ENERGYSOLUTIONS

May 17, 2023 CD-2023-103

Mr. Doug Hansen, Director
Division of Waste Management and Radiation Control
P.O. Box 144880
Salt Lake City, UT 84114-4880

Re: Additional Responses to Federal Cell Facility Application Request for Information - DRC-2022-023940

Dear Mr. Hansen,

Energy*Solutions* hereby responds to the Utah Division of Waste Management and Radiation Control's December 19, 2022 Request for Information (RFI) on our Federal Cell Facility Application.[1] A response is provided for each request using the Director's assigned reference number. By way of reminder, Energy*Solutions* previously submitted responses to Requests D-2, D-3, and D-4 in a separate letter to the director dated February 1, 2023 (CD-2023-025). We have not repeated those responses here.

Appendix O: Erosion Modeling

General information

To address RFIs O-4 and O-5, SIBERIA has been re-run with an updated calibration, with updated results incorporated into the Depleted Uranium Performance Assessment (DU PA) model in GoldSim. A revised technical report, "*NAC-0017_R6 Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0*" (Neptune 2023) accompanies this RFI response.

At this time, the DU PA model has been revised as version 2.03 to reflect the RFI requesting changes to depleted uranium inventory. When other changes are incorporated in response to future director requests that may require revision of the overall DU PA model, the DU PA will be formally issued as v3.0 with updated supporting documentation and found in Appendix O, "*DU PA version 3*" to the Federal Cell Facility Radioactive Material License Application.

Revised peak Total Effective Dose Equivalent (TEDE) [for the ranch worker, hunter, and off-road recreational vehicle (OHV) enthusiast] and cumulative population TEDE (for the total population, ranch worker, hunter, and OHV enthusiast) that will be calculated by DU PA version 3 (reflecting the Clive site-specific update of SIBERIA model) are expected to differ by less than 0.02% from those reported for version 2.0 of the DU PA (Clive DU PA Model Final Report v2.0 found in Appendix O, "*DU PA version 2*" to the Federal Cell Facility Radioactive Material License Application). Similar minimal impacts are expected to the peak concentrations in groundwater, lake water, and lake sediments projected for version 3.0 compared with the results of version 2.0 of the DU PA.

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[1] Hansen, D.J. "Federal Cell Facility Application Request for Information." via DRC-2023-000525 from the Utah Division of Waste Management and Radiation Control to Vern Rogers of Energy*Solutions*, January 19, 2023.

O-2: After downloading SIBERIA from the public website, it did not compile, it may be because it has not been revised for modern architecture. The Division requests that EnergySolutions please provide: (1) Information pertaining to the operating system on which the SIBERIA code was run, (2) Information pertaining to the complier used to compile the SIBERIA source code, (3) SIBERIA compiled version of the code currently being run to support Clive DU PA v2.0, and (4) SIBERIA source code currently being run to support Clive DU PA v2.0. These will greatly expedite our review of the erosion modeling:

SIBERIA is a leading public domain software for erosion modeling. SIBERIA does compile and run on PC architecture.

The operating system on which the SIBERIA code was run is Ubuntu Linux release 20.04 LT. The SIBERIA compiled version being run to support Clive DU PA v2.02 is 8.33. The SIBERIA source code currently being run to support Clive DU PA v2.02 is available for download at https://github.com/csdms-contrib/siberia.

Text under the heading "Obtaining and Compiling SIBERIA" at the bottom of this response provides a summary of SIBERIA system requirements. Compilation of SIBERIA was performed with gfortran v10.3 on Ubuntu Linux release 20.04 LTS. The following flags were used to compile:

```
-O3  -march=native  -mtune=native
```

The Rangeland Hydrology and Erosion Model (RHEM) was run using the batch engine web service: https://github.com/ARS-SWRC/rhem_batch_csip in August, 2021 which ran version 2.3. Subsequently United States Department of Agriculture, Agricultural Research Service (USDA-ARS) provided a version 2.3-executable compiled for Linux.

The file dugway_AverageCoverTopdeck.xlsx combines cdraws_dr000_dr110.xlsx and other similarly-named files, which were used to submit batches of simulations over time. Note that rows for simulations involving draws 555, 556, and 557 appear to be offset one row downward. Along with populating the template Excel file with simulation results the batch engine also transmits parameter files which can be used to run an executable, and output summary files. The calibration reference datasets were generated with the output summary files. The main consequence is that Total Dissolved Solids results are not trusted since that is not output into the summary files.

OBTAINING AND COMPILING SIBERIA

Compiling SIBERIA involves:

- downloading the source code
- setting up a subdirectory to the source code directory in which to build the executable
- copying the makefile from an existing build directory
- editing the makefile to specify the Fortran compiler and compiling and linking options
- editing the siberia.f90 source file to correct a namespace conflict
- building the executable with "make"

1) Download SIBERIA source from CSDMS model repository:
from CSDMS github: https://csdms.colorado.edu/wiki/Model:SIBERIA
on the right-hand side of the page in the "Model info" box : there are two choices:

a) "Download SIBERIA version: 8.3.3" link: this downloads a zipped tar file: `siberia-10.1594.IEDA.100163-8.3.3.tar.gz` which contains an SVN repository directory structure. After extraction source files are found in `./siberia/tags/833 # SOURCEDIR`

b) Click [expand] link to the right of "Source code", then click "View in CSDMS GitHub repository" then on Github site click green "Code" button and "Download Zip" this downloads a zip file "`siberia-master.zip`". After extraction source files are found in `./siberia-master # SOURCEDIR`

Each directory tree has existing directories for building the source labeled for MacOS: `osx-intel, osx-ppc`. A makefile is in each of those directories.

The steps below are the same for each directory structure.

2) COPY MAKEFILE INTO APPROPRIATE BUILD SUBDIRECTORY
e.g., if working on Ubuntu Linux, if "SOURCEDIR" is the directory with the Fortran source files:

```
> cd $SOURCEDIR
> mkdir ubuntu
> cp osx-intel/makefile ubuntu
```

3) EDIT MAKEFILE
In makefile:

Lines 23, 24, 25 have entries for specifying the compiler as invoked in the shell:

```
23 #F95COMPILER=ifort
24 F95COMPILER=g95
25 #F95COMPILER=gfortran
```

If gfortran is installed and in path and invoked with "gfortran", comment out line 24 and uncomment line 25

```
23 #F95COMPILER=ifort
24 #F95COMPILER=g95
25 F95COMPILER=gfortran
```

Otherwise overwrite line 24 (the G95 compiler seems to be abandoned) with the appropriate Fortran compiler as invoked in the shell, e.g:

```
23 #F95COMPILER=ifort
24 F95COMPILER=flang
25 #F95COMPILER=gfortran
```

Edit lines 54 and 55 to use appropriate flags for linking:

```
54     $(TYPE)_$(VERSION) : $(OBJECTS)
55           $(F95COMPILER) -O2 -
o$(RELEASE_LOCATION)/$(TYPE)_$(VERSION) $(OBJECTS)
```

Edit lines 82 and 83 to use appropriate flags for compiling:

```
82     %.o:../%.f90
83           $(F95COMPILER) -c -O2 ../$*.f90
```

On the Ubuntu Linux machine used at Neptune the lines appear as

```
25 F95COMPILER=gfortran-10

54     $(TYPE)_$(VERSION) : $(OBJECTS)
55           $(F95COMPILER) -O3
$(RELEASE_LOCATION)/$(TYPE)_$(VERSION) $(OBJECTS)

82     %.o:../%.f90
83           $(F95COMPILER) -c -O3 ../$*.f90
```

4) Edit source file `siberia.f90`
There is a namespace collision that needs to be resolved by editing line 887 (line number may be slightly different)

Change:

```
887   USE Support
```
to
```
887   USE Support, ONLY:Message_Close
```

5) Compile and link with make. The executable will be created in the "release" subdirectory. Copy that to a directory in $PATH, copy "siberia.setup" into the same directory.
Assuming Ubuntu Linux:

```
> cd $SOURCEDIR/ubuntu
> make
> cp release/siberia_833 ~/bin  # e.g. copy to "$HOME/bin"
                                    # subdirectory
> cp ../siberia.setup ~/bin            # copy siberia.setup
from
                                    # $SOURCEDIR to $HOME/bin
```

O-3: In order to conduct an independent review on the SIBERIA modeling, please provide the SIBERIA input/output files used for the Clive DU PA v2.0.:

Input and output files for the revised simulations have been provided as SIBERIA files on compact disc and are included in Appendix O - DU PA version 2.03/Clive DU PA Model Files/Erosion/Erosion Output Models.

O-4: A single value is specified for many of the parameter values input to SIBERIA that are uncertain. For example, NUREG/CR-7200 explores a range of values of n1 and m1. Whereas Clive DU PA v2.0 uses one set of n1 and m1 values and a very limited range of beta1 values. Please conduct a quantitative sensitivity analysis on the parameters that are most uncertain and that the results are most sensitive to:

A quantitative sensitivity analysis has been conducted on the parameters n1, m1, and beta1. In particular, 1,000 different values of beta1 were used in combination with randomly selected values of n1, and m1 to assess the impact on cover condition and sediment yield. The sensitivity of average annual sediment yield to varying values of beta1 was characterized using the 1,000 different SIBERIA runs. These results found that average annual sediment yield is approximately linearly related to beta1.

Full calibrations against 1,000 sets of foliar and ground cover conditions were obtained with Nelder-Mead-based algorithm matching sediment yields modeled by RHEM v2.3 with SIBERIA-generated sediment yields on a set of profiles of length 10, 25, 50, 75, 100, 120 m with slope 0.2, 0.24, 0.3 (see O-5). These have been summarized in *Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0* (Neptune 2023). For 6 lengths x 3 slopes 18 RHEM single-profile simulations were performed to construct each calibration reference dataset.

O-5: NUREG/CR-7200 discusses how a SIBERIA model is calibrated using regressions of beta1, m1, and n1 values. Please describe quantitatively how the SIBERIA model was calibrated to measured data for the Clive DU PA v2.0:

Since site-specific erosion data do not exist, RHEM was used to generate estimates of sediment yield for the Site. The RHEM estimates of sediment yield are used as reference values for the calibration. Then, values for the beta1, m1, and n1 parameters used by SIBERIA are obtained by matching sediment yields predicted by SIBERIA to reference sediment yields modeled by RHEM. Specifically, the SIBERIA model was calibrated to reference sediment yield datasets generated by RHEM for each of the 1,000 cover condition realizations.

Calibrations are performed using a 1 m digital elevation model (DEM) configured with a set of linear profiles of varying slopes. The Hillslope Erosion Model (HEM) or RHEM simulations are run to obtain sediment yields for the profiles. SIBERIA is repeatedly run as controlled by a Nelder-Mead/downhill-walking simplex optimization routine to obtain parameters resulting in best-matching (least-squares difference sense) sediment yields along the profiles.

The algorithm starts with a set of 4 parameter sets — values of β_1, m_1, n_1 — analogous to vertices of a geometric simplex which is a tetrahedron in 3D parameter space. Each vertex is tagged with the value of an objective function O(b1, m1, n1), defined as the sum of squared differences between average annual sediment yield (return period 2.33 years) predicted by RHEM for a profile of a particular length and slope — multiplied by 60 years — and that obtained at a matching location in the SIBERIA calibration DEM after 60 years of simulation (Nearing 2004).

The latter calculation is obtained by summing the elevation change — initial calibration DEM subtracted from elevation at simulation year 60 — at each grid node along a column of the output DEM above the location corresponding to the RHEM profile. Figure 1 provides a visualization.

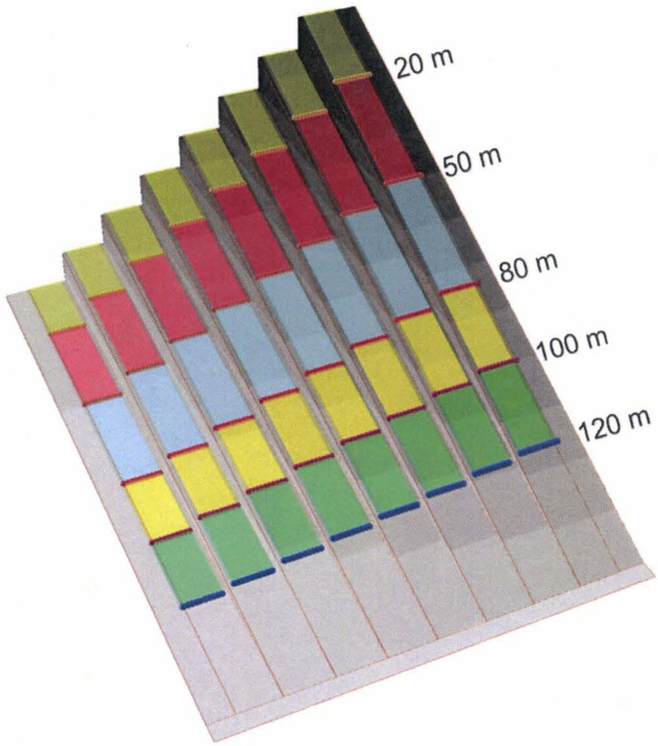

Figure 1. Example calibration domain DEM simulating a set of rainfall runoff plots. Slopes are 2, 4, ..., 20 percent on profile lengths listed along the right. The calibration domain used with the DU Cover would resembles the leftmost three slopes only with slopes 2.0, 2.4, and 3.0 percent, and different profile lengths.

The algorithm proposes trial parameter sets based on values of O at each vertex, performing geometric transformations to move the lowest-valued ("best") vertex away from the higher-valued vertices, or contracting by a scale factor if no lower-valued locations can be found. It exits on achieving a tolerance on a relative range of tracked O values (10^{-4}) or after a maximum number of algorithm iterations is reached (300). Each algorithm iteration may test multiple trial states and run SIBERIA multiple times.

Return values include a set of parameters ranked by O-value with corresponding parameter value sets, along with metadata such as number of iterations, number of trial states, the trial states and O values themselves, and other quantities.

Convergence to a suboptimal, local minimum of O has been observed with reference datasets generated with RHEM. For each calibration sediment yield dataset the algorithm is initialized with multiple configurations. In the current work six were used. In fifteen cases the algorithm exited after 300 iterations for all six initial configurations, however comparing parameter values of the best-performing result in context of the rest of the calibrated values and comparing plots of the corresponding sediment yield generated by SIBERIA with the reference target they were accepted. These are listed in *Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0* (Neptune 2023)

O-6: Some parameters can be grid resolution dependent (e.g., the hillslope diffusivity parameter). Please describe whether any grid convergence testing was performed and, if not, how the grid spacing in the SIBERIA model was determined to be sufficiently small:

In order to address this RFI, SIBERIA was run for subsets of parameter values to explore the impact of grid resolution. Comparison of SIBERIA results for 0.5m vs. 1.5m grid resolution indicate similar sediment yield over the top slope at 10ky, although incision was deeper for the 0.5m grid. Sufficiency of the grid spacing was considered using the sensitivity of response of the implementation of erosion in Goldsim. The effect on the GoldSim implementation is to increase areal proportion of incision into deeper layers from zero or near zero at 1.5m resolution to the order of 10-3 or smaller.

Rate coefficients β_1, β_{12}, β_3, β_5, β_6, diffussivity D_z, and related thresholds are grid-resolution dependent. Parameter values can be supplied to SIBERIA in either resolution-specific or per-unit-profile-width basis as flagged by setting particular input control values as mode values + 20, e.g., ModeErode = 24 flags using the 3D layers model with β_1, m_1, n_1, and D_z on a per-unit-width basis; ModeErode = 4 flags using the 3D Layers model with resolution-specific values. In the former case the "24" value flags SIBERIA to internally rescale the parameter values for the grid resolution being run. Therefore, calibrating on a 1-meter grid allows the same parameters to be used on any grid resolution.

Calibrated parameter values were run on a 0.5-meter version of the model domain using a set of ten calibrated parameter sets. The sets were chosen from the 0, 10th, 20th ,..., 90th, 100th percentiles (labeled RSY_{10th}, RSY_{20th}, ..., RSY_{90th}, RSY_{100th}) of average sediment yield predicted by RHEM at 120 m for the corresponding calibration sediment yield datasets, averaged across the three slopes. Results indicate similar sediment yield over the top slope at 10ky, although incision was deeper as summarized in Table 1. The effect on the GoldSim implementation is to increase areal proportion of incision into deeper layers from zero or near zero at 1.5m resolution to the order of 10^{-3} or smaller. The layers used in the GoldSim implementation are defined in Table 2, and Table 3 compares the effect of grid resolution on the rows of the lookup table from which the erosion effects are read for a particular realization. Figures 2 and 3 present the information in Table 1 graphically. Figure 2 plots the annual average sediment yield on the top cover at 10,000 years for a 0.5-m grid compared with a 1.5-m grid. The dashed line represents 1:1 correlation, showing that the 1.5-m grid provides similar results for sediment yield to the 0.5-m grid. Figure 3 similarly plots maximum incision at 10,000 years for the 0.5-m grid compared with the 1.5-m grid, showing that maximum incision is deeper with the smaller grid.

Figure 4 illustrates this graphically. Cover layers into which some incision has occurred on the top slope are flagged with a brown cross for a particular RSY_{ith} scenario (ordinate) simulated on a 1.5-m grid and flagged with a blue cross if incision occurred with the same calibrated parameters applied to a 0.5-m grid. A total of eleven 10,000-year simulations were run on the 0.5 m domain, representing scenarios corresponding to the $RSY_{0'th}$, $RSY_{10'th}$, ... $RSY_{90'th}$, $RSY_{100'th}$ scenarios.

Table 1. Sediment yield and incision on the Top Slope at 10,000 years on a 0.5-m grid compared with the 1.5-m grid simulations (bold and italicized) for RSY0th, RSY50th, and RSY100th scenarios.

	RSY0th		RSY50th			RSY100th
SY	0.1667	***0.06356***	0.203	***0.2103***	0.234	***0.23981***
	0	***0***				***0***
Dz (m)						
mean	-0.12234	***-0.04667***	-0.14904	***-0.15439***	-0.17606	***-0.17607***
std	0.038966	***0.12147***	0.043114	***0.04399***	0.052201	***0.04371***
100%	-0.38745	***-0.28308***	-0.51416	***-0.38623***	-0.56616	***-0.38635***
75%	-0.14465	***-0.12061***	-0.17285	***-0.18127***	-0.20117	***-20.29%***
50%	-0.11536	***-0.08972***	-0.1416	***-0.14929***	-0.16565	***-17.20%***
25%	-0.09387	***-0.00513***	-0.11816	***-0.12268***	-0.14002	***-14.51%***
0%	-0.00549	***0.51306***	-0.03259	***-0.06128***	-0.05273	***-0.07044***

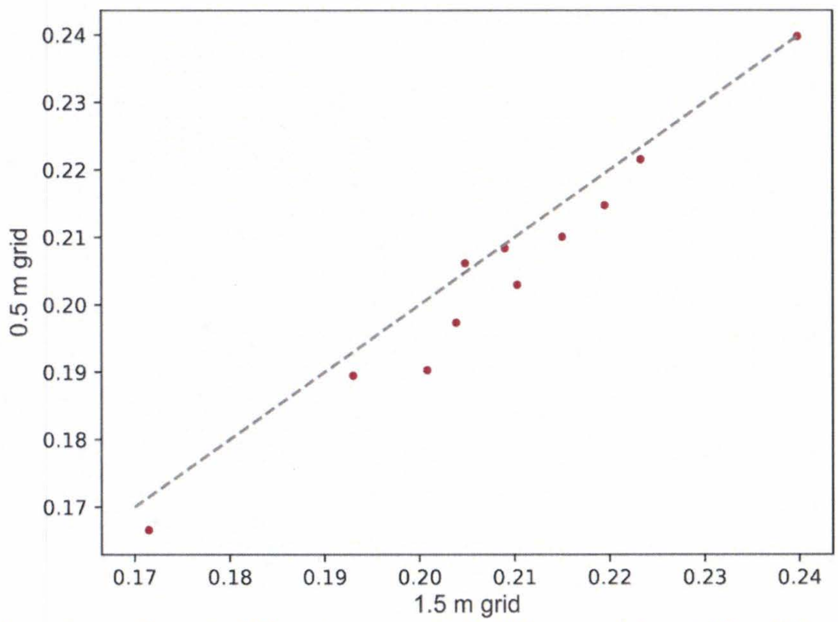

Figure 2. Annual average sediment yield on top cover at 10,000 years, 0.5-m grid vs. 1.5-m grid (T ha^{-1} y^{-1}).

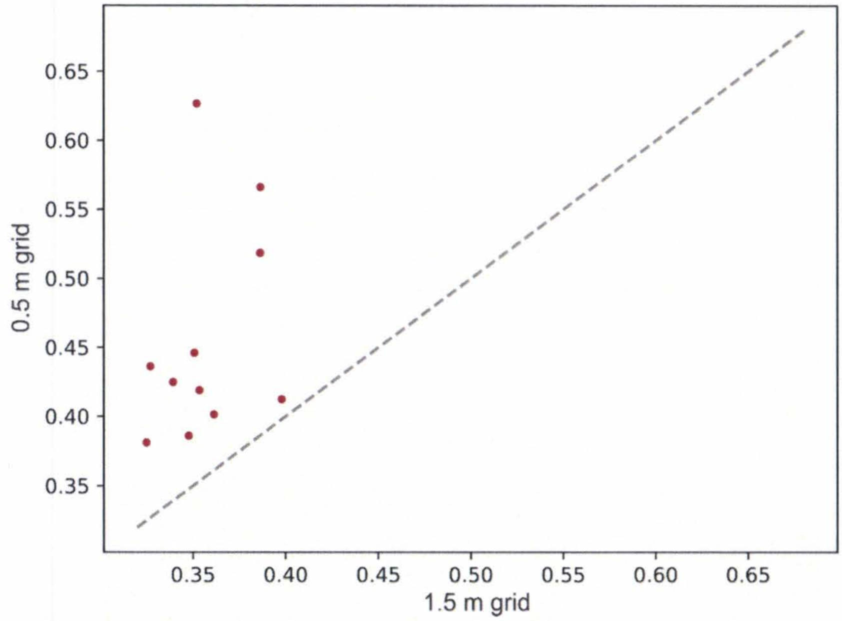

Figure 3. Maximum incision at 10,000 years on 0.5-m grid vs 1.5-m grid (m).

Table 2. Cover layers defined in the Goldsim model

Layer	Thickness (m)	Layer bottom (m)
1	0.01	0.01
2	0.2948	0.3048
3	0.1524	0.4572
4	0.1524	0.6096
5	0.1524	0.7620
6	0.1524	0.9144

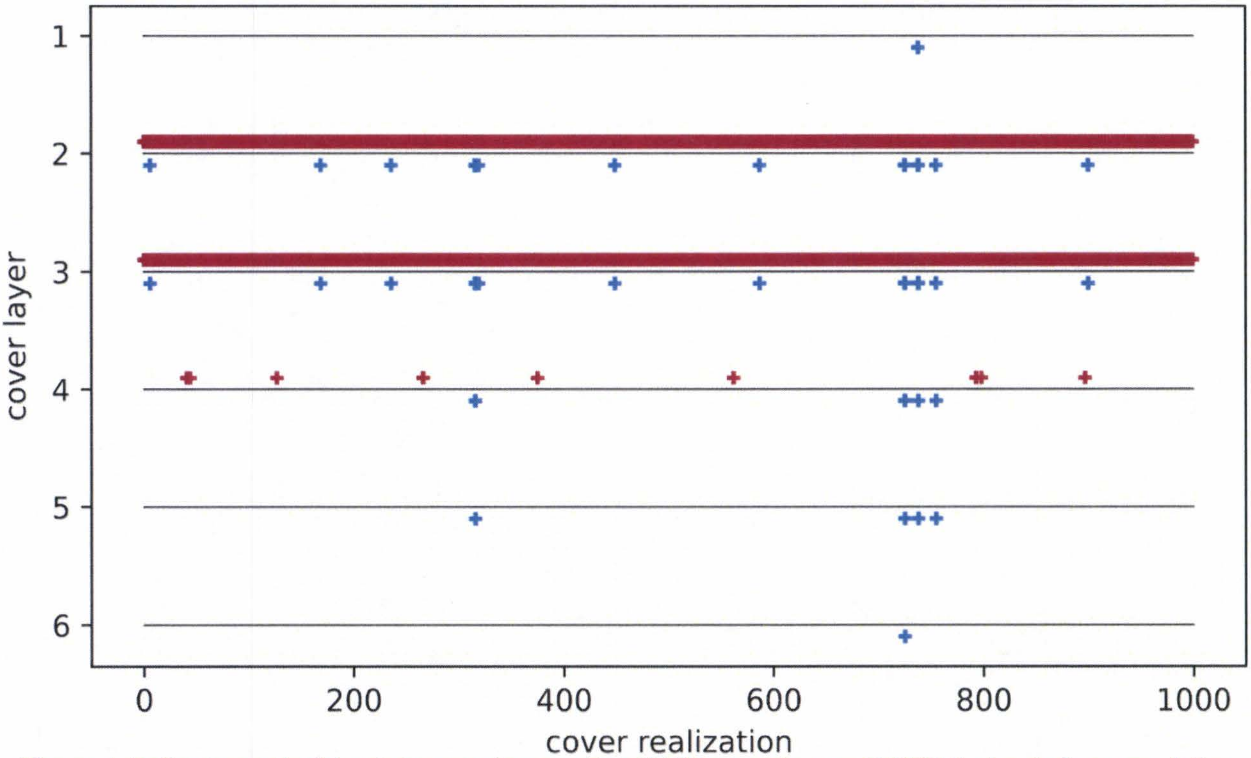

Figure 4. Indicators of incision into cover layers after 10,000 years for ten SIBERIA simulations on a 0.5 m grid (blue) and 1,000 SIBERIA simulations on a 1.5 m grid (brown). Note the apparent thick red lines represent incision into layers 2 and 3 for all simulations on the 1.5 m grid.

Table 3. Comparing GoldSim layer incision areal proportion lookup table for 10,000-year simulations on 0.5 m vs 1.5 m (bold and italicized) SIBERIA model grid.

Cover realization	RSY_{ith}	GridXY (m)	l1	l2	l3	l4	l5	l6
6	90	0.5	0	0.991476	0.008524	0	0	0
		1.5	***0***	***0.995949***	***0.004051***	***0***	***0***	***0***
169	10	0.5	0	0.995566	0.004434	0	0	0
		1.5	***0***	***0.999014***	***0.000986***	***0***	***0***	***0***
236	80	0.5	0	0.993726	0.006274	0	0	0
		1.5	***0***	***0.998133***	***0.001867***	***0***	***0***	***0***
316	50	0.5	0	0.995838	0.003959	0.000204	0	0
		1.5	***0***	***0.998345***	***0.001655***	***0***	***0***	***0***
319	30	0.5	0	0.99373	0.00627	0	0	0
		1.5	***0***	***0.998309***	***0.001691***	***0***	***0***	***0***
449	20	0.5	0	0.999225	0.000775	0	0	0
		1.5	***0***	***0.999348***	***0.000652***	***0***	***0***	***0***
587	70	0.5	0	0.995527	0.004473	0	0	0
		1.5	***0***	***0.998362***	***0.001638***	***0***	***0***	***0***
725	100	0.5	0	0.974912	0.023519	0.001569	0	0
		1.5	***0***	***0.994717***	***0.005283***	***0***	***0***	***0***
738	0	0.5	7.83E-06	0.999419	0.000573	0	0	0
		1.5	***0***	***0.999366***	***0.000634***	***0***	***0***	***0***
755	40	0.5	0	0.990827	0.009027	0.000137	9.78E-06	0
		1.5	***0***	***0.997904***	***2.10E-03***	***0***	***0***	***0***
900	60	0.5	0	0.993938	0.006062	0	0	0
		1.5	***0***	***0.996848***	***3.15E-03***	***0***	***0***	***0***

Diffusivity D_z has been qualitatively set rather than obtained from a calibration. Linear diffusion acts locally proportionally to slope and tends to smooth the landscape through processes including rainsplash, soil creep, freeze-thaw, tree-throw, and bioturbation. Of these only rainsplash contributes to sediment fluxes modeled by HEM and RHEM, and so the overall long-term D_z value is difficult to obtain. Diffusivity has been included as a calibration parameter in the past but tended to decay to zero as advection on longer profiles dominated (Wilson et al. 2005). The value 10^{-4} with which the simulations were performed was based on qualitative assessment of evolved terrain compared to higher and lower values in an approach suggested by Willgoose (pers. comm. 2003) and reported in Hancock and Willgoose (2021). Ideally field data observed over time would be available to attempt to determine D_z, e.g. Willgoose and Riley (1998); however, such data is not available for the Clive facility.

Simulations were performed on a 0.5 m grid using the median RHEM-erosion scenario with values of D_z of 10^{-5} and $10^{-3}$to assess the effects on the GoldSim lookup table. Simulations were also run on a 1.5 m grid with the same values of diffusivity to isolate the effect of diffusion at the reference grid resolution.

Effects of diffusivity on sediment yield and incision depths on the top slope are summarized in Table 4. Generally-increased sediment yield and incision depths with increasing diffusivity and decreased grid resolution are apparent as would be expected.

The area proportion of incision into the cover layers which would directly affect the GoldSim implementation appear in columns “L1” – “L2”. By comparison to the 1.5 m grid which was used in the full set of 1,000 SIBERIA simulations, incision impacts deeper layers although the area is small as seen in Table 1.

Evolved terrain after 10,000 years of simulation under the $RSY_{0'th}$, $RSY_{50'th}$, and $RSY_{100'th}$ scenarios is shown in Figure 5. Incision into the cover layers on the top slope are mapped in Figure 6 and display the spatial distribution of the deeper incision shown in Table 2 and Table 5.

Table 4. Effect of varying diffusivity on area proportion of incision into top slope cover layers on potential GOLDSIM LOOKUP TABLE. Scenario is RSY_{50th} on 0.5 m grid with 1.5 m reference (bolded) for comparison.

Cover realization	RSYith	GridXy (m)	Dz	I1	I2	I3	I4	I5	I6	□z max (m)	SY (Tha-1y-1)
738	0	0.5	3	0	0.986608	0.012698	0.000693	1.96E-06	0	-0.61536	-0.19449
		0.5	0	7.83E-06	0.999419	0.000573	0	0	0	-0.38611	-0.16662
		1.5	**0**	**0**	**0.999366**	**0.000634**	**0**	**0**	**0**	**-0.34778**	**-0.17147**
		0.5	5	0	0.999292	0.000708	0	0	0	-0.34045	-0.16332
316	50	0.5	3	0	0.966505	0.029777	0.003673	4.50E-05	0	-0.66797	-0.23463
		0.5	0	0	0.995838	0.003959	0.000204	0	0	-0.51855	-0.20299
		1.5	**0**	**0**	**0.998345**	**0.001655**	**0**	**0**	**0**	**-0.38623**	**-0.21027**
		0.5	5	0	0.993711	0.006264	2.54E-05	0	0	-0.4873	-0.20258
725	100	0.5	3	0	0.925585	0.062737	0.011353	0.000323	1.96E-06	-0.776	-0.27736
		0.5	0	0	0.974912	0.023519	0.001569	0	0	-0.56616	-0.23979
		1.5	**0**	**0**	**0.994717**	**0.005283**	**0**	**0**	**0**	**-0.38635**	**-0.23981**
		0.5	5	0	0.987199	0.012801	0	0	0	-0.41577	-0.2351

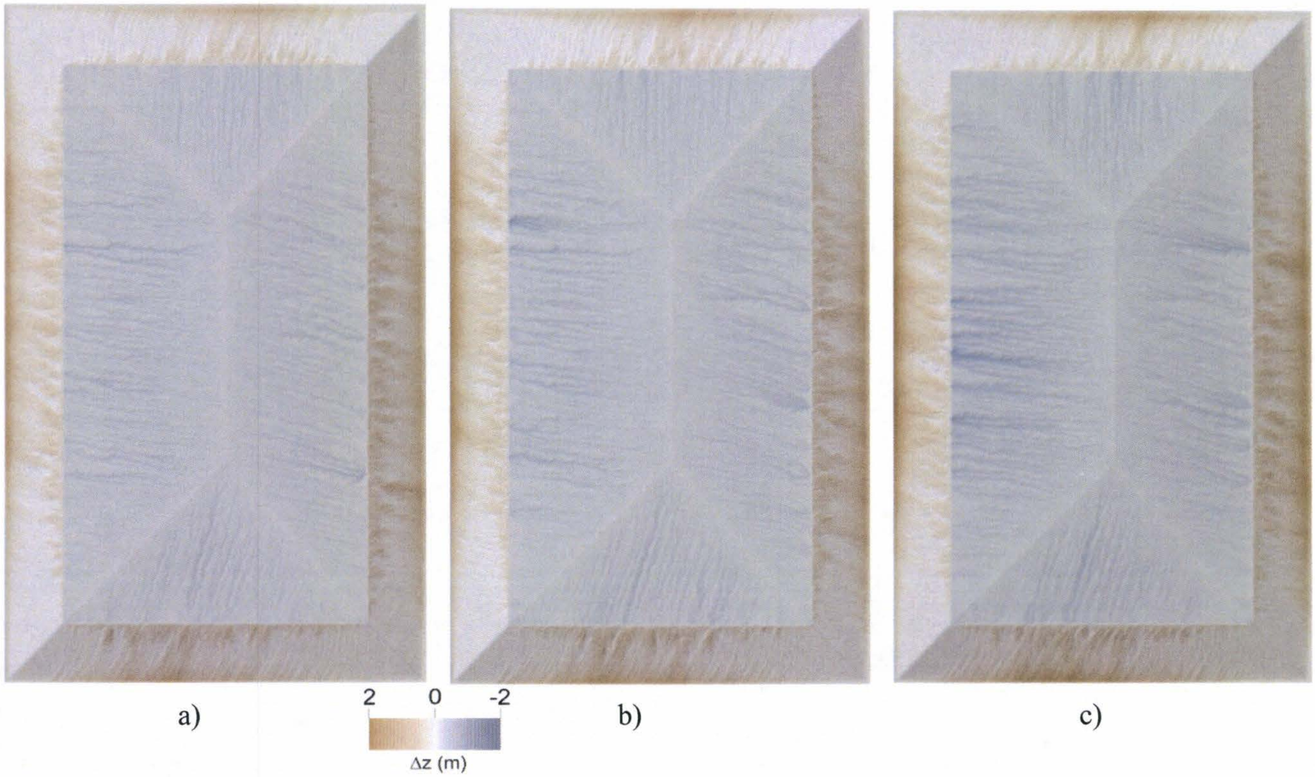

Figure 5. Comparing evolved terrain at 10,000 years of erosion under the a) RSY 0th, b) RSY50th and c) RSY100th scenario on grids of resolution 0.5 m.

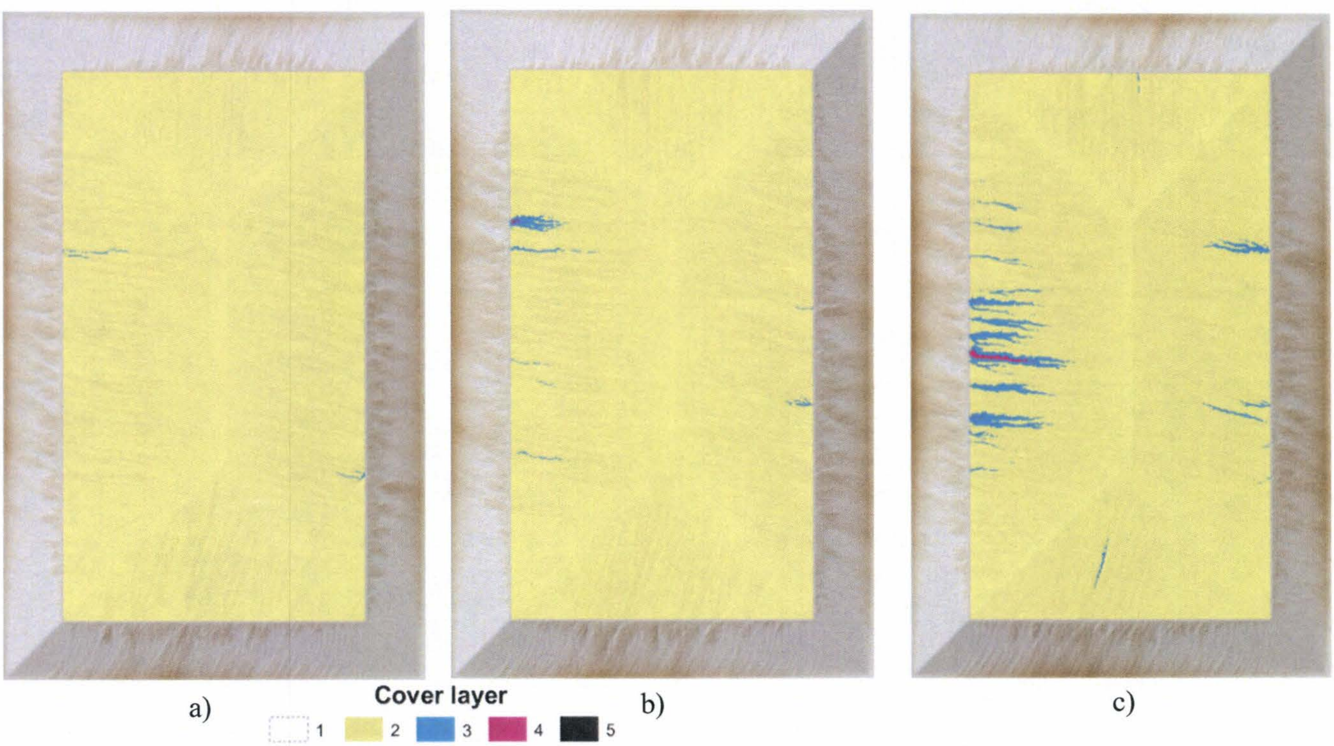

Figure 6. Comparing incision into cover layers on the Top Slope at 10,000 years of erosion under the a) RSY0th, b) RSY50th and c) RSY100th scenario on grids of resolution 0.5 m.

On the 1.5 m grid the diffusive sediment flux term is adding to total sediment yield as D_z increases (Table 6) to the point where it causes incision into the lower half of the evaporative zone layer at 10^{-3} (Table 7). Cross-sections plotted in Figure 7 reveal significant smoothing occurs with diffusivity of 10^{-3} compared to 10^{-4} which implies an appropriate value for D_z may lie in that interval. Increasing D_z beyond 10^{-3} likely results in spuriously-smooth terrain for the site while promoting over-design of the cover in response to increased predicted cover degradation. The effect of varying diffusivity on evolved terrain after 10,000 years of simulation under the $RSY_{50'th}$, scenario is shown in Figure 8. Incision into the cover layers on the top slope are mapped in Figure 9.

The incision into cover layer L4 is located at the corners of the top slope. The three-dimensional "Layers" model of material properties as implemented in SIBERIA v8.33 does not allow variation in D_z, so that while armor or bedrock may resist fluvial erosion the diffusive flux is the same as for mobile material.

Table 5. Sediment yield and incision depth for Top Slope for varying diffusivity, RSY_{50th} scenario.

D_z	**10^{-5}**	**10^{-4} (ref)**	**10^{-3}**
SY (T ha^{-1} y^{-1})	0.2044	0.2103	0.2351
□z (m)			
mean	-0.1501	-0.1544	-0.1726
std	0.0468	0.0440	0.0462
0.00%	-0.3346	-0.3862	-0.5657
25.00%	-0.1796	-0.1813	-0.2001
50.00%	-0.1434	-0.1493	-0.1671
75.00%	-0.1158	-0.1227	-0.1381
100.00%	-0.0282	-0.0613	-0.0787

Table 6. Effect of varying diffusivity on proportion of area of top slope exposed to incision after 10,000 years of simulation with the RSY_{50th} scenario.

D_z	**l1**	**l2**	**l3**	**l4**	**l5**	**l6**
1.00E-05	0	0.998186	0.001814	0	0	0
1.00E-04	**0**	**0.998345**	**0.001655**	**0**	**0**	**0**
1.00E-03	0	0.989874	0.009739	0.000387	0	0

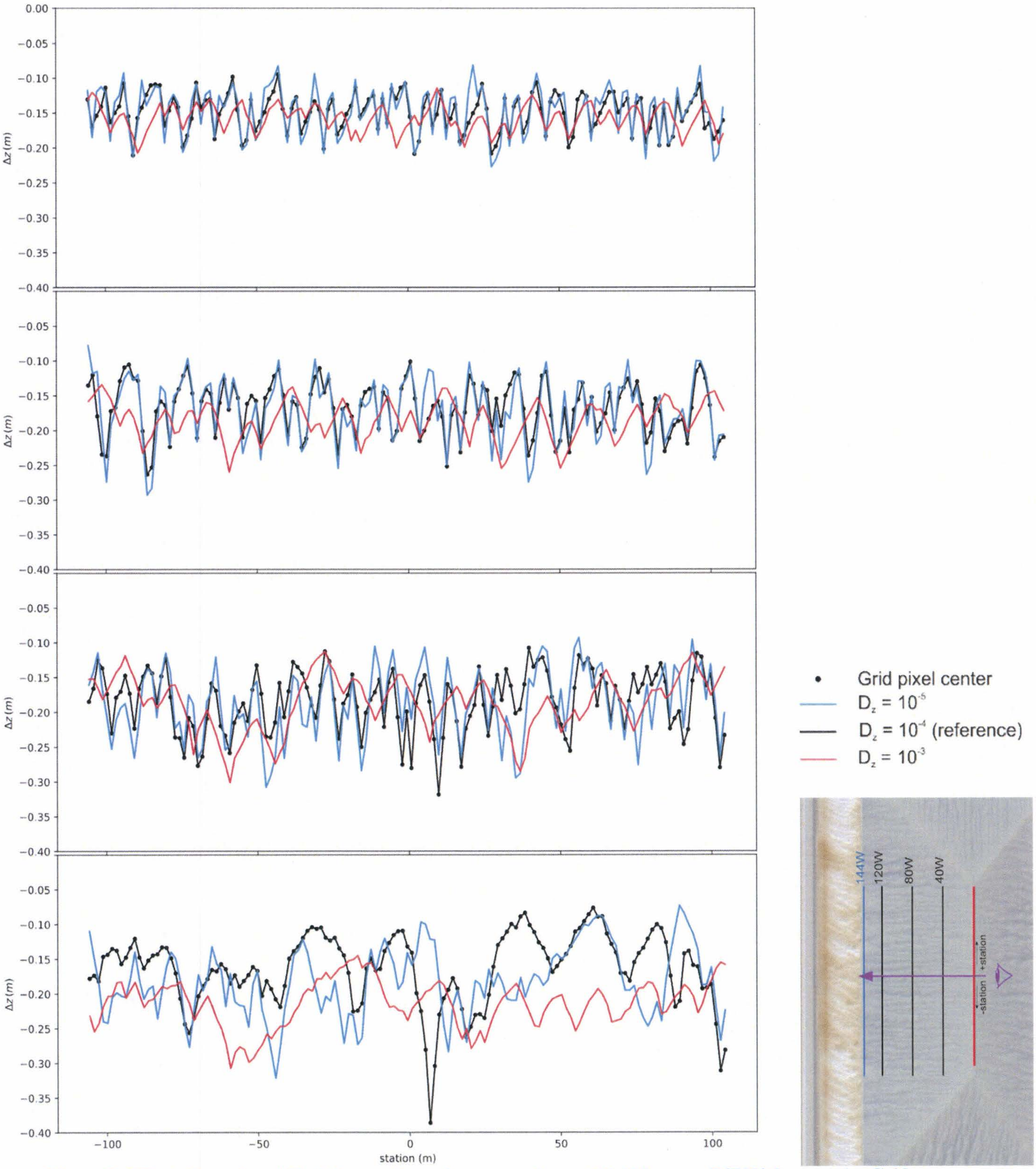

Figure 7. Effect of varying diffusivity on channel cross-sections at 10,000 years, RSY50th scenario. Grid resolution is 1.5 m. Vertical exaggeration is ~1300.

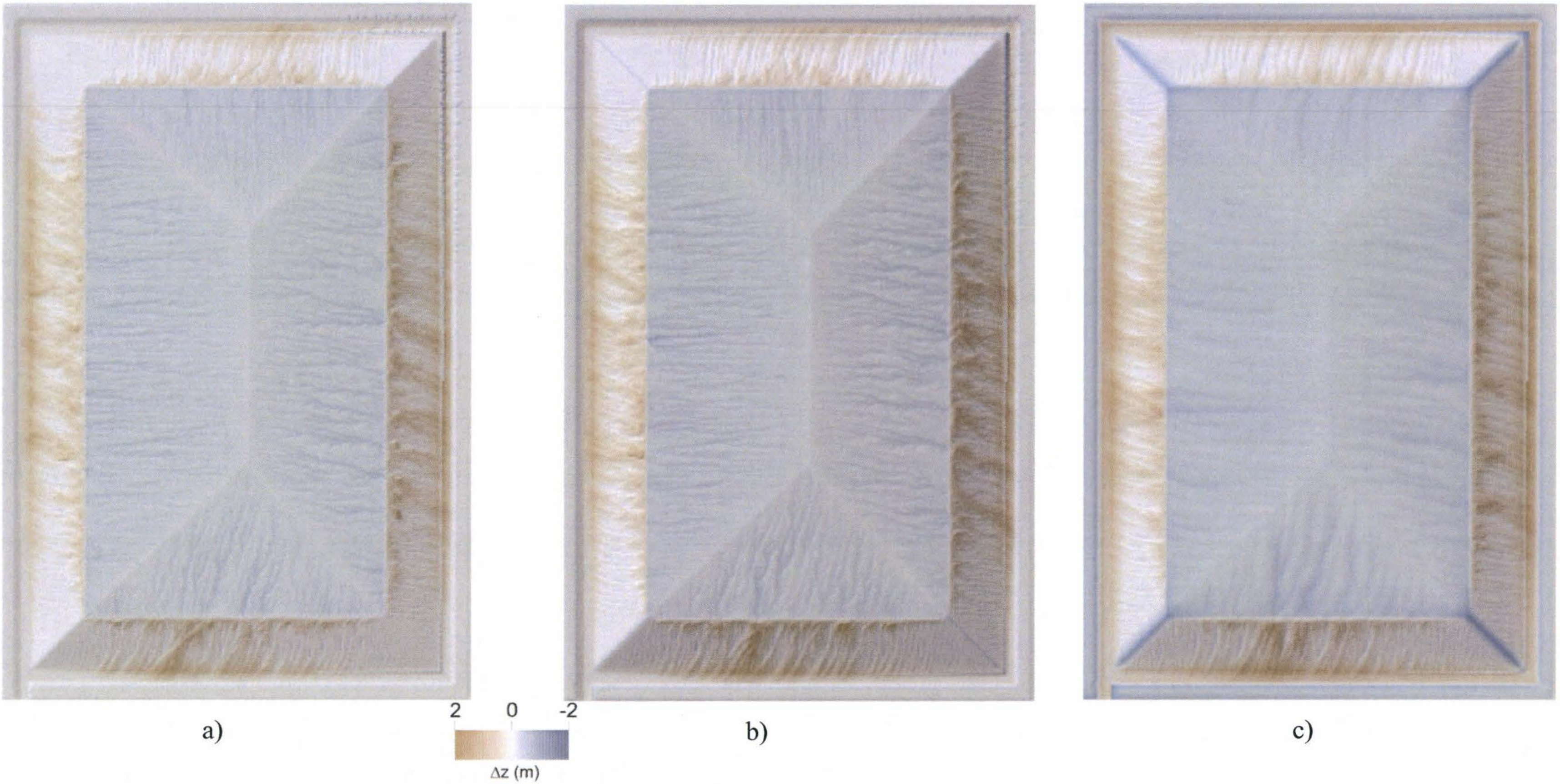

Figure 8. Effect of varying diffusivity on cover after 10,000 years, RSY_{50th} scenario on a 1.5 m grid. a) $D_z = 10^{-5}$, b) $D_z = 10^{-4}$ (reference), c) $D_z = 10^{-3}$.

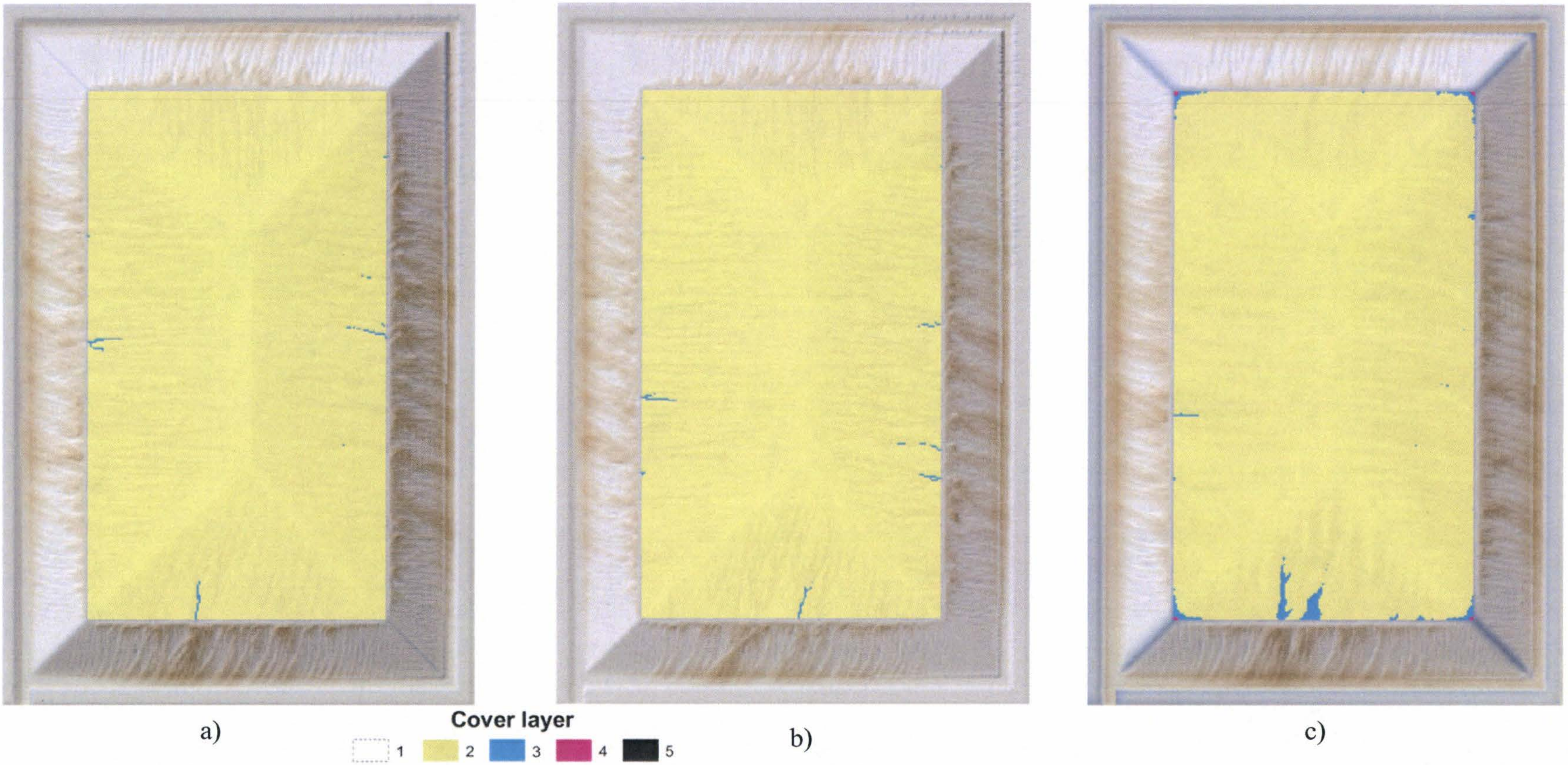

Figure 9. Effect of varying diffusivity on cover after 10,000 years on incision into top slope cover layers, RSY_{50th} scenario on a 1.5 m grid. a) $D_z = 10^{-5}$, b) $D_z = 10^{-4}$ (reference), c) $D_z = 10^{-3}$.

O-7: The DU PA v2.0 uses a mean flow in the analysis but refers to threshold flow. Somewhat outdated literature is cited in this discussion. Thresholds are important in gully formation and considering the full distribution of events, particularly events of significance changes as the landscape changes. Please clarify the role of mean flow assumptions versus threshold in the SIBERIA modeling:

"Mean flow" as used in DU PA v2.0 refers to the use of runoff and erosion from the average annual storm (return period 2.33 years) as the geomorphically effective event. "Threshold" refers to parameters associated with runoff, advective sediment transport, and diffusive sediment transport which can be applied in the model. For the modeling in DU PA v2.0, these were all held to zero given no relevant data. This is a conservative assumption. Had estimated values been applied the erosion rates may have been spuriously reduced.

While SIBERIA is an older model and thus much of the literature supporting it is somewhat dated, it remains a reasonable tool for longer-term landform evolution modeling. SIBERIA is formulated to apply a single geomorphically effective event repeatedly to predict long-term landforms expected to result from erosion from a time-series of storms as described in Willgoose et al. (1991). While CAESAR-Lisflood is increasingly used as the state-of-the-art Landscape Evolution Model (LEM) for applications such as mining rehabilitation, it carries a high computational expense. Accordingly, it has been proposed to be used for early-period modeling to establish terrain for longer-term modeling with SIBERIA (Lowry et al. 2015).

"Mean flow" as used in DU PA v2.0 is referring to using the runoff and erosion from the average annual storm (return period 2.33 years) as the geomorphically effective event. Per theory including statistical analyses developed in (Willgoose et al. 1991), this event when applied each simulation year should replicate the long-term landscape form expected from the explicit long-term time series of storms.

"Threshold" is referring to parameters on runoff, advective sediment transport, and diffusive sediment transport which can be applied in the model. These were all held to zero given no relevant data, which is a conservative assumption. Had estimated values been applied the erosion rates may have been spuriously reduced. It may be possible to use RHEM to assess thresholds however there were not any no-flow results observed in the 18,000 RHEM simulations performed to generate the 1,000 calibration datasets.

Note that SIBERIA implements a channelization function which does implement a threshold to flag a grid node as "channel", involving parameters a_t (specified as the reciprocal), a_1, b_5 (coefficient), n_1 (exponent on slope), and m_5 (exponent on A). Under the default channel model mode this only affects the output if b_{12} and m_{12} are specified to provide a second fluvial process for channel flow; the exponent on slope remains n_1 due to the numerical solution method.

In the Water Erosion Prediction Project (WEPP) model the erodibility coefficient and critical shear stress value are often assumed the same as the hillslope rill erodibility coefficient (Flanagan and Livingston 1995) and in effect was done with SIBERIA. Rill-related parameters in RHEM such as the undisturbed concentrated flow erodibility coefficient K_ω/KOMEGA, maximum concentrated erodibility coefficient KCM, and the beta detachment decay factor ADF may offer a route for a channel-specific β_{12} relevant to the local soil type. Al-Hamdan et al. (2014) offer an equation for K_ω based on ground cover components and silt and clay content.

O-8: It is unclear whether a roughness value for the initial topography was assigned in the SIBERIA model. Formation of rills/gullies often require some roughness to initiate (otherwise the channelization process has a hard time initiating). Please clarify whether a roughness value was assigned in the initial topography, and if not, provide the justification for not including the roughness and if it was included, please justify the assigned value.:

No roughness value was assigned for the initial topography in the SIBERIA model for DU PA v2.0. A small amount of roughness resulted from sampling the reference DEM at SIBERIA domain node centers. In order to assess the impact of adding more roughness, several additional simulations were performed. Increasing the roughness produced mixed results with a threshold such that higher roughness reduced sediment yield on the top slope and slightly reduced overall incision depth.

No specific roughness value was imposed on the input DEM encoded into the starting RST2 file originally. A minor roughness resulted from sampling the reference DEM at SIBERIA domain node centers. Slope calculated directly in Python with numpy arrays varies on the order of 1 part in 10,000.

Subsequently each grid node was perturbed by adding random elevations drawn from N(0.0, 0.002) (m). Comparing results at 10ky from the perturbed version and the original version showed little variation in sediment yield on the top slope but did extend apparent rilling toward the central ridge. The 1000 calibrated SIBERIA simulations were therefore run with the 2 mm perturbed starting DEM. Results from the RSY_{50th} scenario are described in Table 7 and evolved terrain at 10,000 years in Figure 10. Incision into cover layers on the Top Slope is mapped in Figure 11.

An additional 10ky simulation was run using perturbations drawn from N(0.0, 0.004) (m) for the RSY_{50th} scenario. Varying only roughness added to the original DEM as zero, "2 mm" (N(0.0, 0.002)), and "4 mm" (N(0.0, 0.004)), the higher roughness reduced sediment yield on the top slope by ~2 percent and slightly reduced overall incision depth. Between the three cases the 2-mm roughness addition predicted deeper incision overall, introducing an element of conservatism.

Unpublished numerical experiments related to Wilson et al. (2005) showed that increasing roughness beyond a threshold value directly reduces erosion predicted over a particular simulation time and can lead to spurious net deposition. Results in Table 5 indicate that threshold may lie between 2 – 4. Reduced incision into Layer 3 as shown in Figure 11c) supports that proposition.

Table 7. Effect of random roughness in initial DEM on erosion after 10,000 years of simulation, RSY50th scenario.

	zero	2 mm (ref)	4 mm
SY (T ha^{-1} y^{-1})	0.2109	0.2103	0.2062
Dz (m)			
mean	-0.15486	-0.15439	-0.15143
std	0.044404	0.043988	0.043088
0%	-0.34424	-0.38623	-0.35364
25%	-0.17993	-18.13%	-0.17761
50%	-0.14954	-14.93%	-0.14661
75%	-0.12378	-12.27%	-0.11987
100%	-0.05981	-0.06128	-0.05969

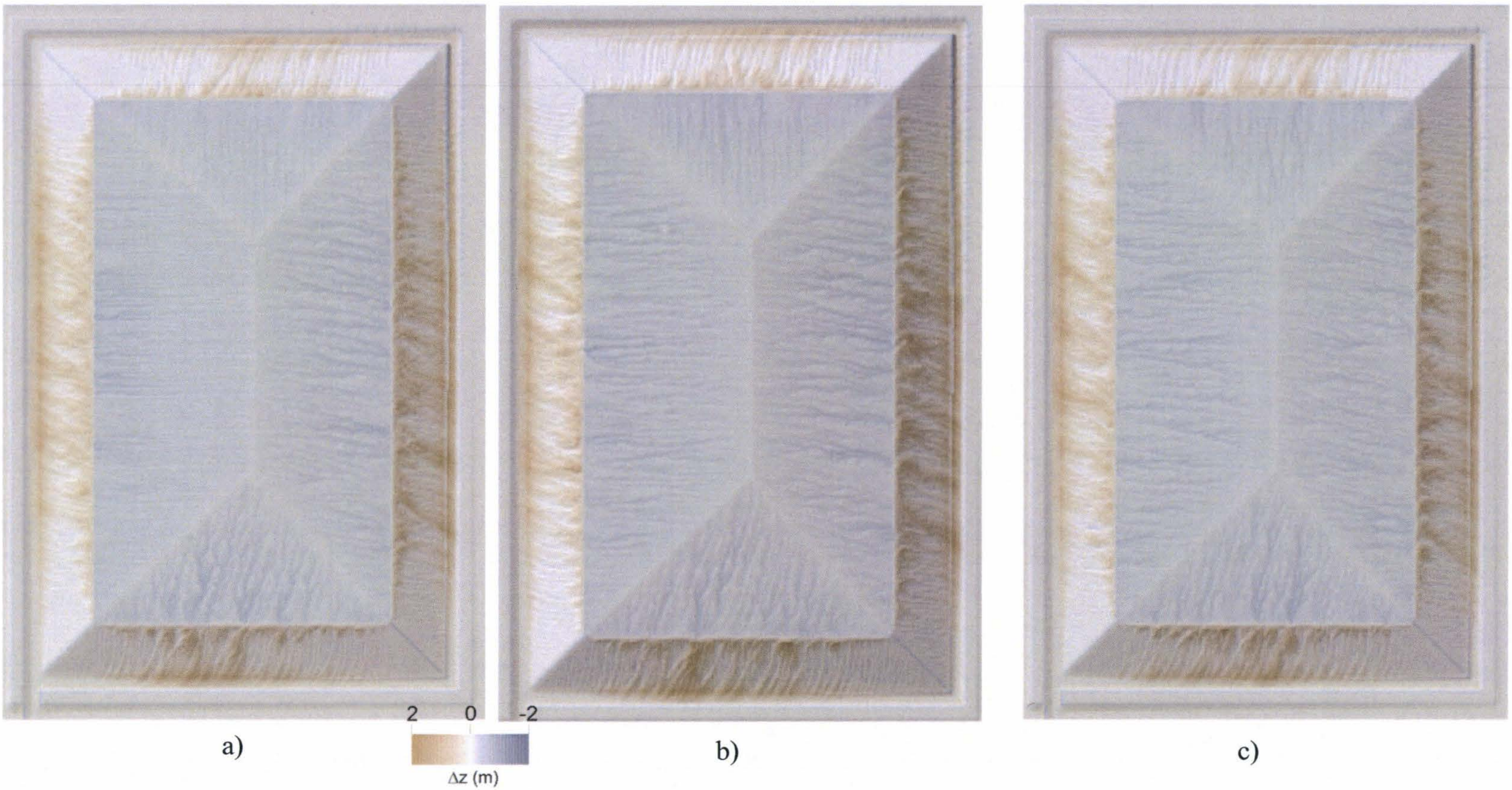

Figure 10. RSY$_{50th}$ scenario terrain at 10,000 years with varying random roughness added to initial DEM. a) inherent roughness from DEM sampling. b) 2 mm standard deviation. c) 4 mm standard deviation.

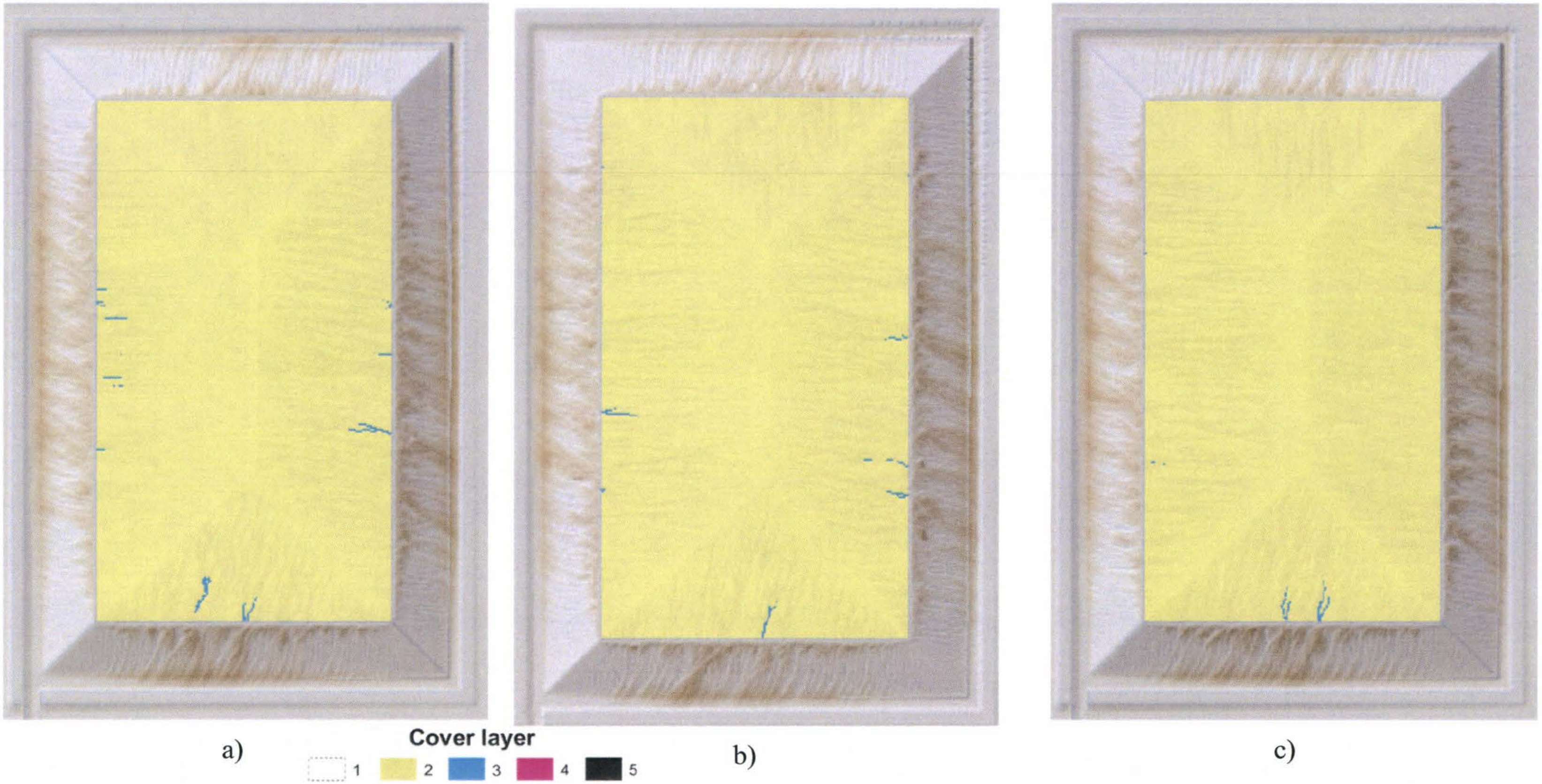

Figure 11. Incision into cover layers on Top Slope, RSY_{50th} scenario terrain at 10,000 years with varying random roughness added to initial DEM. a) inherent roughness from DEM sampling. b) 2 mm standard deviation. c) 4 mm standard deviation.

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Appendix D: Geotechnical and Seismic Engineering Evaluations

D-2: Evaluate Uncertainty in Engineering Properties. The geotechnical analyses presented in Appendix D as a basis for the proposed Federal Cell have evaluated expected conditions using engineering properties obtained during past geotechnical explorations at the site and from the literature. Geotechnical properties are inherently spatially variable, and the spatial variability will affect the outcomes of the analyses. Understanding the impact of spatial variability on geotechnical stability is necessary to evaluate the efficacy of the Federal Cell. The Division requests a quantitative evaluation of the sensitivity of each of the geotechnical analyses to uncertainty in the engineering properties by varying the engineering properties used in the analyses two standard deviations above and below the mean.:

Energy*Solutions* submitted the response to Request D-2 on February 1, 2023 in a separate letter to the director.

D-3: Evaluate Static and Seismic Stability of Internal Slopes. The geotechnical analyses in Appendix D have been conducted in the context of global stability using the build out geometry. Case histories have shown, however, that stability failures in waste containment systems often occur within internal slopes during operations (e.g., during filling). The potential for internal slope failures needs to be evaluated, and any vulnerable internal slope geometries identified. Please evaluate quantitatively the static stability of a range of likely scenarios for internal slopes. Identify critical internal slopes geometries, if any, that are prone to stability failure:

Energy*Solutions* submitted the response to Request D-3 on February 1, 2023 in a separate letter to the director.

D-4: Evaluate Blow Counts Using Appropriate Hammer Correction Factor and Re-evaluate Geotechnical Analyses. The standard penetration testing (SPT) hammer correction factor used to adjust the blow count data may not have been appropriate for the hammer used for the geotechnical exploration activities. Determine the type of hammer (specifically that of a rope and cathead or one using an automatic system) used for standard penetration testing in the past geotechnical exploration activities and the appropriate hammer correction factor to be used to adjust the blow counts for the hammer that was employed. If necessary, re-compute the blow counts used in the analyses and re-conduct the geotechnical analyses using blow counts updated with a revised hammer correction factor. In addition, if geotechnical parameters were developed from empirical relationships using SPT blow counts, confirm the appropriate SPT blow counts were utilized in developing those geotechnical parameters.:

Energy*Solutions* submitted the response to Request D-4 on February 1, 2023 in a separate letter to the director.

If you have further questions regarding the additional responses to the director's requests of DRC-2022-023940, please contact me at (801) 649-2000.

Sincerely,

Vern C. Rogers

Vern C. Rogers
Director, Regulatory Affairs

enclosure

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

May 17, 2023 CD-2023-103

Mr. Doug Hansen, Director
Division of Waste Management and Radiation Control
P.O. Box 144880
Salt Lake City, UT 84114-4880

Re: Additional Responses to Federal Cell Facility Application Request for Information - DRC-2022-023940

Dear Mr. Hansen,

Energy*Solutions* hereby responds to the Utah Division of Waste Management and Radiation Control's December 19, 2022 Request for Information (RFI) on our Federal Cell Facility Application.[1] A response is provided for each request using the Director's assigned reference number. By way of reminder, Energy*Solutions* previously submitted responses to Requests D-2, D-3, and D-4 in a separate letter to the director dated February 1, 2023 (CD-2023-025). We have not repeated those responses here.

<u>Appendix O: Erosion Modeling</u>

General information

To address RFIs O-4 and O-5, SIBERIA has been re-run with an updated calibration, with updated results incorporated into the Depleted Uranium Performance Assessment (DU PA) model in GoldSim. A revised technical report, "*NAC-0017_R6 Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0*" (Neptune 2023) accompanies this RFI response.

At this time, the DU PA model has been revised as version 2.03 to reflect the RFI requesting changes to depleted uranium inventory. When other changes are incorporated in response to future director requests that may require revision of the overall DU PA model, the DU PA will be formally issued as v3.0 with updated supporting documentation and found in Appendix O, "*DU PA version 3*" to the Federal Cell Facility Radioactive Material License Application.

Revised peak Total Effective Dose Equivalent (TEDE) [for the ranch worker, hunter, and off-road recreational vehicle (OHV) enthusiast] and cumulative population TEDE (for the total population, ranch worker, hunter, and OHV enthusiast) that will be calculated by DU PA version 3 (reflecting the Clive site-specific update of SIBERIA model) are expected to differ by less than 0.02% from those reported for version 2.0 of the DU PA (Clive DU PA Model Final Report v2.0 found in Appendix O, "*DU PA version 2*" to the Federal Cell Facility Radioactive Material License Application). Similar minimal impacts are expected to the peak concentrations in groundwater, lake water, and lake sediments projected for version 3.0 compared with the results of version 2.0 of the DU PA.

[1] Hansen, D.J. "Federal Cell Facility Application Request for Information." via DRC-2023-000525 from the Utah Division of Waste Management and Radiation Control to Vern Rogers of Energy*Solutions*, January 19, 2023.

O-2: After downloading SIBERIA from the public website, it did not compile, it may be because it has not been revised for modern architecture. The Division requests that EnergySolutions please provide: (1) Information pertaining to the operating system on which the SIBERIA code was run, (2) Information pertaining to the complier used to compile the SIBERIA source code, (3) SIBERIA compiled version of the code currently being run to support Clive DU PA v2.0, and (4) SIBERIA source code currently being run to support Clive DU PA v2.0. These will greatly expedite our review of the erosion modeling:

SIBERIA is a leading public domain software for erosion modeling. SIBERIA does compile and run on PC architecture.

The operating system on which the SIBERIA code was run is Ubuntu Linux release 20.04 LT. The SIBERIA compiled version being run to support Clive DU PA v2.02 is 8.33. The SIBERIA source code currently being run to support Clive DU PA v2.02 is available for download at https://github.com/csdms-contrib/siberia.

Text under the heading “Obtaining and Compiling SIBERIA” at the bottom of this response provides a summary of SIBERIA system requirements. Compilation of SIBERIA was performed with gfortran v10.3 on Ubuntu Linux release 20.04 LTS. The following flags were used to compile:

```
-O3  -march=native  -mtune=native
```

The Rangeland Hydrology and Erosion Model (RHEM) was run using the batch engine web service: https://github.com/ARS-SWRC/rhem_batch_csip in August, 2021 which ran version 2.3. Subsequently United States Department of Agriculture, Agricultural Research Service (USDA-ARS) provided a version 2.3-executable compiled for Linux.

The file dugway_AverageCoverTopdeck.xlsx combines cdraws_dr000_dr110.xlsx and other similarly-named files, which were used to submit batches of simulations over time. Note that rows for simulations involving draws 555, 556, and 557 appear to be offset one row downward. Along with populating the template Excel file with simulation results the batch engine also transmits parameter files which can be used to run an executable, and output summary files. The calibration reference datasets were generated with the output summary files. The main consequence is that Total Dissolved Solids results are not trusted since that is not output into the summary files.

OBTAINING AND COMPILING SIBERIA

Compiling SIBERIA involves:

- downloading the source code
- setting up a subdirectory to the source code directory in which to build the executable
- copying the makefile from an existing build directory
- editing the makefile to specify the Fortran compiler and compiling and linking options
- editing the siberia.f90 source file to correct a namespace conflict
- building the executable with “make”

1) Download SIBERIA source from CSDMS model repository:
from CSDMS github: https://csdms.colorado.edu/wiki/Model:SIBERIA
on the right-hand side of the page in the "Model info" box : there are two choices:

a) "Download SIBERIA version: 8.3.3" link: this downloads a zipped tar file: `siberia-10.1594.IEDA.100163-8.3.3.tar.gz` which contains an SVN repository directory structure. After extraction source files are found in `./siberia/tags/833 # SOURCEDIR`

b) Click [expand] link to the right of "Source code", then click "View in CSDMS GitHub repository"
then on Github site click green "Code" button and "Download Zip"
this downloads a zip file "`siberia-master.zip`". After extraction source files are found in `./Siberia-master # SOURCEDIR`

Each directory tree has existing directories for building the source labeled for MacOS:
`osx-intel, osx-ppc`. A makefile is in each of those directories.

The steps below are the same for each directory structure.

2) COPY MAKEFILE INTO APPROPRIATE BUILD SUBDIRECTORY
e.g., if working on Ubuntu Linux, if "SOURCEDIR" is the directory with the Fortran source files:

```
> cd $SOURCEDIR
> mkdir ubuntu
> cp osx-intel/makefile ubuntu
```

3) EDIT MAKEFILE
In makefile:

Lines 23, 24, 25 have entries for specifying the compiler as invoked in the shell:

```
23 #F95COMPILER=ifort
24 F95COMPILER=g95
25 #F95COMPILER=gfortran
```

If gfortran is installed and in path and invoked with "gfortran", comment out line 24 and uncomment line 25

```
23 #F95COMPILER=ifort
24 #F95COMPILER=g95
25 F95COMPILER=gfortran
```

Otherwise overwrite line 24 (the G95 compiler seems to be abandoned) with the appropriate Fortran compiler as invoked in the shell, e.g:

```
23 #F95COMPILER=ifort
24 F95COMPILER=flang
25 #F95COMPILER=gfortran
```

Edit lines 54 and 55 to use appropriate flags for linking:

```
54    $(TYPE)_$(VERSION) : $(OBJECTS)
55          $(F95COMPILER) -O2 -
o$(RELEASE_LOCATION)/$(TYPE)_$(VERSION) $(OBJECTS)
```

Edit lines 82 and 83 to use appropriate flags for compiling:

```
82    %.o:../%.f90
83          $(F95COMPILER) -c -O2 ../$*.f90
```

On the Ubuntu Linux machine used at Neptune the lines appear as

```
25 F95COMPILER=gfortran-10

54    $(TYPE)_$(VERSION) : $(OBJECTS)
55          $(F95COMPILER) -O3
$(RELEASE_LOCATION)/$(TYPE)_$(VERSION) $(OBJECTS)

82    %.o:../%.f90
83          $(F95COMPILER) -c -O3 ../$*.f90
```

4) Edit source file `siberia.f90`
There is a namespace collision that needs to be resolved by editing line 887 (line number may be slightly different)

Change:

```
887   USE Support
```
to
```
887   USE Support, ONLY:Message_Close
```

5) Compile and link with make. The executable will be created in the "release" subdirectory. Copy that to a directory in $PATH, copy "siberia.setup" into the same directory. Assuming Ubuntu Linux:

```
> cd $SOURCEDIR/ubuntu
> make
> cp release/siberia_833 ~/bin  # e.g. copy to "$HOME/bin"
                                    # subdirectory
> cp ../siberia.setup ~/bin           # copy siberia.setup
from
                                    # $SOURCEDIR to $HOME/bin
```

O-3: In order to conduct an independent review on the SIBERIA modeling, please provide the SIBERIA input/output files used for the Clive DU PA v2.0.:

Input and output files for the revised simulations have been provided as SIBERIA files on compact disc and are included in Appendix O - DU PA version 2.03/Clive DU PA Model Files/Erosion/Erosion Output Models.

O-4: A single value is specified for many of the parameter values input to SIBERIA that are uncertain. For example, NUREG/CR-7200 explores a range of values of n1 and m1. Whereas Clive DU PA v2.0 uses one set of n1 and m1 values and a very limited range of beta1 values. Please conduct a quantitative sensitivity analysis on the parameters that are most uncertain and that the results are most sensitive to:

A quantitative sensitivity analysis has been conducted on the parameters n1, m1, and beta1. In particular, 1,000 different values of beta1 were used in combination with randomly selected values of n1, and m1 to assess the impact on cover condition and sediment yield. The sensitivity of average annual sediment yield to varying values of beta1 was characterized using the 1,000 different SIBERIA runs. These results found that average annual sediment yield is approximately linearly related to beta1.

Full calibrations against 1,000 sets of foliar and ground cover conditions were obtained with Nelder-Mead-based algorithm matching sediment yields modeled by RHEM v2.3 with SIBERIA-generated sediment yields on a set of profiles of length 10, 25, 50, 75, 100, 120 m with slope 0.2, 0.24, 0.3 (see O-5). These have been summarized in *Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0* (Neptune 2023). For 6 lengths x 3 slopes 18 RHEM single-profile simulations were performed to construct each calibration reference dataset.

O-5: NUREG/CR-7200 discusses how a SIBERIA model is calibrated using regressions of beta1, m1, and n1 values. Please describe quantitatively how the SIBERIA model was calibrated to measured data for the Clive DU PA v2.0:

Since site-specific erosion data do not exist, RHEM was used to generate estimates of sediment yield for the Site. The RHEM estimates of sediment yield are used as reference values for the calibration. Then, values for the beta1, m1, and n1 parameters used by SIBERIA are obtained by matching sediment yields predicted by SIBERIA to reference sediment yields modeled by RHEM. Specifically, the SIBERIA model was calibrated to reference sediment yield datasets generated by RHEM for each of the 1,000 cover condition realizations.

Calibrations are performed using a 1 m digital elevation model (DEM) configured with a set of linear profiles of varying slopes. The Hillslope Erosion Model (HEM) or RHEM simulations are run to obtain sediment yields for the profiles. SIBERIA is repeatedly run as controlled by a Nelder-Mead/downhill-walking simplex optimization routine to obtain parameters resulting in best-matching (least-squares difference sense) sediment yields along the profiles.

The algorithm starts with a set of 4 parameter sets — values of β_1, m_1, n_1 — analogous to vertices of a geometric simplex which is a tetrahedron in 3D parameter space. Each vertex is tagged with the value of an objective function O(b1, m1, n1), defined as the sum of squared differences between average annual sediment yield (return period 2.33 years) predicted by RHEM for a profile of a particular length and slope — multiplied by 60 years — and that obtained at a matching location in the SIBERIA calibration DEM after 60 years of simulation (Nearing 2004).

The latter calculation is obtained by summing the elevation change — initial calibration DEM subtracted from elevation at simulation year 60 — at each grid node along a column of the output DEM above the location corresponding to the RHEM profile. Figure 1 provides a visualization.

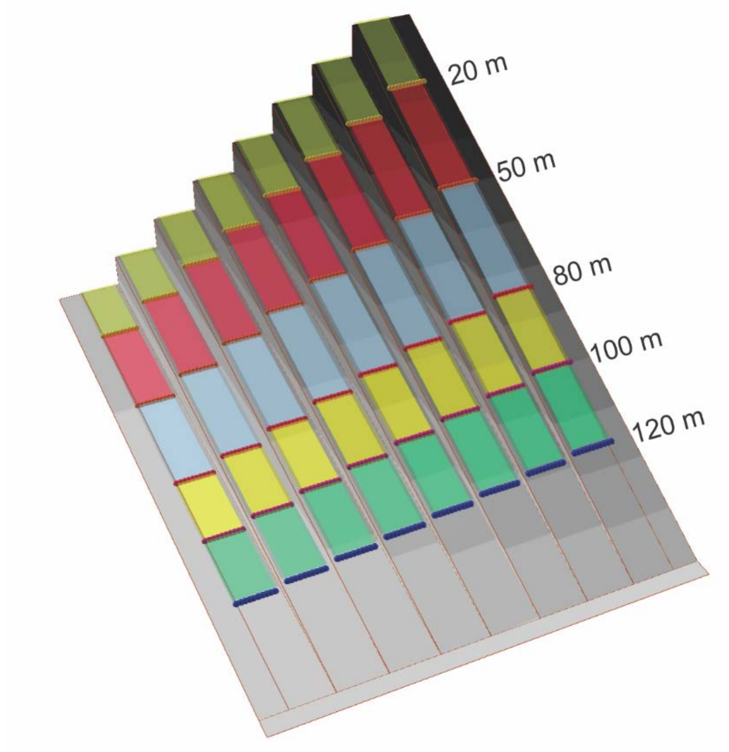

Figure 1. Example calibration domain DEM simulating a set of rainfall runoff plots. Slopes are 2, 4, …, 20 percent on profile lengths listed along the right. The calibration domain used with the DU Cover would resembles the leftmost three slopes only with slopes 2.0, 2.4, and 3.0 percent, and different profile lengths.

The algorithm proposes trial parameter sets based on values of O at each vertex, performing geometric transformations to move the lowest-valued ("best") vertex away from the higher-valued vertices, or contracting by a scale factor if no lower-valued locations can be found. It exits on achieving a tolerance on a relative range of tracked O values (10^{-4}) or after a maximum number of algorithm iterations is reached (300). Each algorithm iteration may test multiple trial states and run SIBERIA multiple times.

Return values include a set of parameters ranked by O-value with corresponding parameter value sets, along with metadata such as number of iterations, number of trial states, the trial states and O values themselves, and other quantities.

Convergence to a suboptimal, local minimum of O has been observed with reference datasets generated with RHEM. For each calibration sediment yield dataset the algorithm is initialized with multiple configurations. In the current work six were used. In fifteen cases the algorithm exited after 300 iterations for all six initial configurations, however comparing parameter values of the best-performing result in context of the rest of the calibrated values and comparing plots of the corresponding sediment yield generated by SIBERIA with the reference target they were accepted. These are listed in *Erosion Modeling for the Clive DU PA, Clive DU PA Model v3.0* (Neptune 2023)

O-6: Some parameters can be grid resolution dependent (e.g., the hillslope diffusivity parameter). Please describe whether any grid convergence testing was performed and, if not, how the grid spacing in the SIBERIA model was determined to be sufficiently small:

In order to address this RFI, SIBERIA was run for subsets of parameter values to explore the impact of grid resolution. Comparison of SIBERIA results for 0.5m vs. 1.5m grid resolution indicate similar sediment yield over the top slope at 10ky, although incision was deeper for the 0.5m grid. Sufficiency of the grid spacing was considered using the sensitivity of response of the implementation of erosion in Goldsim. The effect on the GoldSim implementation is to increase areal proportion of incision into deeper layers from zero or near zero at 1.5m resolution to the order of 10-3 or smaller.

Rate coefficients β_1, β_{12}, β_3, β_5, β_6, diffussivity D_z, and related thresholds are grid-resolution dependent. Parameter values can be supplied to SIBERIA in either resolution-specific or per-unit-profile-width basis as flagged by setting particular input control values as mode values + 20, e.g., ModeErode = 24 flags using the 3D layers model with β_1, m_1, n_1, and D_z on a per-unit-width basis; ModeErode = 4 flags using the 3D Layers model with resolution-specific values. In the former case the "24" value flags SIBERIA to internally rescale the parameter values for the grid resolution being run. Therefore, calibrating on a 1-meter grid allows the same parameters to be used on any grid resolution.

Calibrated parameter values were run on a 0.5-meter version of the model domain using a set of ten calibrated parameter sets. The sets were chosen from the 0, 10th, 20th ,…, 90th, 100th percentiles (labeled RSY_{10th}, RSY_{20th}, …, RSY_{90th}, RSY_{100th}) of average sediment yield predicted by RHEM at 120 m for the corresponding calibration sediment yield datasets, averaged across the three slopes. Results indicate similar sediment yield over the top slope at 10ky, although incision was deeper as summarized in Table 1. The effect on the GoldSim implementation is to increase areal proportion of incision into deeper layers from zero or near zero at 1.5m resolution to the order of 10^{-3} or smaller. The layers used in the GoldSim implementation are defined in Table 2, and Table 3 compares the effect of grid resolution on the rows of the lookup table from which the erosion effects are read for a particular realization. Figures 2 and 3 present the information in Table 1 graphically. Figure 2 plots the annual average sediment yield on the top cover at 10,000 years for a 0.5-m grid compared with a 1.5-m grid. The dashed line represents 1:1 correlation, showing that the 1.5-m grid provides similar results for sediment yield to the 0.5-m grid. Figure 3 similarly plots maximum incision at 10,000 years for the 0.5-m grid compared with the 1.5-m grid, showing that maximum incision is deeper with the smaller grid.

Figure 4 illustrates this graphically. Cover layers into which some incision has occurred on the top slope are flagged with a brown cross for a particular RSY_{ith} scenario (ordinate) simulated on a 1.5-m grid and flagged with a blue cross if incision occurred with the same calibrated parameters applied to a 0.5-m grid. A total of eleven 10,000-year simulations were run on the 0.5 m domain, representing scenarios corresponding to the $RSY_{0'th}$, $RSY_{10'th}$, … $RSY_{90'th}$, $RSY_{100'th}$ scenarios.

Table 1. Sediment yield and incision on the Top Slope at 10,000 years on a 0.5-m grid compared with the 1.5-m grid simulations (bold and italicized) for RSY0th, RSY50th, and RSY100th scenarios.

	RSY0th		RSY50th			RSY100th
SY	0.1667	***0.06356***	0.203	***0.2103***	0.234	***0.23981***
	0	***0***				***0***
Dz (m)						
mean	-0.12234	***-0.04667***	-0.14904	***-0.15439***	-0.17606	***-0.17607***
std	0.038966	***0.12147***	0.043114	***0.04399***	0.052201	***0.04371***
100%	-0.38745	***-0.28308***	-0.51416	***-0.38623***	-0.56616	***-0.38635***
75%	-0.14465	***-0.12061***	-0.17285	***-0.18127***	-0.20117	***-20.29%***
50%	-0.11536	***-0.08972***	-0.1416	***-0.14929***	-0.16565	***-17.20%***
25%	-0.09387	***-0.00513***	-0.11816	***-0.12268***	-0.14002	***-14.51%***
0%	-0.00549	***0.51306***	-0.03259	***-0.06128***	-0.05273	***-0.07044***

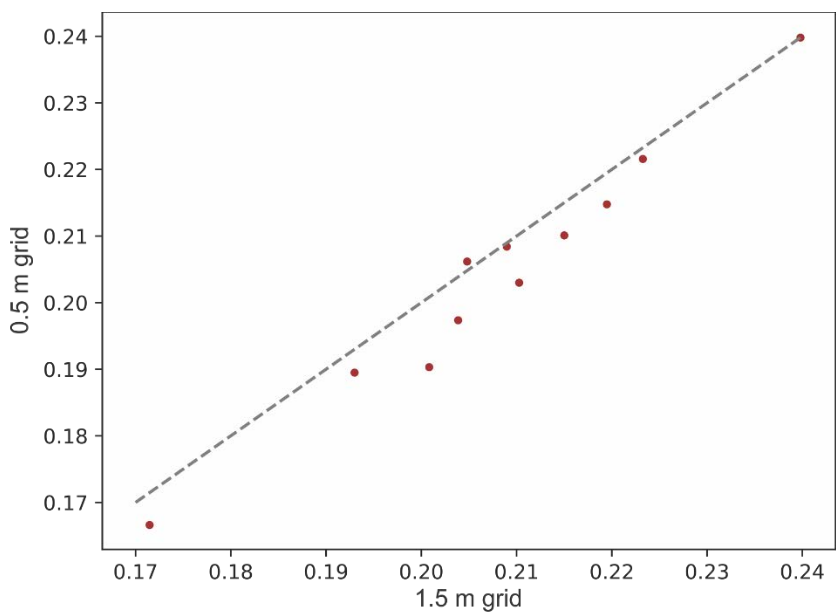

Figure 2. Annual average sediment yield on top cover at 10,000 years, 0.5-m grid vs. 1.5-m grid (T ha^{-1} y^{-1}).

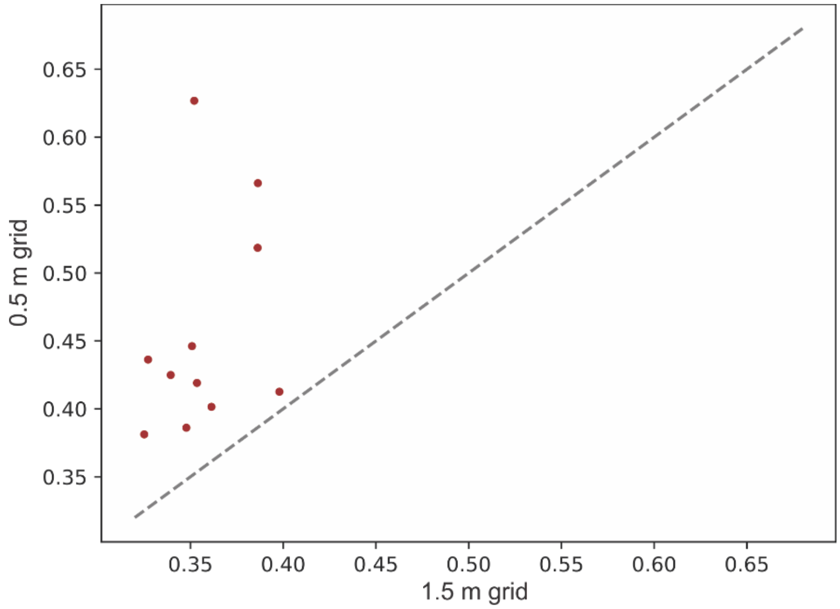

Figure 3. Maximum incision at 10,000 years on 0.5-m grid vs 1.5-m grid (m).

Table 2. Cover layers defined in the Goldsim model

Layer	Thickness (m)	Layer bottom (m)
1	0.01	0.01
2	0.2948	0.3048
3	0.1524	0.4572
4	0.1524	0.6096
5	0.1524	0.7620
6	0.1524	0.9144

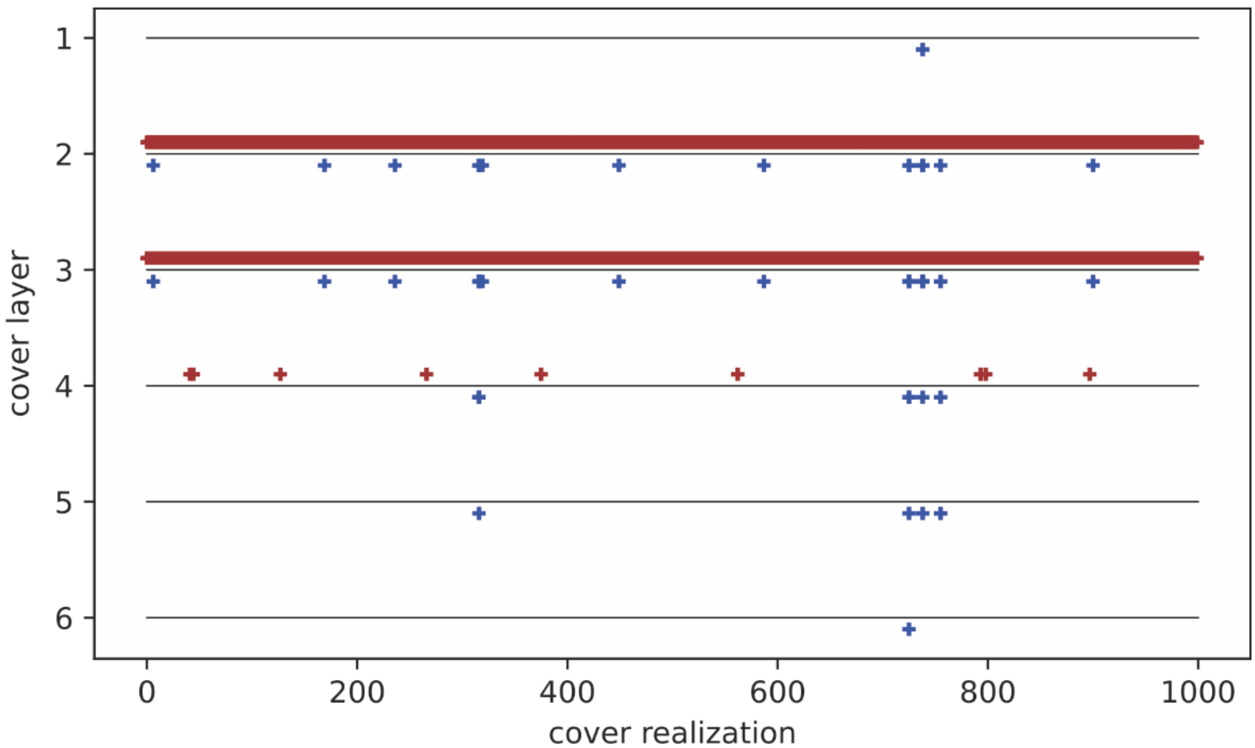

Figure 4. Indicators of incision into cover layers after 10,000 years for ten SIBERIA simulations on a 0.5 m grid (blue) and 1,000 SIBERIA simulations on a 1.5 m grid (brown). Note the apparent thick red lines represent incision into layers 2 and 3 for all simulations on the 1.5 m grid.

Table 3. Comparing GoldSim layer incision areal proportion lookup table for 10,000-year simulations on 0.5 m vs 1.5 m (bold and italicized) SIBERIA model grid.

Cover realization	RSY_{ith}	GridXY (m)	l1	l2	l3	l4	l5	l6
6	90	0.5	0	0.991476	0.008524	0	0	0
		1.5	***0***	***0.995949***	***0.004051***	***0***	***0***	***0***
169	10	0.5	0	0.995566	0.004434	0	0	0
		1.5	***0***	***0.999014***	***0.000986***	***0***	***0***	***0***
236	80	0.5	0	0.993726	0.006274	0	0	0
		1.5	***0***	***0.998133***	***0.001867***	***0***	***0***	***0***
316	50	0.5	0	0.995838	0.003959	0.000204	0	0
		1.5	***0***	***0.998345***	***0.001655***	***0***	***0***	***0***
319	30	0.5	0	0.99373	0.00627	0	0	0
		1.5	***0***	***0.998309***	***0.001691***	***0***	***0***	***0***
449	20	0.5	0	0.999225	0.000775	0	0	0
		1.5	***0***	***0.999348***	***0.000652***	***0***	***0***	***0***
587	70	0.5	0	0.995527	0.004473	0	0	0
		1.5	***0***	***0.998362***	***0.001638***	***0***	***0***	***0***
725	100	0.5	0	0.974912	0.023519	0.001569	0	0
		1.5	***0***	***0.994717***	***0.005283***	***0***	***0***	***0***
738	0	0.5	7.83E-06	0.999419	0.000573	0	0	0
		1.5	***0***	***0.999366***	***0.000634***	***0***	***0***	***0***
755	40	0.5	0	0.990827	0.009027	0.000137	9.78E-06	0
		1.5	***0***	***0.997904***	***2.10E-03***	***0***	***0***	***0***
900	60	0.5	0	0.993938	0.006062	0	0	0
		1.5	***0***	***0.996848***	***3.15E-03***	***0***	***0***	***0***

Diffusivity D_z has been qualitatively set rather than obtained from a calibration. Linear diffusion acts locally proportionally to slope and tends to smooth the landscape through processes including rainsplash, soil creep, freeze-thaw, tree-throw, and bioturbation. Of these only rainsplash contributes to sediment fluxes modeled by HEM and RHEM, and so the overall long-term D_z value is difficult to obtain. Diffusivity has been included as a calibration parameter in the past but tended to decay to zero as advection on longer profiles dominated (Wilson et al. 2005). The value 10^{-4} with which the simulations were performed was based on qualitative assessment of evolved terrain compared to higher and lower values in an approach suggested by Willgoose (pers. comm. 2003) and reported in Hancock and Willgoose (2021). Ideally field data observed over time would be available to attempt to determine D_z, e.g. Willgoose and Riley (1998); however, such data is not available for the Clive facility.

Simulations were performed on a 0.5 m grid using the median RHEM-erosion scenario with values of D_z of 10^{-5} and $10^{-3}$to assess the effects on the GoldSim lookup table. Simulations were also run on a 1.5 m grid with the same values of diffusivity to isolate the effect of diffusion at the reference grid resolution.

Effects of diffusivity on sediment yield and incision depths on the top slope are summarized in Table 4. Generally-increased sediment yield and incision depths with increasing diffusivity and decreased grid resolution are apparent as would be expected.

The area proportion of incision into the cover layers which would directly affect the GoldSim implementation appear in columns “L1” – “L2”. By comparison to the 1.5 m grid which was used in the full set of 1,000 SIBERIA simulations, incision impacts deeper layers although the area is small as seen in Table 1.

Evolved terrain after 10,000 years of simulation under the $RSY_{0'th}$, $RSY_{50'th}$, and $RSY_{100'th}$ scenarios is shown in Figure 5. Incision into the cover layers on the top slope are mapped in Figure 6 and display the spatial distribution of the deeper incision shown in Table 2 and Table 5.

Table 4. Effect of varying diffusivity on area proportion of incision into top slope cover layers on potential GOLDSIM LOOKUP TABLE. Scenario is RSY_{50th} on 0.5 m grid with 1.5 m reference (bolded) for comparison.

Cover realization	RSYith	GridXy (m)	Dz	l1	l2	l3	l4	l5	l6	□z max (m)	SY (Tha-1y-1)
738	0	0.5	3	0	0.986608	0.012698	0.000693	1.96E-06	0	-0.61536	-0.19449
		0.5	0	7.83E-06	0.999419	0.000573	0	0	0	-0.38611	-0.16662
		1.5	**0**	**0**	**0.999366**	**0.000634**	**0**	**0**	**0**	**-0.34778**	**-0.17147**
		0.5	5	0	0.999292	0.000708	0	0	0	-0.34045	-0.16332
316	50	0.5	3	0	0.966505	0.029777	0.003673	4.50E-05	0	-0.66797	-0.23463
		0.5	0	0	0.995838	0.003959	0.000204	0	0	-0.51855	-0.20299
		1.5	**0**	**0**	**0.998345**	**0.001655**	**0**	**0**	**0**	**-0.38623**	**-0.21027**
		0.5	5	0	0.993711	0.006264	2.54E-05	0	0	-0.4873	-0.20258
725	100	0.5	3	0	0.925585	0.062737	0.011353	0.000323	1.96E-06	-0.776	-0.27736
		0.5	0	0	0.974912	0.023519	0.001569	0	0	-0.56616	-0.23979
		1.5	**0**	**0**	**0.994717**	**0.005283**	**0**	**0**	**0**	**-0.38635**	**-0.23981**
		0.5	5	0	0.987199	0.012801	0	0	0	-0.41577	-0.2351

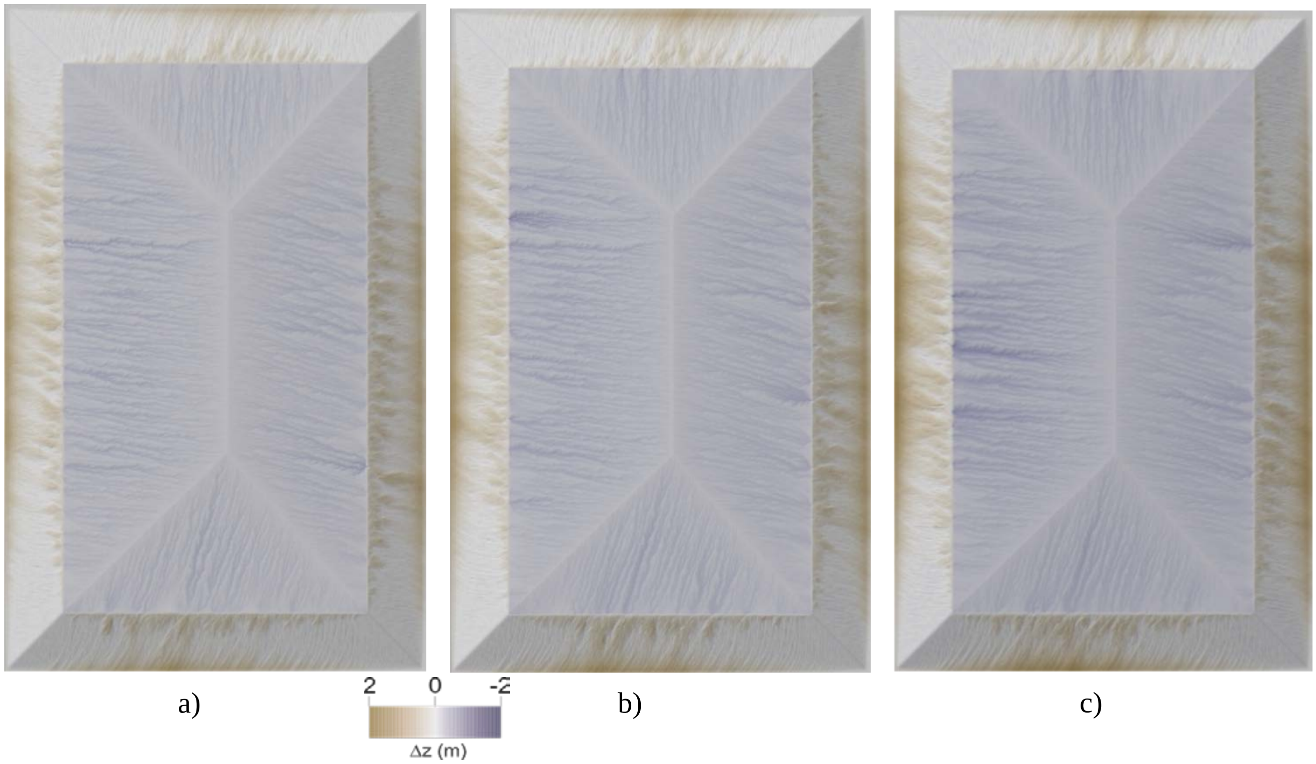

Figure 5. Comparing evolved terrain at 10,000 years of erosion under the a) RSY 0th, b) RSY50th and c) RSY100th scenario on grids of resolution 0.5 m.

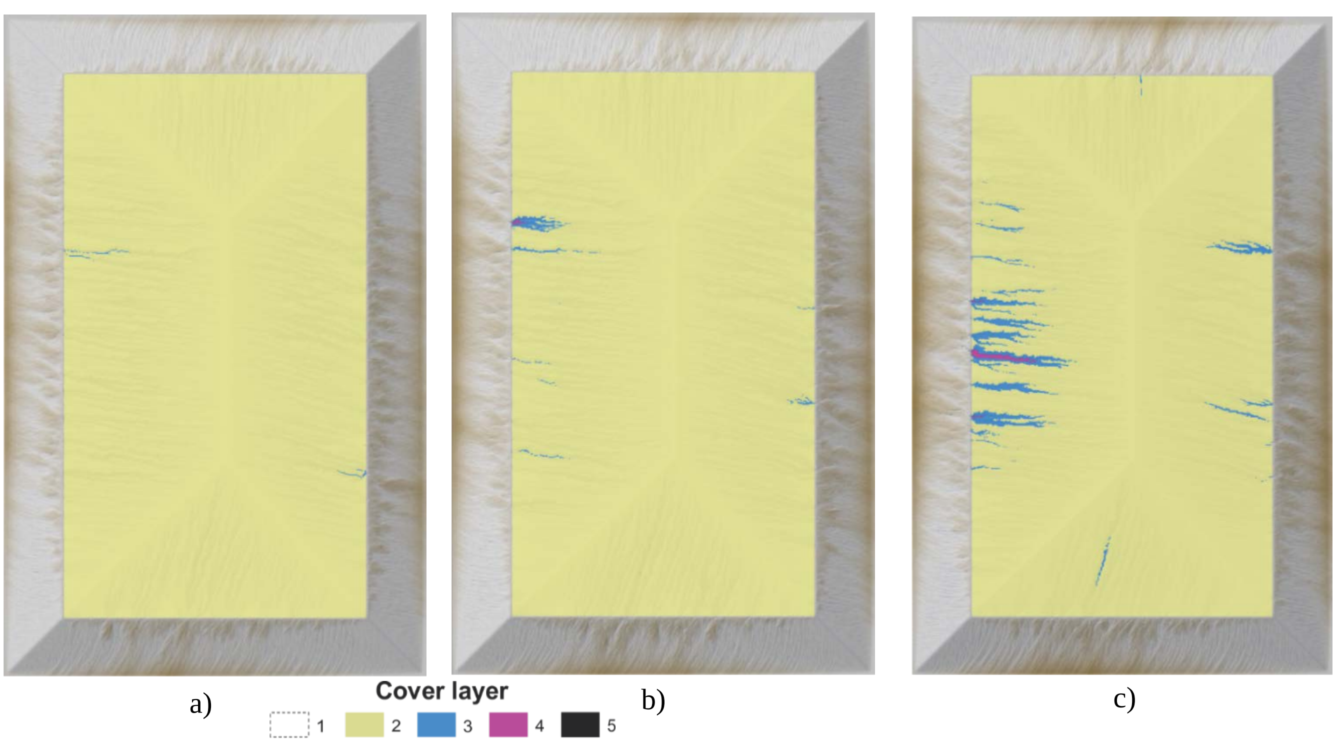

Figure 6. Comparing incision into cover layers on the Top Slope at 10,000 years of erosion under the a) RSY0th, b) RSY50th and c) RSY100th scenario on grids of resolution 0.5 m.

On the 1.5 m grid the diffusive sediment flux term is adding to total sediment yield as D_z increases (Table 6) to the point where it causes incision into the lower half of the evaporative zone layer at 10^{-3} (Table 7). Cross-sections plotted in Figure 7 reveal significant smoothing occurs with diffusivity of 10^{-3} compared to 10^{-4} which implies an appropriate value for D_z may lie in that interval. Increasing D_z beyond 10^{-3} likely results in spuriously-smooth terrain for the site while promoting over-design of the cover in response to increased predicted cover degradation. The effect of varying diffusivity on evolved terrain after 10,000 years of simulation under the $RSY_{50'th}$, scenario is shown in Figure 8. Incision into the cover layers on the top slope are mapped in Figure 9.

The incision into cover layer L4 is located at the corners of the top slope. The three-dimensional “Layers” model of material properties as implemented in SIBERIA v8.33 does not allow variation in D_z, so that while armor or bedrock may resist fluvial erosion the diffusive flux is the same as for mobile material.

Table 5. Sediment yield and incision depth for Top Slope for varying diffusivity, RSY_{50th} scenario.

D_z	**10^{-5}**	**10^{-4} (ref)**	**10^{-3}**
SY (T ha^{-1} y^{-1})	0.2044	0.2103	0.2351
□z (m)			
mean	-0.1501	-0.1544	-0.1726
std	0.0468	0.0440	0.0462
0.00%	-0.3346	-0.3862	-0.5657
25.00%	-0.1796	-0.1813	-0.2001
50.00%	-0.1434	-0.1493	-0.1671
75.00%	-0.1158	-0.1227	-0.1381
100.00%	-0.0282	-0.0613	-0.0787

Table 6. Effect of varying diffusivity on proportion of area of top slope exposed to incision after 10,000 years of simulation with the RSY_{50th} scenario.

D_z	**l1**	**l2**	**l3**	**l4**	**l5**	**l6**
1.00E-05	0	0.998186	0.001814	0	0	0
1.00E-04	**0**	**0.998345**	**0.001655**	**0**	**0**	**0**
1.00E-03	0	0.989874	0.009739	0.000387	0	0

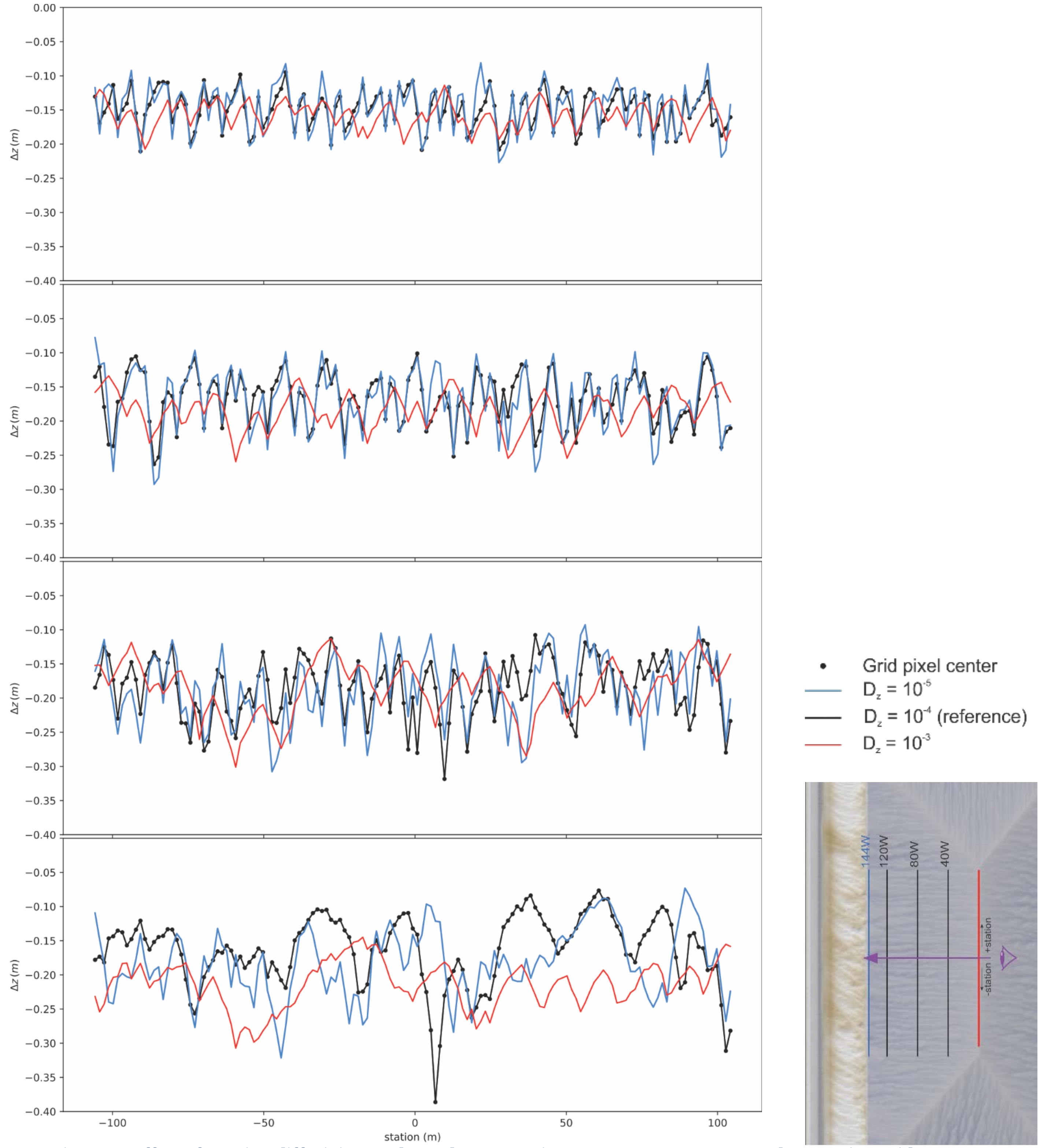

Figure 7. Effect of varying diffusivity on channel cross-sections at 10,000 years, RSY50th scenario. Grid resolution is 1.5 m. Vertical exaggeration is ~1300.

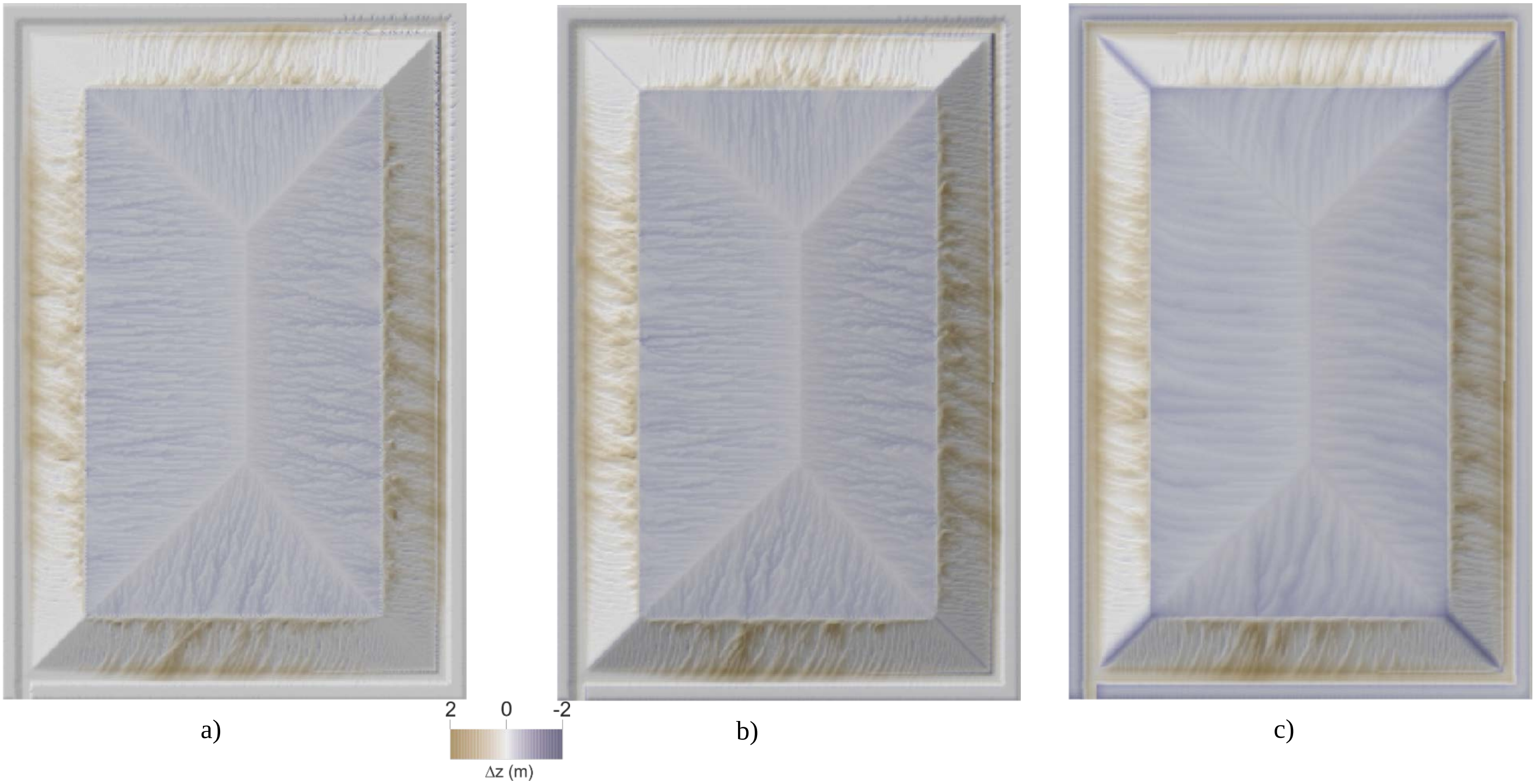

Figure 8. Effect of varying diffusivity on cover after 10,000 years, RSY_{50th} scenario on a 1.5 m grid. a) $D_z = 10^{-5}$, b) $D_z = 10^{-4}$ (reference), c) $D_z = 10^{-3}$.

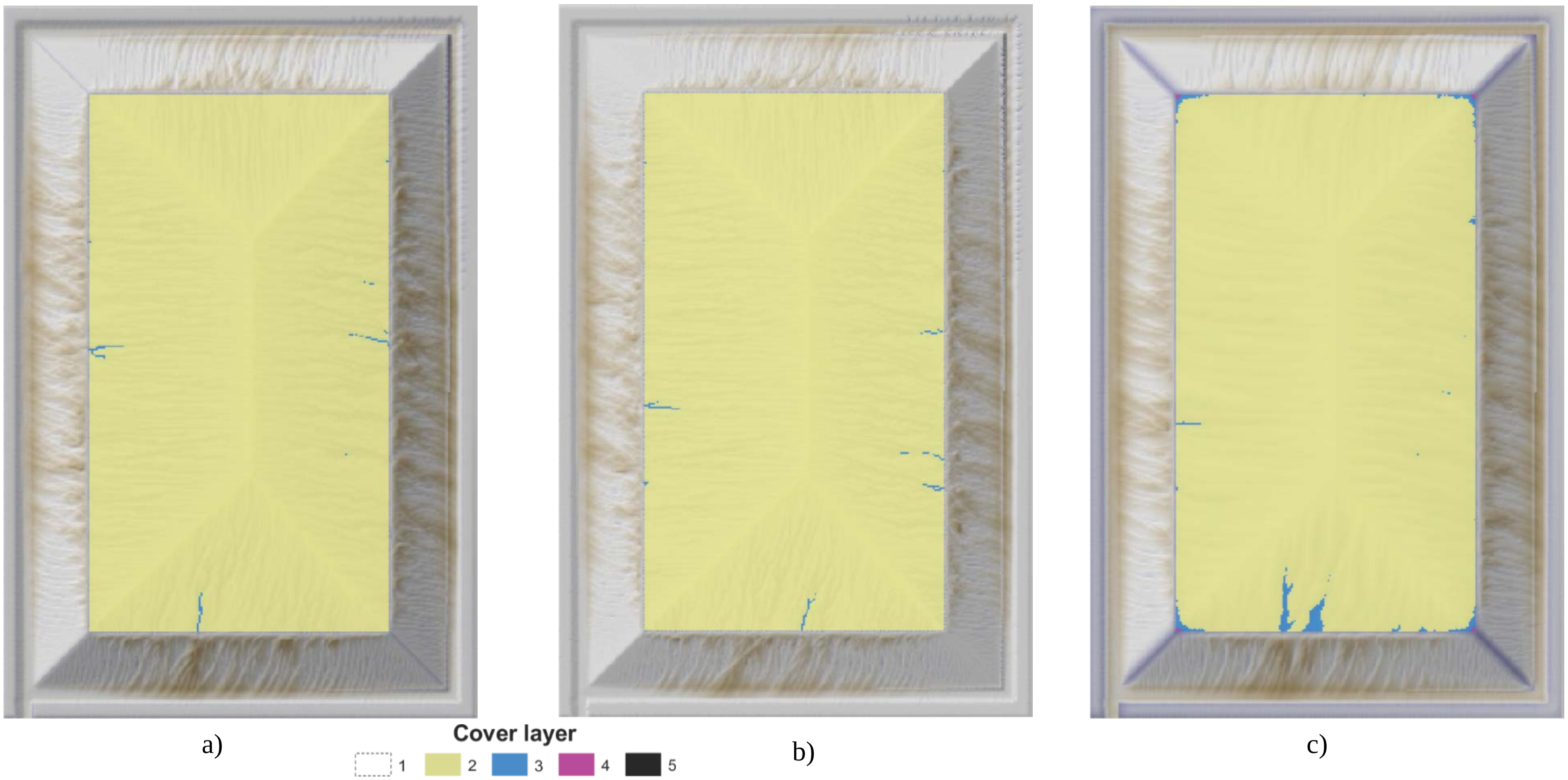

Figure 9. Effect of varying diffusivity on cover after 10,000 years on incision into top slope cover layers, RSY_{50th} scenario on a 1.5 m grid. a) $D_z = 10^{-5}$, b) $D_z = 10^{-4}$ (reference), c) $D_z = 10^{-3}$.

O-7: The DU PA v2.0 uses a mean flow in the analysis but refers to threshold flow. Somewhat outdated literature is cited in this discussion. Thresholds are important in gully formation and considering the full distribution of events, particularly events of significance changes as the landscape changes. Please clarify the role of mean flow assumptions versus threshold in the SIBERIA modeling:

"Mean flow" as used in DU PA v2.0 refers to the use of runoff and erosion from the average annual storm (return period 2.33 years) as the geomorphically effective event. "Threshold" refers to parameters associated with runoff, advective sediment transport, and diffusive sediment transport which can be applied in the model. For the modeling in DU PA v2.0, these were all held to zero given no relevant data. This is a conservative assumption. Had estimated values been applied the erosion rates may have been spuriously reduced.

While SIBERIA is an older model and thus much of the literature supporting it is somewhat dated, it remains a reasonable tool for longer-term landform evolution modeling. SIBERIA is formulated to apply a single geomorphically effective event repeatedly to predict long-term landforms expected to result from erosion from a time-series of storms as described in Willgoose et al. (1991). While CAESAR-Lisflood is increasingly used as the state-of-the-art Landscape Evolution Model (LEM) for applications such as mining rehabilitation, it carries a high computational expense. Accordingly, it has been proposed to be used for early-period modeling to establish terrain for longer-term modeling with SIBERIA (Lowry et al. 2015).

"Mean flow" as used in DU PA v2.0 is referring to using the runoff and erosion from the average annual storm (return period 2.33 years) as the geomorphically effective event. Per theory including statistical analyses developed in (Willgoose et al. 1991), this event when applied each simulation year should replicate the long-term landscape form expected from the explicit long-term time series of storms.

"Threshold" is referring to parameters on runoff, advective sediment transport, and diffusive sediment transport which can be applied in the model. These were all held to zero given no relevant data, which is a conservative assumption. Had estimated values been applied the erosion rates may have been spuriously reduced. It may be possible to use RHEM to assess thresholds however there were not any no-flow results observed in the 18,000 RHEM simulations performed to generate the 1,000 calibration datasets.

Note that SIBERIA implements a channelization function which does implement a threshold to flag a grid node as "channel", involving parameters a_t (specified as the reciprocal), a_1, b_5 (coefficient), n_1 (exponent on slope), and m_5 (exponent on A). Under the default channel model mode this only affects the output if b_{12} and m_{12} are specified to provide a second fluvial process for channel flow; the exponent on slope remains n_1 due to the numerical solution method.

In the Water Erosion Prediction Project (WEPP) model the erodibility coefficient and critical shear stress value are often assumed the same as the hillslope rill erodibility coefficient (Flanagan and Livingston 1995) and in effect was done with SIBERIA. Rill-related parameters in RHEM such as the undisturbed concentrated flow erodibility coefficient K_ω/KOMEGA, maximum concentrated erodibility coefficient KCM, and the beta detachment decay factor ADF may offer a route for a channel-specific β_{12} relevant to the local soil type. Al-Hamdan et al. (2014) offer an equation for K_ω based on ground cover components and silt and clay content.

O-8: It is unclear whether a roughness value for the initial topography was assigned in the SIBERIA model. Formation of rills/gullies often require some roughness to initiate (otherwise the channelization process has a hard time initiating). Please clarify whether a roughness value was assigned in the initial topography, and if not, provide the justification for not including the roughness and if it was included, please justify the assigned value.:

No roughness value was assigned for the initial topography in the SIBERIA model for DU PA v2.0. A small amount of roughness resulted from sampling the reference DEM at SIBERIA domain node centers. In order to assess the impact of adding more roughness, several additional simulations were performed. Increasing the roughness produced mixed results with a threshold such that higher roughness reduced sediment yield on the top slope and slightly reduced overall incision depth.

No specific roughness value was imposed on the input DEM encoded into the starting RST2 file originally. A minor roughness resulted from sampling the reference DEM at SIBERIA domain node centers. Slope calculated directly in Python with numpy arrays varies on the order of 1 part in 10,000.

Subsequently each grid node was perturbed by adding random elevations drawn from N(0.0, 0.002) (m). Comparing results at 10ky from the perturbed version and the original version showed little variation in sediment yield on the top slope but did extend apparent rilling toward the central ridge. The 1000 calibrated SIBERIA simulations were therefore run with the 2 mm perturbed starting DEM. Results from the RSY_{50th} scenario are described in Table 7 and evolved terrain at 10,000 years in Figure 10. Incision into cover layers on the Top Slope is mapped in Figure 11.

An additional 10ky simulation was run using perturbations drawn from N(0.0, 0.004) (m) for the RSY_{50th} scenario. Varying only roughness added to the original DEM as zero, "2 mm" (N(0.0, 0.002)), and "4 mm" (N(0.0, 0.004)), the higher roughness reduced sediment yield on the top slope by ~2 percent and slightly reduced overall incision depth. Between the three cases the 2-mm roughness addition predicted deeper incision overall, introducing an element of conservatism.

Unpublished numerical experiments related to Wilson et al. (2005) showed that increasing roughness beyond a threshold value directly reduces erosion predicted over a particular simulation time and can lead to spurious net deposition. Results in Table 5 indicate that threshold may lie between 2 – 4. Reduced incision into Layer 3 as shown in Figure 11c) supports that proposition.

Table 7. Effect of random roughness in initial DEM on erosion after 10,000 years of simulation, RSY50th scenario.

	zero	2 mm (ref)	4 mm
SY (T ha^{-1} y^{-1})	0.2109	0.2103	0.2062
Dz (m)			
mean	-0.15486	-0.15439	-0.15143
std	0.044404	0.043988	0.043088
0%	-0.34424	-0.38623	-0.35364
25%	-0.17993	-18.13%	-0.17761
50%	-0.14954	-14.93%	-0.14661
75%	-0.12378	-12.27%	-0.11987
100%	-0.05981	-0.06128	-0.05969

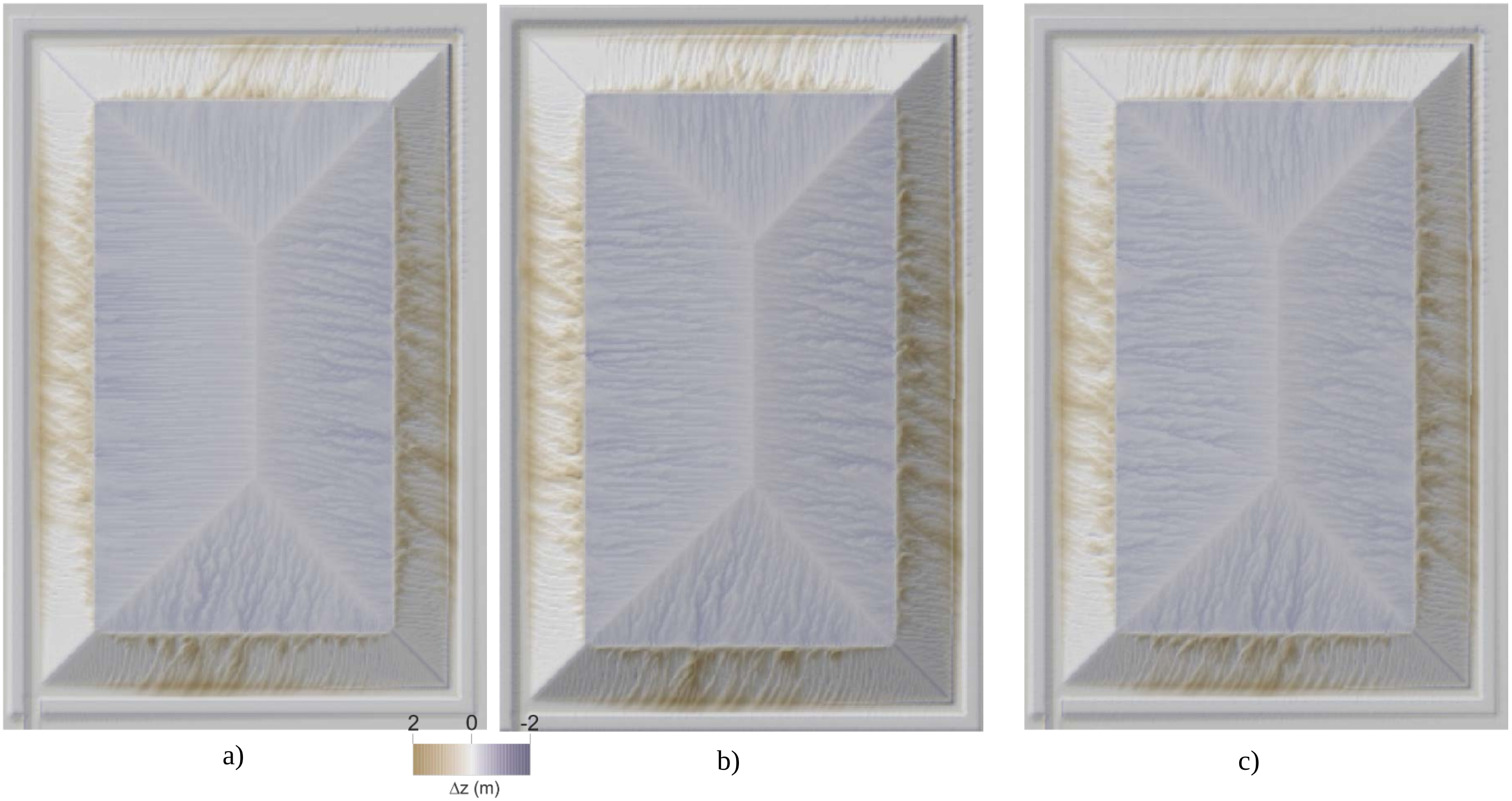

Figure 10. RSY$_{50th}$ scenario terrain at 10,000 years with varying random roughness added to initial DEM. a) inherent roughness from DEM sampling. b) 2 mm standard deviation. c) 4 mm standard deviation.

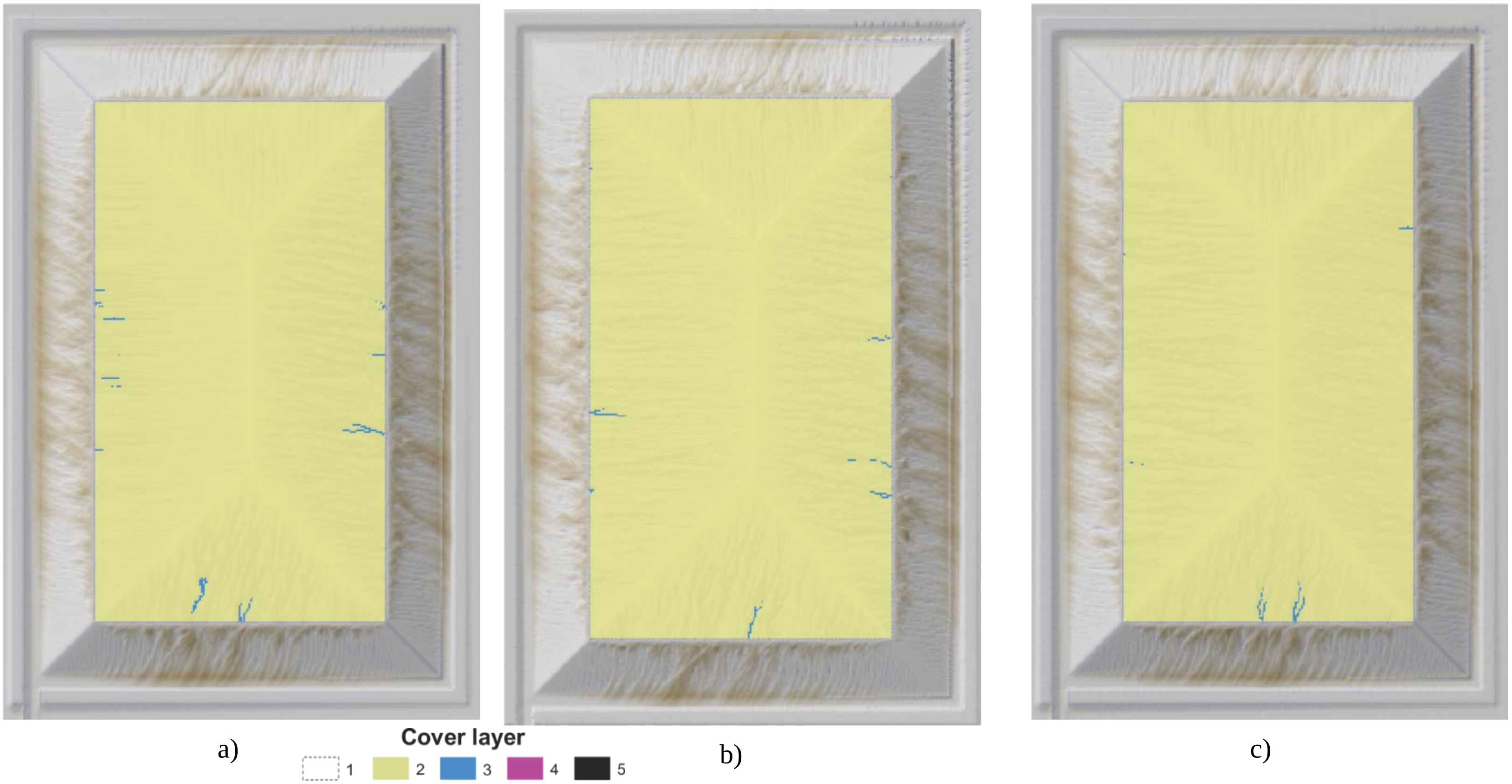

Figure 11. Incision into cover layers on Top Slope, RSY$_{50th}$ scenario terrain at 10,000 years with varying random roughness added to initial DEM. a) inherent roughness from DEM sampling. b) 2 mm standard deviation. c) 4 mm standard deviation.

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Appendix D: Geotechnical and Seismic Engineering Evaluations

D-2: Evaluate Uncertainty in Engineering Properties. The geotechnical analyses presented in Appendix D as a basis for the proposed Federal Cell have evaluated expected conditions using engineering properties obtained during past geotechnical explorations at the site and from the literature. Geotechnical properties are inherently spatially variable, and the spatial variability will affect the outcomes of the analyses. Understanding the impact of spatial variability on geotechnical stability is necessary to evaluate the efficacy of the Federal Cell. The Division requests a quantitative evaluation of the sensitivity of each of the geotechnical analyses to uncertainty in the engineering properties by varying the engineering properties used in the analyses two standard deviations above and below the mean.:

Energy*Solutions* submitted the response to Request D-2 on February 1, 2023 in a separate letter to the director.

D-3: Evaluate Static and Seismic Stability of Internal Slopes. The geotechnical analyses in Appendix D have been conducted in the context of global stability using the build out geometry. Case histories have shown, however, that stability failures in waste containment systems often occur within internal slopes during operations (e.g., during filling). The potential for internal slope failures needs to be evaluated, and any vulnerable internal slope geometries identified. Please evaluate quantitatively the static stability of a range of likely scenarios for internal slopes. Identify critical internal slopes geometries, if any, that are prone to stability failure:

Energy*Solutions* submitted the response to Request D-3 on February 1, 2023 in a separate letter to the director.

D-4: Evaluate Blow Counts Using Appropriate Hammer Correction Factor and Re-evaluate Geotechnical Analyses. The standard penetration testing (SPT) hammer correction factor used to adjust the blow count data may not have been appropriate for the hammer used for the geotechnical exploration activities. Determine the type of hammer (specifically that of a rope and cathead or one using an automatic system) used for standard penetration testing in the past geotechnical exploration activities and the appropriate hammer correction factor to be used to adjust the blow counts for the hammer that was employed. If necessary, re-compute the blow counts used in the analyses and re-conduct the geotechnical analyses using blow counts updated with a revised hammer correction factor. In addition, if geotechnical parameters were developed from empirical relationships using SPT blow counts, confirm the appropriate SPT blow counts were utilized in developing those geotechnical parameters.:

Energy*Solutions* submitted the response to Request D-4 on February 1, 2023 in a separate letter to the director.

If you have further questions regarding the additional responses to the director's requests of DRC-2022-023940, please contact me at (801) 649-2000.

Sincerely,

Vern C. Rogers

Vern C. Rogers
Director, Regulatory Affairs

enclosure

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

LA-UR-05-7771

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Title: SURFACE EROSION MODELING FOR THE REPOSITORY WASTE COVER AT LOS ALAMOS NATIONAL LABORATORY TECHNICAL AREA 54, MATERIAL DISPOSAL AREA G

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Kelly J. Crowell
Leonard J. Lane

Submitted to: U. S. Department of Energy

Los Alamos
NATIONAL LABORATORY

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Acronyms and Abbreviations

ALSM	Airborne laser swath mapping
CREAMS	Chemicals, Runoff, and Erosion from Agricultural Management Systems
DEM	Digital elevation model
HEM	Hillslope Erosion Model
LANL	Los Alamos National Laboratory
MDA	Material Disposal Area
NOAA	National Oceanic & Atmospheric Administration
TA	Technical Area
WEPP	Water Erosion Prediction Project

Acknowledgements

Technical assistance and review for SIBERIA parameterization was provided by the author of SIBERIA, Garry Willgoose, at the School of Geography, University of Leeds. Sean French, at the Nuclear Waste Operations at Los Alamos National Laboratory, provided expertise on Material Disposal Area G, project oversight, and logistical and funding support. Rob Shuman, at URS Corporation, provided guidance on project requirements, site information, and a review of the model results. Mark Day and Garth Weber, also at URS Corporation, developed the cover design datasets. Ricki Sheldon analyzed the runoff and erosion data for Mesita del Buey. This work was funded through the U.S. Department of Energy.

1.0 Introduction

Low-level radioactive waste from operations at Los Alamos National Laboratory (LANL or the Laboratory) is currently disposed of in pits excavated into the mesa top at Material Disposal Area (MDA) G of Technical Area (TA) 54. One requirement for the operation of this repository is to limit releases of radioactive material to the environment for a period of 1,000 years or more following the facility's closure. The Laboratory is required to demonstrate that the repository can be successfully closed, which includes showing that the waste pits will not be excavated by long-term surface erosion processes such as rilling and gullying. Toward that end, surface erosion modeling was conducted to estimate the spatial distribution of depth to waste at MDA G after 1,000 years of erosion and sediment transport.

Material Disposal Area G is located on a slender finger mesa, Mesita del Buey, which has complex topography and a challenging layout of legacy waste pits located close to the edge of the mesa and natural drainage features (Figure 1). As a result, the closure cover has a complex topography, and the performance of the cover must be assessed as a three-dimensional unit. The SIBERIA model (Willgoose and Riley, 1998) was selected for the erosion evaluation because it is a well-tested version of a new class of erosion models developed to predict long-term landscape evolution. Like well-known hillslope-based erosion models such as the Water Erosion Prediction Project (WEPP) (Laflen et al., 1995) and KINEROS (Smith et al., 1995), SIBERIA predicts sediment transport derived from shallow sheet and rill processes for a range of soil, runoff, vegetation cover, and hillslope properties. Unlike WEPP and KINEROS, SIBERIA predicts the spatial distribution of deformation across complex, three-dimensional topography over hundreds to thousands of years. This includes the lowering of ridges, the incision or infilling of valleys and hollows, and the development of gullies and fans.

Scientists at LANL worked with cover design engineers at URS Corporation in an iterative process to develop a stable closure cover design (Figure 2). The SIBERIA modeling results described in this report demonstrate that the final, optimized design meets performance criteria across the site for a wide range of potential site and climate conditions that could occur over the 1,000-year compliance period. Section 2 of this report describes the principles behind the SIBERIA model and the methods for defining parameters and running the model. The results of the model simulations are provided in Section 3, and Section 4 discusses these results and some of the uncertainties associated with the modeling.

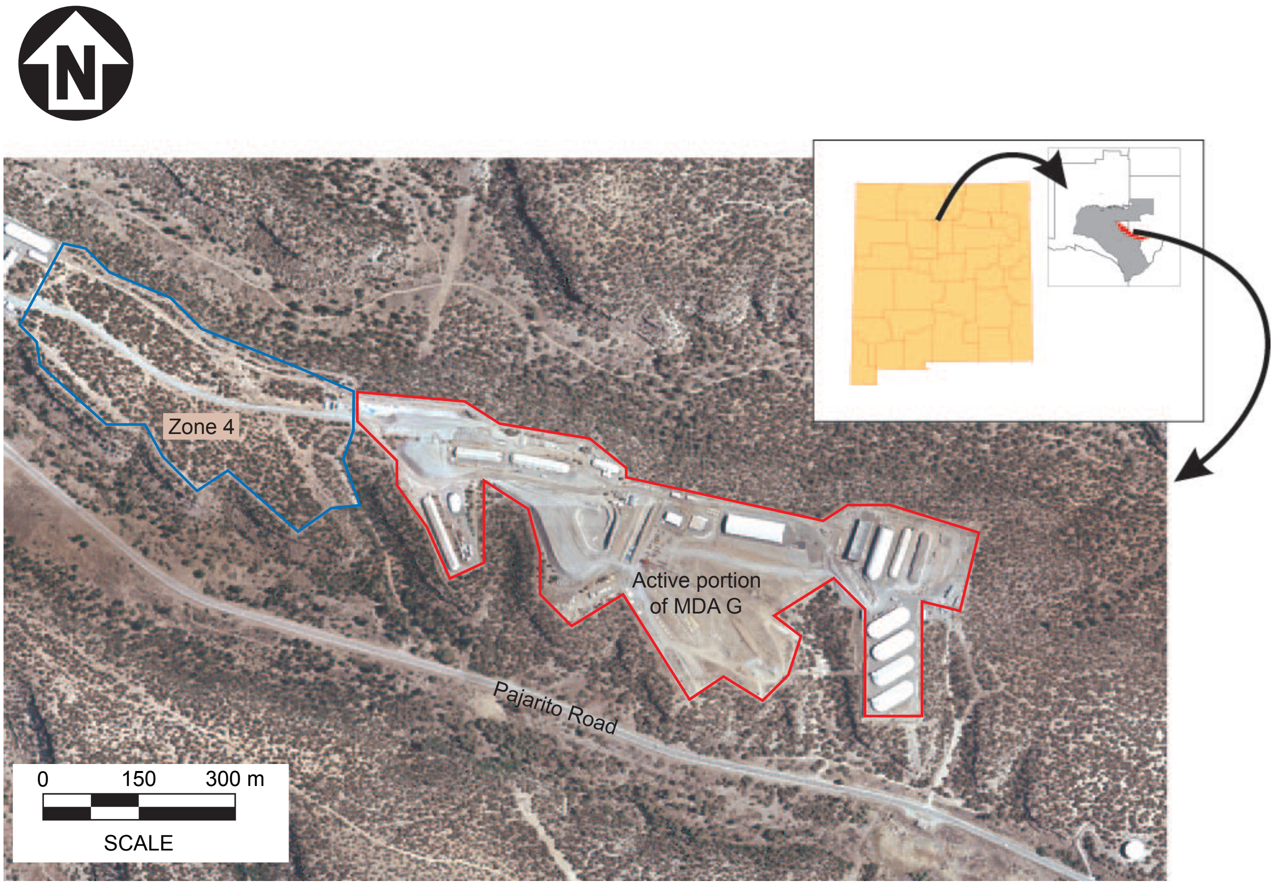


Figure 1
Aerial Photograph of Material Disposal Area G

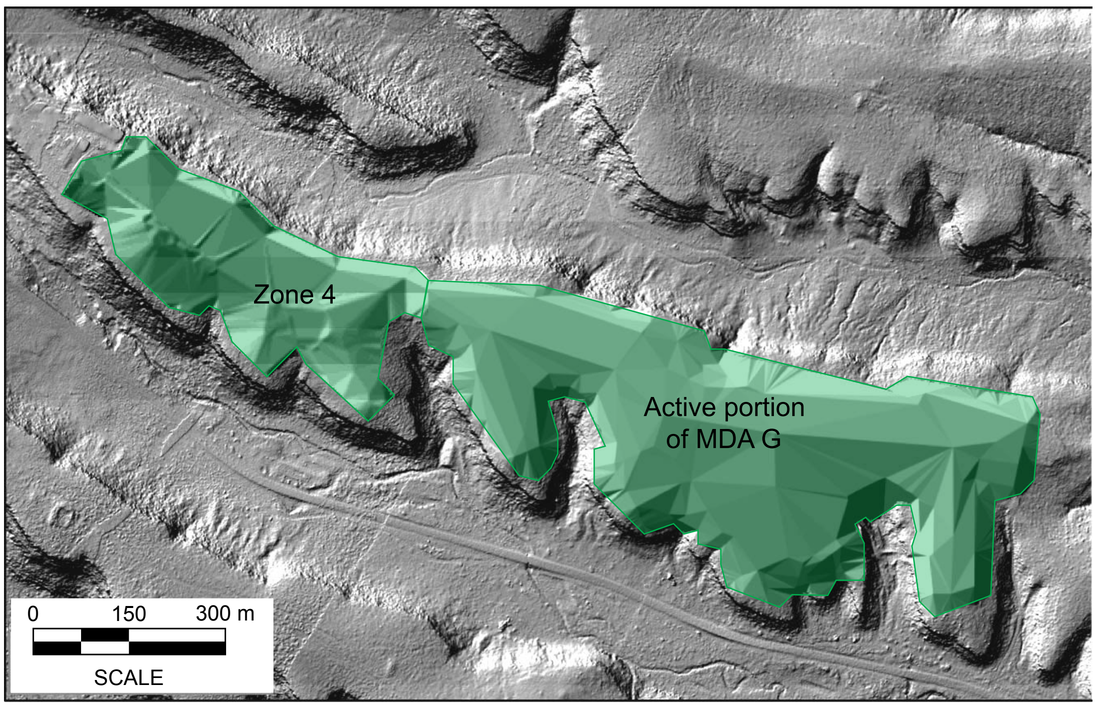


Figure 2
Proposed Configuration of Cover
for Material Disposal Area G

2.0 Methods

The long-term erosion assessment at MDA G was performed using the SIBERIA landscape evolution model (Willgoose et al., 1991a, 1991b). This model predicts steady-state erosion and sediment transport across a landscape that is represented as elevations in a gridded digital elevation model (DEM). The DEM is adjusted each time step (typically 1 year) to account for any change in surface elevation that occurred from erosion or deposition since the last time step. The governing equation for the SIBERIA model is:

$$Q_s = BA^m S^n + D_z S \qquad 1$$

Where

Q_s	=	the annual sediment flux through a grid cell (kg per meter width)
B	=	a coefficient that represents all factors that moderate runoff-driven erosion in the grid cell, except slope and runoff
$A^m S^n$	=	the relationship between contributing area (A), slope (S), and sediment yield
D_z	=	a diffusion coefficient
S	=	the terrain gradient (slope) (%)

Thus, Equation 1 includes sediment transport terms for both runoff-driven (advective) processes ($B\,A^m$) and gravity-driven (diffusion) processes. The intensity of runoff-driven sediment transport is given by $B\,A^m\,S^n$. The coefficient B accounts for all factors (e.g., vegetation cover, degree of soil disturbance, and soil type) that moderate runoff-driven erosion in the grid cell, except for slope and runoff. The $A^m\,S^n$ value increases as the catchment area above a grid cell increases (i.e., a bigger catchment area feeding into a grid cell equates to a greater runoff volume flowing through the grid cell) and as the gradient of the cell increases. The exponents m and n determine how sediment yield depends on contributing area and slope for a given site, and can be determined empirically (where data are plentiful) or through an optimization process using other hillslope-based models. Diffusive transport includes processes such as rainsplash (sediment particles ejected from the surface by raindrop impacts), tree-throw (sediment tumbled downslope when the root ball of a fallen tree is exposed at the surface), and animal burrow mounds. The diffusion coefficient D_z captures the intensity of these gravity-driven sediment transport processes.

Within the SIBERIA model, Equation 1 represents sediment-transport processes at all scales. In addition, the sediment yield, Q_s, when applied to each time step over long periods of time, is equivalent to the average annual sediment that would result from large and small events of all return periods. Equation 1 is solved for every grid cell in the SIBERIA model domain for each time step. Every grid cell has an upslope contributing area, *A*, and a slope, *S*. In any given grid cell the values of *A* and *S* may change through time as the landscape deforms; thus, these values are recalculated for each time step. The values of *B*, *m*, *n* and D_z are considered inherent material and site properties for soil and bedrock, even though they may change slowly or catastrophically as a result of long-term soil development or fire. The user may change these values in time through a start-and-stop process. However, because it is virtually impossible to project how time will affect these values at MDA G, in this study they were held constant over time for specific soil and bedrock layers.

2.1 Development of SIBERIA Parameters for Material Disposal Area G

The typical approach for developing values for the SIBERIA parameters *B*, *m*, *n*, and D_z is to calibrate SIBERIA to one or more standard hillslope-runoff erosion models. In principle, SIBERIA can be parameterized directly using long-term rainfall, runoff, and sediment yield data, but these datasets are rare. To derive the relationship for runoff-driven transport ($B\,A^m\,S^n$) empirically, data must exist for a range of hillslope and watershed gradients, *S*, at a range of area scales, *A* (hillslope, subwatershed, and watershed).

Multiple rainfall, runoff, and sediment datasets do exist for Mesita del Buey at a range of scales (experimental measurement plot, hillslope, and watershed scales), but these data are neither continuous over time nor of the uniform quality required for direct determination of SIBERIA parameter values. They were, however, sufficient for parameterizing the rainfall-runoff model IRS9 (Stone et al., 1992) and the runoff-sediment yield Hillslope Erosion Model (HEM) (Lane et al., 2001). Both the IRS9 model and the HEM were used to develop parameter values for the advective transport term in SIBERIA.

Although a quantitative path exists for developing the advective term in SIBERIA, determining the diffusion term is still an art. Research by Heimsath et al. (1997) has significantly advanced the quantitative determination of diffusion in equilibrium landscapes. Unfortunately, Mesita del Buey is a poor candidate for the application of these techniques because soil geochronology suggests that the local soils are aeolian and may have been emplaced rapidly about 10,000 years ago. Given this, the diffusivity was constrained by estimating a match between SIBERIA-generated topography and direct observations of headwater drainage lines using data from the field and from airborne laser swath mapping (ALSM) digital topographic maps. For example, if a SIBERIA run predicted that observed well-defined drainage lines at MDA G aggraded (filled-in with sediment) significantly over 1,000 years, then the value used for the diffusion coefficient in that run was probably set too high. If many new drainage lines appeared across the site, then the diffusion coefficient was probably too low.

A final challenge in parameterizing SIBERIA is developing steady-state values for *B*, *m*, and *n* such that the application of Equation 1 on an annual time step in the model domain reproduces nature's highly dynamic runoff and erosion rates. In nature, landscape-forming runoff events occur sporadically, perhaps once every 10, 20, or 1,000 years, rather than every year. Analysis of long-term datasets shows that the cumulative effect of a few "large" runoff events over the monitoring period is greater than the cumulative effect of the smaller runoff events that occur every year. Because SIBERIA is a steady-state model, the user must determine the size (return period) of a landscape-forming event that can be applied annually in the model domain to predict the same long-term sediment yield that would be generated through periodic large events.

Thus, the parameterization of the SIBERIA model for application at MDA G required a multistep approach. This approach, which is explained in more detail in the following sections, consisted of six major steps:

1. Collect, collate, and evaluate precipitation, runoff, and sediment-yield data for Mesita del Buey. These data were used to parameterize the rainfall-runoff ISR9 model and the runoff-erosion HEM, as well as to test SIBERIA results.

2. Evaluate long-term runoff and sediment-yield datasets from an analog site, the semiarid Santa Rita Experimental Range (in Arizona), to estimate the return period for landscape-forming events.

3. Develop rainfall-runoff relationships for MDA G using the selected return period for the landscape-forming events, as determined from data collected at the Santa Rita Experimental Range. Apply the ISR9 model using MDA G soil and vegetation properties and precipitation amounts for events with 2- and 5-year return periods for MDA G. The excess runoff values predicted by ISR9 for the 2- and 5-year events were used as input to the HEM.

4. Apply the HEM to predict sediment yield for hillslopes using a range of slopes and areas.

5. Apply a simulated multiparameter regression annealing technique (Crowell et al., 2004) to obtain values for *B*, *m*, and *n* that minimize the difference between sediment yields predicted by HEM and SIBERIA for the same set of test hillslopes.

6. Estimate D_z by matching SIBERIA results to present-day topography.

2.1.1 Local Data Analysis

A number of rainfall, runoff, and erosion datasets have been collected at LANL over the past five decades. Several long-term precipitation records for LANL (available at <http://weather.lanl.gov/>) were analyzed in relation to data posted for Mesita del Buey in the National Oceanic & Atmospheric Administration's Atlas 14 (NOAA, 2004) and were found to have similar rainfall frequency characteristics. For reproducibility and ease of analysis, the NOAA Atlas 14 rainfall frequency data were used for all analyses reported in this study; these data were generated from NOAA Atlas 14 for the rain gauge located at the LANL water quality monitoring site E247 (35.83^{o} N 106.24^{o} W). This site lies between the Zone 4 expansion area and the active portion of MDA G, immediately south of Mesita del Buey.

There are also a number of runoff and sediment-yield datasets for Mesita del Buey, which are of varying duration and quality. The two datasets determined to be of the most use for parameterizing ISR9 and assessing the HEM and SIBERIA results are (1) TA-51 runoff plots and (2) runoff and sediment-concentration data from eight small watersheds draining TA-54 and from two water quality monitoring stations on Cañada del Buey (E218 and E230). The first dataset contains runoff and erosion data for 52 runoff events; these data were collected from six 3×10 m (9.8×30 ft) plots located at TA-51. The second provides runoff and sediment concentration data for watersheds ranging in size from 1 ha to 10 km^2 (2.5 ac to 3.9 mi^2) and includes data for 141 runoff events. Both datasets were preconditioned to remove obviously poor data. Only those events for which rainfall, runoff, and sediment values could be matched, and for which rainfall was greater than runoff, were included.

Sediment concentration data for the TA-51, TA-54, and Cañada del Buey sites are summarized in Figure 3. In order to show both datasets in equivalent units (mg/l), sediment concentration values for the runoff plots were calculated by dividing the amount of sediment eroded during an event by the runoff volume for the same event. For the second dataset (representing the small watersheds at TA-54 and the Cañada del Buey monitoring stations), sediment concentration data were derived from total suspended solids samples collected with an ISCO automated sampler during storm runoff.

It was hoped that the data shown in Figure 3 would enable the estimation of the values of m and n in the $A^m S^n$ term (Equation 1). However, the variation in sediment concentration between subwatersheds appears to be more a result of site conditions (e.g., paving, soil disturbance, and drainage pipes) than a difference in watershed area or gradient, S. In addition, the event data are not equivalent for all sites. Consequently, it was determined that using these data to directly parameterize the SIBERIA model was inappropriate. These data were, however, used as one means of verifying SIBERIA model output.

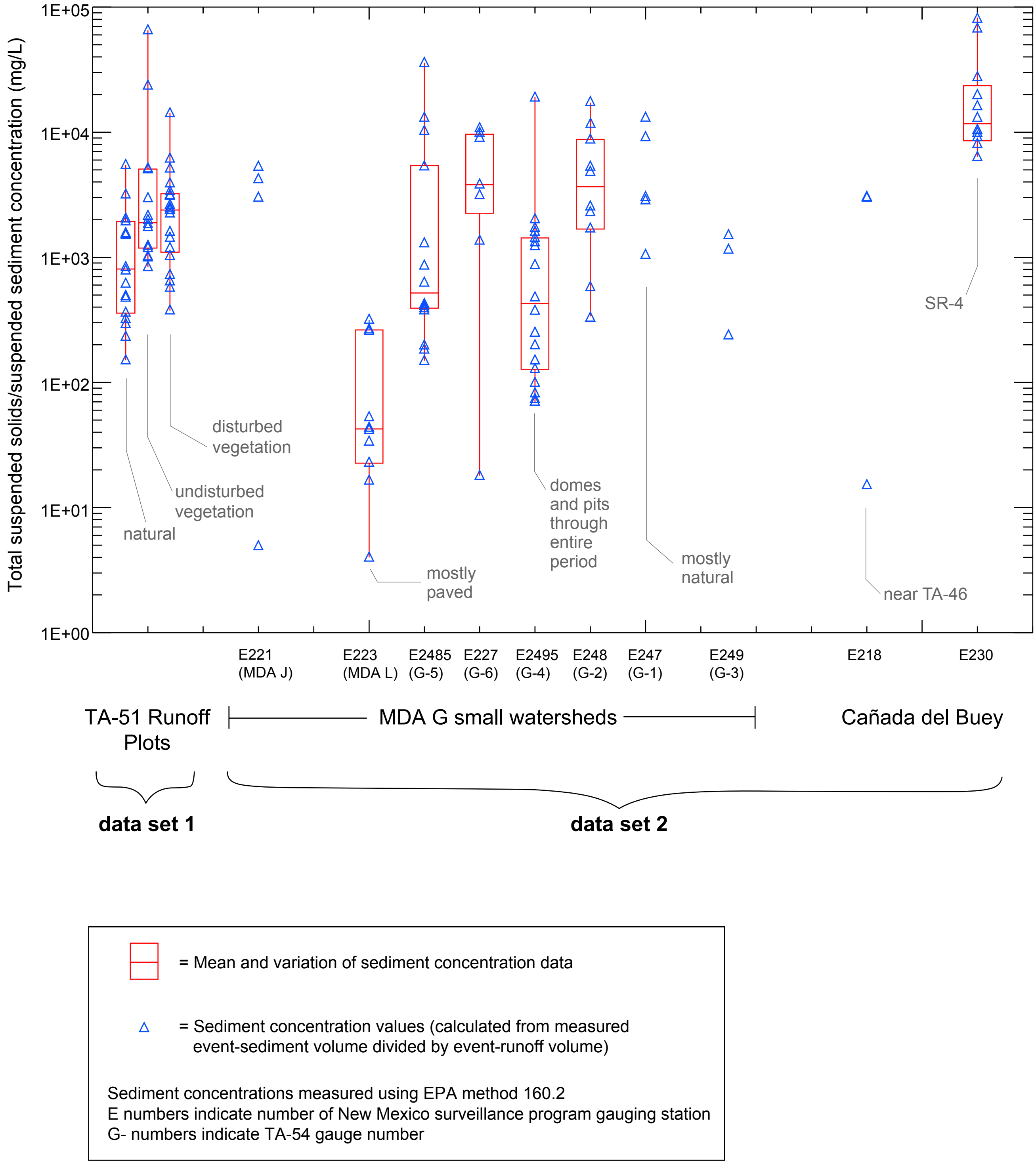


Figure 3
Sediment Concentration Data for Runoff Plots, Small Watersheds, and Cañada del Buey

Hillslope topography and vegetation cover profile data were collected specifically for this project (Lane et al., 2002) and used in the ISR9 analysis to develop excess runoff values (with uncertainty) for the range of conditions expected after closure of the disposal facility. The profiles were located in areas with varying degrees of disturbance and rehabilitation. Data defining the shape of the hillslope as well as canopy and ground cover were collected at 1 m (3.3 ft) intervals along each of the 17 profiles shown in Figure 4.

2.1.2 Definition of a Steady-State Landscape-Forming Event

No long-term, coupled rainfall, runoff, and erosion datasets exist for LANL or nearby areas. As an analog, the long-term record of runoff and sediment-yield data from the Santa Rita Experimental Range in Southern Arizona was analyzed to determine the return period for a steady-state landscape-forming event in a semiarid environment. The analysis of these data showed that the average annual sediment yield for a period of approximately 16 years fell within the range of the sediment yield values from events with return periods of 2 and 5 years (Table 1). This is in agreement with the return period recommended by SIBERIA's author of about 2.3 years, which was based on his analysis of a long-term dataset from Europe (Willgoose, 2004). Rather than choose a single return period for the landscape-forming event, SIBERIA runs were performed for both the 2-and 5-year events. The assumption was that the two events would provide low and high estimates of sediment yield over the 1,000-year time frame of the model, and would account for the uncertainty in using data from an analog site to determine the landscape-forming event for MDA G.

2.1.3 Estimation of Runoff and Erosion

The IRS9 infiltration and runoff model (Stone et al., 1992) was used to estimate runoff volumes. Precipitation data for Los Alamos, New Mexico were taken from the NOAA Atlas 14 for events with 2- and 5-year return periods. The IRS9 model was applied to the 17 hillslope profiles shown in Figure 4 for two soil types, sandy loam and loam. These soil types bound the expected soil texture for the MDA G cover as given in the cover design specifications (Day et al., 2005). It is important to note that, although this cover is composed of multiple layers with different admixture materials, SIBERIA assumes the cover is a single homogenous layer of either loam or sandy loam. The loam cover consists of crushed tuff with a 6 percent admixture of bentonite, and the sandy loam assumes a cover composed of crushed tuff with no bentonite. Both covers include an admixture of 12 percent, by volume, of angular rock. The bentonite adds strength to the cover, inhibiting soil mass wasting on the steeper parts of the cover, but decreasing soil hydraulic conductivity, which in turn increases the amount of runoff available to drive erosion. The angular rock provides protection from surface erosion. As the cover erodes more rock is exposed at the surface, reducing the amount of soil surface exposed to erosion.

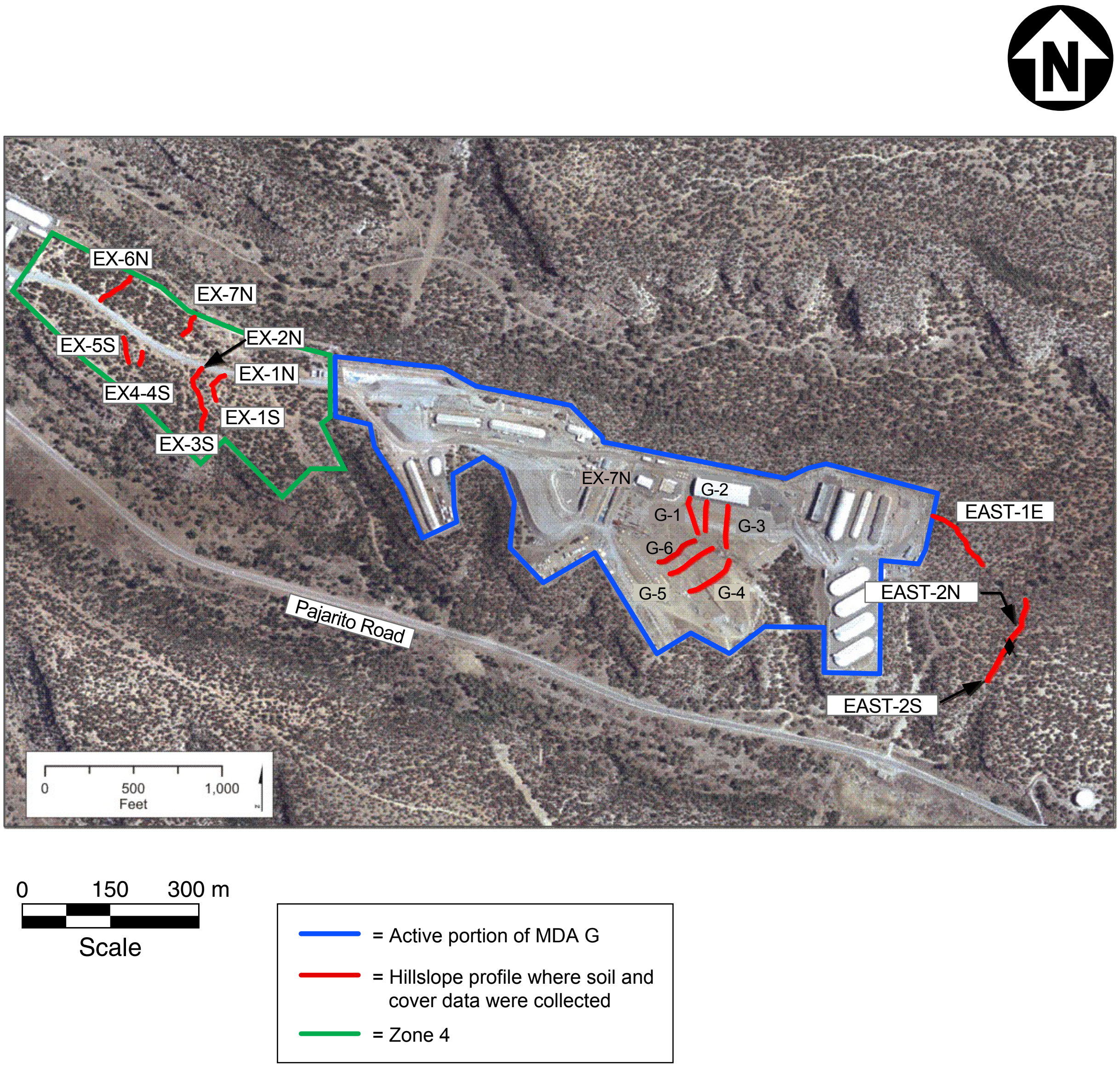


Figure 4
Location of 17 Hillslope Profiles in Vicinity of Material Disposal Area G

Table 1
Characteristics of Four Small Watersheds within the Santa Rita Experimental Range near Tucson, Arizona (analog site)

Watershed ID	Drainage Area (ha)	Grazing System	Vegetation Type	Soil Type	Event Runoff [a] (mm)			Sediment Yield (T/ha)	
					2-Year Event	5-Year Event	16-Year Mean [b]	2-Year Event	5-Year Event
5	4.0E+00	Rotation	Mesquite and grass [c]	Sasabe sandy loam	9.5E+00	2.7E+01	1.7E+01	2.9E+00	6.2E+00
6 [d]	3.1E+00	Rotation	Grass	Diaspar loamy sand	1.3E+00	3.8E+00	1.6E+00	5.4E-02	1.2E-01
7	1.1E+00	Year long	Grass	Sasabe sandy loam	1.6E+01	3.9E+01	2.5E+01	7.8E-01	2.8E+00
8	1.1E+00	Year long	Mesquite and grass [c]	Sasabe sandy loam	2.3E+01	5.1E+01	3.0E+01	1.9E+00	8.0E+00

[a] *Sixteen years of hydrologic data (1976 – 1991) were used in this analysis*

[b] *Mean annual runoff for all runoff events that occurred during the 16-year observation period*

[c] *Mesquite trees (Prosopis velutina (woot.)) and Lehmann lovegrass (Eragrostis lehmanniana (Nees)) as well as lesser amounts of other shrubs and desert grasses*

[d] *Watershed 6 has predominantly loamy sand of the Diaspar soil series and thus its runoff and sediment yield are significantly lower than from the sandy loam of the Sasabe soil series.*

The hydraulic properties of the cover material determine the amount of runoff associated with the two landscape-forming events. A saturated hydraulic conductivity value of 11 mm/hr (0.43 in./hr) was assigned to the sandy loam in accordance with the value provided by Nyhan et al. (1993) for crushed tuff. A value of 6.5 mm/hr (0.26 in./hr) was used for the loam soil; this is about half the value for sandy loam and is a typical value from the literature (Lane, 2004). These hydraulic conductivity values were used in the IRS9 model to calculate runoff values for the rain events with 2- and 5-year return periods. As discussed in more detail in Section 4.2, the values used for saturated hydraulic conductivity are highly uncertain.

Table 2 shows the results of the ISR9 simulations, including mean runoff values and ranges for each of the soil-type/return-period pairs (Lane, 2004). The percent canopy and ground cover vary significantly among the 17 hillslope profiles; these data can be compared to the range of cover values expected to exist after the closure of MDA G (Figure 5). The effect of cover variation on runoff is evident from the results listed in Table 2. These results also indicate that the average runoff from an annual landscape-forming event is likely to range from about 1 to 18 mm/yr (0.039 to 0.71 in/yr) depending on the soil type, hillslope topography, and cover properties at the site.

2.1.4 Sediment Yield Predictions

The excess runoff estimates calculated by the ISR9 model were used as input to the HEM (Lane et al. 2001) to estimate hillslope erosion resulting from the 2- and 5-year runoff events for both soil types. The HEM is an erosion and sediment transport model that analytically solves the kinematic wave equation for sediment transport on a series of connected hillslope segments. The model calculates the erosion or deposition in each hillslope segment as a function of the segment runoff, gradient, ground cover, canopy cover and soil type. The HEM is well tested and calibrated to hundreds of rainfall simulator experiments performed for the WEPP model calibration. A primary advantage of the HEM over the WEPP and other hillslope erosion models is its ease of use, including the availability of an online version for rapid evaluation of erosion.

For this study, the online version of HEM (USDA, 2002) was modified to run in a batch mode to generate sediment yield values over a wide range of hillslope lengths and gradients for the combinations of soil type and excess runoff shown in Figure 6 and Table 3. Three combinations were selected to represent low-, medium-, and high-erosion scenarios at MDA G; these are described in more detail in Section 2.3. In brief, the low-erosion scenario assumed that the closure cover was composed of sandy loam, the ground and canopy cover were high, and the runoff event had an associated value of 2.6 mm (0.1 in.). The moderate-erosion scenario assumed a sandy loam soil, moderate cover conditions, and a runoff event of 7 mm (0.28 in.). The high-erosion scenario assumed a loam soil, low ground and canopy cover, and a runoff event of 12.4 mm (0.49 in.).

Table 2
Summary of Rainfall-Runoff Simulation Results for Hillslope Profiles at TA-54

Hillslope Profile ID	Amount of Cover (%) [a]		Estimated Runoff (mm) [b]			
	Canopy	Ground	2-Year, 6-Hour Storm		5-Year, 6-Hour Storm	
			Sandy Loam [c]	Loam [d]	Sandy Loam [c]	Loam [d]
Area G-1 SE	6.1E+01	2.3E+01	1.1E+00	5.0E+00	4.8E+00	1.0E+01
Area G-2 S	6.4E+01	2.4E+01	8.0E-01	4.7E+00	4.3E+00	9.7E+00
Area G-3 S	6.3E+01	2.2E+01	1.0E+00	5.0E+00	4.6E+00	1.0E+01
Area G-4 NE	2.0E+01	3.3E+01	3.4E+00	7.6E+00	8.3E+00	1.4E+01
Area G-5 NE	2.4E+01	4.6E+01	2.2E+00	6.4E+00	6.8E+00	1.2E+01
Area G-6 NE	2.6E+01	4.1E+01	2.4E+00	6.6E+00	7.0E+00	1.3E+01
EX-1N NE	8.0E+00	2.7E+01	5.0E+00	9.3E+00	1.0E+01	1.6E+01
EX-1S SE	2.9E+00	7.9E+00	6.7E+00	1.1E+01	1.3E+01	1.8E+01
EX-2N NE	1.5E+01	4.4E+01	3.0E+00	7.2E+00	7.9E+00	1.4E+01
EX-3S SE	2.6E+01	4.0E+01	2.4E+00	6.7E+00	7.1E+00	1.3E+01
EX-4S S	1.2E+01	3.2E+01	4.3E+00	8.5E+00	9.2E+00	1.5E+01
EX-5S S	6.9E+00	1.7E+01	5.8E+00	1.0E+01	1.1E+01	1.7E+01
EX-6N NE	3.2E+01	6.1E+01	8.0E-01	4.7E+00	4.3E+00	9.7E+00
EX-7N NE	2.7E+01	5.7E+01	1.4E+00	5.4E+00	5.4E+00	1.1E+01
East-1E SE	2.9E+01	7.2E+01	5.0E-01	4.2E+00	3.6E+00	9.1E+00
East-2N N	2.9E+01	6.9E+01	6.0E-01	4.4E+00	3.8E+00	9.3E+00
East-2S SW	1.8E+01	5.4E+01	2.2E+00	6.4E+00	6.7E+00	1.2E+01
Statistical Summary of Hillslope Profile Values						
Mean	2.7E+01	3.9E+01	2.6E+00	6.7E+00	7.0E+00	1.2E+01
Standard Deviation (SD)	1.9E+01	1.9E+01	1.9E+00	2.1E+00	2.7E+00	2.6E+00
Coefficient of Variation	7.0E-01	5.0E-01	7.0E-01	3.0E-01	4.0E-01	2.0E-01
Mean – SD	8.0E+00	2.0E+01	7.0E-01	4.6E+00	4.3E+00	9.8E+00
Mean + SD	4.6E+01	5.8E+01	4.5E+00	8.8E+00	9.7E+00	1.5E+01

[a] *All data were collected in July and August 2002.*

[b] *The initial soil water condition was assumed to be wet (tension of approximately 0.33 bar).*

[c] *Sandy loam was used to simulate crushed tuff.*

[d] *Loam was used to simulate a mixture of crushed tuff and 6 percent clay admixture.*

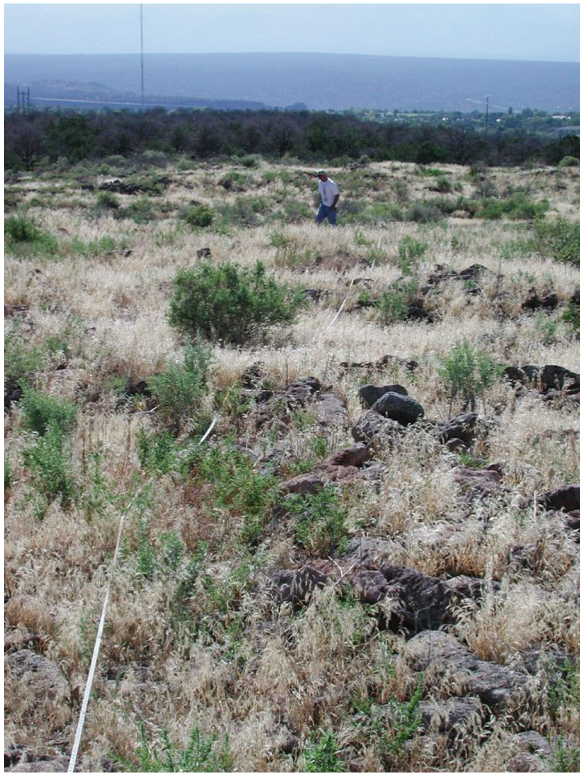


Figure 5a
Example of highest ground
and canopy cover conditions in area
(90% ground cover, 90% canopy cover).

Figure 5b
Example of well-established
ground cover following rehabilitation
(30% ground cover, 90% canopy cover).

Figure 5
Photographs Showing Expected Range in Canopy and Ground Cover after Site Closure

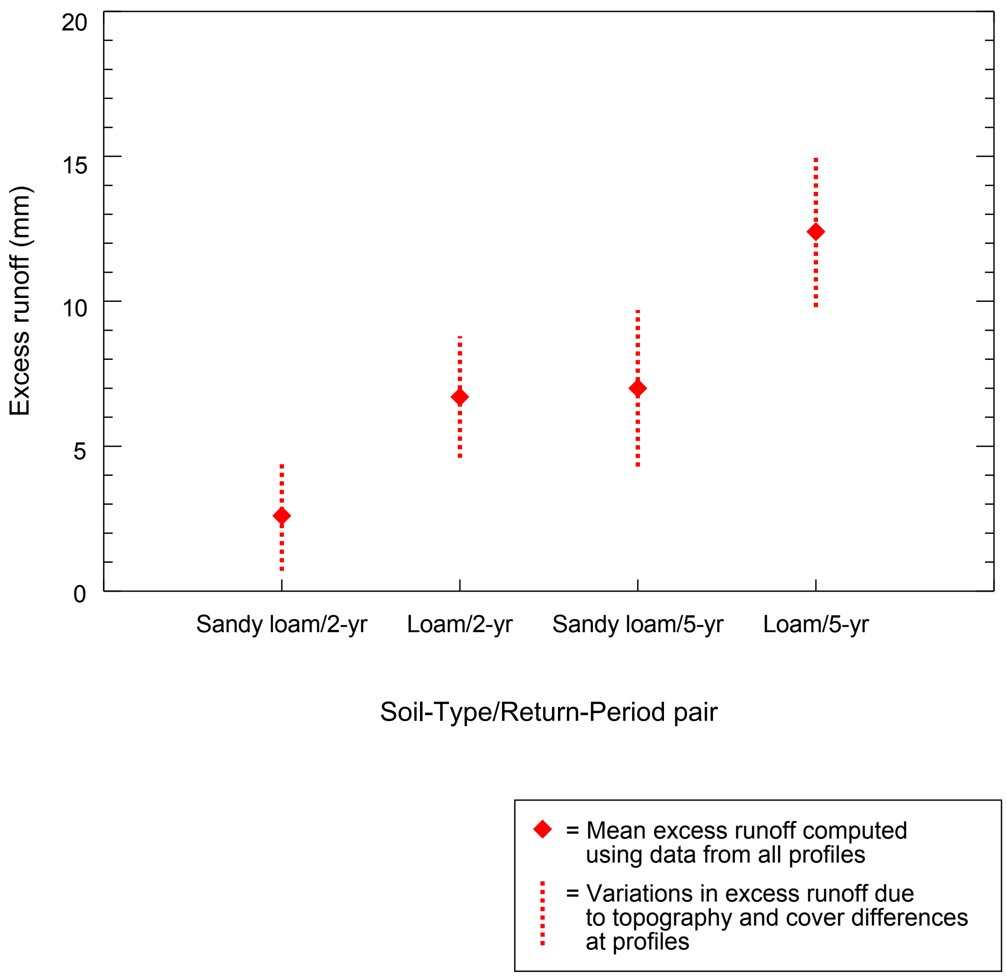


Figure 6
Mean Excess Runoff Values and Ranges for Soil-Type/Return-Period Pairs

Table 3
Summarized Input and Output for the Three Erosion Scenarios Used in SIBERIA Model

Model Parameters	Erosion Scenarios over 1,000-Year Period		
	Low	Moderate	High
Hillslope Erosion Model Parameters			
Soil Texture	Sandy Loam	Sandy Loam	Loam
Canopy Cover / Ground Cover (%)	70 / 70	30 / 70	30 / 30
Landscape-Forming Event (return period in years)	2	5	5
Excess Runoff (mm)	2.6	7	1.2
SIBERIA Model Parameters			
B	9.4E-06	4.2E-05	6.8E-04
m	1.6E+00	1.6E+00	1.3E+00
n	8.6E-01	8.7E-01	8.6E-01
D_z	1.0E-03	2.5E-03	5.0E-03
SIBERIA Model Sediment Yield (T/ha/yr)			
100 years	5.0E-01	1.3E+00	3.2E+00
500 years	4.0E-01	1.1E+00	2.5E+00
1000 years	4.0E-01	1.0E+00	2.3E+00

The HEM runs were performed for the low-, moderate-, and high-erosion parameter sets shown in Table 3 on eight artificial hillslopes. The hillslopes, which were constructed to represent the range of lengths and gradients found on the proposed MDA G closure cover, are shown in Figure 7. The hillslope sediment yields from each set of HEM runs (low, moderate, and high erosion) were then compared to sediment yields from three sets of SIBERIA runs (low, moderate, and high erosion) performed on the same artificial hillslopes. An optimization routine was applied to find the SIBERIA parameters that minimized the difference in sediment yield predicted by the two models for the same profiles. This optimization process is described below.

2.1.5 Optimization of SIBERIA Advective Transport Parameters

The SIBERIA parameter values for the advective transport term $B\ A^m\ S^n$ (Equation 1) were developed using an optimization process called simulated annealing (Press et al., 1996). The process requires the user to specify a set of target values and an equation that, when solved with the right parameter values, will match the target values. In this analysis, the HEM sediment yields from the artificial hillslopes shown in Figure 7 were the target values and Equation 1 was the equation of interest. The simulated-annealing algorithm was used to minimize the difference between the HEM-predicted target yields and the SIBERIA sediment yields for trial sets of B, m, n and D_z values. The optimal set of B, m, and n values shows a minimal difference between HEM and SIBERIA sediment yields for all hillslope length and gradient combinations of interest.

For a given profile, the HEM provides total sediment flux (kg), runoff volume (m^3), mean sediment concentration (%), and inter-rill and rill detachment and deposition rates (kg/m) on a per-meter-width basis. The SIBERIA model provides outputs allowing an equivalent total mass flux to be calculated along a flow path identical to the HEM profiles. Parameters B, m, n, and D_z were varied by the simulated-annealing code to minimize an objective function that is formulated as an “energy” in constraining a randomized exploration of the parameter space. The objective function used was the sum of the squared differences between the net sediment fluxes that were calculated by the two models along the artificial planar hillslopes. The simulated-annealing code calculation was evaluated for low-, moderate- and high-erosion scenarios on length-and-slope combinations derived from the artificial hillslopes shown in Figure 7. Lengths ranged from 30 to 130 m (98 to 430 ft) and were sampled every meter, while gradients ranged from 2 to 16 percent at 2 percent intervals. This yielded 808 hillslope cases (101 slope lengths times 8 gradients). The upper length was chosen to avoid edge effects at the hillslope profile ends. The shortest hillslope length was chosen to limit effects due to differences in how diffusion is calculated for short slope lengths in the HEM and SIBERIA models. Figure 8 shows the correlation between the sediment yields predicted by HEM and SIBERIA for the optimal set of values selected for B, m, n, and D_z by the simulated-annealing algorithm for the low-erosion scenario case; a similarly good match was seen for the moderate and high erosion scenarios. Table 3 summarizes the optimized SIBERIA parameter values for all three erosion scenarios.

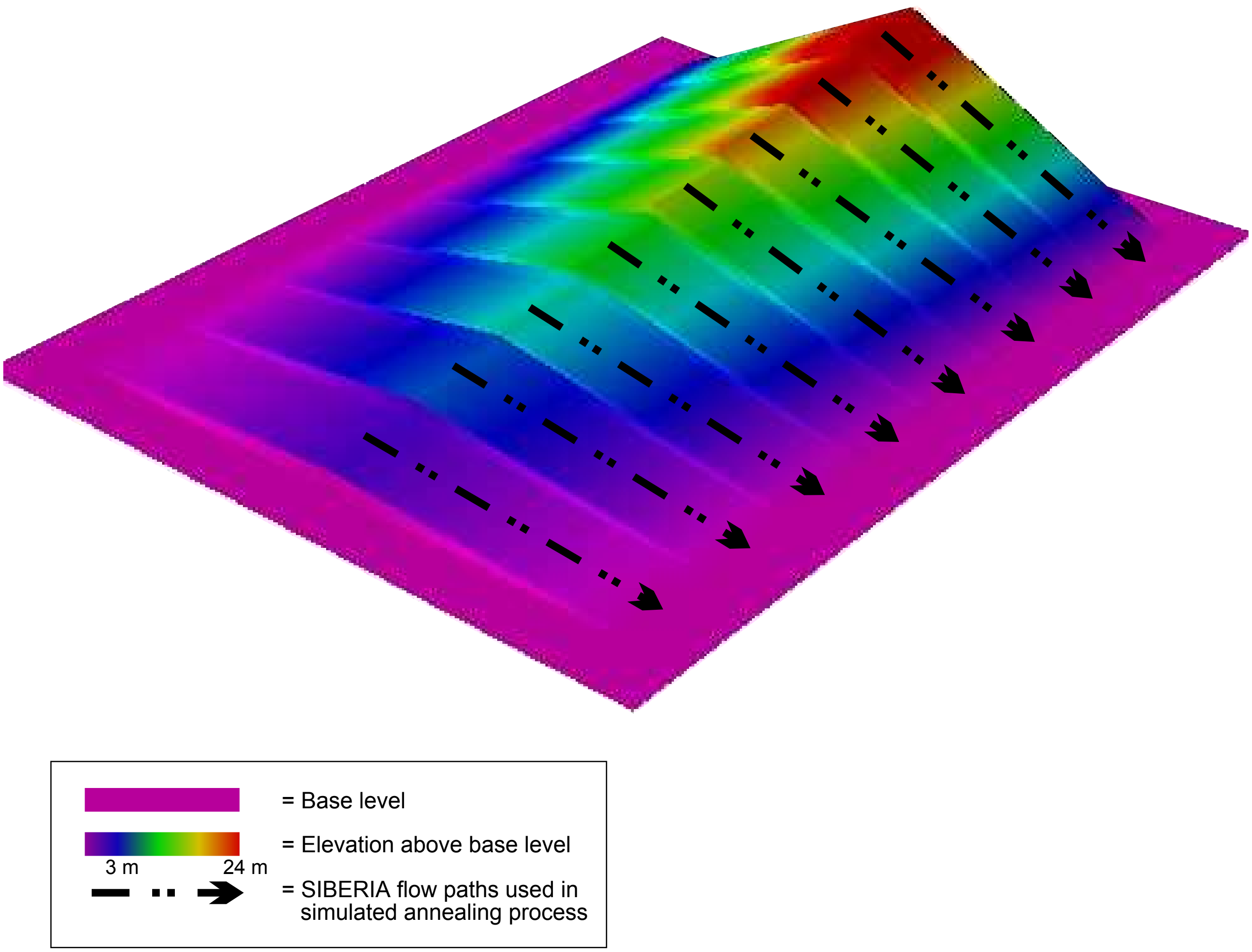


Figure 7
Artificial Surface Showing HEM Profiles and SIBERIA Flow Paths Used during Simulated Annealing

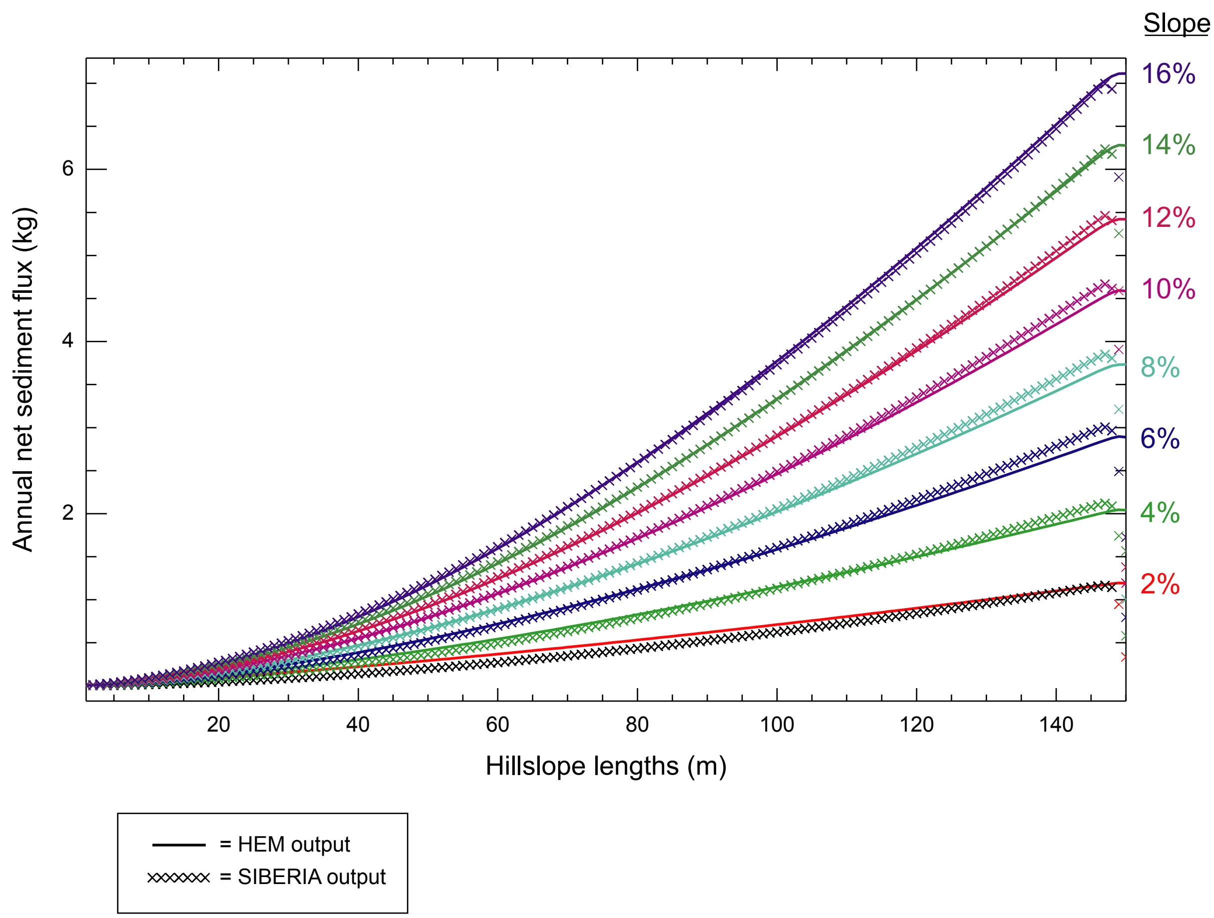


Figure 8
Correlation in Sediment Yield between the HEM and SIBERIA Model for a Range of Slopes and Hillslope Lengths (low-erosion scenario)

2.1.6 Estimation of the Diffusion Coefficient

Within the SIBERIA model, diffusion is added to advective transport as the product of the diffusion coefficient, D_z, and the hillslope gradient, *S*. Advective and diffusive processes are thought to be largely in balance in the undisturbed portions of Mesita del Buey because there are no well-developed, deep gullies or deep colluvial fills in headwater regions on the mesa. Values given for D_z in the literature range over several orders of magnitude; it was not possible to select a meaningful value among these for the specific site conditions. Although the simulated-annealing procedure found D_z values for the three erosion scenarios, these values do not include the full range of diffusion processes represented by SIBERIA because the HEM includes only that component of diffusion caused by rainsplash. In reality, biotic and other processes contribute significantly to diffusion in the landscape over long time scales and must be considered.

To determine a site-specific D_z value, SIBERIA runs were made using a range of D_z values. The resulting topography was visually inspected and compared to current topography as represented by the DEM derived from ALSM. The comparison focused on gullies and hollows; if SIBERIA predicted the development of deep colluvial fills in the hollows, it was assumed that diffusion was too high relative to advective processes (fluvial transport), whereas if SIBERIA predicted excessive gullying, diffusion was considered too low relative to advective processes. For this analysis, D_z values of 1.0×10^{-4}, 0.0025, and 0.005 were used as input to the moderate-erosion scenario to assess the impact of diffusion on the landscape over 1,000 years of erosion.

The low D_z value of 1.0×10^{-4} led to the development of a highly dissected gully network, which currently does not exist at TA-54. As a result, this value was rejected as being too low for the current model. The middle D_z value of 0.0025 resulted in a landscape with more of the characteristics of the current landscape, whereas the high D_z value resulted in a landscape that looked much more rounded than the current landscape. Because the results associated with the middle value seemed to best represent conditions at MDA G, and because no better method for estimating the D_z was available, the value of 0.0025 was chosen as the moderate-erosion D_z value and the best value for MDA G.

A D_z value of 0.001 was chosen for the low-erosion scenario. This value was selected because a low diffusion rate coupled with a low advective-erosion rate should yield the correct balance between the two processes and result in a landscape that looks somewhat similar to the current landscape; this diffusion rate would also result in slower overall erosion than the moderate- and high-erosion scenarios. Similarly, a D_z value of 0.005 was used in combination with a high erosion rate for the high-erosion scenario. A more rigorous test of the effect of D_z on landscape form is desirable, but experts in the field of landscape evolution modeling suggest that this approach was reasonable given the state of the science (Dietrich, 2004; Willgoose, 2004; Bras, 2004).

2.2 SIBERIA Model Domain Configuration

The SIBERIA model domain is represented by a DEM that consists of current topography from the LANL 2000 ALSM survey (Carey and Cole, 2002) and the proposed cover elevations supplied by URS Corporation personnel. The domain has two layers. The top layer is composed of cover material and extends from the surface of the final cover, through the interim cover, to bedrock. The cover material proposed by Day et al. (2005) is moderately compacted crushed tuff, augmented with bentonite and angular gravel, overlain with a topsoil and pea gravel mixture approximately 5-mm (0.2-in.) thick. The gravel admixtures are used to aid in the establishment of vegetation during the active institutional control period and will help increase soil surface cover and reduce erosion. The second layer is composed of the mesa bedrock material. This layer also includes armoring material (i.e., riprap) emplaced around the edges of the cover, where the transition from mesa-top to cliff occurs. The armoring is included to reduce erosion at the cover-cliff boundary, slow runoff, and capture sediment eroded from the cover.

The current version of SIBERIA does not automatically track the depth of a given layer, though it does account for the spatial extent of a material type that is exposed at the surface of the model domain. In nature, the rate of downcutting in a gully slows once the base of the gully reaches bedrock. To simulate this situation, SIBERIA was run in a “start-stop-start” mode. The model was stopped after every 20 years of simulated time and each cell was checked to determine if its elevation had dropped below the bedrock surface. Cells that had reached bedrock were relabeled as such so that erosion would proceed at a slower rate, and the model was restarted.

The disposal facility was divided into two model regions: the active portion of MDA G and the Zone 4 expansion area (Figure 1). The same SIBERIA parameter values for erosion were used for both areas; however, the cover size and depth and pit configurations are quite different between the two sites

2.3 Model Scenarios

The objective of the erosion modeling was to estimate the spatial distribution of depth to waste at MDA G after 1,000 years of erosion and sediment transport. Any such estimates are uncertain due to potential variations in climate, soil properties, evolution of the vegetation structure, and other factors over the 1,000-year time frame. To help constrain the uncertainty, three scenarios were developed that are expected to result in low, moderate, and high rates of erosion at the site. Each of the long-term outcomes is plausible on the basis of long-term erosion rates reported in the literature (Kirchner et al., 2001) and local current observations. The parameter values for each scenario were developed from soil, vegetation, rainfall, runoff, erosion, and sediment-yield data collected over a range of time frames at the Laboratory and at an analog site (Santa Rita Experimental Watershed, AZ), as described above. Soil properties for the simulations are based on material specifications provided by the cover design engineers (Day et al., 2005).

The low-erosion scenario assumes that the soil will have the erosion and runoff properties of a sandy loam (crushed tuff and gravel with no clay admixture) with high infiltration capacity, a thick vegetation cover of native grasses (canopy cover of 70 percent, ground cover of 70 percent), and an annual design runoff of 2.6 mm (1.0 in.). The moderate-erosion scenario represents an estimate of the average conditions that currently exist at the site. This scenario also assumes a sandy loam with mixed-grass and shrub vegetation cover similar to the current, relatively undisturbed conditions that exist in Zone 4 at TA-54 and at the eastern end of Mesita del Buey (i.e., canopy cover of 30 percent, ground cover of 70 percent). The annual design runoff for the moderate scenario is 7.0 mm (0.28 in.). The high-erosion scenario assumes a loam soil (crushed tuff and gravel mixed with bentonite), a sparse vegetation cover within the range of conditions found on Mesita del Buey (i.e., canopy cover of 30 percent, ground cover of 30 percent), and an annual design runoff of 12 mm (0.48 in.). These scenario parameters are summarized in Table 3.

3.0 Results

The SIBERIA simulations were performed for a range of different cover designs in an iterative process that involved close coordination with the cover designers at URS Corporation. The process enabled the development of an optimized design that was expected to satisfy the performance criteria. Results of the SIBERIA simulations for the final conceptual cover are shown in Figures 9, 10 and 11. These figures show the remaining cover depths, after 1,000 years, over portions of the facility occupied (now and in the future) by pits and shafts. An orange–green color scale indicates how well the cover performs over the pits. Green and yellow shades indicate depth to waste values in excess of 2.5 m (8.2 ft), whereas dark orange indicates that the cover is approaching a thickness of only 1 m (3.3 ft). The blue–red color scale on these figures shows the cumulative change in elevation across the site at the end of the 1,000-year-simulation period. Blue shows deposition (net accumulation) and red shows net erosion.

Examination of Figure 9 reveals that, for the moderate-erosion scenario, 2.5 m (8.2 ft) or more of cover remains over the majority of the disposal units at MDA G 1,000 years after facility closure. Away from the disposal units, areas of erosion and deposition are observed. Gully formation is seen in areas marked by long slope lengths (e.g., in the vicinity of pits 20, 21, and 22) and along the edges of the mesa. Figures 10a and 10b show similar results for the low- and high-erosion scenarios at MDA G. While greater erosion is noted in some portions of the facility under high erosion conditions, a minimum of 1.75 m (5.7 ft) of cover appears to exist over most, if not all, of the disposal units. Figure 11 shows the depth-to-waste results for the moderate-erosion scenario at the Zone 4 expansion area. Results from all three scenarios show that a minimum of 1.75 m (5.7 ft) of cover exists across the site at the end of the 1,000-year simulation period.

Although Figures 9 through 11 show results at the end of the 1,000-year simulation period, SIBERIA allows the user to track depth-to-waste and sediment-yield information at all points across the facility through time. Depth-to-waste values, which were saved every 20 years for the whole facility, are the basis for determining the rate at which waste may be brought to the surface by means of biologic mechanisms such as root uptake and leaf drop. In addition, time-dependent sediment-yield values from the portions of the cover located over the pits and shafts were tracked independently of areas that were located away from waste, such as cliff faces. In the following discussion, these two sediment source areas are loosely referred to as pit-affected and clean-sediment contributing areas, respectively.

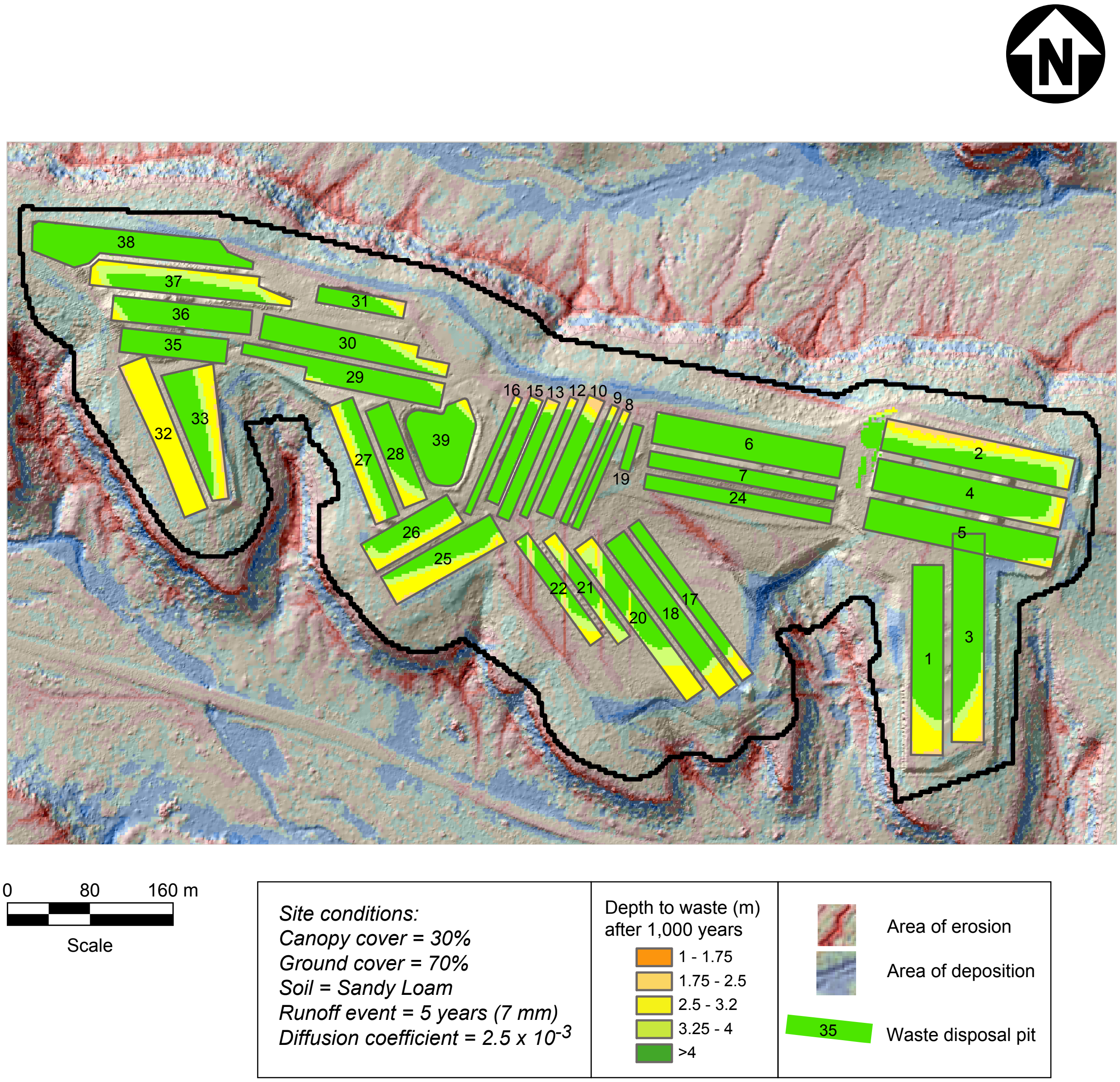


Figure 9
Erosion and Deposition at MDA G for Moderate-Erosion Scenario (as predicted by SIBERIA model after 1,000 years)

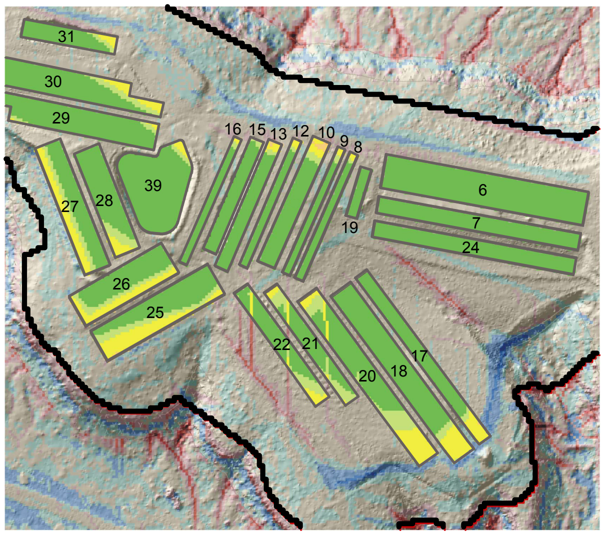


Figure 10a.
Low-erosion scenario (70% canopy cover, 70% ground cover, sandy loam soil, 2-year runoff event [2.6 mm], and diffusion coefficient of 1.0 x 10^{-4}.

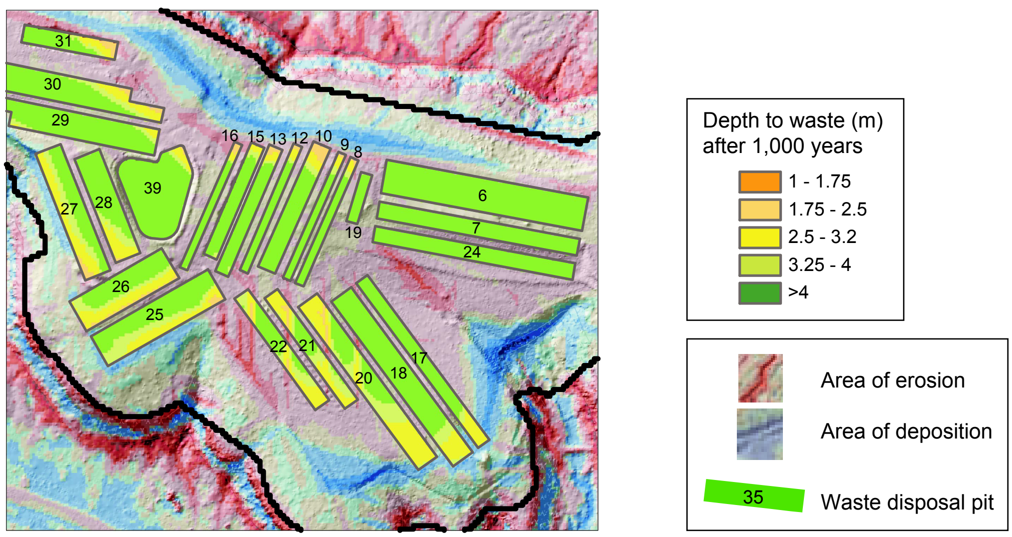
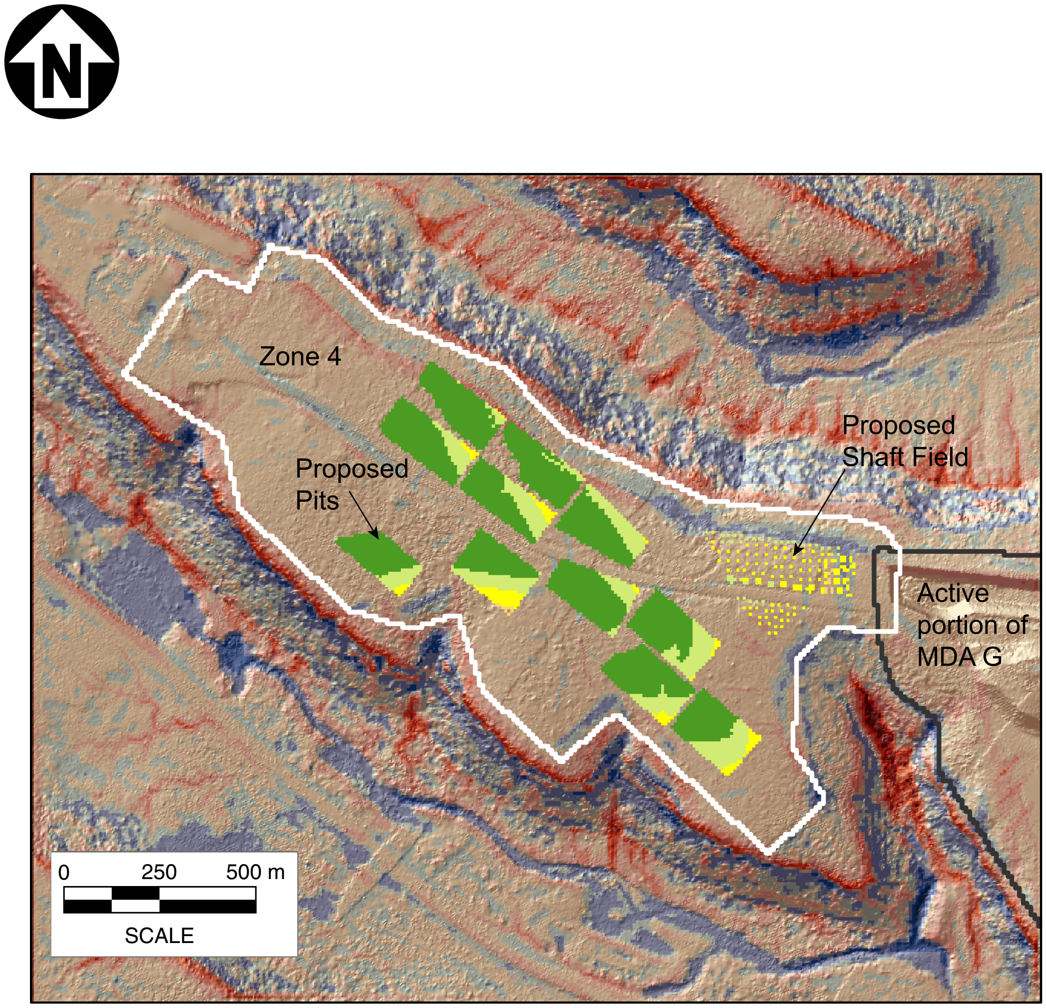


Figure 10b.
High-erosion scenario (30% canopy cover, 30% ground cover, sandy loam soil, 5-year runoff event [12 mm], and diffusion coefficient of 2.5 x 10^{-3}.

Figure 10
Erosion and Deposition at MDA G for Low- and High-Erosion Scenarios (as predicted by SIBERIA after 1,000 years)



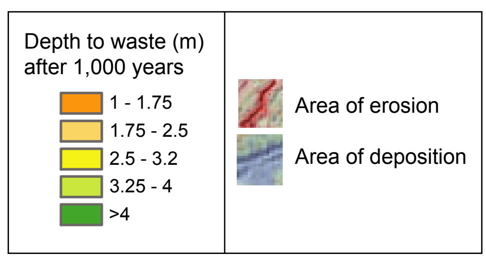


Figure 11
Erosion and Deposition at Zone 4 for Moderate-Erosion Scenario
(as predicted by SIBERIA model after 1,000 years)

The time-dependent sediment-yield values can be used to determine how much potentially contaminated sediment may be delivered to different parts of the Cañada del Buey and Pajarito Canyon floodplains. Figure 12 shows how the surface of MDA G is divided into sediment source areas (indicated by the divisions of the mesa-top) that drain into catchments within each canyon. The boundaries of the catchments were estimated on the basis of visual inspection of the topographic features along the edges of Mesita del Buey and the water drop diagram developed in conjunction with the cover design effort (Day et al., 2005, Figure 4).

Pit-affected sediment eroded from a grid cell over a given disposal unit within a drainage is assigned the disposal unit and drainage name, and is transferred across the lower boundary of the drainage into the corresponding catchment in the canyon. In this manner the total amount of potentially contaminated sediment, as well as the type and concentration of the contaminated sediment delivered to the canyon can be tracked through time. Table 4 summarizes the delivery of sediment to each of the catchments shown in Figure 12 for the moderate-erosion scenario. Although the data have been stored as a function of time and disposal unit, Table 4 shows the total sediment yield into each catchment for the 1,000-year time frame. For example, over the 1,000-year period, Pajarito Canyon catchment PC2 was projected to receive 8,995 T (9,915 t) of sediment from uncontaminated portions of MDA G and 766 T (844 t) from pit-affected areas; thus, the pit-affected sediment is 8 percent of the total sediment delivered from the mesa to PC2. Note that the drainage boundaries may change through time. For example, between 0 and 100 years the cover over a given pit may spill sediment to PC2, but from 100 to 200 years, some or all of the cover over that pit may spill into another drainage, and therefore be deposited in another catchment. These shifts in sediment yield are also tracked.

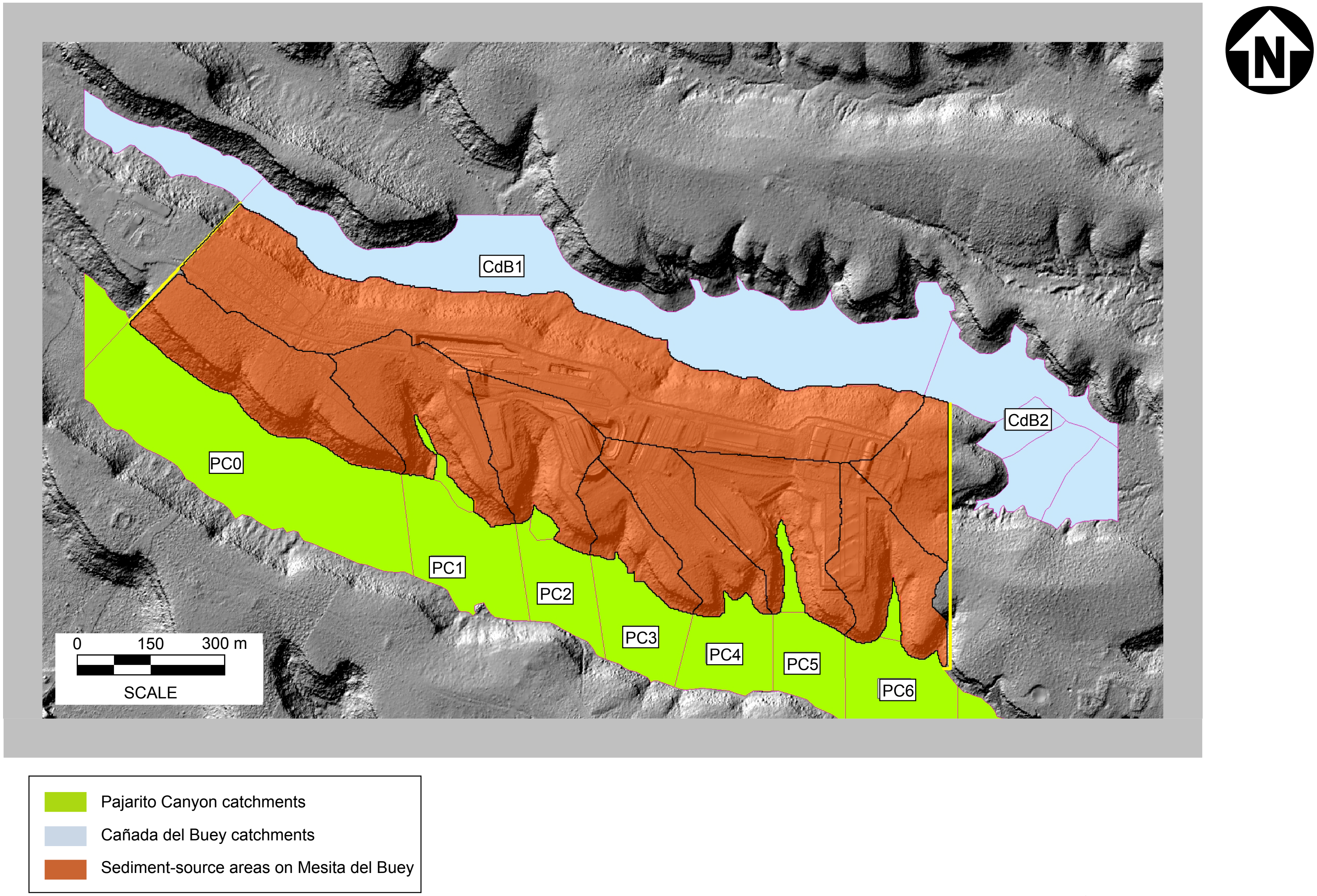


Figure 12
MDA G Sediment-Source Areas and Sediment Catchments in Habitable Canyon Bottoms

Table 4
Summary of Sediment Delivery from MDA G to Canyon Catchments over 1,000 Years

Canyon Catchment Number	Mass of Sediment Delivered (T)		Pit-Affected Sediment as % of Total Sediment
	Clean Sediment	Pit-Affected Sediment	
PC0	5,644	767	12
PC1	16,987	580	3
PC2	8,995	766	8
PC3	8,823	1,251	12
PC4	5,405	1,400	21
PC5	6,549	1,340	17
PC6	5,435	478	8
CdB1	39,930	3,482	8
CdB2	1,005	153	13

PC = Pajarito Canyon catchment *CdB = Cañada del Buey catchment*

4.0 Discussion and Qualifications

The SIBERIA simulations represent a significant step forward in cover-performance modeling, as they allow the feedback between erosion and the shape of the repository cover to be explored over a highly complex topography. This work represents a robust application of SIBERIA and reflects the opinion of the authors that landscape evolution models provide the best current option for assessing the performance of a cover exposed to long-term erosion. Nevertheless, significant uncertainty exists in the predictions. These uncertainties are the result of both model structure, as discussed in Section 4.1, and lack of adequate data for model parameterization, as discussed in Section 4.2. Even with these uncertainties, however, the SIBERIA sediment-yield predictions were in line with long-term values cited in the literature as well as with data from Mesita del Buey, as discussed in Section 4.3.

4.1 Model Limitations

The SIBERIA model was chosen because it was the only landscape evolution model that had been applied to and validated for critical environmental problems constrained by regulations such as mine reclamation and tailing pile remediation. The model version used for this study, however, had four potential drawbacks. First, it did not automatically modify material properties in cells when erosion cut into a new layer. Second, the sediment-transport-capacity equation may cause spurious deposition to occur when there was a change in material type along a flow path from a material with higher transport capacity (e.g., the cover) to one with lower transport capacity (e.g., bedrock). In addition, the model does not allow particle tracking or sediment-packet tracking through the landscape, hence it is impossible to determine if the sediment that eroded from the cover over a given pit was trapped permanently in the rock armor, or eventually made its way to the stream bottom. Third, it is likely that a dynamic climate will give a different result than the steady-state climate the user is forced to adopt by the SIBERIA model. And fourth, the model did not include an explicit cliff-retreat algorithm. A new version of SIBERIA is currently being tested that addresses all but the fourth of these issues.

Each of the model limitations noted above introduces uncertainty in the model results. The fact that the version of SIBERIA used for this study did not automatically update material properties as erosion progressed to a new layer was not a major problem since this study modeled only two materials, a homogeneous cover material and bedrock. Even so, an effort was made to minimize the effect that this limitation had on modeling results. During the simulations performed for this study, the model was manually stopped every 20 years to determine if the amount of erosion or the change in elevation in a given grid cell had caused the cell to move below the cover layer boundary. If it had, the cell type was changed from “cover” to “bedrock” and the model was restarted. Because there was no way of knowing when the boundary between the cover and bedrock had been reached during the 20-year interval, the affected cell was also reassigned a cell elevation of the original bedrock surface. This approach is not expected to introduce much error into the model projections because rates of erosion within the bedrock are small.

A seemingly more difficult problem arises from the use of the sediment-transport-capacity equation to predict both erosion and transport. The amount of eroded sediment transported out of a grid cell depends on the gradient of the cell, its material composition, and the size of the upslope area contributing to the cell. A problem may arise when a grid cell with a material type of “cover” is upslope from a cell with material type “bedrock”; because of the rock armor, this situation occurs around the entire edge of the cover. Under natural conditions, sediment undergoing transport from a more erodible upslope area would stay in suspension and travel across the downslope bedrock area. In the model, however, if the two cells have the same gradient and the same approximate upslope area, the dramatic change in erodibility between the upslope cover cell and downslope bedrock cell causes the sediment transport capacity to drop significantly. This results in sediment deposition at the transition between the cells and could pose a nonquantifiable error in the results, since the deposition around the edge of the cover suppresses erosion at the edge of the cover. For the cover design at MDA G, however, the proposed placement of rock armor at the MDA G cover edge would, in fact, cause deposition of sediment due to frictional resistance and water loss between boulders. Because the rock armor is assigned a material type of “bedrock,” the model behavior in this situation is expected to be similar to the actual conditions that will occur at MDA G. Thus, the model limitation noted above probably does not strongly affect the predicted cover performance.

The other aspect of the second model limitation mentioned above is that the model does not allow particle tracking or sediment-packet tracking. This means the model cannot determine if contaminated particles will remain trapped in the rock armor or migrate to a downhill location. Application of the new version of SIBERIA, which replaces the sediment-transport-capacity equation with grain-size-explicit-erosion and sediment-transport equations, would enable particle tracking through the landscape and thus increase understanding of how contaminants will redistribute through the landscape over time. It would also solve the issue of sediment dropping out of suspension at boundaries between upslope cover and lower bedrock cells.

The third model limitation, the fact that SIBERIA uses a steady-state landscape-forming event to drive erosion, is likely to have a significant impact on the predicted cover performance. In nature, many storms of different durations and intensities occur throughout a single year; over a period of 1,000 years the climate may become significantly wetter or drier. Even if the mean annual precipitation remains the same, rain may come in fewer but larger events that would result in more erosion per event. In this analysis, the uncertainty introduced by climate variability over the 1,000-year simulation period is only partially addressed. An attempt was made to bracket the impact of climate on cover performance by using both a 2- and 5-year runoff event, with the 5-year event representing a wet and highly erosive condition over the 1,000 year time frame and the 2-year event representing a more moderate climate over that same period. The choice of the 2- and 5-year landscape-forming events was based on data from the Santa Rita Experimental Watershed in southern Arizona and is supported by analyses for climates as diverse as Australia and England (Willgoose and Riley, 1998; Willgoose et al., 1991b). However, the impacts of climate variability and extreme events on long-term cover performance should probably be considered in greater detail. The new version of SIBERIA allows consideration of an event-based climate series; the application of this version to MDA G may be appropriate.

The fourth limitation of the model used in this analysis is that it does not include the process of cliff retreat. While including a stochastic rockfall algorithm in SIBERIA would not be difficult, calibrating such a model would be difficult without better quantification of the actual processes. Data limitation issues related to modeling cliff retreat are discussed below.

4.2 Data Limitations

In some cases, uncertainties were introduced because of the lack of adequate data for model parameterization. Areas of particular concern include the characterization of the hydraulic and erosional properties of the proposed cover, the role of climate variability and extreme events in cover performance, and the impact of various ongoing geomorphic processes on cover performance at MDA G.

The material properties of the cover and bedrock are critical data for determining the predicted performance of the cover in relation to both erosion processes and infiltration (Newman and Schofield, 2005). A critical parameter for both processes is saturated hydraulic conductivity. The SIBERIA analysis was performed before the results of hydraulic conductivity measurements performed on samples of the proposed cover material were available. In the absence of a measured value, Newman and Schofield (2005) estimated a saturated hydraulic conductivity of 0.039 mm/hr (1.3×10^{-4} in./hr) for the proposed cover material. This value is almost 300 times less than the value of 11 mm/hr (4.3×10^{-1} in./hr) used in ISR9 to compute runoff for the 2- and 5-year events used in SIBERIA.

The hydraulic conductivity values used in the ISR9 modeling were taken from literature values (Nyhan et al., 1993; Charman and Murphy, 1992) for actual soils with the same texture (i.e., the same proportions of sand, silt and clay) as that for the proposed cover. The Newman and Schofield (2005) infiltration calculations used estimated hydraulic conductivities for a 6 percent bentonite/crushed tuff mixture. These estimates were based on a linear regression fit between the measured hydraulic conductivity of pure crushed tuff and the value reported in Nyhan et al. (1997) for a 10 percent bentonite/tuff mixture. Both sets of values have limitations. The values representing actual soils reflect the fact that these soils have developed, over a long period of time, a structure with a hierarchy of pores and water pathways. The samples of crushed tuff/bentonite used for the Newman and Schofield estimate were homogeneous with none of the characteristics that will develop as a result of biotic activities such as root growth or the burrowing activities of insects or animals. In all likelihood, the actual value for the saturated hydraulic conductivity of the cover lies somewhere between the Newman and Schofield value and the value used for the SIBERIA modeling.

The uncertainty in the saturated hydraulic conductivity of the cover material is a potentially significant source of error in the surface erosion modeling. If the actual hydraulic conductivity values are lower than the values adopted for the modeling, the SIBERIA runoff rates, and subsequent erosion, will be higher than predicted. As mentioned, samples of the proposed cover material have been submitted for analysis; the results of this testing should provide additional insight into this critical property of the cover.

Rainfall simulator experiments carried out on test plots at a hillslope scale (including flow in drainage lines) would help to fully characterize the infiltration, runoff, erosion, and transport characteristics of the cover over a wide range of event intensities. Such experiments would significantly reduce the main source of uncertainty in the performance assessment — the hydraulic properties of the cover. They would also provide data about the amount of runoff and erosion associated with the wide range of rainfall events expected under actual variable climate conditions, which is critical to running SIBERIA with a climate series rather than a steady-state landscape-forming event. The development of a set of potential future climate series to be used as input to the new version of SIBERIA would help to lower uncertainty related to climate and provide a better understanding of the uncertainty associated with the timing and size of extreme events.

Currently, it is not known which of the ongoing geomorphic processes at MDA G pose the greatest risk to the long-term integrity of the waste disposal units. Although rough estimates exist for fluvial and wind erosion, no data are available to assess rates of cliff retreat or sediment-diffusion processes. Studies to determine the rates of cliff retreat, fluvial erosion, wind erosion, soil development, and diffusion at Mesita del Buey would improve knowledge in this area. The development of cliff retreat rates requires the collection and processing of a statistically meaningful set of samples to determine the distribution of cliff face ages at Mesita del Buey using cosmogenic radionuclides. Similar techniques can be used to assess diffusion and soil development rates. Observations suggest that the cliff faces at Mesita del Buey are eroding through mass wasting (block falls), wind erosion, and fluvial erosion but no useful data exist about the erosion rates. A thorough investigation of cliff retreat rates and processes, including time for collecting and processing enough samples to be statistically meaningful, would help to lower uncertainty in this area.

4.3 Comparison of SIBERIA Results to Field-Collected Data

In spite of the sources of error and uncertainty in the parameterization of the model and the model structure, a comparison of annual sediment yield predicted by SIBERIA and that estimated from mean sediment concentrations collected at experimental plots and gauging stations on Mesita del Buey suggest that SIBERIA performed well. Table 5 shows sediment yield values derived from these sites range from 0.2 to 1 T/ha (0.089 to 0.45 t/ac) per landscape-forming event; this is close to the range of predicted values of 0.4 to 3.2 T/ha (0.16 to 1.3 t/ac) per event. The fact that the values derived for Mesita del Buey are lower than the SIBERIA values could be a result of the relatively short data-collection periods, which did not include large events. In contrast, the SIBERIA analysis was based on 16 years of data from the Santa Rita Experimental Watershed which included several large erosional events.

Table 5
Estimated Sediment Yield for Mesita del Buey Sites from Events with 2- and 5-Year Return Periods [a]

Observation Site	Drainage Area (m^2)	Return Period Runoff Volumes [b] (m^3)		Mean Sediment Concentration (mg/L)	Sediment Yield [c] (T/ha)	
		2-Year Event	5-Year Event		2-Year Event	5-Year Event
TA-51 Runoff Plots	3.3E+01	3.0E-01	5.0E-01	2.3E+03	1.9E-01	3.6E-01
Small catchments draining TA-54						
E221	4.1E+03	5.2E+01	8.3E+01	4.1E+03	5.2E-01	8.3E-01
E227	1.7E+04	2.1E+02	3.4E+02	5.0E+03	6.3E-01	1.0E+00
E247	5.0E+04	3.2E+02	5.4E+02	4.1E+03	2.7E-01	4.4E-01

[a] All values from actual site data, except as noted

[b] Calculated using the Chemicals, Runoff, and Erosion from Agricultural Management Systems (CREAMS) model

[c] Calculated by multiplying the mean concentration from observed events by the calculated runoff volume. These yields compare favorably with those predicted by SIBERIA for the annual landscape-forming event, as shown in Table 3.

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A Coupled Channel Network Growth and Hillslope Evolution Model
1. Theory

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This paper presents a model of the long-term evolution of catchments, the growth of their drainage networks, and the changes in elevations within both the channels and the hillslopes. Elevation changes are determined from continuity equations for flow and sediment transport, with sediment transport being related to discharge and slope. The central feature of the model is that it explicitly differentiates between the sediment transport behavior of the channels and the hillslopes on the basis of observed physics, and the channel network extension results solely from physically based flow interactions on the hillslopes. The difference in behavior of channels and hillslopes is one of the most important properties of a catchment. The flow and sediment transport continuity equations in the channel and the hillslope are coupled and account for the long-term interactions of the elevations in the hillslope and in the channels. Sediment transport can be due to fluvial processes, creep, and rockslides. Tectonic uplift may increase overall catchment elevations. The dynamics of channel head advance, and thus network growth, are modeled using a physically based mechanism for channel initiation and growth where a channel head advances when a channel initiation function, nonlinearly dependent on discharge and slope, exceeds a threshold. This threshold controls the drainage density of the basin. A computer implementation of the model is introduced, some simple simulations presented, and the numerics of the solution technique described.

INTRODUCTION

The flood response of a catchment to rainfall is dependent on the geomorphological form of the catchment. But the catchment runoff not only responds to catchment form, it also shapes it through the erosional processes that act during runoff events. Over geologic time the catchment form, shaped by the range of erosion events, reflects the runoff processes that occur within it. The channel network form and extent reflect the characteristics of both the hillslope and channel processes. Hydrologists have long parameterized the influence of the geomorphology on flood response [e.g., *Rodriguez-Iturbe and Valdes*, 1979]. Many geomorphologists have statistically or probabilistically described the landscape, ignoring the historic processes that created it [*Strahler*, 1964; *Shreve*, 1966]. There have been some notable exceptions [*Gilbert*, 1909; *Horton*, 1945]. The difficulty of the problem is such that the number of researchers that have attempted to unify the geomorphology and the hydrology is small [*Kirkby*, 1971; *Huggett*, 1988; *Dunne*, 1989], even though the importance of both specializations has long been recognized by geomorphologists [*Davis*, 1909, p. 268]:

> to look upon the landscape . . . without any recognition of the labor expended in producing it, or of the extraordinary adjustments of streams to structures and of waste to weather, is like visiting Rome in the ignorant belief that the Romans of today have no ancestors.

The main stumbling blocks to the fulfillment of the promise of this scientific paradigm have been the range of temporal scales (geologic versus flood event time scales) and spatial scales (catchment and channel length scales) that are important in the problem, the heterogeneity in both space and time of the dominant processes, and the problem of the unification and observation of the processes acting at these disparate scales. Physically based computer models of catchment development [e.g., *Ahnert*, 1976; *Kirkby*, 1987] are important tools in the understanding of the interactions between hydrologic process and response, primarily because of their ability to explore the sensitivity of the system to changes in the physical conditions, without many of the difficulties implicit in field studies.

The goal here is to develop a quantitative understanding of how channel networks and hillslopes evolve with time using a computer model of landscape evolution. Catchment form and hydrologic response are seen in the context of the complete history of erosional development of the catchment.

A large-scale model of catchment evolution involving channel network growth and elevation evolution has been developed. It brings together a model of erosion processes that has been theoretically and experimentally verified at small scales, with a physically based conceptualization of the channel growth process. It will be shown that neither the properties of the channel network nor the properties of the hillslopes can be viewed in isolation but must be viewed as components of a complicated large-scale nonlinear system: the drainage basin. The basic tenet of this work is that it is necessary to understand the physics of the catchment processes to be able to fully understand the catchment form and that it is necessary to ". . . identify linked process equations and so define geomorphological systems in such a way that an analytical, predictive approach can be used. . ." [*Huggett*, 1988, p. 48]. It is not claimed, nor is it intended, that the proposed model account for all the processes occurring in the catchment. Rather, a general model framework is presented which is both physically realistic and incorporates the dominant physical processes yet provides a useful tool by which the important interactions within the catchment can be examined.

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This paper will concentrate on the development of the model, justification of the governing equations, and illustrating the operation of the model with a sample simulated catchment. An accompanying paper [*Willgoose et al.*, this issue (*a*)] will present a nondimensionalization of this model, identify governing nondimensional numbers, and study the properties of simulated catchments.

THE PHYSICAL MODEL

The governing equations of this work are used to simulate the growth and evolution of the channel networks and the contributing hillslopes. Two variables are solved for in the plane: the elevation and an indicator variable that identifies where channels exist in space. A drainage direction is assigned to each node in the discretized space on the basis of the direction of steepest slope from node to node. These drainage directions are used to determine the area contributing to (i.e., flowing through) each node. From these areas, and thus discharge, and the steepest slopes at the nodes, continuity equations for flow and sediment transport are written. These areas and steepest slopes are also used to evaluate the channel initiation function (which may, for example, be overland flow velocity) which is then used in the channelization function to determine regions of active channel network extension. Details of the numerical implementation of the solution technique for these equations can be found in Appendix A.

The governing differential equations for elevation and channel indicator functions are

$$\frac{\partial z}{\partial t} = c_0(x, y) + \frac{1}{\rho_s(1-n)}\left(\frac{\partial q_{sx}}{\partial x} + \frac{\partial q_{sy}}{\partial y}\right) + D_z\left(\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2}\right) \qquad (1a)$$

$$\frac{\partial Y}{\partial t} = d_t\left[0.0025\,\frac{a}{a_t} + \left(-0.1Y + \frac{Y^2}{1+9Y^2}\right)\right] \qquad (1b)$$

and the constitutive equations are

$$a = \beta_5 q^{m_5} S^{n_5} \qquad (2a)$$

$$q_s = f(Y) q^{m_1} S^{n_1} \qquad (2b)$$

$$f(Y) = \beta_1 O_t \qquad Y = 0 \text{ (hillslope)}$$

$$f(Y) = \beta_1 \qquad Y = 1 \text{ (channel)} \qquad (2c)$$

and for channels,

$$Q_c = \beta_3 A^{m_3} \qquad (2d)$$

$$q = Q_c/w \qquad (2e)$$

$$w = \beta_4 Q_c^{m_4} \qquad (2f)$$

where the equations are solved on some spatial domain Ω with boundary conditions

$$\partial z/\partial p = 0 \qquad (2g)$$

on the boundary of Ω.

The variables in (1) and (2) are

- t time;
- x, y horizontal directions;
- z elevation;
- Y indicator variable for channelization ($Y = 0$, hillslope node; $Y = 1$, channel node);
- a channel initiation function;
- q_{sx}, q_{sy} sediment flux per unit width in the x and y directions;
- Q_c discharge, in the channel;
- q discharge per unit width;
- w width of channels, variable with discharge;
- β_1 rate constant for sediment transport;
- β_4, m_4 constants relating channel width to discharge [*Henderson*, 1966];
- O_t rate constant relating the sediment transport flux in the channel to that on the hillslope;
- A contributing area;
- $c_0(x, y)$ rate of tectonic uplift;
- ρ_s density of eroded material;
- n porosity of material before erosion and after deposition;
- S slope in steepest downhill direction;
- D_z diffusivity constant in certain transport processes;
- m_1, n_1 powers of q and S in the sediment transport equation;
- d_t rate constant for channel growth;
- a_t channel initiation threshold;
- β_5 multiplicative constant on channel initiation function;
- m_5, n_5 powers on q and S, respectively, in the channel initiation function;
- β_3, m_3 multiplicative constant and power, respectively, relating the characteristic discharge to the contributing area;
- p direction perpendicular to the boundary of Ω.

The governing equations are nonlinear partial differential equations of two states; these two states are elevation z and an indicator variable for channelization, Y. The most important qualitative characteristic of a catchment, the branched network of channels that form the backbone of the drainage system of a basin, is thus explicitly modeled. There are five important variables distributed in space that are derived from these two states. They are the steepest downhill slope, the contributing area, the discharge, the distribution of channel initiation function, and sediment transport in space. The channel initiation function and sediment transport feed back into, as inputs, the two state equations for elevation and channelization. Thus there is a nonlinear interaction between the elevation and channelization and the channel initiation function and sediment transport in space. This interaction is the central feature of the model that drives the network growth.

The differential equation for elevation ($1a$) is a continuity equation in space for sediment transport. The first term in ($1a$) is the rate of tectonic uplift (positive upward). This term may be quite general with variability both in space and time. For instance, a spatially uniform uplift event, such as that resulting from an earthquake [*Morisawa*, 1964] can be described by

$$c_0(\mathbf{x}, t) = \bar{c}_0\delta(t - t_0) \qquad (3)$$

where $\bar{c}_0$ is the uplift resulting from the tectonic event, t_0 is the time at which the event occurred, and $\delta(t)$ is the dirac delta function.

Likewise, it could be an uplift that occurs continuously with time but is variable in space, such as that resulting from continuous bulging of the continental crest [e.g., *Havlena and Gross*, 1988]

$$c_0(\mathbf{x}, t) = \bar{c}_0(\mathbf{x}) \tag{4}$$

where $\bar{c}_0(\mathbf{x})$ is the spatially variable uplift rate.

Elevations are defined relative to the elevation datum at the outlet of the catchment (e.g., the elevation of the outlet notch). Thus the tectonic uplift rate c_0 is defined as the uplift relative to the elevation of the outlet. As an example, consider a small catchment with an outlet on the floodplain of a very large river. The outlet elevation of the small catchment is dominated by elevation changes in the floodplain in the large river; that is, from the viewpoint of the small catchment the elevation at the outlet is externally imposed and variable in time. In this case, c_0 for the small catchment is the tectonic uplift relative to the floodplain of the large river (i.e., the catchment outlet elevation) not relative to sea level.

Two physically based transport processes are modeled in (1*a*). It is convenient to differentiate between fluvial transport processes that are dependent on discharge and slope and diffusive transport processes that are dependent on slope alone. The most important process over most of the catchment is the continuity term for fluvial sediment transport, the second term in (1*a*). This term encompasses rivers, gullies, rills, and sheet overland flow; only the constants β_1, n_1, m_1, and O_t change. The sediment transport is dependent on discharge and the slope in the steepest downhill direction. Moreover, from (2*c*), the rate of the fluvial transport is a function of whether that point in space is channelized or not. In the model, sediment transport on the hillslopes can be less than that in the channel. This effect is parameterized by the O_t term of (2*c*), where O_t is less than 1. The formulation of this fluvial transport term of (2*b*) is justified in Appendix B. The other important transport term in the elevation evolution equation is a diffusive transport term, the third term in (1*a*). The long-term average of a number of hillslope transport processes can be modeled by use of a spatially constant Fickian diffusion term; the processes include hillslope soil creep, rain splash, and rock slide [*Culling*, 1963; *Dunne*, 1980; *Andrews and Bucknam*, 1987]. Other mass transport mechanisms could also be modeled [*Ahnert*, 1976, 1987] but are not studied here because they require modeling of the regolith depth and thus of the complex chemical and weathering processes that create soil. This was considered outside the scope of the study.

The channelization equation (1*b*) is the equation governing the development of channels and the extension of the networks. Equation (1*b*) is based on one developed by *Meinhardt* [1982] to differentiate the leaf vein cells in a leaf for a biological model of leaf reticulation. It is a convenient equation, based on the phenomenology of channel head extension rather than fundamentally derived from the controlling transport physics at the channel head, which are very complicated and spatially variable. The form of equation (1*b*) causes Y to have two stable attractors, 0 and 1. Typically, the modeling process starts with $Y = 0$ everywhere, representing a catchment with no channels, only hillslopes. If desired, a preexisting channel network can be applied (i.e., $Y = 1$ along the channels). When the value of the channel initiation function a exceeds the channel initiation threshold a_t, the value of $Y = 0$ becomes unstable, and Y goes into transition where it is increasing to $Y = 1$, that is, that spot in the catchment goes into transition from hillslope to channel. When Y reaches a value of 1 it remains there, since the value of $Y = 1$ is stable irrespective of the value of the channel initiation function; channel formation is modeled as a one-way process from hillslope to channel. The role of the channel initiation function is to trigger the channelization process when the threshold is exceeded. The rate at which a point is channelized once the channel initiation threshold is exceeded is governed by the parameter d_t; a large value of d_t results in the channel forming quickly. Equation (1*b*) is a convenient but not exclusive way of parameterizing the abrupt switch from hillslopes to channels in terms of the channel initiation function. Any formulation leading to two stable binary solutions ($Y = 0$; $Y = 1$) and which incorporates the threshold behavior should work similarly. This formulation is believed to adequately simulate the mean position of the channel head, averaging out any stochastic advance and retreat of the channel head that may occur over short time scales.

Four properties of the channel initiation function were found to be necessary before network development would occur. Without these properties the channels, represented by the 0-1 state, either did not extend, did not form binary branched networks, or simply formed disconnected "blobs." In the discussion below the channel initiation function may be considered to be either overland flow velocity or groundwater seepage velocity, both positively correlated with discharge per unit width and slope. This assertion will be justified later in this paper.

The first of these four networking conditions was that regions of elevated channel initiation function must be formed on the hillslopes around the advancing channel head. These regions resulted from the localized high slopes and the convergence of the flow paths around the channel head (Figure 1*a*). These in turn resulted from preferential erosion in the channels. Simply put, channels must erode faster than hillslopes, and this condition is required for a channel head to advance.

The second condition for network formation was that the region of elevated channel initiation function around the channel head must move upstream with the channel head as it advances. The capturing of the flow around the channel head (Figure 1*b*) ensures this. In this way, discharges per unit width on the hillslope downstream of the channel head are diminished, relative to those in front of the channel head, reducing the channel initiation function. This condition allows the channel to grow linearly rather than in a blob-like form.

The third conditions was that advancing channel heads should "repel" each other and that growing channel heads should be repelled by a watershed or catchment boundary. This condition ensures that the resulting network is space filling, a commonly assumed, if not totally verified, feature of channel networks [*Abrahams*, 1984; *Tarboton et al.*, 1988, 1989]. The repulsion of advancing channel heads results from an interaction between the drainage patterns and erosion (Figure 1*c*). Everything else being equal, the region between the growing channel heads (region A) which has lower discharges per unit width will have a slower rate of change of elevation than the region outside the advancing

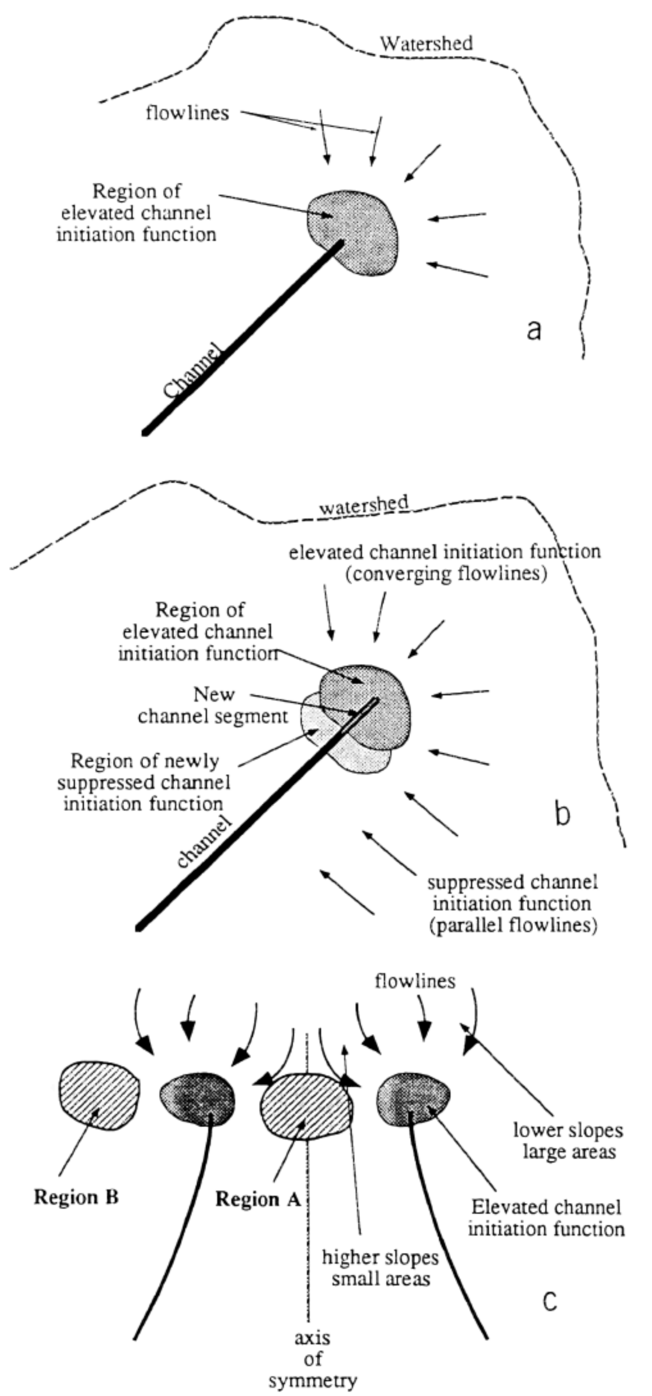

Fig. 1. (*a*) Localization of channel initiation function around channel head. (*b*) Translation of channel initiation function region with channel head activator. (*c*) "Repulsion" of channel heads.

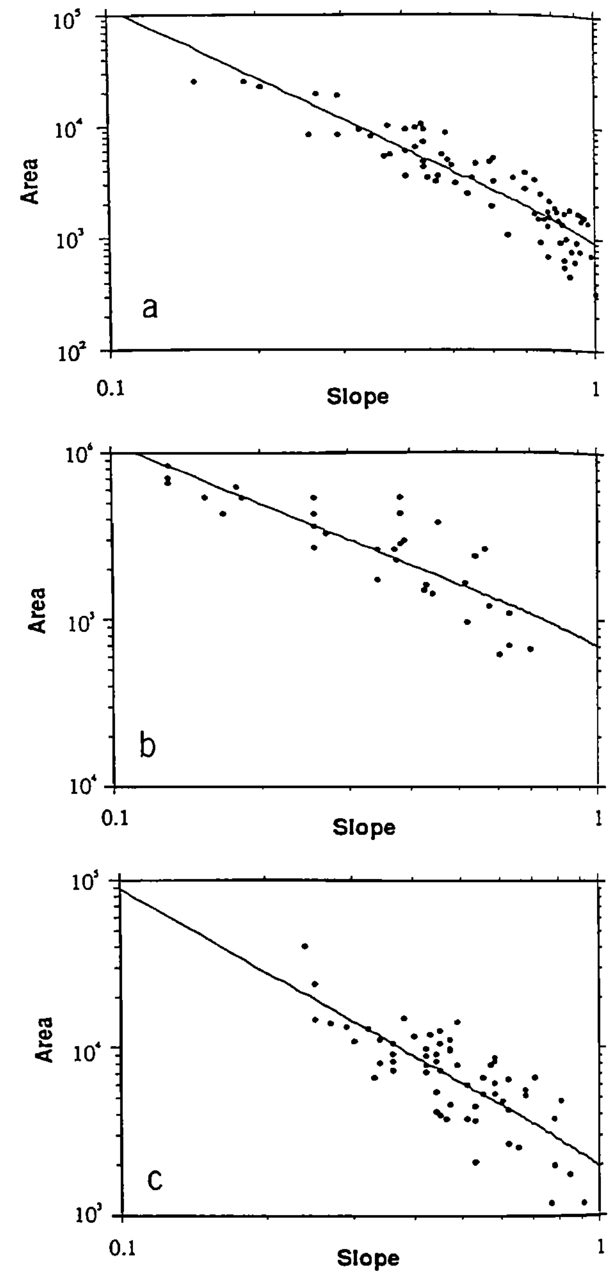

Fig. 2. Source area plotted against valley slope, or slope at channel heads, for (*a*) Coos Bay, Oregon, (*b*) Sierra Nevada, California, and (*c*) Marin County, California. The line is the channel initiation mechanism (equation (11)). (The data were digitized from graphs courtesy of W. Dietrich.)

channel heads which has larger discharges per unit width (region B). Hence, although slopes are highest between the advancing channel heads (region A), for typical channel initiation functions (see below) the highest channel initiation function is typically in region B so that advancing channel heads repel each other. Repulsion from the boundaries follows similarly, with the boundary being a watershed (i.e., zero slope perpendicular to the boundary, equation (2*g*)), so that an image channel may be postulated.

The fourth condition is that the process that produced the elevated channel initiation function around the channel head and lower values elsewhere must be localized around the channel head. The limited length scale of this process ensures that new channel heads can be created laterally off existing channels, away from existing channel heads.

PHYSICAL JUSTIFICATION OF THE CHANNEL INITIATION FUNCTION

The generic equation used to represent the channel initiation function in (2*a*) is

$$a = \beta_5 q^{m_5} S^{n_5} \tag{5}$$

TABLE 1. Sample Channel Initiation Functions

Mechanism	Governing Equation*	m_5/n_5
1. overland flow velocity (per unit width)	$v = \left[\frac{1}{n^{3/5}}\right] q^{0.4} S^{0.3}$	1.33
2. overland flow† velocity (triangular channel)	$v = \left[\frac{a_1}{4(1+a_1^2)n^3}\right]^{0.25} Q^{0.25} S^{0.3}$	0.67
3. overland flow shear stress (/unit width)	$\tau = [\gamma n^{3/5}]\, q^{0.6} S^{0.7}$	0.86
4. overland flow shear stress (triangular channel)	$\tau = \left[\frac{n a_1 \gamma^{8/3}}{4(1+a_1^2)^{1/2}}\right]^{3/8} Q^{0.375} S^{0.813}$	0.46
5. groundwater stream sapping	$\frac{dH}{dx} = \left[\frac{1}{Kh}\right] q$	∞

*For notation, see the text.
†a_1 is the sideslope of the triangular channel.

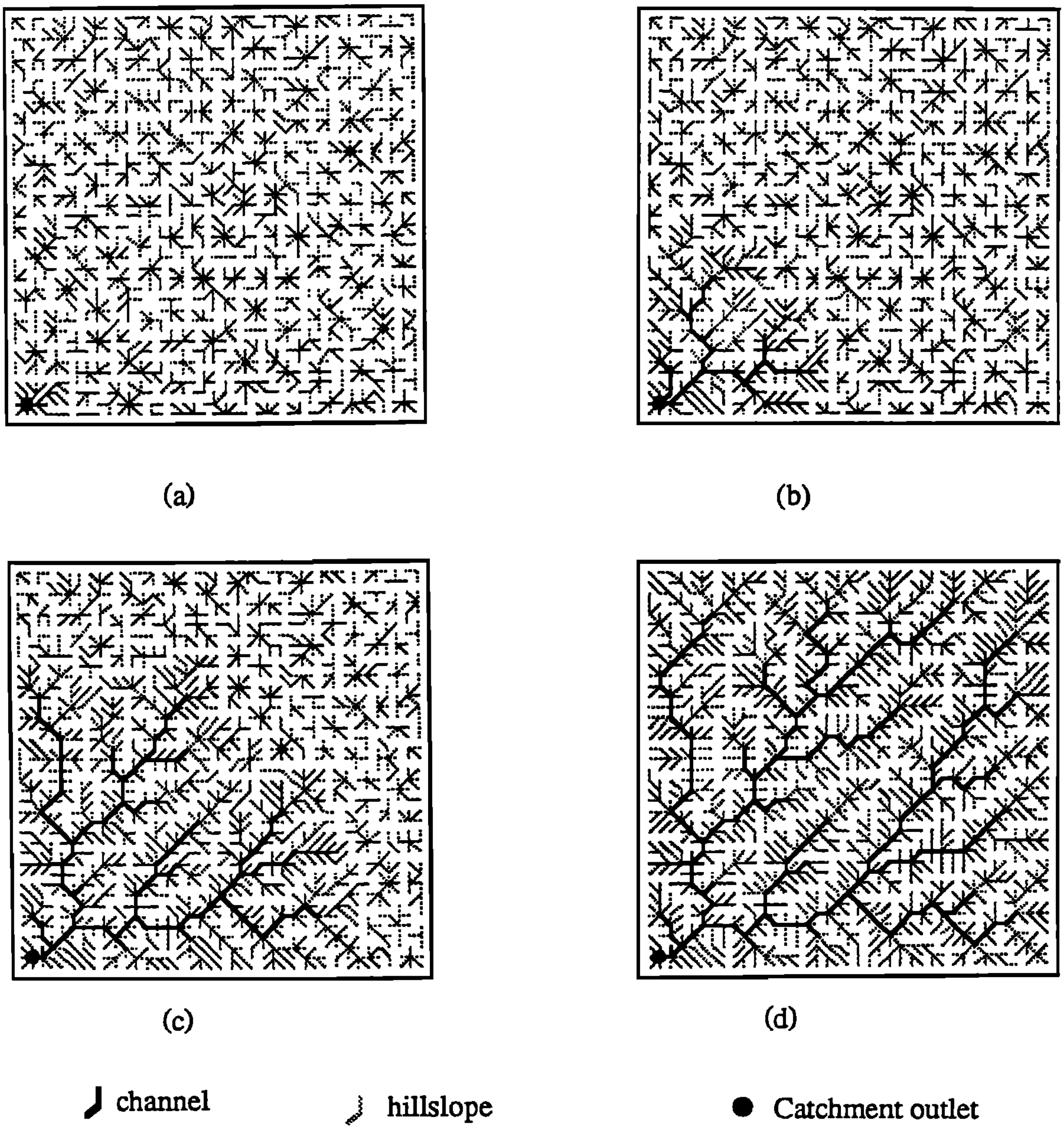

Fig. 3. Simulated channel networks and hillslope flow directions with time.

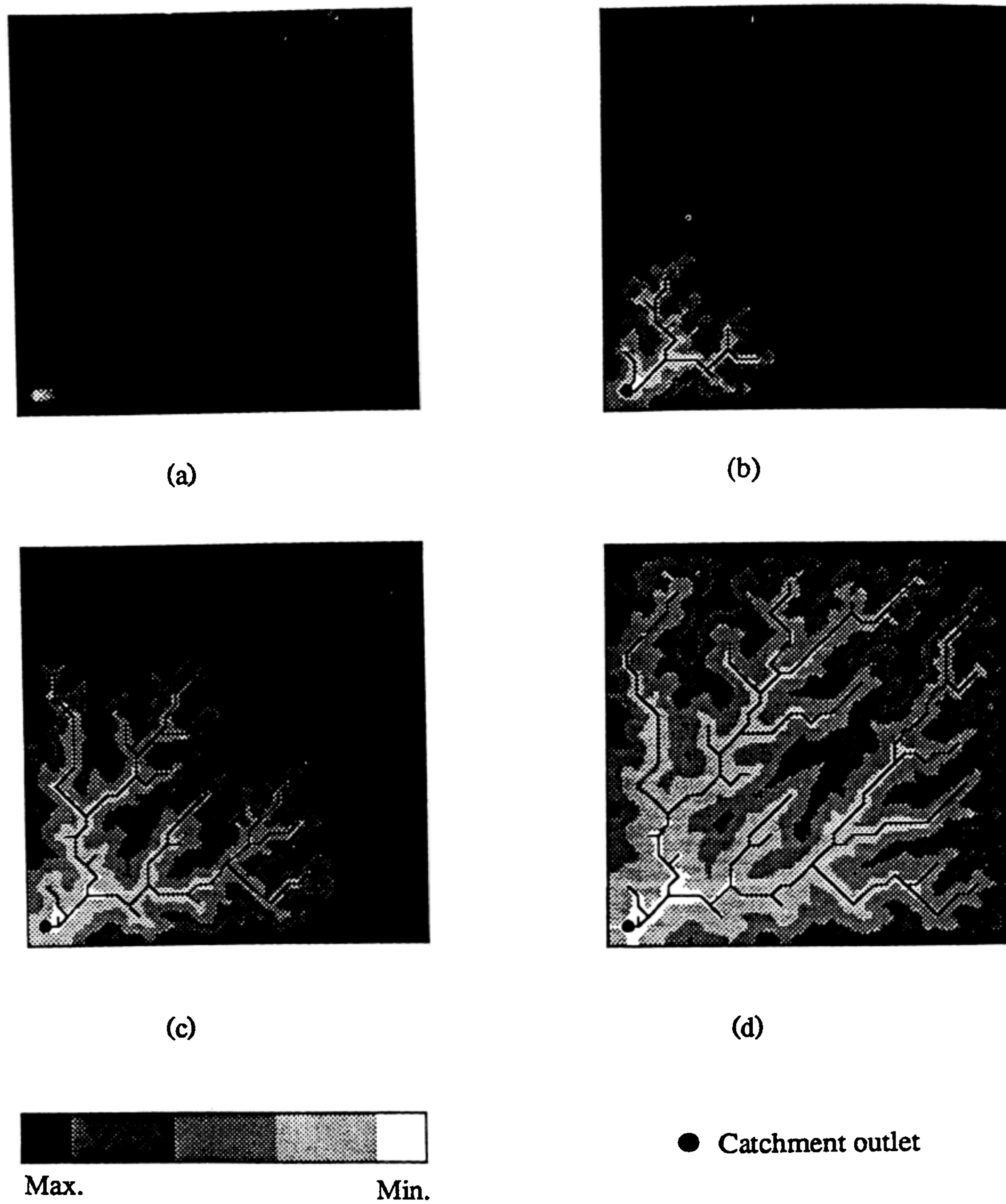

Fig. 4. Simulated channel network and elevation with time.

The purpose of the channel initiation function in the channelization indicator equation ($1b$) is to trigger the transition from hillslope to channel when the channel initiation threshold at that point is exceeded. The channel initiation function reflects both large-scale and small-scale channel extension processes. The large-scale processes are the hillslope scale erosion processes such as the discharge and slope at the channel head. The small-scale processes, smaller than the spatial resolution of the model, are those related to the geometry of the channel head. These geometry effects are explicitly incorporated into the single coefficient β_5, as outlined below.

A number of different physical processes that can trigger channel head advance will be examined below. One of the most common criteria for the design of erosion works is overland flow velocity. If the wide channel assumption is made so that hydraulic radius R is equal to flow depth y, and the wetted perimeter P is equal to the channel width w, then Manning's equation can be written as

$$v = \frac{y^{2/3} S^{1/2}}{n} \tag{6}$$

and the discharge Q for a wide channel of width w can be written as

$$Q = \frac{y^{5/3}S^{1/2}w}{n} \tag{7}$$

Combining these equations yields

$$v = \beta_5 q^{0.4} S^{0.3} \tag{8}$$

where $\beta_5 = [n^{3/5}]^{-1}$.

The width w may be the width of the upstream face of the channel head so that Q/w is the discharge per unit width on the hillslope directly upstream of the channel head. Alternatively, if the hillslope hollow upstream of the channel head has concentrated the flow into a rill, the appropriate width may be the rill width. The model does not determine this width; it must be determined a priori in combination with the other unknowns. This may be quite difficult in the field.

Similar expressions for velocity in a triangular channel, and other channel geometries, may be derived, and the exponents are different [*Willgoose et al.*, 1989]. Bottom shear stress can also be used as the threshold criteria. Results are summarized in Table 1.

Dunne [1969] proposed a conceptualization of a groundwater process where groundwater stream tubes converged onto a seepage face at a channel head, causing channel side wall erosion. This conceptualization of gully advance is supported by other fieldwork [*Priest et al.*, 1975]. *Dunne* [1989] suggested a threshold on the hydraulic gradient above which erosion at the seepage force will occur by piping.

$$\left(\frac{dH}{dx}\right)_{\text{threshold}} = (\gamma - 1)(1 - n) \tag{9}$$

where dH/dx is groundwater hydraulic gradient at the seepage face, γ is specific gravity of the sediment material, and n is porosity.

Using Darcy's law for groundwater flow at the seepage face, this can be reformulated as

$$\frac{dH}{dx} = \beta_5 q \tag{10}$$

where

$\beta_5 = 1/Kh$;
K hydraulic conductivity;
h height of the seepage face;
q discharge/unit width.

Thus the general formulation of (5) is equally applicable to channel formation due to surface-dominated or groundwater-dominated hydrologic processes.

There exists some experimental evidence to support a threshold-based channel initiation mechanism, dependent on discharge and slope, as proposed above. The idea of channel extension occurring when some threshold is exceeded is not new. For instance, *Dietrich et al.* [1986] and *Montgomery and Dietrich* [1988] proposed a channel head advance mechanism similar in concept to that here. Their mechanism, argued on the basis of slope stability and landsliding, initiated channel growth when a function dependent on the hillslope stability exceeded a threshold.

Furthermore, *Patton and Schumm* [1975] and *Begin and Schumm* [1979] examined the slopes and area contributing to a point in the hillslopes and channels. Patton and Schumm found that the data for channels and hillslopes were significantly different at the 1% level, suggesting that a threshold separates the channel and the hillslope regimes. *Begin and Schumm* [1979, p. 349] found for a given contributing area that "above a certain threshold slope the probability of valley incision is largely increased."

The notion of a threshold on channel initiation does not necessarily contradict the channel stability concept of *Smith and Bretherton* [1972], where channels form when a small surface nick grows unstably. Recently, *Loewenherz* [1990]

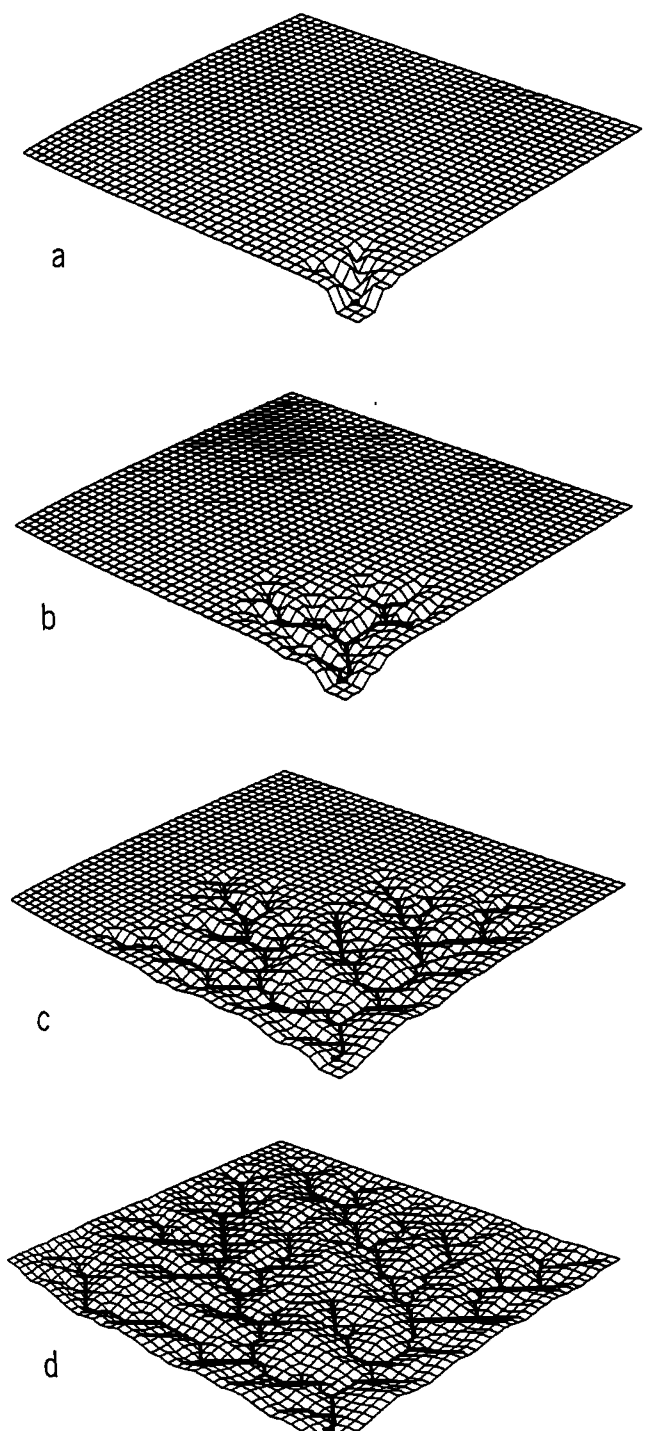

Fig. 5. Isometric view of channel network and hillslope with time: (*a*) $t = 500$, (*b*) $t = 2000$, (*c*) $t = 6000$, (*d*) $t = 13{,}000$. Times are nondimensional.

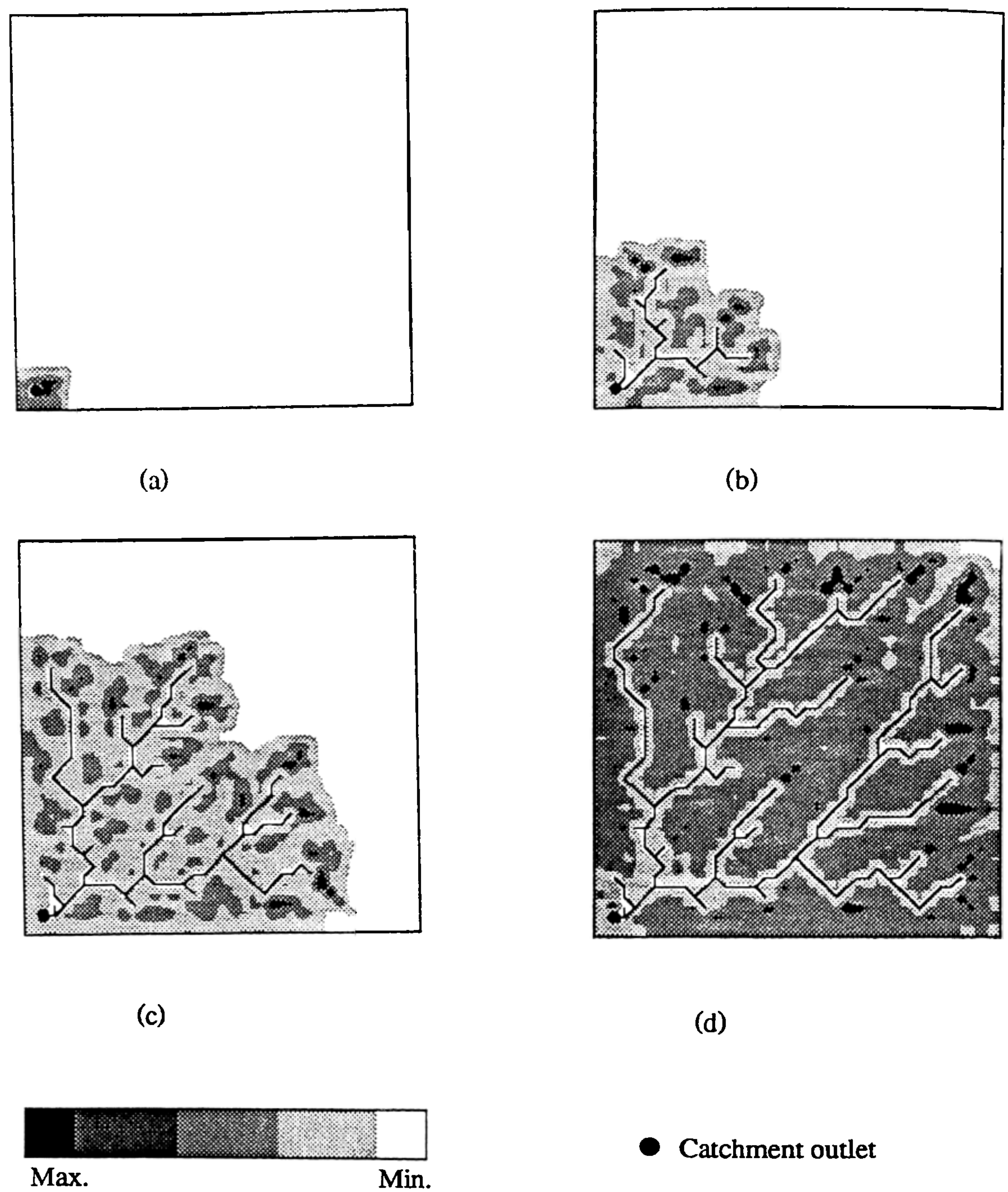

Fig. 6. Simulated channel network and overland flow velocities with time.

concluded that the Smith and Bretherton analysis will lead to a system of rills spaced at an infinitesimal distance apart. This contradicts the observations that incisions and streams are separated by finite distances. *Loewenherz* [1990] resolved the stability conditions by introducing microscale effects that damp the growth of small wavelengths, effectively introducing a scale into the problem. This is compatible with a threshold concept. Furthermore, it is commonly observed that gully extension occurs after land clearing (increasing runoff or decreasing erosional resistance), a phenomenon that can be explained by a threshold concept based on runoff and erodability and not necessarily with stability analysis. We suggest that the Smith-Bretherton criterion determines the most upstream point to which the channel head may advance but that otherwise the channel head position is determined by the threshold.

The proposed relationship between discharge and slope in the channel initiation function is also supported by experimental evidence. A channel head will stop advancing when the channel initiation function in the hillslope just upstream of the channel head falls below the threshold. Thus at the channel head the channel initiation function will be equal to or less than the threshold, so that at the channel head,

$$A^{m_t m_s/n_s} S \le \left(\frac{a_t}{\beta_5 \beta_3^{m_s}} \right)^{1/n_s} \tag{11}$$

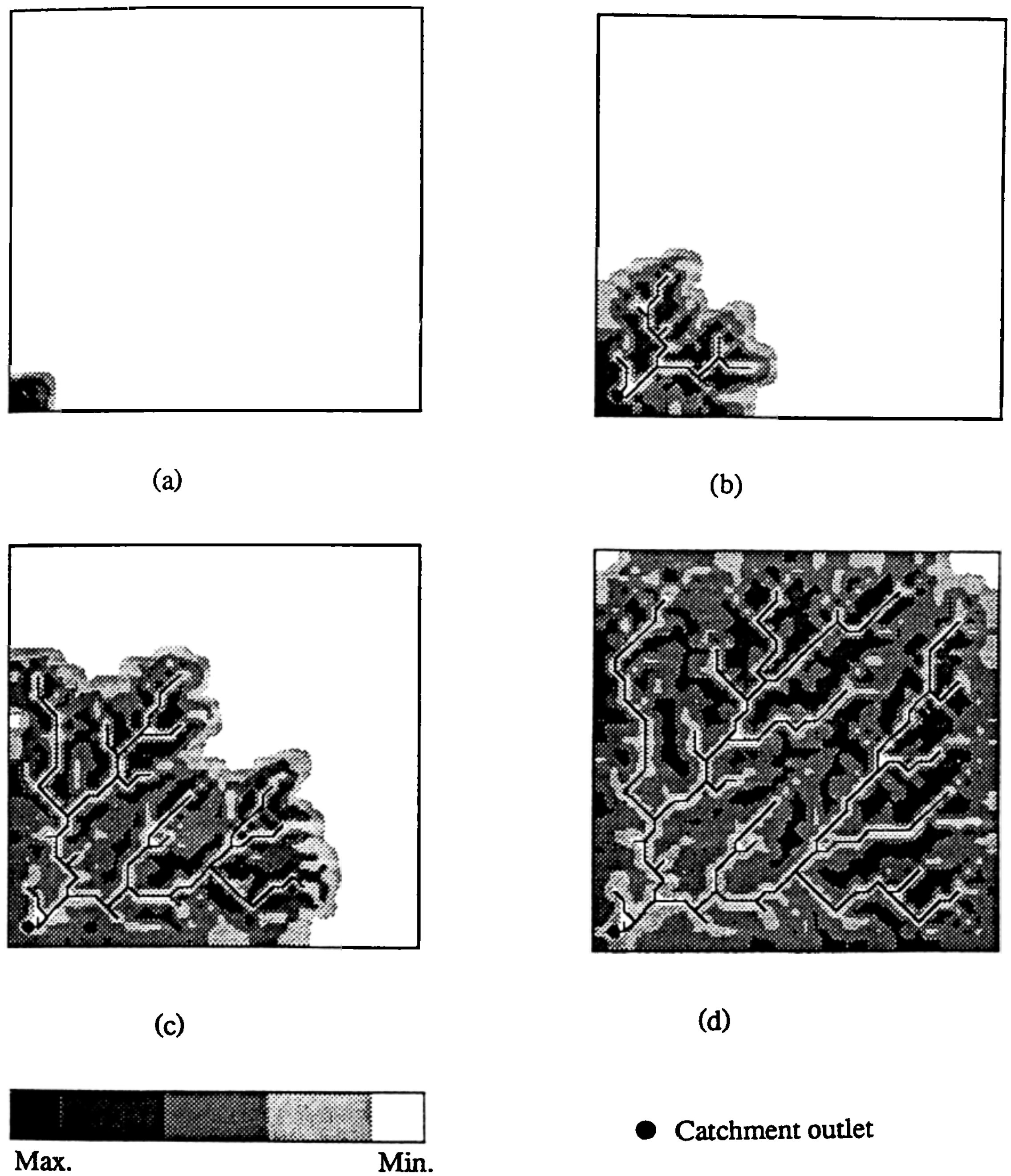

Fig. 7. Simulated channel network and hillslope slopes with time.

Montgomery and Dietrich [1988, 1989] collected data for gully heads in three regions of California and Oregon. They measured the area contributing to the channel head and the slope of the valley immediately upstream of the channel head. No one gully head advance mechanism was dominant over all the regions, and gully advance was attributed to a variety of different mechanisms including localized landsliding, groundwater stream sapping, and overland flow. No attempt was made to classify the data on the dominant mechanism at the gully head. The equality in (11) was fitted to these data, and the results are presented in Figure 2. The fitted values of $m_3 m_5 / n_5$ are consistent with proposed mechanisms for channel head advance [*Willgoose et al.*, 1989], and the fit to the data of (11) is quite satisfactory. Moreover, the fitted values of the right-hand side constant in (11) are consistent with the regional trends in mean annual rainfall and thus the runoff β_3. It must be stated, however, that in many cases the observed channel head processes were different than those discussed here. This suggests that the other channel initiation processes noted above may also be formulated by a threshold criteria of the form of (11). The small amount of scatter in the data of Montgomery and Dietrich either suggests that the right-hand side of (11) is constant across processes or that there is only one dominant channel extension process in the field, not the several as suggested. This issue will be further discussed in an accompanying paper [*Willgoose et al.*, this issue (*b*)].

Note from (11) that if the ratio $m_3 m_5 / n_5$ is the same (with everything else the same) for two basins, then the area-slope relationship of the two systems is similar (has the same slope

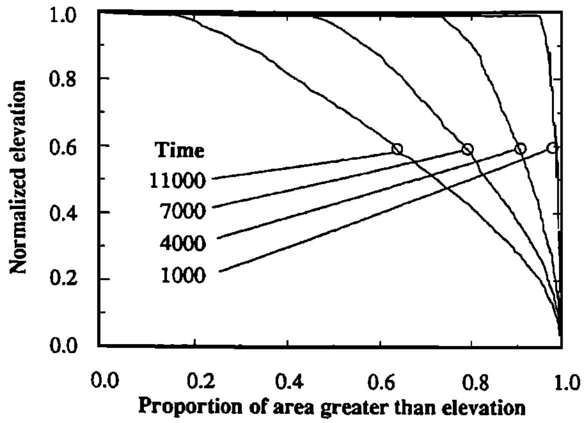

Fig. 8. Hypsometric curve with time for simulated catchment.

in a log-log plot). The drainage density, though, depends on the absolute values of m_5 and n_5, since it depends on the threshold relationship on the right-hand side of (11). For two networks to be exactly the same the spatial distribution of locations where the threshold is exceeded throughout the catchment's history must be the same.

SAMPLE RESULTS

This section presents some sample results of the application of the computer model documented in Appendix A, based on the theory described above. This section is not intended to be a comprehensive consideration of all aspects of the model and the simulations; that will be the subject of an accompanying paper [*Willgoose et al.*, this issue (*a*)]. Rather, following a single simulation through time, typical characteristics of the generated catchments will be described.

The results of the simulation presented here are typical of the large number of simulations that have been performed. Figures 3–6 show the spatial distribution of various catchment properties for selected times. Figure 3 shows the simulated channel network. The initial surface is a flat plane with a very minor random elevation perturbation (0.25% of the initial notch height). Thus initially much of the hillslope self-drains to pits, where the flow, but not sediment, is assumed to infiltrate to groundwater at the lowest point. Figure 3 demonstrates the headward growth of the channels from the initial seed on the bottom left-hand corner of the grid. The directions of overland flow are also shown, and they demonstrate the convergence of flow directions on the hillslopes around the channel heads illustrated in Figure 1. As the network extends, the lower valleys surrounding the channels capture the self-draining portions of the hillslope. The network resulting from lateral branching is qualitatively similar to branching in the stream-sapping hypothesis of *Dunne* [1969], and the pattern of future channel branching is likewise mirrored by the current pattern of hillslope flow directions.

As the network grows, it erodes valleys along the channels because of the preferential erosion in the channels compared with the hillslopes. Figure 4, contours of elevation, clearly shows this. These valleys result in the preferred hillslope flow directions being toward the channel network so that there are high velocities around the channel head. An alternative view of this valley formation with time is given by Figure 5, which is an isometric view of elevations within the catchments.

The network growth process is dominated by the spatial distribution of the channel initiation function on the hillslopes. The channel initiation function in this example is overland flow velocity, as described by (8). Figure 6 shows the spatial distribution of velocity on the hillslopes. This figure demonstrates that the regions of high velocity are concentrated around the channel heads and move with the advancing channel heads. In particular, Figure 6*c* shows that the highest peaks of the channel initiation function are at the growing channel heads and that other peaks within in the interior parts of the network are considerably lower. This is consistent with the first two of the networking conditions discussed at the start of the paper. At later times the channels, and the regions of high velocity, are relatively uniformly spaced, which is consistent with the idea of space-filling networks discussed by *Abrahams* [1984] and related to the third networking condition discussed in the physical model section.

Contours of hillslope slope are provided in Figure 7. The most interesting characteristic of this plot is that the steepest slopes do not occur around the advancing channel head. The steepest slopes are on the laterally draining valley sides; the slopes draining down the valley to the channel heads are quite low by comparison. However, the channel initiation function is high at the channel heads, even though the

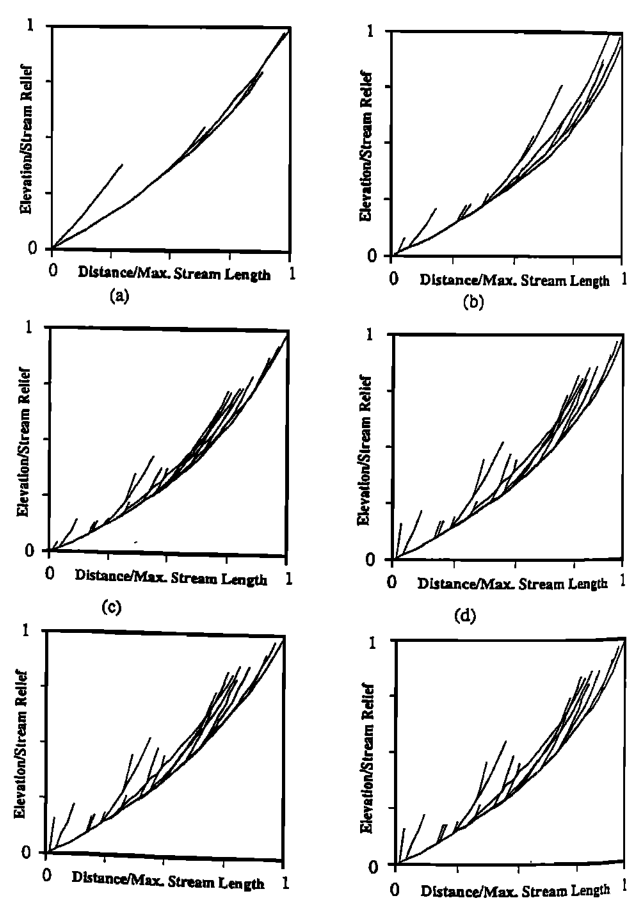

Fig. 9. Longitudinal elevation of all channels with time: (*a*) t = 2000, (*b*) t = 6000, (*c*) t = 13,000, (*d*) t = 25,000, (*e*) t = 35,000, and (*f*) t = 60,000.

corresponding slopes are low, because of the compensating effect of large contributing areas. In Figure 3 the hillslopes contributing to the channel head are long, relative to those draining laterally to the channel, so that the contributing area per unit width at the channel heads is larger than that draining laterally. Thus in the channel initiation function of (2*a*) the increased area contribution overwhelms the decreased slope contribution. Figure 7 shows that as the catchment evolves with time the highest slopes are in the upstream reaches of the catchment, with lower slopes downstream. These lower slopes result from the hillslope erosion that has taken place in the older, root sections of the catchment of the bottom left-hand corner (see Figure 4).

Figure 8 gives the hypsometric curves for the catchment. The shape and trends of this curve with time are consistent with the interpretation of field data proposed by *Schumm* [1956]. Figure 9 shows the elevations of all the streams, normalized against both distance and elevation, for a variety of times both before and after the network has stopped growing. The curvature of the profile is reasonable and consistent with observed data. Table 2 lists some sample statistics for the catchment for the time at which the network stops growing.

In conclusion, a sample simulated catchment has been shown, and the characteristics of a typical simulation have been discussed. The networks that are generated are qualitatively realistic both in planar and elevation profile properties. The drainage directions on the hillslopes are shown to be consistent with channel network growth hypotheses of previous researchers and consistent with the stream-sapping, headward growth mechanism.

CONCLUSIONS

This work developed a physically based model of channel network growth and hillslope evolution. The model simulates the long-term changes in elevation within the catchment and the consequent effect on channel network growth and hillslope form. The changes in elevation are modeled by continuity equations for flow and sediment transport; elevation changes result from local imbalances in the sediment transport. A channelization mechanism, called the channel initiation function, which is nonlinearly dependent on discharge and local slope is used. It is the spatial distribution of the channel initiation function around the channel head that governs where and whether the channel head advances; a channel extends if the channel initiation function exceeds a threshold. A central component of the model is that erosion in the channels takes place at a faster rate than in the hillslope. This preferential erosion in the channels results in convergence of the flow on the hillslopes toward the channels. It is this convergence of flow that triggers channel head advance. Thus the interaction between the hillslopes and the channels over long time scales is central to the final form of the channel network and the hillslopes.

A sample simulated catchment was examined. This simulation demonstrated the process by which catchments grow and develop their observed form. It was also demonstrated that the physics of the evolution of the catchment and network growth are consistent with observed characteristics of field catchments.

TABLE 2. Sample Statistics of Simulated Basin

Statistic	Value
R_b	5.20
R_s	1.73
K	1.78
D'_d	6.80
R_l	2.85
R_A	6.61
ε_1	2.25
magnitude	22
Mean catchment relief	9.90
Mean hillslope relief	4.18
Mean stream relief	6.41
Mean hillslope slope	1.92

R_b, Horton's bifurcation ratio; R_s, Horton's slope ratio; R_l, Horton's length ratio; D'_d, nondimensional drainage density $D_d A^{1/2}$; A, catchment area; ε_1, number of streams of order $j-1$ flowing into streams of order j, for any j, as defined by *Tokunaga* [1978]; K, ratio $\varepsilon_k/\varepsilon_{k-1}$ where ε_k is the number of streams of order $j-k$ flowing into streams of order j, for all j, as defined by *Tokunaga* [1978].

APPENDIX A: NUMERICAL SOLUTION TECHNIQUE FOR THE GOVERNING EQUATIONS

Equations (1*a*) and (1*b*) are solved on a two-dimensional rectangular grid with irregular boundaries allowed. To begin the calculations, initial elevations are assigned to the nodes, and the catchment is assigned an initial pattern of channelization. Using this elevation information, a drainage direction at each node is determined. A node may only drain into one of the eight nodes directly adjacent to it. All flow in a node drains in the steepest downslope direction. Contributing area to a node is determined by analyzing the drainage directions.

Elevation changes result from imbalances in sediment transport. The balance of sediment transport at a node is determined by evaluating the sediment transport into that node and subtracting the sediment transport out of that node. The sediment transport equation (2*b*) is evaluated at every node so that the rate of change of elevation at a node j due to fluvial sediment transport alone is

$$\frac{\partial z_j}{\partial t} = \frac{1}{\rho_s(1-n)\Delta x \Delta y} \sum_{i=1}^{N} I_{ij} f(Y_i) Q_i^{m_1} S_i^{n_1} \qquad \text{(A1)}$$

where

$I_{ij} = 1$ if node i drains into node j;
$I_{ij} = 0$ if node i does not drain into node j;
$I_{ij} = -1$ when $i = j$;
N number of nodes in the grid;
Δx, Δy grid spacing in the x and y directions;
$f(Y_i) = \beta_1$ when $Y_i = 1$ (channel);
$f(Y_i) = \beta_1 O_t$ when $Y_i = 0$ (hillslope).

Note that the interpretation of the discharge here is different from that expressed in the governing equations (1) and (2). Here Q_i is the total discharge through the node i on a grid Δx by Δy which is related to the discharges in the governing equations (for flow in the y direction as an example) as

$$Q_{iy} = \int_{i-\Delta x/2}^{i+\Delta x/2} q_y \, dx \qquad \text{(A2)}$$

The idea of $Y = 0$ representing hillslope and $Y = 1$ representing channels is only approximate. In particular, at an advancing channel head there is a period of time when the hillslope is in transition from hillslope to channel; that is, Y is between 0 and 1. Points intermediate between hillslope and channel have sediment transport properties that are intermediate between that for hillslope and that for channel, though simulations indicated that the model is insensitive to the exact form. The adopted transition was a linear transformation from hillslope to channel sediment transport rate.

$$f(Y) = \beta_1 O_t \qquad Y \le 0.1\alpha \text{ (hillslope)}$$

$$f(Y) = \beta_1\left[O_t + (1 - O_t)(Y - 0.1\alpha)\,\frac{Y}{1 - 0.1\alpha}\right] \qquad 0.1\alpha \le Y < \alpha \text{ (transition)}$$

$$f(Y) = \beta_1 \qquad Y \ge \alpha \text{ (channel)} \tag{A3}$$

where α is a model parameter greater than 1.

The Fickian diffusion term in ($1a$) is evaluated in space by a five-point centered finite difference approximation so that

$$D_z\left(\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2}\right)_{(i,j)} \approx D_z\left(\frac{z_{i+1,j} + z_{i,j+1} + z_{i-1,j} + z_{i,j-1} - 4z_{i,j}}{\Delta x \Delta y}\right) \tag{A4}$$

where D_z is diffusivity and $z_{i,j}$ is elevation at the node with the (x, y) coordinates equal to (i, j).

Equations (A1) and (A4) are solved in time by an explicit two-point predictor-corrector scheme (see, for example, *Acton* [1970]). Equation (A1) is stiff because of the large variation of A (and thus Q) over a catchment; area varies from 1 to NM nodes for an N by M region. The rates of change of elevation for large areas are high, those for small areas (e.g., hillslopes) are low. To capture the details of elevation changes for both the large and small areas, and maintain numerical stability on the basis of the Courant number [*Willgoose*, 1989], very small time steps are required.

The preferred solution scheme uses a nonlinear extrapolation for the predictor step and nonlinear interpolation for the corrector step. This scheme explicitly addresses the time scale problems noted above by using a nonlinear extrapolation for elevation that is an approximate solution to (A1). The solution technique is thus

$$\mathbf{z}^p(t_0 + \Delta t) = \mathbf{z}(t_0) + \Delta \mathbf{z}^p \tag{A5}$$

$$\mathbf{Y}^p(t_0 + \Delta t) = \mathbf{Y}(t_0) + \Delta \mathbf{Y}^p \tag{A6}$$

$$\mathbf{z}^c(t_0 + \Delta t) = \mathbf{z}(t_0) + 0.5(\Delta \mathbf{z}^p + \Delta \mathbf{z}^c) \tag{A7}$$

$$\mathbf{Y}^c(t_0 + \Delta t) = \mathbf{Y}(t_0) + \frac{\Delta t}{2}\left(\left.\frac{\partial \mathbf{Y}}{\partial t}\right|_{\mathbf{z} = \mathbf{z}^p(t_0 + \Delta t), \mathbf{Y} = \mathbf{Y}^p(t_0 + \Delta t)} + \left.\frac{\partial \mathbf{Y}}{\partial t}\right|_{\mathbf{z} = \mathbf{z}(t_0), \mathbf{Y} = \mathbf{Y}(t_0)}\right) \tag{A8}$$

where $\Delta \mathbf{z}^p$ is the predicted change in $\mathbf{z}$, relative to $\mathbf{z}(t_0)$, over the time step Δt, based on the states at time $t_0[\mathbf{z}(t_0), \mathbf{Y}(t_0)]$, and $\Delta \mathbf{z}^c$ is the corrected changes in $\mathbf{z}$, relative to $\mathbf{z}(t_0)$, based on the states at time $t_0[\mathbf{z}(t_0), \mathbf{Y}(t_0)]$ and the predicted states at time $t_0 + \Delta t$ $[\mathbf{z}^p(t_0 + \Delta t), \mathbf{Y}^p(t_0 + \Delta t)]$.

The following derivation develops the nonlinear extrapolation method that is an approximation to the exact solution of (A1). Assume that fluvial transport dominates diffusive transport. Consider fluvial sediment continuity at a node j where the elevation at all surrounding nodes are fixed with time:

$$\frac{\partial z_j}{\partial t} = \frac{1}{1-n}\left[\sum_{i \,(ij)} f(Y_i) I_{ij} Q_i^{m_1}\left(\frac{z_i - z_j}{l_{ij}}\right)^{n_1} - f(Y_j) Q_j^{m_1}\left(\frac{z_j - z_k}{l_{jk}}\right)^{n_1}\right] \tag{A9}$$

where l_{ij} is the distance between nodes i and j and k is the node that node j drains into.

As time goes to infinity and elevations go to equilibrium, then

$$\frac{1}{1-n}\left[\sum_{i \,(ij)} f(Y_i) I_{ij} Q_i^{m_1}\left(\frac{z_i - z_j^*}{l_{ij}}\right)^{n_1} - f(Y_j) Q_j^{m_1}\left(\frac{z_j^* - z_k}{l_{jk}}\right)^{n_1}\right] = 0 \tag{A10}$$

For the nonlinear extrapolation of elevations we need to know (1) the value of the equilibrium elevation z_j^* and (2) the rate at which $z_j(t)$ tends to z_j^*.

It can be shown [*Willgoose et al.*, 1989] that (A9) is approximated

$$\frac{\partial z_j}{\partial t} = \left.\frac{\partial z_j}{\partial t}\right|_{t = t_0} \frac{(z_j(t) - z_j^*)^{n_1}}{(z_j(t_0) - z_j^*)^{n_1}} \qquad t \ge t_0 \tag{A11}$$

An important property of this equation is that it is asymptotically correct for both $t = t_0$ and $t = \infty$ so that many of the stiffness problems of (A1) are obviated. Solution of this equation yields the solution for $z_j(t_0 + \Delta t)$, given the equilibrium elevation z_j^*, as

$$z_j(t_0 + \Delta t) = z_j^* + [z_j(t_0) - z_j^*]^{n_1/(n_1 - 1)}\left[z_j(t_0) - z_j^* + \left.\frac{\partial z_j}{\partial t}\right|_{t = t_0}(1 - m)\Delta t\right]^{(1 - n_1)^{-1}} \tag{A12}$$

To determine z_j^*, $\partial z_j/\partial t$ is approximated by a Taylor series (expanded to linear terms), around the elevation at time t_0, $z_j(t_0)$, so that

$$\frac{\partial z_j}{\partial t} \approx \left.\frac{\partial z_j}{\partial t}\right|_{z_j = z_j(t_0)} + [z_j - z_j(t_0)]\left.\left[\frac{\partial}{\partial z_j}\left(\frac{\partial z_j}{\partial t}\right)\right]\right|_{z_j = z_j(t_0)} \tag{A13}$$

Solving this equation for the equilibrium solution $z_j = z_j^*$, when $\partial z_j/\partial t = 0$, yields the estimate of z_j^* based on elevations at $t = t_0$:

$$z_j^* = \frac{z_j(t_0)\left.\left[\frac{\partial}{\partial z_j}\left(\frac{\partial z_j}{\partial t}\right)\right]\right|_{z_j = z_j(t_0)} - \left.\frac{\partial z_j}{dt}\right|_{z_j - z_j(t_0)}}{\left.\left[\frac{\partial}{\partial z_j}\left(\frac{\partial z_j}{\partial t}\right)\right]\right|_{z_j = z_j(t_0)}} \tag{A14}$$

The derivative with respect to z_j in this equation can be determined from (A9) and is given by

$$\frac{\partial}{\partial z_j}\left(\frac{\partial z_j}{\partial t}\right) = \frac{1}{1-n}\left[\sum_{i \neq j} \frac{f(Y_i) I_{ij} Q_i^{m_1}}{l_{ij}}\left(\frac{z_i - z_j}{l_{ij}}\right)^{n_1 - 1} + \frac{f(Y_j) Q_j^{m_1}}{l_{jk}}\left(\frac{z_j - z_k}{l_{jk}}\right)^{n_1 - 1}\right] \quad \text{(A15)}$$

APPENDIX B: PHYSICAL JUSTIFICATION OF THE SEDIMENT TRANSPORT EQUATION

The sediment transport formula given in (2*b*) is of the form

$$q_s = \beta_1 q^{m_1} S^{n_1} \quad \text{(B1)}$$

A sediment transport equation of this form has been used by geomorphologists in previous work [e.g., *Smith and Bretherton*, 1972] and may be obtained from the Einstein-Brown equation, a commonly accepted fluvial sediment transport formula, with a minimal number of simplifying assumptions. In addition, it will be shown how the Einstein-Brown equation, an instantaneous sediment transport relation, can be converted into a mean temporal sediment transport relation for long time scales. It will be shown that the simple form of (B1) is maintained after temporal averaging.

The Einstein-Brown equation is expressed in terms of a nondimensional sediment transport ϕ and a nondimensionalized shear stress $1/\psi$. *Vanoni* [1975] gives the governing equation as

$$\phi = 40\left(\frac{1}{\psi}\right)^3 \quad \text{(B2)}$$

where

$$\phi = \frac{q_s}{\rho_s F_1 \sqrt{g(s-1)d_s^3}} \quad \text{(B3)}$$

$$\frac{1}{\psi} = \frac{\tau_0}{\rho g(s-1)\, d_s} \quad \text{(B4)}$$

$$F_1 = \sqrt{\frac{2}{3} + \frac{36\nu^2}{g d_s^3(s-1)}} - \sqrt{\frac{36\nu^2}{g d_s^3(s-1)}} \quad \text{(B5)}$$

and the notation used is

- q_s sediment discharge, mass/time/(unit width);
- s specific gravity of sediment;
- ρ, ρ_s density of water and sediment, respectively;
- d_s a representative diameter for the sediment particle (normally d_{50}, the 50th percentile diameter, is used);
- g acceleration due to gravity;
- τ_0 γRS, which is bottom shear stress;
- R hydraulic radius;
- S bed slope;
- ν kinematic viscosity of water.

If the sediment is considered homogeneous throughout the catchment, this equation may be simplified to yield

$$q_s = F_2(RS)^p \quad \text{(B6)}$$

where $p = 3$ for the Einstein-Brown equation, and

$$F_2 = 40\rho_s F_1 \sqrt{g(s-1)d_s^3}\left[\frac{1}{(s-1)\, d_s}\right]^3$$

Equation (B6) is not in the form of (B1). The equation must be reformulated so that it is dependent on discharge per unit width q rather than the hydraulic radius. A number of different channel geometries have been examined [*Willgoose et al.*, 1989], including (1) a wide channel with uniform depth across the cross section, (2) overland flow/unit width, (3) a triangular channel with side slopes a_1, and (4) a general channel cross section of the form $y = a_1|x|^{b_1}$, where a_1 and b_1 are variable.

The simplest case, a wide channel, will be used to illustrate the techniques involved. Using Manning's equation for discharge (equation (7)), noting that for a wide channel $R = y$, the governing sediment equation for the wide channel is

$$q_s = F q^{3p/5} S^{7p/10} \quad \text{(B7)}$$

where $F = F_2 n^{3p/5}$.

The multiplicative constant F is dependent, in a well defined way, on flow geometry and sediment characteristics. F is constant with respect to q because the wetted perimeter is independent of flow depth. For the specific example of the Einstein-Brown equation ($p = 3$), (B7) simplifies to

$$q_s = [F_2 n^{1.8}] q^{1.8} S^{2.1} \quad \text{(B8)}$$

Note that for the wide channel, (B7) and (B8) are exact and require no approximation. This is also the case for overland flow/unit width and for the triangular channel, however, some very small approximations are required to reformulate the sediment transport for the general cross section into (B1).

The geomorphologic time scales of interest in landscape evolution are of the order of thousands of years, certainly much longer than the time scale of individual runoff and erosion events. Temporal averaging of (B1) produces a modified version of this equation, where the discharge is the mean peak discharge from a partial duration flood frequency analysis. A new value of the multiplicative constant β_1 is obtained that is a function of the moments of the distribution of flood events. The long-term average sediment transport rate (per unit width) from averaging over erosion events is

$$\bar{q}_s = \beta_1\left[\bar{T}_p \lambda \int_{-\infty}^{\infty} [q'(t')]^{m_1}\, dt'\right] \cdot \left[1 + m_1(m_1 - 1)\frac{\sigma_{q_p}^2}{\bar{q}_p^2} + m_1(m_1-1)(m_1-2) \cdot \frac{\gamma_{q_p}(\sigma_{q_p}^2)^{3/2}}{\bar{q}_p^3} + m_1 \frac{\sigma_{q_p T_p}^2}{\bar{q}_p \bar{T}_p}\right] \bar{q}_p^{m_1} S^{n_1} \quad \text{(B9)}$$

where

- t time;
- $q(t)$ discharge during the hydrograph;
- $\bar{T}_p$ mean duration of runoff hydrographs;
- λ rate of occurrence of runoff events;
- $\bar{q}_p$ mean peak discharge per unit width over all the hydrographs that carry significant sediment load from flood frequency analysis;
- $q'(t) = q(t)/\bar{q}_p$
- $t' = t/\bar{T}_p$

$\sigma^2_{q_p}$ the variance of the peak discharge;

$\sigma^2_{q_p T_p}$ covariance between the peak discharge and the length of the flood hydrograph;

γ_{q_p} skewness coefficient of q_p.

The skewness coefficient is given by

$$\gamma_{q_p} = \frac{\frac{1}{N} \sum_{i=1}^{N} (q_p - \bar{q}_p)_i^3}{(\sigma^2_{q_p})^{3/2}}$$

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Final Report for the Clive DU PA Model

Clive DU PA Model v2.0

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Executive Summary

Neptune and Company, Inc. (Neptune), under contract to Energy*Solutions*, LLC (Energy*Solutions*), has developed a computer model (the Clive DU PA Model, or the Model) to support decision making related to the proposed disposal of depleted uranium (DU) wastes at the low-level radioactive waste (LLW) disposal facility at Clive, Utah, operated by Energy*Solutions*. The Model provides a platform on which to conduct analyses relevant to performance assessment (PA), as required by the State of Utah in Utah Administrative Code (UAC) R313-25, *License Requirements for Land Disposal of Radioactive Waste* (UAC 2018). Specifically, a PA is required in UAC R313-25-9, Technical Analyses. The Model may also serve to inform decisions made by the Site operator to gain maximum utility of the resource that is the Clive Facility.

Depleted uranium is the remains of the uranium enrichment process, of which the fissionable uranium isotope ^{235}U is the product. The leftover uranium, depleted in ^{235}U, is predominantly ^{238}U, but may include small amounts of other U isotopes. In general, DU contains very small amounts of decay products in the uranium, thorium, actinium, and neptunium series of decay chains. Some specific DU waste, resulting from introduction of uranium recycled from used nuclear reactor fuel (reactor returns) into the separations process, contains varying amounts of contaminants, in the form of fission and activation products. Since some of the DU evaluated in this PA includes reactor returns, it is here termed "DU waste." The national inventory of DU is on the order of 700 Gg (700,000 Mg, or metric tons) in mass as uranium hexafluoride (DUF_6), and the bulk of it exists in its original storage cylinders, undergoing conversion to oxide form for disposal. This conversion is being performed at the Portsmouth, Ohio, and Paducah, Kentucky, gaseous diffusion plant (GDP) sites, using new purpose-built "deconversion" plants to produce triuranium octoxide (U_3O_8). A much smaller mass of DU waste was generated by the Savannah River Site (SRS) in the form of uranium trioxide (UO_3), a powder stored in several thousand 200-L (55-gal) drums. While the composition of the SRS DU is reasonably well known, the content of the GDP DU is not well documented. For the purposes of this assessment, it was necessary to assume that some uncertain fraction of the GDP DU waste was contaminated to the same extent as the SRS DU waste. DU waste from both sources is considered in the Clive DU PA Model.

The Model is written using the GoldSim probabilistic systems analysis software, which is well-suited for the purpose. In order to provide decision makers with a broad perspective of the behavior and capabilities of the Facility, the Model considers uncertainty in input parameter values. This probabilistic assessment methodology is encouraged by the Nuclear Regulatory Commission (NRC) and the Department of Energy (DOE) in constructing PAs and the models that support them. The Model can be run in deterministic mode, where a single set of median model inputs is used, but running in probabilistic *Monte Carlo* mode provides greater insight into the model behavior, and especially into model sensitivity to the distribution of input parameter values. In *Monte Carlo* mode, a large number of realizations are executed with values drawn at random from the input parameter distributions using Latin Hypercube Sampling to ensure equal probability across the range of the input distributions. The distributions of results, therefore, reflect the uncertainty in these values. To the extent that the Model reflects the uncertain state of knowledge at a site, the Model provides insight about how the site works, and what should be expected if different actions are taken or different wastes are disposed. In this way, the Model aids in decision making, even in the face of uncertainty.

The Clive Facility is located at the eastern edge of the Great Salt Desert, west of the Cedar Mountains, and approximately 100 km (60 mi) west of Salt Lake City, Utah. Clive is a remote and environmentally inhospitable area for human habitation. Human activity at Clive has historically been very limited, due largely to the lack of potable water, or even water suitable for irrigation. The site is located on flat ground, with the bottom of the waste disposal cells shallowly excavated into local lacustrine silts, sands, and clays. A single waste disposal cell, or embankment, is considered in this model: the Federal Cell. This cell is modeled with an engineered cover, as per design documents. The top of the cell is above grade, and the cover has layers of an evapotranspiration (ET) cover system of earthen origin on its top slope, with a riprap surface layer on its side slope. In time, this cover is expected to become vegetated with native plants, and occupied to a limited extent by animals including insects and mammals. As plant communities become established, they are likely to keep the cover system fairly dry through transpiration.

Water balance modeling of the cover indicates that some water may penetrate the cover system, and this infiltration has the potential to leach radionuclides from the waste and transport them down through the cell liner and unsaturated zone to the aquifer. In the saturated zone (aquifer), contaminants are transported laterally to a hypothetical monitoring well located about 27 m (90 ft) from the edge of the interior of the cell. Since the side slopes of the cell are modeled to not contain DU waste, the effective distance to the well from the DU waste itself is about 81 m (265 ft). This environmental transport pathway is relevant for long-lived and readily leached radionuclides such as ^{99}Tc. Contributions to groundwater radionuclide concentrations from the proposed DU waste are calculated for comparison to groundwater protection limits (GWPLs) during the next 500 years, as stipulated in the water discharge permit (Utah 2014).

In addition to water advective transport, radionuclides are transported via diffusion in both water and air phases within the cover system, which can provide upward transport pathways. Gaseous radionuclides, such as ^{222}Rn, partition between air and water. Soluble constituents partition between water and solid porous media. Coupled with all these processes are the activities of biota, with plants transporting contaminants to their above-ground surface tissues via their roots, and burrowing animals (ants and small mammals) moving bulk materials upward and downward through burrow excavation and collapse. Biota do not play a major role in contaminant transport contributing to human doses or uranium hazard according to model results. The Model considers the effects of a compromised radon barrier with respect to facility performance.

Once radionuclides reach the ground surface at the top of the engineered cover via the aforementioned processes, they are subject to suspension into the atmosphere and dispersion to the surrounding landscape. Atmospheric transport of gases (^{222}Rn) and contaminants sorbed to suspended particles is modeled using a standard modeling platform approved by the U.S. Environmental Protection Agency (EPA), called AERMOD. The results of this model are abstracted into the Clive DU PA Model, and contributions of airborne radionuclides to dose and uranium toxicity hazard are evaluated.

The impact of sheet and gully erosion in the Model is evaluated by the application of results of landscape evolution models of hillslope erosion loss and channel development. The model domain includes the Federal Cell as designed, with a gently sloping top slope ET cover system and a steeper riprap covered side slope. Gully depths estimated by the erosion model are calculated at 10,000 years and used to derive values of the percentage of the cover where gullies end within a given depth interval. This model provides an estimate of the volume of embankment cover material removed by erosion. The depositional area of the gully fan is assumed to be the same as the area of waste exposed in the gullies, using projections onto the horizontal plane. If these embankment materials include DU waste contaminants, then this leads to some contribution to doses and uranium hazards. No associated effects, such as biotic processes, effects on radon dispersion, or local changes in infiltration are considered within the gullies.

Given the remote and inhospitable environment of Clive, it is not reasonable to assume that the traditional residential receptors considered in other PAs will be present here. Traditionally, and based on DOE (DOE M 435.1) and NRC guidance (10 CFR 61), members of the public are evaluated outside the fence line or boundary of the disposal facility, and inadvertent intruders are assumed to access the disposal facility and the disposed waste directly, in activities such as well drilling or house construction. For disposal facilities in the arid west, these types of strictly defined default scenarios do not adequately describe likely human activities. Their inclusion in a PA for a site in the arid west, such as Clive, usually results in unrealistic underestimation of the performance of a disposal system, which does not lend itself to effective decision making for the Nation's needs to dispose of radioactive waste.

At Clive, there is no potable water resource to drill for, and historical evidence suggests there is little likelihood that anyone would construct a residence on or near the site. There are present day activities in the vicinity, however, that might result in receptor exposures if these activities are projected into the future when the facility is closed and after institutional control is lost. Large ranches operate in the area, so ranch hands work in the vicinity. Pronghorn antelope are found in the region, and hunters will follow them. Both of these activities are facilitated by the use of off-highway vehicles (OHVs). OHV enthusiasts also ride recreationally for sport in areas near the facility.

In addition to these receptors, there are specific points of exposure within the vicinity of the Clive Facility where individuals might be exposed. About 12 km (8 miles) to the west, OHV enthusiasts use the Knolls Recreation Area. Interstate-80 and a railroad are located to the north, with an associated rest area on the highway. Closer to the Clive Facility, the Utah Test and Training Range access road is used on occasion. The Model hence evaluates dose and uranium hazard to these site-specific receptors.

The State of Utah follows federal guidance by categorizing receptors in a PA in UAC Rule R313-25-9 (UAC 2018) and 10 CFR 61.41 (CFR 2014) according to the labels "member of the public" (MOP) and "inadvertent human intruder" (IHI). NRC offers two definitions of inadvertent intruders in 10 CFR 61:

> **§ 61.2 Definitions**. *Inadvertent intruder* means a person who might occupy the disposal site after closure and engage in normal activities, such as agriculture, dwelling construction, or other pursuits in which the person might be unknowingly exposed to radiation from the waste.
>
> **§ 61.42 Protection of individuals from inadvertent intrusion.** Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or

> contacting the waste at any time after active institutional controls over the disposal site are removed.

NRC offers one reference to an MOP in the context of the general population:

> **§ 61.41 Protection of the general population from releases of radioactivity.** Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 millirems [0.25 mSv] to the whole body, 75 millirems [0.75 mSv] to the thyroid, and 25 millirems [0.25 mSv] to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

DOE definitions in DOE M 435.1 (the Manual accompanying DOE Order 435.1) are much more specific. However, the applicable federal agency that regulates disposal of low-level radioactive waste at the Clive Facility is NRC. For the Clive Facility and the Model, based on the NRC definitions, the ranch hand, hunter, and OHV enthusiast are expected to engage in activities both on and off the site. These receptors fit the NRC definition of inadvertent intrusion because they are assumed to occupy the site, albeit for limited periods of time. The receptors that are located at specific offsite locations, instead, fit the NRC definition of MOP. The Model presents predicted doses to the receptors identified above, under the conditions and assumptions that provide the basis for the Model. These doses are presented as the results of the Model. A comparison of doses to both MOP and IHI performance objectives is also presented.

The Model addresses radiation doses to human receptors who might come in contact with radionuclides released from the disposal facility into the environment subsequent to facility closure. In accordance with UAC Rule R313-25-9, doses are calculated within a 10,000-year compliance period. The doses are compared to a performance criterion of 25 mrem in a year for a MOP, and 500 mrem in a year for an inadvertent intruder. The dose assessment component of the PA model, like the transport modeling components described above, supports probabilistic *Monte Carlo* analysis. Spatiotemporal scaling is a critical component of Model development. For example, the Model differentiates the impact of short-term variability in exposure parameters (values applicable over a few years or decades, such as individual physiological and behavioral parameters) from the longer-term variability of transport parameters (values applied over the full 10,000-year performance period, such as hydraulic and geochemical parameters). This distinction facilitates assessment of uncertainties that relate to physical processes from uncertainties relating to inter-individual differences in potential future receptors.

In addition to radiation dose, uranium is also associated with non-radiological toxicity. The potential chemical toxicity of uranium disposed at the Clive Facility is evaluated in the Model. Potential receptor chronic daily intake of uranium is compared to toxicological criteria developed by EPA that pertain to a threshold of adverse effect associated with kidney toxicity.

These doses and the supporting contaminant transport modeling that provides the dose model with radionuclide concentrations in exposure media are evaluated for 10,000 years, in accordance with UAC R313-25-9(5)(a). After that time, the modeling focus turns to long-term, or "deep time" scenarios. Peak activity of the waste occurs when the progeny of the principal parent, ^{238}U (with a half-life that is approximately the age of the earth—over 4 billion years), reach secular equilibrium. This occurs at roughly 2.1 My from the time of isotopic separation, and the Model evaluates the potential future of the site in this context. At 2.1 My the activity of the last modeled member of the chain, ^{210}Pb, is equal to that of ^{238}U, within less than one half of one percent. While the calculation could be carried out further in time to achieve a greater degree of accuracy, there is no benefit in doing so for decision-making purposes. This is now a geologic time frame, and needs to take into account the likely possibility of future deep lakes in the Bonneville Basin. The return of such lakes is understood to be inevitable, and the Clive Facility, as constructed, will not survive in its current configuration. Many lakes, of intermediate and deep size, are expected to occur in the 2.1-My time frame, following the climate cycle periodicity of about 100,000 yr, based on current scientific understanding of paleoclimatology. In these time frames, it is also important to consider processes such as eolian (i.e., wind-borne) deposition, which can be seen in geologic formations in the Clive area. Deposition builds up the ground surface over time, such that the ground surface each time a lake returns is 2 – 3 m higher than the ground surface between lake cycles.

As each lake returns, estimates are made of the radionuclide concentrations in the lake and in the sediments surrounding and subsuming the site. Because the exact behavior of lake intrusion and site destruction is speculative, the Model makes several conservative assumptions. Upward movement of radionuclides, via diffusion and biota, is assumed to occur until the first lake returns. At that point in time, the radionuclides that are above ground are assumed to comingle with sediments, dispersed over an uncertain area approximately the size of an intermediate lake. In the presence of a lake, the radionuclides migrate into the water, in accordance with their aqueous solubility. For U_3O_8, which is considered to be the only form of uranium oxide remaining by the time the first lake arrives (since UO_3 moves out of the waste first and what is left will become more like U_3O_8 or UO_2 in the presence of a wetter climate), the solubility of U is very low. As each lake recedes, radionuclides are co-deposited with the sediment, only to be dissolved into the water again with the next lake. This is a very conservative approach, especially for the lake concentrations, since in reality each blanket of sediment could entrap constituents, and the concentrations in water and sediment over time should decrease consequently. The analysis, therefore, focuses on the arrival of the first lake, which will be the most destructive in terms of sudden release of radionuclides, and would provide the least amount of sediment to encapsulate them. Subsequent lakes would see progressively less radionuclide activity as the site is slowly buried under ever-deeper lacustrine deposits through the eons.

The utility of such a calculation, aside from responding to the UAC, is to inform decisions regarding the placement of wastes in the embankment. With downward pathways influencing groundwater concentrations, and upward pathways influencing dose and uranium hazard, a balance must be achieved in the placement of different kinds of waste. In version 1.0 of the Clive DU PA Model (Neptune 2011), three different options for configuration of the DU waste within the Class A South embankment (subsequently renamed the Federal Cell) were evaluated. These options included a “3-m model,” named because the top of the DU waste was 3 m below the embankment cover, and also 5-m and 10-m models. No DU waste is included under the side slopes for this PA. In addition to these disposal options, two scenarios related to embankment erosion were evaluated in the Clive DU PA Model v1.0. The first essentially assumed a stable embankment for 10 ky, with infilling of the cap and continual airborne deposition replacing fine sediments that are resuspended themselves and subsequently dispersed offsite. The second scenario was one in which gullies were formed that, depending on the DU waste disposal configuration, might intersect and expose the DU waste to the environment.

In version 2.0 of the Model, which supports the results described herein, modeling is conducted under the assumption that gullies will occur on the embankment. Additionally, the only DU waste configuration presently evaluated is for disposal of these wastes in layers of the embankment below the current grade of surrounding soil. Dose results for each type of potential receptor are presented in Table ES-1.

There is a question of which statistic from the many Model realizations is most appropriate for comparison to performance criteria. The statistics in Table ES-1 represent summaries of the mean, median, and 95th percentiles of the peak dose at 10,000 yr for the 10,000 realizations. The peak of the mean dose is recommended by NRC for comparison with performance objectives (NRC 2006). However, the GoldSim model structure typically presents peak dose across time as a result; thus, when comparing across model realizations the result is a mean of the peaks. In the DU PA, the peak dose occurs at or near 10 ky in nearly all realizations. In effect, 10 ky is the worst-case year in terms of dose. Under these circumstances, the 95th percentile is analogous to the 95% upper confidence interval of the mean at 10 ky that is commonly used to represent reasonable maximum exposure in CERCLA risk assessments. In other words, because the peak dose occurs in the same time step in each model realization, the peak of the mean dose is equivalent to the mean of the peaks. Thus, for the DU PA, the distinction is moot.

Compliance with the performance objectives for the inadvertent intruder dose of 500 mrem in a year and for the MOP of 25 mrem in a year is clearly established for all three types of potential future receptors. This indicates that, for the disposal configuration where DU wastes are placed below grade, doses are expected to remain well below applicable dose thresholds even if gullies are assumed to occur on the embankment.

Results are also available for the offsite (MOP) receptors. None of the 95th percentile dose estimates for these receptors exceeds 0.1 mrem in a year, and all of the peak mean dose estimates are also at or below 0.1 mrem in a year.

Table ES-1. Peak TEDE: statistical summary.

	peak TEDE (mrem/yr) within 10,000 yr		
receptor	**mean**	**median (50th %ile)**	**95th %ile**
ranch worker	3.0E-2	2.4E-2	7.2E-2
hunter	2.5E-3	2.0E-3	5.9E-3
OHV enthusiast	4.0E-3	3.5E-3	8.6E-3

Results are based on 10,000 realizations of the Model.
TEDE: Total effective dose equivalent

For those radionuclides for which GWPLs exist, as specified in the facility's permit (Utah 2014), results are shown in Table ES-2. For all such radionuclides compliance with the GWPLs is clearly demonstrated. The mean values for ^{99}Tc and ^{129}I are much greater than the median, indicating that the distributions of these concentrations have a very strong degree of skewness.

Table ES-2. Peak groundwater activity concentrations within 500 yr, compared to GWPLs.

radionuclide	GWPL[1] (pCi/L)	peak activity concentration within 500 yr (pCi/L)		
		mean	median (50th %ile)	95th %ile
^{90}Sr	42	0	0	0
^{99}Tc	3790	15	1.8E-1	81
^{129}I	21	9.9E-3	5.7E-9	6.2E-2
^{230}Th	83	2.8E-29	0	0
^{232}Th	92	2.1E-35	0	0
^{237}Np	7	8.6E-21	0	7.1E-27
^{233}U	26	2.7E-24	0	6.0E-28
^{234}U	26	1.6E-23	0	5.0E-28
^{235}U	27	1.3E-24	0	4.1E-29
^{236}U	27	2.4E-24	0	6.9E-29
^{238}U	26	1.2E-22	0	4.1E-27

[1]GWPLs are from Utah (2014), Table 1A.
Results are based on 10,000 realizations of the Model.

Sensitivity analyses on the Model results indicate that receptor doses are dominated by radon inhalation, whereas the downward migration pathway is dominated by net infiltration and molecular diffusion. A trade-off is indicated in terms of DU waste placement. The lower the DU waste is placed, particularly the ^{99}Tc-contaminated DU waste, the greater the groundwater concentrations of ^{99}Tc, but the lower the doses due to increases in the diffusion path length to the ground surface. Conversely, the higher the DU waste is placed in the embankment, the lower the ^{99}Tc groundwater concentrations, and the greater the dose to receptors. Placement of DU waste below surface grade in the Federal Cell satisfies both dose and groundwater performance objectives.

In addition to the dose assessment for hypothetical individuals described above, the structure of the Model allows the cumulative population dose to be tracked. For the objective of keeping doses as low as reasonably achievable (ALARA), estimated dose to the entire population of ranch workers, hunters, and OHV enthusiasts over the 10,000-yr simulation is evaluated. These cumulative population doses are shown in Table ES-3.

The population doses presented in Table ES-3 may be evaluated relative to doses received from natural background radiation and by considering the person-rem costs suggested in NRC (2015) guidance. The NRC has suggested the value of a statistical life (VSL)-based cost of $5,100 per person rem. Using such a cost, the total ALARA cost over 10 ky (for example, $29,580 using the mean estimate of total population dose, or $3 per yr.) is very small compared to the cost of waste operations and disposal. Average annual individual background dose related to natural background radiation in the United States is approximately 3.1 mSv (310 mrem; NCRP (2009)), which for the total cumulative receptor population of about 3,200,000 individuals over 10,000 years is approximately 992,000 rem—a level that is many orders of magnitude greater than the population doses shown in Table ES-3. ALARA is intended to support evaluation of options to reduce doses in a cost-effective manner. Given the results of this ALARA analysis, it is not clear that further reduction in dose would have a net benefit.

Table ES-3. Cumulative population TEDE: statistical summary.

	population TEDE (person-rem) within 10,000 yr		
receptor type	**mean**	**median (50th %ile)**	**95th %ile**
total population	5.8	5.2	12
ranch worker	1.3	1.2	2.7
hunter	0.76	0.66	1.7
OHV enthusiast	3.7	3.3	7.9

Results are based on 10,000 realizations of the Model.
TEDE: Total effective dose equivalent

The final set of analyses conducted with the Model are the deep time analyses. As described above, the deep time model is very conservative in many ways with respect to dispersal of the DU waste material. Deep lakes that obliterate the Federal Cell are assumed to return periodically. Simplified processes are used to keep the deep time model from becoming overly complicated for the amount of uncertainty in both parameters and processes.

Concentrations of ^{238}U in lake water and sediment at the time of peak lake occurrence (82,500 years) are presented in Table ES-4 and Table ES-5. These results simply show the concentrations that might occur in response to obliteration of the site by wave action during return of a lake to the elevation of Clive and subsequent dispersal of the waste in a relatively confined system. The concentrations presented would continue to decrease with each lake and climate cycle as more sediment is deposited with each lake event, and each lake event allows radionuclides to be dispersed ever further afield.

Table ES-4. Statistical summary of lake water concentrations at peak lake occurrence, 82,500 yr.

	Lake concentrations (pCi/L) at 82,500 yr		
radionuclide	**mean**	**median (50th %ile)**	**95th %ile**
uranium-238	0.011	5.6E-5	0.059
radium-226	0.77	0.28	2.9
thorium-230	0.73	0.28	2.9

Results are based on 1,000 simulations of the Model.

Table ES-5. Statistical summary of sediment concentrations at peak lake occurrence, 82,500 yr.

radionuclide	Sediment concentrations (pCi/g) at 82,500 yr		
	mean	median (50^{th} %ile)	95^{th} %ile
uranium-238	2.7E-2	4.1E-3	0.13
radium-226	7.4E-3	2.1E-3	2.8E-2
thorium-230	7.0E-3	2.1E-3	2.7E-2

Results are based on 1,000 simulations of the Model.

The deep time model disperses radionuclides that have migrated upward from the DU waste into above-ground layers of the embankment prior to the occurrence of the first returning lake. Because all DU waste is modeled to be disposed below grade, the model assumes that no material below grade is dispersed. In addition, the return of the first lake is considered likely to be several tens of thousands of years, or even a few hundreds of thousands of years, into the future, at which point eolian deposition will result in sedimentation deposits around the site of several meters. This deposition will both stabilize the site and make it even less likely that any below-grade material will be dispersed. Based on these results, it is reasonable to expect that the deep time concentrations could be close to or possibly less than background concentrations for uranium in soil of about 1 pCi/g (Myrick et al. (1981), Table 30) and approximately 2 pCi/L for background uranium concentrations in the Great Salt Lake (CRWQCB (1990), Table 5).

The quantitative results for all Model analyses are summarized in Table ES-6. Doses to all receptors are always less than the 500-mrem (IHI) and 25-mrem (MOP) annual performance criteria. Groundwater concentrations are always less than the GWPLs. Even in the case of ^{99}Tc, the peak median, mean, and 95% groundwater concentrations are well below the GWPL of 3,790 pCi/L.

Table ES-6. Summary of the results of the Clive DU PA Model.

performance objective	meets performance objective?
Dose to MOP below regulatory threshold of 25 mrem in a year	Yes
Dose to IHI below regulatory threshold of 500 mrem in a year	Yes
Groundwater maximum concentration of ^{99}Tc in 500 years < 3790 pCi/L	Yes
ALARA average total population cost equivalent over 10,000 years:	$29,580

The results overall demonstrate that the below-grade disposal configuration can be used to dispose of the quantities and types of DU waste included in the Model in a manner adequately protective of human health and the environment.

1.0 Background

One of the responsibilities of the Nuclear Regulatory Commission (NRC) is to ensure the safe disposal of commercially generated low-level radioactive waste. Non-defense-related depleted uranium (DU) waste falls under the jurisdiction of NRC, and requires a disposal option that is protective of human health and the environment. NRC currently regulates the disposal of DU waste as a low-level radioactive waste, in cooperation with "Agreement States." The Energy*Solutions* low-level radioactive waste disposal facility at Clive, Utah, is a candidate for disposal of DU waste, and Utah is an Agreement State that has regulatory authority to determine if such disposal can occur in compliance with Utah and NRC regulatory requirements.

A facility's ability to ensure protection of human health and the environment is evaluated by conducting a Performance Assessment (PA). A PA is used to model potential transport of radionuclides from the disposed inventory to the accessible environment, and to estimate radiation dose to potential human receptors. The estimated doses are compared to performance objectives, which are specified as dose limits. If the estimated doses are less than the performance objectives, then adequate protection of human health has been demonstrated.

The purpose of this report is to present the results of the Clive DU PA Model v2.0 (the Model), a computer model developed to inform PA for disposal of specific DU waste materials in the proposed Federal Cell at the Clive Facility. This report provides a summary of the approach taken and the results that can be obtained from the Model, and references supporting documentation that includes details of the Model development and quality assurance program.

1.1 Depleted Uranium

In order to produce suitable fuel for nuclear reactors and/or weapons, uranium has to be enriched in the fissionable ^{235}U isotope. Uranium enrichment in the U.S. began during the Manhattan Project in World War II. Enrichment for civilian and military uses continued after the war under the U.S. Atomic Energy Commission, and its successor agencies, including the DOE.

The uranium fuel cycle begins by extracting and milling natural uranium ore to produce "yellow cake," which is a varying mixture of uranium oxides. Low-grade natural ores contain about 0.05 to 0.3% by weight of uranium oxide while high-grade natural ores can contain up to 70% by weight of uranium oxide. Uranium found in natural ores contains two principal isotopes—uranium-238 (99.3% ^{238}U) and uranium-235 (0.7% ^{235}U). The uranium is enriched in ^{235}U before being made into nuclear fuel, which generates a product consisting of 3% to 5% ^{235}U for use as nuclear fuel and a by-product of DU (between 0.1% and 0.5 ^{235}U). The DU has some commercial applications including counterweights and military applications as artillery. However, the commercial demand for depleted uranium is currently much less than the amounts generated for nuclear fuel. Use of ^{238}U as fuel for breeder reactors has not been seriously considered in this country. The U.S. Department of Energy (DOE) has about 700 Gg (700,000 Mg or metric tons) of DUF_6 in storage, containing roughly 464 Gg of uranium. Hence, the need to find disposal options for DU waste.

1.2 The Clive Waste Disposal Facility

Energy*Solutions* operates a low-level radioactive waste disposal facility west of the Cedar Mountains in Clive, Utah, as shown in Figure 1. Clive is located along Interstate-80, approximately 5 km (3 mi) south of the highway, in Tooele County. The facility is approximately 80 km (50 mi) east of Wendover, Utah, and approximately 100 km (60 mi) west of Salt Lake City, Utah. The facility sits at an elevation of approximately 1302 m (4275 ft) above mean sea level (amsl) and is accessed by both road and rail transportation.

The Clive Facility receives low-level radioactive waste shipped via truck and rail. The Clive disposal facility is licensed to accept Class A low-level radioactive waste. Under current NRC regulations, DU waste is considered Class A waste, in which case the Clive site is an option for disposal. However, NRC is currently considering options for updating 10 CFR 61, and the State of Utah has updated their regulations (UAC-R313-25-9 (UAC 2018)), which force the requirement of a PA for disposal of large quantities of DU. Based in part on a PA demonstrating the facility's ability to comply with performance objectives, Energy*Solutions* proposes that large quantities of DU waste be disposed in the Federal Cell. This is an above-ground engineered disposal embankment that is clay-lined with clay barriers and an ET cover on its top slope and riprap erosion control cover on its side slope. The disposal embankment is designed to perform for a minimum of 500 years based on requirements of 10 CFR 61.7, and hence provides a possible solution for the long-term disposal of DU.

Clive is a remote and environmentally inhospitable area. Human activity at Clive has, historically, been very limited. The regulations (10 CFR 61 and Utah regulations R313-25-9) indicate the need to evaluate performance with respect to members of the public and inadvertent human intruders. However, the difference between these two categories of human receptors is somewhat blurred because of the types of human activities that are reasonable to consider in the general area of the disposal facility. These two categories of receptors are described further below in the regulatory context of the Clive DU PA.

1.3 Regulatory Context

Energy*Solutions* is permitted by the State of Utah to receive Class A Low Level under Utah Administrative Code (UAC) R313 25, *License Requirements for Land Disposal of Radioactive Waste.* The wastes that are received must be classified in accordance with the UAC R313 15 1009, *Classification and Characteristics of Low-Level Radioactive Waste.* The classification requirements in UAC R313-15-1009 reflect those outlined in NRC's 10 CFR 61 Section 55, but include additional references to radium 226 (^{226}Ra). Further, groundwater protection levels (GWPLs) must be adhered to, as outlined in the site's *Ground Water Quality Discharge Permit* (Utah 2014).

Title 10 CFR 61 (CFR 2014) is the Federal regulation for the disposal of certain radioactive wastes, including land disposal at privately-operated facilities such as that operated by Energy*Solutions* at Clive, Utah. It contains procedural requirements, performance objectives, and technical requirements for near-surface disposal, including disposal in engineered facilities with protective earthen covers, which may be built fully or partially above-grade. Near-surface disposal is defined as disposal in or within the upper 30 m (100 ft) of the earth's surface (10 CFR 61.2).

Figure 1. Location of the Clive site operated by Energy*Solutions* (base image from Google Earth).

A facility's compliance with performance objectives is evaluated by preparing a PA model. DU presents an interesting case because the uranium is nearly all ^{238}U, meaning that secular equilibrium is not attained for more than 2 My, and, during that time, activity associated with the DU continues to increase due to ingrowth of progeny from ^{238}U. At the time of the development of the regulation, DU waste as such did not, and was not expected to, exist in significant quantities. The nature of the radiological hazards associated with DU presents challenges to the estimation of long-term effects from its disposal. Recognition of this special behavior of DU has prompted the NRC to revisit the regulation. Revision of 10 CFR 61 has been underway since 2010 but is not complete. In the interim, Utah has updated UAC R313-25-9 to require specific PA for the disposal of significant quantities of DU.

The key endpoints of a PA are estimated future potential doses to members of the public (MOP). The performance objectives specified in Subpart C of 10 CFR 61 are in the following section:

> **§ 61.41 Protection of the general population from releases of radioactivity.** Concentrations of radioactive material which may be released to the general environment in ground water, surface water, air, soil, plants, or animals must not result in an annual dose exceeding an equivalent of 25 millirems [0.25 mSv] to the whole body, 75 millirems [0.75 mSv] to the thyroid, and 25 millirems [0.25 mSv] to any other organ of any member of the public. Reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable.

The location of a member of the public (MOP) is not defined clearly in the NRC statute. Under DOE Order 435.1 the MOP is defined as someone who does not access the disposal facility, but is located outside of the fence line or boundary of the facility. However, NRC does not similarly define an MOP, unless the disposal facility is not considered part of the natural environment. Otherwise, an MOP is not restricted other than through the activities in which the MOP might engage.

In addition to addressing MOP, 10 CFR 61 requires additional assurance of protecting individuals from the consequences of inadvertent intrusion. An inadvertent intruder is someone who is exposed to waste without intent, and without realizing that exposure might occur (after loss of institutional control). This is distinct from the intentional intruder, who might be interested in deliberately disturbing the site, or extracting materials from it, or who might be driven by curiosity or scientific interest. Intentional intruders are not evaluated in a PA.

> **§ 61.42 Protection of individuals from inadvertent intrusion.** Design, operation, and closure of the land disposal facility must ensure protection of any individual inadvertently intruding into the disposal site and occupying the site or contacting the waste at any time after active institutional controls over the disposal site are removed.

The distinction between MOP and an inadvertent intruder is clear in DOE Order 435.1, but is not as clear in NRC 10 CFR 61. Under DOE Orders, a MOP does not engage in activities within the boundaries of the disposal facility, and an inadvertent intruder inadvertently accesses the waste material directly. Consequently, the locations of MOP and intruder are different under DOE Orders. However, the NRC indicates that an inadvertent intruder is defined as follows:

> **§ 61.2 Definitions**. *Inadvertent intruder* means a person who might occupy the disposal site after closure and engage in normal activities, such as agriculture, dwelling construction, or other pursuits in which the person might be unknowingly exposed to radiation from the waste.

Because of the remoteness of the Clive Facility and, hence, the types of activities in which humans might engage, the distinction is made for this PA that ranchers, hunters, and OHV enthusiasts are inadvertent intruders because they "engage in normal activities, such as agriculture, dwelling construction, or other pursuits in which the person might be unknowingly exposed to radiation from the waste." This facility is regulated under NRC, in which case the definitions in 10 CFR 61 are most relevant. However, it is noted that the ranchers, hunters, and OHV enthusiasts do not intrude into the waste to create a direct exposure. Other receptors evaluated in the PA Model who are located offsite are regarded as MOPs. The results of this

Model are calculated without regard for MOP and IHI categorization. The Model simply evaluates dose to each receptor, providing the information necessary for comparison with performance objectives.

No dose limit is specified in 10 CFR 61 for the inadvertent intruder. However, since Part 61 has been issued, the standard used by NRC and others for LLW disposal licensing has been an annual dose of 500 mrem. The 500 mrem-in-a-year standard is also used in the DOE waste determinations implementing the Part 61 performance objectives (NUREG-1854), and as part of the license termination rule dose standard for intruders (10 CFR 20.1403).

The scope of a PA may be limited to the evaluation of MOP and inadvertent intrusion, and also to the issue of site stability. The performance standard for stability requires the facility to be sited, designed, and closed to achieve long-term stability to eliminate to the extent practicable the need for ongoing active maintenance of the site following closure. The intent was to provide reasonable assurance that long-term stability of the disposed waste and the disposal site will be achieved. To help achieve stability, the NRC suggested to the extent practicable that disposed waste should maintain gross physical properties and identity over 300 years, under the conditions of disposal, with a further suggestion that the disposal facility should be evaluated for at least a 500-year time frame. About the same time as Part 61 was promulgated, the NRC also put in place requirements for design of uranium mill tailings piles such as the Vitro site which is collocated with the Clive Facility. The NRC specified that the design shall provide reasonable assurance of control of radiological hazards to be effective for 1,000 years to the extent reasonably achievable, and, in any case, for at least 200 years.

This raises the issue of appropriate compliance periods for a waste form that does not reach peak radioactivity for more than 2 My. Section 2(a) of R313-25-9(5)(a) states:

> For purposes of this performance assessment, the compliance period shall be a minimum of 10,000 years. Additional simulations shall be performed for the period where peak dose occurs and the results shall be analyzed qualitatively.

The intent of this Model, therefore, is to evaluate impacts to receptors for a period of 10,000 years, and long-term performance of the disposal system beyond that time. The regulation does not address time frame for site stability. Given the long period of time before DU reaches secular equilibrium, it is difficult to determine when peak dose might occur. Consequently, the Clive DU PA Model has been implemented quantitatively for 10 ky, and has run additional simulations for 2.1 My, the time at which DU reaches peak activity. The results of the PA Model will be used to inform decisions about the suitability of the Clive Facility for disposal of DU waste, the amount of DU waste that can be disposed safely, and different options for the engineered design and the placement of the waste within the disposal system. These decisions will be made in light of the doses to the receptors identified for the Model, groundwater concentrations of ^{99}Tc and other radionuclides, and the long-term effects on site stability and dispersal of DU waste in returning lakes and lake sediment.

Site stability might also be considered to be a qualitative criterion for evaluating the concept of maintaining receptor impacts to be “as low as reasonably achievable” (ALARA). However, 10 CFR 20.1003 defines ALARA in the context of dose to populations. In addition, 10 CFR 61.42 states that “reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable." The ALARA process is described in more detail in the white paper *Decision Analysis Methodology for Assessing ALARA Collective Radiation Doses and Risks* (Neptune 2021d). ALARA is evaluated in terms of population doses for the design options that are considered. This allows design options to be compared, and, ultimately, to be optimized. NRC suggests a value of $5,100 for the cost per person rem, with a possible range of $3000 to $7500 (NRC 2015).

In addition to the radiological criteria, the State of Utah imposes limits on groundwater contamination, as stated in the Ground Water Quality Discharge Permit (Utah 2014). Part I.C.1 of the Permit specifies that GWPLs in Table 1A of the Permit shall be used for the Class A LLW Cell. Table 1A in the Permit specifies general mass and radioactivity concentrations for several constituents of interest to DU waste disposal. These GWPLs are derived from Ground Water Quality Standards listed in UAC R317-6-2 *Ground Water Quality Standards*. Exceptions to values in that table are provided for specific constituents in specific wells, tabulated in Table 1B of the Permit. This includes values for mass concentration of total uranium, radium, and gross alpha and beta radioactivity concentrations for specific wells where background values were found to be in exceedance of the Table 1A limits.

As specified in the Permit, groundwater at Clive is classified as Class IV, saline ground water (according to UAC R317-6-3 *Ground Water Classes*), and is highly unlikely to serve as a future water source. The underlying groundwater in the vicinity of the Clive site is of naturally poor quality because of its high salinity and, as a consequence, is not suitable for most human uses, and is not potable for humans. However, the Clive DU PA Model calculates estimates of groundwater concentrations at a virtual well near the Federal Cell for comparison with these GWPLs. Part I.D.1 of the Permit specifies that the performance standard for radionuclides is 500 years.

1.4 Performance Assessment

Within the regulatory framework described above, a PA addresses doses to potential human receptors within a time frame of compliance. The Clive DU PA Model also addresses performance of the system for approximately 2.1 My—until secular equilibrium of ^{238}U and its decay products is reached. The PA process starts with the regulatory context but is itself a decision support process. Decisions may be made based on the results of the PA modeling that is performed. In the context of decision analysis, this requires steps that include the following:

1. State a problem,
2. Identify objectives (and measures of those objectives—i.e., attributes or criteria),
3. Identify decision alternatives or options,
4. Gather relevant information, decompose and model the problem (structure, uncertainty, preferences),
5. Choose the "best" alternative (the option that maximizes the overall benefit),
6. Conduct uncertainty analysis, sensitivity analysis, and value of information analysis to determine if the decision should be made, or if more data/information should be collected to reduce uncertainty and, hence, increase confidence in the decision, and
7. Go back (iterate) if more data/information are collected.

The problem addressed here is one of potential disposal of DU waste at the Clive Facility. The objectives are to minimize risk to human health and the environment. Risk is measured in terms of dose and uranium toxicity hazard to the human receptors that are identified for analysis. The decision options that are evaluated relate to different waste configuration options for DU waste disposal. Given that context, the next step of the PA process is to gather information, and to build a PA model. There are several steps involved, each one building on the previous step. The modeling process starts with evaluating features, events, and processes (FEPs) that might be important for evaluating performance, and using the FEPs analysis to build a conceptual site model (CSM). These steps are described in full in the *FEP Analysis for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021e), and the *Conceptual Site Model for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021q).

Development of the CSM sets the stage for subsequent model structuring, which is the first step needed to build the numerical model of the system. All relevant FEPs are captured in the model structure, from waste inventory, mechanisms for transport through the engineered system, and migration through the natural environment to the accessible environment, to identification of human receptors, exposure pathways, and dose assessment. The model structure leads to specification of the model. Probability distributions are specified for each input parameter. The type of information available for each input parameter is highly variable, hence requiring varied approaches for specification. Different methods that are used are described in the white paper *Fitting Probability Distributions* (Neptune 2021s).

Model structuring and specification completes the numerical model. The model is computed using the GoldSim systems analysis software (GTG 2020). GoldSim is probabilistic simulation software that includes a graphical user-interface that is convenient for developing PA models. GoldSim is inherently a systems-level software framework. The focus of a GoldSim model is on the decision-making process, which includes managing uncertainty and coupling all processes. This PA model is intended to reflect the current state of knowledge with respect to the proposed DU disposal, and to support environmental decision making in light of inherent uncertainties.

The development of the model is iterative, where the iterations depend on model evaluation, which is performed at various levels. During model construction the model is evaluated iteratively as new components are added. Once a complete model is assembled, the model is then subjected to uncertainty and sensitivity analysis. The goals of the uncertainty analysis are to evaluate results against the performance objectives and to understand the values of the results with respect to the model formation. The sensitivity analysis is used to identify components of the model that are most influential on the output. This leads to model iteration as suggested in Step 7 above.

Building a model to inform PA is a large undertaking. There are many intricacies that must be accommodated starting with development of FEPs, moving through the CSM, mathematical abstraction of environmental processes, numerical model structuring, development of probability distributions for the input parameters, and model evaluation. This complex process is described briefly in this document, and is described in more detail in the supporting documents (see white papers). In addition to complete documentation, the GoldSim model itself is fully contained, with internal documentation of every aspect of the model structure. The extensive documentation is provided for two reasons: The first is simply that it provides access to all information used in the

Model. This is done in the spirit of openness, transparency, and, hence, defensibility. The second is in the context of the quality assurance program that requires tracking of all information from its source through to the final model. The QA program implemented for this Model is described in full in the *Quality Assurance Project Plan* (Neptune 2021r).

1.5 Technical Evolution of PA and PA Modeling

Since PA modeling began in the late 1970s through the early 1990s at many of the radioactive waste disposal facilities around the U.S., many different approaches to modeling have been used. These approaches span the range from deterministic process-level modeling to probabilistic systems-level modeling. Early PA models tended towards deterministic modeling for several reasons: 1) PA modeling was initially performed with a focus on groundwater modeling, which was, and still is, often performed using deterministic process-level models; 2) there were computational or technological difficulties with taking a probabilistic approach; and 3) PA regulations and guidance were established mostly with deterministic performance objectives, which was interpreted as a reason for performing deterministic modeling. In particular, PA for low-level radioactive waste (LLW) disposal facilities followed deterministic performance objectives. However, the regulations for the Waste Isolation Pilot Plant and the Yucca Mountain Project (YMP) (Title 40, *Code of Federal Regulations* (CFR), Part 191, "Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes," and Title 40, CFR Part 197, "Public Health and Environmental Radiation Protection Standards for Yucca Mountain, Nevada") provide an exception to the deterministic objectives, and, consequently, probabilistic PA models have been developed for these radioactive waste disposal facilities.

Technological advances in the last decade have also allowed more PA modeling to move towards a probabilistic approach. Finally, PA modeling is multi-disciplinary, and as more technical disciplines have been brought into PA modeling, there has been increased recognition of the potential benefits of probabilistic systems-level modeling.

Systems-level models are usually computationally simpler than process-level models. However, the systems-level PA model might still have large numbers of parameters, which reveals the complexity of dealing with PA modeling even at a systems-level scale. The large number of parameters is a consequence of the many constituents of concern that are usually included in PA models, and the need to characterize transport properties for each of these constituents (e.g., partitioning coefficients, solubility, plant uptake factors). However, it is unlikely that more than a few of these parameters are important predictors for a given PA endpoint (e.g., dose to a member of the public, groundwater protection levels). Along these lines, another advantage of systems-level modeling performed in a probabilistic environment is the ability to identify parameters that are most important or sensitive for a given endpoint. Because system-level models may be probabilistic, global sensitivity analysis methods can be used to identify the most sensitive parameters (see the white paper *Machine Learning for Sensitivity Analysis of Probabilistic Environmental Models* (Neptune 2021k)).

The advantages of system-level models are that they are capable of 1) coupling of different processes without the need for the application of ad hoc boundary conditions, 2) using an appropriate spatial and temporal scaling relative to the decisions that need to be made, 3) having the ability to characterize and manage uncertainty through probabilistic modeling, and 4) being used to perform global sensitivity analysis. Use of the global sensitivity analysis can potentially lead to refinement and enhancements of the underlying models or the identification and collection of new data (e.g., research studies or monitoring) as necessary to reduce uncertainty of certain parameters or variables. Use of a system-level model can also provide the ability to rapidly and efficiently explore alternative conceptualizations of the system, which allows a greater ability to address scenario and conceptual model uncertainties.

System-level models are often supported by process-level models. Each component of a system-level model requires model building, which can include abstraction from a process-level model. The purpose of the abstraction is to be able to capture the essence of the process-level model in the probabilistic system-level model, so that its relative importance or sensitivity can be evaluated. As a consequence of the development of system-level modeling frameworks such as GoldSim, PA models are often developed following this approach, with global sensitivity analysis driving iteration until the model results indicate a clear response and decision path.

1.6 Report Structure

The remainder of this report provides a more complete introduction to the PA modeling process applied to the Clive DU waste disposal option, briefly describes the FEPs process, and follows with a brief description of the CSM. The CSM description is aimed at identifying components of the model that might be significant in the model results. Model building always leads to insights into the important components of a model, and that is conveyed in terms of important aspects of the CSM.

The model structure is described prior to presentation of results, which are the main focus of this report. Results are presented for the 10-ky quantitative model and for the deep time model. For the 10-ky model, the important results from a regulatory perspective include doses to the receptors that have been identified as critical. Groundwater concentrations are evaluated for the next 500 yrs. For the deep time model, which models the performance of disposal of DU at Clive for the next 2.1 My, results are presented in terms of lake water concentrations assuming the return of a deep pluvial lake in the Bonneville Basin, and sediment concentrations that remain after the pluvial lake recedes.

A summary is provided that includes further interpretation of results and comparison with performance objectives. More complete documentation of the details of the model development is contained in the white papers, and also in the GoldSim model itself. Taken together, these documents present and support the Clive DU PA Model v2.0.

2.0 Introduction

The safe storage and disposal of DU waste is essential for mitigating releases of radioactive materials and reducing exposures to humans and the environment. The Federal Cell, a radioactive waste facility located in Clive, Utah, and operated by Energy*Solutions,* is proposed to receive and store DU waste. The Clive Facility has been tasked with evaluating disposal of the DU waste in an economically feasible manner that protects humans from future radiological releases.

To assess whether the Clive Facility location and containment technologies are suitable for protection of human health, specific performance objectives for land disposal of radioactive waste set forth in UAC R313-25, must be met. These Utah requirements reflect and expand on similar requirements in Title 10 Code of Federal Regulations Part 61 (10 CFR 61) Subpart C, and promulgated by the Nuclear Regulatory Commission (NRC). In order to support the required radiological PA, a model is needed to evaluate doses to human receptors that would result from the disposal of DU and its associated radioactive contaminants.

This section provides an introduction to the general approach taken for developing the Clive DU PA Model. The focus is on methods that have been undertaken at each step along the path, from description of the problem and the disposal facility under consideration, FEPs identification, CSM development, approaches to numerical modeling, and evaluation of results.

2.1 General Approach

Performance Assessment models are complex probabilistic systems-level models that evaluate the long-term effects to human health and the environment of disposal of radioactive waste. The approach includes the following steps:

1. Identification of disposal options—in this case use of the Federal Cell at the Clive Facility in Utah for disposal of DU waste, and specifics of the disposal configuration. This includes consideration of the regulatory environment in which the PA model is to be evaluated.
2. Identification of important FEPs that should be considered in the evaluation of the Clive disposal facility. This includes identification of human receptors who might be engaged in activities near or on the disposal facility.
3. Development of a CSM that captures the relevant FEPs. This includes evaluation of the FEPs for the likelihood of occurrence and their consequence. If, for a given FEP, the likelihood of occurrence or consequence is considered too small, then the FEP is not included in the CSM.
4. Development of a numerical or computational model for the PA. This translates the CSM into numerical code for processing. This includes model structure and model specification. The Clive DU PA Model is developed fully probabilistically, with coupling of all processes included in the model.
5. Model evaluation, including:
    a. uncertainty analysis, which compares the probabilistic output to the performance objectives, and
    b. sensitivity analysis, which is used to identify the important parameters or components of the model in terms of prediction of the model output. This may lead to model refinement or data collection if the uncertainties in the decisions that need to be made are considered to be too large.
6. Reporting of the PA model and its results, including:
    a. doses to potential human receptors,
    b. population doses evaluated in the context of ALARA,

   c. groundwater concentrations at a specified location, and
   d. deep time concentrations in lake water and lake sediment.

7. Quality Assurance.

A PA is a type of systematic (risk) analysis that addresses what can happen, how likely it is to happen, what the resulting impacts are, and how these impacts compare to regulatory standards. The essential elements of a performance assessment are

- a description of the site and engineered system,
- an understanding of events and processes likely to affect long-term facility performance,
- a description of processes controlling the movement of contaminants from waste sources to the general environment,
- a computation of metrics reflecting system performance including concentrations, doses, and other human health risk metrics to members of the general population, and
- an evaluation of uncertainties in the modeling results that support the assessment.

The role of PA in a regulatory context is often restricted to the narrow use of evaluating compliance. In the present case, the Clive DU PA Model v2.0 can be used to evaluate compliance—and inform a PA document that presents the argument that demonstrates compliance—with the applicable provisions of the Utah Administrative Code. In addition to that role, however, and because of the long-term nature of the analysis, the intent of the Model is not to estimate actual long-term human health impacts or risks from a closed facility. We believe that it is technically inappropriate to view the model results in terms of actual long-term human health effects. The purpose of the Model is to provide a robust analysis that can examine and identify the key elements and components of the site, the engineered system, and the environmental setting that could contribute to potential long-term impacts. Because of the time-scales of the analysis and the associated uncertainty in knowledge of characteristics of the site, the waste inventory, the engineered system and its potential to degrade over time, and changing environmental conditions, a critical part of the PA process is also the consideration of uncertainty and evaluation of model and parameter sensitivity in interpretation of PA modeling results.

A probabilistic model includes a mathematical analysis of stochastic events or processes and their consequences. Probabilistic analysis acknowledges that events and processes are inherently uncertain, and involves characterization of uncertainty around expectation. Model output hence is expressed with the same characteristics of expectation and uncertainty, which lends itself to a global or probabilistic sensitivity analysis. Sensitivity analysis for probabilistic models is used to identify the parameters (variables) that are the most important predictors of the output for a given endpoint (e.g., dose to a resident, concentrations in groundwater). The important predictors are those that explain most of the variability in the output variable of interest. Usually, for a given endpoint of interest, this is no more than a handful of input or explanatory variables. Because PA models are usually complex, dynamic, non-linear systems, these global sensitivity analysis methods involve complex non-linear regression models that capture the impact of each input variable across its specified range (range of its probability distribution).

Performance Assessment concerns modeling radioactive waste disposal facilities into the long-term future. As such, PA models must address both the spatial and temporal magnitude of PA. It is critical in a PA model to address the scale of the decisions that need to be made. Modeling is performed at the spatial and temporal scale that is needed to support PA decisions related to closure. In effect, system-level models might be fairly coarse, but this has advantages for evaluating how the system evolves over time. For example, all processes involved are fully coupled in the same model; probabilistic modeling can be performed to both characterize and manage uncertainty; and statistics and decision analysis can be incorporated into the modeling framework.

Results from a systems-level model are aimed at the decision objectives at the spatial and temporal scales of interest. These results are presented as probability distributions for the endpoints of interest (peak doses, concentrations, etc.), and comparisons are made with performance objectives where appropriate (dose, groundwater concentrations).

Given the PA model construction with respect to the spatio-temporal scales of the model, there are two levels of response. The first is for each hypothetical individual included in the model; and the second is at a population level for the ALARA analysis. Dose results are available for each receptor in every year of the model, up to 10 ky. Each dose result at this level represents individual doses resulting from the concentrations in various exposure media predicted by the model at that time. The dose parameters, however, are specific to the individual. This approach to modeling dose was taken for a few reasons: 1) There are not many receptors at Clive, in which case, from a computational perspective it was feasible to consider each individual receptor, and 2) this approach allows population dose to be estimated directly from the individual doses.

Although individual peak doses are available in the model, the output of interest is the mean dose. Traditionally this has been estimated as the mean dose to a hypothetical average individual. With this model, the mean dose is estimated directly from the individual doses. Mean doses are evaluated in each year of the model, but, traditionally for PA, interest lies primarily in the worst-case year, in which case the peak mean dose across time is the metric of interest.

The effect is that average (mean) doses are available at multiple scales. Traditional comparison with performance objectives is performed with the peak mean dose, meaning the highest mean dose in a year across the 10-ky performance period. In this model, for which radioactivity is increasing with time for the DU waste, the greatest dose almost always occurs at 10 ky, and the highest groundwater concentrations at 500 years. So peak mean dose results at 10 ky are presented. Note that there will be 10,000 estimates of dose for each receptor if 10,000 realizations are run. This is usually enough simulations to stabilize an estimate of the mean. The dose assessment model is described in detail in the white paper *Dose Assessment for the Clive DU PA* (Neptune 2021f).

If the distribution of the peak of the means is treated as if each simulation result is independent, then the 95th percentile of the distribution is somewhat analogous to the notion of a 95% upper confidence interval that is commonly used under CERCLA. Comparisons may be made with the PA performance objectives using the median, mean, and 95th percentile of the output distribution for each endpoint of interest.

For the ALARA analysis, the model is set up so that the population dose can be estimated for each receptor class in each year of the model. The 10,000 realizations provide 10,000 estimates of population dose in each year of the model. The population dose distribution can also be processed to include the cost to human health and society by assigning a dollar value to person-rem. This process is described in detail in the *Decision Analysis* white paper (Neptune 2021d).

Once the results are obtained and compared to the performance objectives, a global sensitivity analysis is performed to identify the parameters that are the most influential in predicting each endpoint of interest. Often this is only a handful of parameters for each endpoint. The results of the sensitivity analysis can be used to determine if it might be useful to collect more data or to otherwise refine the model before making final decisions. This is ostensibly a decision analysis task, which can be performed using the sensitivity analysis results as a basis for determining the benefit of collecting new data. The potential benefits would be seen in reduction in uncertainty in the model results. The sensitivity analysis methods used for this model are described in the white paper *Machine Learning for Sensitivity Analysis of Probabilistic Environmental Models* (Neptune 2021k).

This holistic approach to PA modeling is aimed at providing insights into disposal system performance. Although the model predicts or estimates doses to human receptors, among other endpoints, the more important aspect of this type of modeling is to gain an understanding of how the system might evolve over the time frames of interest, and to use this understanding to support decision making including the ability to safely dispose of waste and optimization of waste placement within the disposal system. No matter what doses are predicted, it is important to understand why those modeled doses are observed, and hence, what are the important features of the disposal system with regards to protection of human health and the environment.

2.2 General Facility Description

The Energy*Solutions* low-level radioactive waste disposal facility is west of the Cedar Mountains in Clive, Utah, as shown in Figure 1. Clive is located along Interstate-80, approximately 5 km (3 mi) south of the highway, in Tooele County. The facility is approximately 80 km (50 mi) east of Wendover, Utah, and approximately 100 km (60 mi) west of Salt Lake City, Utah. The facility sits at an elevation of approximately 1302 m (4275 ft) above mean sea level (amsl). The Clive Facility is adjacent to the above-ground disposal cell used for uranium mill tailings that were removed from the former Vitro Chemical company site in South Salt Lake City between 1984 and 1988 (Baird et al. 1990).

The Clive Facility receives waste shipped via truck and rail. DU waste is proposed to be disposed in the Federal Cell (Figure 2), a permanent engineered disposal embankment that will be clay-lined with composite clay barriers and an ET cover over the top slope, and a riprap cover over the side slopes. The disposal embankment is designed to perform for a minimum of 500 years. The Clive Facility includes the following:

- the Bulk Waste Facility, including the Mixed Waste, Low Activity Radioactive Waste (LARW), 11e.(2), and Class A LLW disposal cells plus support facilities,
- the Containerized Waste Facility (CWF), located within the Class A LLW area, and
- the Treatment Facility (TF), located in the southeast corner of the Mixed Waste area.

The DU waste under consideration is proposed for disposal in the Federal Cell. The terms "cell" and "embankment" are here used interchangeably. The DU PA Model v2.0 considers only the long-term performance of DU disposed in this waste cell. The Federal Cell is next to the 11e.(2) cell, which is licensed for disposal of uranium processing by-product waste and is not considered in this analysis.

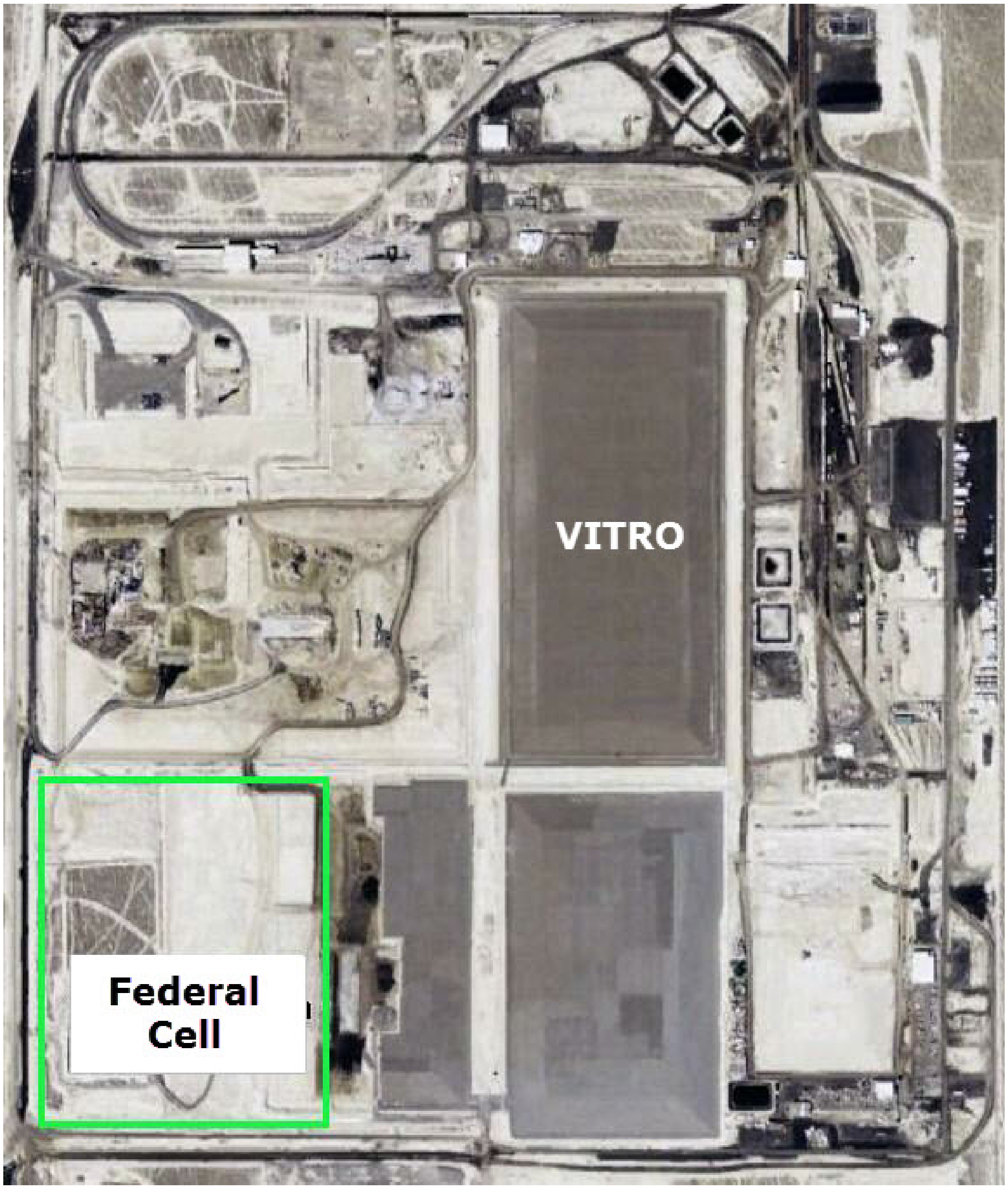

Figure 2. The Energy*Solutions* Clive site, with the Federal Cell location indicated.

The general aspect of the Federal Cell is that of a hipped cap, with relatively steeper sloping sides nearer the edges. The upper part of the embankment, known as the top slope, has a moderate slope, while the side slope is markedly steeper (20% as opposed to 2.4%). For DU PA v2.0, no waste is placed under the side slopes, in which case modeling focuses on waste placed under the top slope. The embankment is also constructed such that a portion of it lies below-grade; and this represents the modeled disposal location for DU. Details of the design of the embankment are contained in the white paper *Embankment Modeling for the Clive DU PA* (Neptune 2021a).

DU waste from the Savannah River Site (SRS) and the gaseous diffusion plants (GDP) at Portsmouth, Ohio and Paducah, Kentucky is proposed for disposal at the Clive facility. Three categories of DU waste are considered:

1. Depleted uranium oxide (UO_3) waste from the Savannah River Site (SRS) presently on site at the Clive facility,

2. DU from the GDPs, which exists in two principal populations:

    a) DU contaminated with fission and activation products from reactor returns introduced to the diffusion cascades, and

    b) DU consisting of only "clean" uranium, with no such contamination.

The DU oxides that are to be produced at the GDP "deconversion" plants will be primarily U_3O_8. The contamination problem arises from the past practice of introducing irradiated nuclear materials (reactor returns) into the isotopic separations process. Irradiated nuclear fuel underwent a chemical separation process to remove the plutonium for use in nuclear weapons. Uranium, then thought to be a rare substance, was also separated out, but contained some residual contamination from activation and fission products. This uranium was again converted to UF_6 for re-enrichment, and was introduced to the gaseous diffusion cascades, contaminating them and the storage cylinders as well. Decay products (^{226}Ra), activation products (^{241}Am, ^{237}Np, ^{238}Pu, ^{239}Pu, ^{240}Pu, ^{241}Pu, ^{242}Pu), and fission products (^{90}Sr, ^{99}Tc, ^{129}I, ^{137}Cs) potentially contaminate the DU waste. The proposed inventory evaluated in the Model is described fully in the white paper *Radioactive Waste Inventory for the Clive DU PA* (Neptune 2021b).

3.0 Features, Events, and Processes

The conceptual site model (CSM) describes the physical, chemical, and biological characteristics of the Clive Facility. The CSM, therefore, encompasses the inventory of disposed wastes, the migration of radionuclides contained in the waste through the engineered and natural systems, and the exposure and radiation doses to hypothetical future humans. These site characteristics are used to define variables for the quantitative PA model that is used to provide understanding of the future potential human radiation doses from the disposal of DU waste.

The content of the CSM informs the Model with respect to regional and site-specific features, events, and processes, such as climate, groundwater, and human receptor scenarios. The CSM accounts for and defines relevant features, events, and processes (FEPs) at the site, materials and their properties, interrelationships, and boundaries. These constitute the basis of the Model, on which, or through which, radionuclides are transported to locations where receptors might be exposed.

A key activity in developing a PA for a radiological waste repository is the comprehensive identification of relevant external factors that should be included in quantitative analyses. These factors, termed "features, events, and processes" (FEPs), form the basis for scenarios that are evaluated to assess site performance.

The universe of FEPs screened and identified as relevant for the Clive DU PA Model are documented in the white paper *FEP Analysis for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021e) and further elaborated in the CSM document (*Conceptual Site Model for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021q)).

4.0 Conceptual Site Model

Important components of the conceptual site model are described in the following sections. Details are contained in the white paper *Conceptual Site Model for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021q).

4.1.1 Disposal Site Location

Energy*Solutions* operates a low-level radioactive waste disposal facility west of the Cedar Mountains in Clive, Utah, as shown in Figure 1. Clive is located along Interstate-80, approximately 5 km (3 mi) south of the highway, in Tooele County. The facility is approximately 80 km (50 mi) east of Wendover, Utah, and approximately 100 km (60 mi) west of Salt Lake City, Utah. The facility sits at an elevation of approximately 1302 m (4275 ft) above mean sea level (amsl) and is accessed by both highway and rail transportation. The Clive Facility is adjacent to the above-ground disposal cell used for uranium mill tailings that were removed from the former Vitro Chemical company site in South Salt Lake City between 1984 and 1988 (Baird et al. 1990) (Figure 2).

4.1.2 Disposal Site Description

The Clive Facility receives waste shipped via truck and rail. DU waste is proposed for disposal in the Federal Cell, a permanent above-ground engineered disposal embankment that is clay-lined with clay barriers and an ET cover. The disposal embankment is designed to perform for a minimum of 500 years with minimal need for active maintenance after site closure. More detail relating to the properties of the disposal embankment is provided in Section 4.1.2.1.

The Energy*Solutions* Clive Facility is divided into the following areas: the Bulk Waste Facility, including the Mixed Waste, Low Activity Radioactive Waste (LARW), 11e.(2), and Class A LLW disposal cells; the Containerized Waste Facility (CWF), located within the Class A LLW area; and the Treatment Facility (TF), located in the southeast corner of the Mixed Waste area. This analysis considers only the Federal Cell (Figure 2).

4.1.2.1 Federal Cell

Depleted uranium waste is proposed for disposal in the Federal Cell. The Federal Cell is about 374 × 585 m (1226.5 × 1920 ft), with an area of approximately 22 ha (54 acres), and an estimated total waste volume of about2 million m^3 (2.6 million yd^3). A drainage ditch surrounds the disposal cell. The cell is constructed on top of a compacted clay liner. Waste will be placed above the liner and will be covered with a layered engineered cover constructed of natural materials. The top slopes will be finished at a 2.4% grade while the side slopes will be no steeper than 5:1 (20% grade).

The design of the Federal Cell cover has been engineered to discourage erosion, to reduce the effects of infiltration, and to protect workers and the public from radionuclide exposure. The cell top slope cover consists of layers including two clay radon barriers, a frost protection layer, an evaporative zone layer, and a surface layer. The side slopes will have a riprap cover intended to discourage erosion. The clay radon barriers are designed to minimize infiltration of precipitation and runoff and to reduce the migration of radon from the waste cell. Further details on the Federal Cell design are provided in the *Embankment Modeling* white paper (Neptune 2021a).

4.1.2.2 Waste Inventory

The waste inventory is limited to the disposal of DU wastes of two general waste types: 1) depleted uranium trioxide (DUO_3) waste from the Savannah River Site (SRS) and 2) anticipated DU waste as U_3O_8 from gaseous diffusion plants (GDPs) at Portsmouth, Ohio and Paducah, Kentucky. The quantity and characteristics of DU waste from other sources that has previously been disposed in other embankments at the Clive Facility is not included. A full list of radionuclides has been established for the PA modeling effort. The radionuclide species list is based upon process knowledge, radionuclides analyzed for (though not necessarily detected) in the DU waste material, and decay products with half-lives over five years. The species list consists of the following radionuclides:

> *fission products*:
> Sr-90, Tc-99, I-129, Cs-137
>
> *progeny of uranium isotopes*:
> Pb-210, Rn-222, Ra-226, -228, Ac-227, Th-228, -229, -230, -232, Pa-231
>
> *uranium isotopes*:
> U-232, -233, -234, -235, -236, -238
>
> *transuranic radionuclides*:
> Np-237, Pu-239, -239, -240, -241, -242, Am-241

The waste inventory is discussed in more detail in the *Waste Inventory* white paper (Neptune 2021b) and in the *Conceptual Site Model* white paper (Neptune 2021q).

4.1.2.3 Climate

The following sections briefly describe the aspects of the regional climate that influence the performance of the site and engineered features. Further details are provided in the *Conceptual Site Model* white paper (Neptune 2021q), and in the *Unsaturated Zone Modeling* white paper (Neptune 2021c). In general, the climate is dry, with evapotranspiration potential that exceeds precipitation on an annual basis. This leads to low infiltration rates, and subsequent relatively slow movement of radionuclides to groundwater.

4.1.2.3.1 Temperature

Regional climate is regulated by the surrounding mountain ranges, which restrict movement of weather systems in the vicinity of the Clive Facility. The most influential feature affecting regional climate is the presence of the Great Salt Lake, which can moderate downwind temperatures since it never freezes (NRC 1993). The climatic conditions at the Clive Facility are characterized by hot and dry summers, cool springs and falls, and moderately cold winters (NRC 1993). Frequent invasions of cold air are restricted by the mountain ranges in the area. Data from the Clive facility from 1993 to 2020 indicate that monthly temperatures range from about -2.9°C (26.8°F) in December to 26.6°C (79.9°F) in July (Trinity Consultants 2021).

4.1.2.3.2 Precipitation

The Clive Facility is characterized as being an arid to semi-arid environment where evaporation greatly exceeds annual precipitation (AdrianBrown 1997). Data collected at the Clive Facility from 1993 to 2020 indicate that average annual rainfall is on the order of 21.4 cm (8.4 in) per year (Trinity Consultants 2021). Precipitation generally reaches a maximum in the spring (1998-2020 monthly average of 3.2 cm [1.25 in] in April), when storms from the Pacific Ocean are strong enough to move over the mountains (NRC 1993; Whetstone Associates 2006). Precipitation is generally lighter during the summer and fall months (1998-2020 monthly average of 0.6 cm [0.25 in] in August) with snowfall occurring during the winter months (Trinity Consultants 2021).

4.1.2.3.3 Evaporation

Because of warm temperatures and low relative humidity, the Clive Facility is located in an area of high evaporation rates. NRC (1993) indicates that average annual pond evaporation rate at the Clive Facility is 150 cm/yr (59 in/yr), with the highest evaporation rates between the months of May and October. Previous modeling studies indicate that the Dugway climatological station nearby is comparable to the Clive site with respect to evaporation and have reported pan-evaporation estimates of 183 cm/yr (72 in/yr), which is considerably greater than average annual rainfall (AdrianBrown 1997). While the data range for the site is more limited, annual pan evaporation measured at the site greatly exceeds annual precipitation. Average annual pan evaporation is 139 cm (54 in) (Trinity Consultants 2021).

4.1.2.4 Unsaturated Zone

The engineered features of the landfill, including cap, waste, and liner, are all in the unsaturated zone (UZ)[1]. The part of the UZ that extends from the bottom of the cell liner to the water table consists of naturally occurring lake sediments from the ancestral Lake Bonneville.

Diffusion in the water phase may also play a role in the transport of waterborne contaminants in the UZ, since the advective flux is expected to be small. The concentration gradients in the UZ are also expected to be predominantly vertical, so diffusion will also occur in the vertical direction, oriented with the column of cells.

Diffusion in the air phase within the UZ below the facility will not be modeled, since the only diffusive species would be radon, which is of greater concern at the ground surface. Upward

[1] The deep time model (*Deep Time Assessment for the Clive DU PA* (Neptune 2021h)) acknowledges the likelihood of intermediate and deep lakes returning to the Great Basin, including the Clive facility, during future glacial cycles, which are projected to occur well after the 10,000-yr duration of the quantitative model.

radon diffusion to the ground surface will be dominated by radon parents in the waste zone, and is modeled within the engineered cap. Unsaturated zone processes, material properties, and parameters represented in the PA model are described in detail in the *Unsaturated Zone Modeling* white paper (Neptune 2021c). The primary concerns for the PA are movement through the unsaturated zone of mobile radionuclides, such as ^{90}Sr, ^{99}Tc, and ^{129}I to groundwater and the upward diffusive movement of radon.

4.1.2.4.1 Infiltration

Recharge is an important process in controlling the release of contaminants to the groundwater pathway. Site characteristics influencing movement of water from precipitation through the vadose zone to the water table include climate, soil characteristics, and native vegetation. Engineered barriers are used to control the flow of water into the waste. A hydrologic model of the waste disposal system must realistically represent precipitation, the source of water to the system, runoff, evaporation, transpiration, and changes in storage to estimate the flow through the system. Under natural conditions plants remove water from the upper soil zone through root uptake and transpiration, reducing the water available for seepage deeper into the profile. The same processes occur in an engineered cover layer that has been revegetated. Seepage through a cover system can occur when soils become wet enough to increase their conductivity to water. Cover surface layers with adequate storage capacity can hold the water in the near surface until it can move back into the atmosphere through evaporation, reducing the seepage of water to the waste.

Steady-state water infiltration rates and water contents for the cover layers required as input for the DU PA Model are developed from infiltration modeling using the HYDRUS-1D software package. This section describes the development of HYDRUS-1D models for the Clive DU PA Model and implementation of HYDRUS-1D results into the probabilistic framework employed by GoldSim. The HYDRUS-1D model (Šimůnek et al. 2018) was selected for simulating the performance of the ET cover proposed for the Federal Cell top slope because of its ability to simulate processes known to have a significant role in water flow in landfill covers in arid regions.

The one-dimensional version of the software (rather than the two-dimensional version) was selected for simulating flow in the Federal Cell ET cover since previous numerical modeling of flow in the similar ET cover design for the Class A West cover demonstrated that subsurface lateral flow was not significant (Energy*Solutions* 2012). To test the importance of 2-D flow effects in the ET cover design, 2-D transient flow simulations were conducted for representative sections of the cover. The approach taken was to model a section of the side slope in two dimensions. Representative hydraulic properties were assigned to the ET cover layers and the models were run with daily atmospheric boundary conditions for 100 years. Root water uptake was modeled assuming the roots extended to the bottom of the evaporative zone layer and assuming a rooting density that decreased with depth. The results of these 2-D simulations demonstrated that water flow in the cover system for both designs is predominantly vertical with no significant horizontal component. These results demonstrate that 1-D models can be used to provide a defensible analysis of cover performance for the ET cover design due to the lack of lateral flow.

Model development requires construction of a computational grid based on the geometry of the model domain. Hydraulic properties for each layer required for the model were available from previous studies at the site or were estimated from site-specific measurements such as particle size distributions. Some of the hydraulic properties were variable in this modeling as described below. HYDRUS requires daily values of precipitation, potential evaporation, and potential transpiration to represent the time-variable boundary conditions on the upper surface of the cover. Representative boundary conditions were developed from records of nearby meteorological observations. Parameters for describing root water uptake are available from the literature.

The process of abstracting a detailed flow model into a probabilistic model that could be implemented in GoldSim required the development of distributions for hydraulic property parameters for the cover materials that influence water balance. Included in the distributions used was a distribution for the saturated hydraulic conductivity (K_s) of the radon barriers for the modeling. This distribution included values from a range of in-service ("naturalized") clay barrier K_s values described by Benson et al. (2011), Section 6.4, pp. 6–12. Multiple HYDRUS-1D simulations with varying hydraulic property inputs were conducted to provide values of infiltration flux into the waste zone, and water content within each ET cover layer. From these simulation results, a 1000-row table was developed that represents 1000 outputs of the HYDRUS model, for values of net infiltration flux and cover layer water content. This table is then implemented in the Clive DU PA Model to provide for each realization a steady-state infiltration flux and layer water contents that include the uncertainty in these parameters. The ET cover and unsaturated zone infiltration modeling approaches and results are described in detail in the *Unsaturated Zone Modeling* white paper (Neptune 2021c).

4.1.2.5 Geochemical

The conceptual model for the transport of radionuclides at the Clive Facility allows sufficient meteoric water infiltration into the waste zone to allow dissolution of uranium and daughters, fission products, and potential transuranic contaminants (along with native soluble minerals). At first, leaching is likely to be solubility-limited with respect to uranium, and the leachate will migrate away from the source with the uranium concentration at the solubility limit. The other radionuclides are unlikely to be at a solubility limit. Depending upon the amount of water available, these radionuclides will either re-precipitate once the thermodynamic conditions for saturation are reached, or remain in solution and be transported to the saturated zone. This water is expected to be oxidizing, with circum-neutral to slightly alkaline pH (similar to the upper unconfined aquifer), and an atmospheric partial pressure of carbon dioxide. However, the amount of total dissolved solids (TDS) is expected to be initially lower than the upper aquifer.

The composition of this aqueous phase will change as it reaches the saturated zone, with some increase in dissolved solids and potentially lower dissolved oxygen and carbon dioxide. The saturated zone for this PA model includes only the shallow, unconfined aquifer. Transport of radionuclides is expected to be restricted to this aquifer and to not migrate to the lower aquifer due to a natural upward gradient at the facility. The chemical composition of the saturated zone is characterized as having a somewhat alkaline pH likely due to the presence of carbonates, mainly oxidizing though transient reduced conditions may exist, with high levels of dissolved ions of mainly sodium and chlorine.

The transport of dissolved radionuclides can also be limited by sorption onto the solid phase of associated minerals and soils within each of the zones considered in this PA model. The transport of uranium is limited by both solubility and the sorption of radionuclides in groundwater. Sorption consists of several physicochemical processes including ion exchange, adsorption, and chemisorption. Sorption is represented in the PA model as a partitioning coefficient (K_d) value.

Distributions of radionuclide-specific partitioning coefficients and solubilities were developed for the PA model considering the geochemical conditions in the cell, the unsaturated zone, and the shallow aquifer at the Clive Facility. The development of these distributions is described in detail in the *Geochemical Modeling* white paper (Neptune 2021l). The primary concerns for the model include the geochemical properties of ^{99}Tc as they affect movement to groundwater and of uranium in its different chemical forms for the 10-ky and deep time models.

4.1.2.6 Saturated Zone

Contaminants moving vertically in the UZ below the cell enter the saturated zone (SZ) beneath the disposal facility. The rate of recharge is the same as the Darcy flux (the rate of volume flow of water per unit area) through the overlying UZ, and is expected to be small enough that vertical transport within the SZ would be small. Most SZ waterborne contaminant transport will be in the horizontal direction, following the local pressure gradients, which are reflected in water table elevations in the shallow aquifer. A point of compliance in the groundwater has been established at 27 m (90 ft) from the edge of the embankment interior, so saturated transport is modeled to that point. Note that, in the case of the DU PA, only the top slope section of the embankment would contain DU waste, so the effective distance from the DU waste to the well is lengthened by the width of the side slope section, to about 81 m (265 ft).

Saturated zone groundwater transport generally involves the processes of advection-dispersion and diffusion. Mean pore water velocity in the saturated zone is assumed to be determined by the Darcy flux and the porosity of the sediment. A range of values will allow the sensitivity analysis (SA) to determine if this is a sensitive parameter in the determination of concentrations at the compliance well and resultant potential doses. Modeling of fate and transport for the saturated zone pathway will include advection, linear sorption, mechanical dispersion, and molecular diffusion. Saturated zone processes and parameters represented in the PA model are described in detail in the *Saturated Zone Modeling* white paper (Neptune 2021m). The primary concern for the model is the breakthrough of ^{99}Tc at the monitoring well.

4.1.2.7 Air Modeling

Gaseous and particle-bound contaminants that have migrated to the surface soil layer are potentially subject to dispersion in the atmosphere. The effect of mechanical disturbance on human exposure to soil particulates is evaluated in the PA based on the effect of off-highway vehicle (OHV) use. However, although this mechanism may be consequential for human exposure, it is not likely to be a significant contributor to the overall rate of fine particulates emissions from the embankment over time. Eolian (or aeolian, meaning wind-related) disturbance is the primary cause of particulates emissions from the embankment and is the process modeled in the PA to estimate particulate emissions.

In addition to particulate emissions of contaminated surface soil due to eolian erosion, emissions of gas-phase radionuclides diffusing across the surface of the embankment into the atmosphere are considered in the PA model. Note that this effect is counter-balanced by replacement with eolian material that moves onto the cap. Diffusion modeling of radionuclide gases in the embankment, and estimation of flux into the atmosphere, is described in the *Radon Diffusion Modeling* white paper (Neptune 2021n). For both particulate-bound and gaseous radionuclides, atmospheric dispersion modeling employing local meteorological data is conducted to calculate breathing-zone air concentrations above the embankment and at specific locations in the area where off-site receptors may be exposed (see *Dose Assessment* white paper (Neptune 2021f)).

Atmospheric dispersion may result in significant bulk transport of fine particles off of the embankment. Atmospheric dispersion modeling is also used to calculate the deposition flux of resuspended embankment particles in the areas adjacent to the embankment where ranchers and recreational receptors may be exposed. As particulates from the embankment are deposited on surrounding land, this surrounding area may become a secondary source of radionuclide exposure.

Atmospheric dispersion modeling is conducted outside of the GoldSim modeling environment, into which the model is abstracted. An atmospheric dispersion model is a mathematical model that employs meteorological and terrain elevation data, in conjunction with information on the release of contamination from a source, to calculate breathing-zone air concentrations at locations above or downwind of the release. Some models may also be used to calculate surface deposition rates of contamination at locations downwind of the release.

Both particle resuspension and atmospheric dispersion are first modeled outside of the GoldSim PA model, and the results are then incorporated into GoldSim. The particulate emission model used is AERMOD, a relatively simple model that has been adopted by EPA to estimate an annual-average emission rate of respirable particulates (approximately 10 µm and less, i.e., PM_{10}) from the ground surface. AERMOD is EPA's recommended regulatory air modeling system for steady-state releases; and is suitable for calculating annual-average contaminant breathing zone air concentrations at various distances and in various directions from a source release. These models are described in detail in the *Atmospheric Transport Modeling* white paper (Neptune 2021o).

4.1.2.8 Biologically Induced Transport

Biotic fate and transport models have been developed to evaluate the redistribution of soils, and contaminants within the soil, by native flora and fauna. The Clive Facility is located in the eastern side of the Great Salt Lake Desert, with flora and fauna characteristic of Great Basin alkali flat and Great Basin desert shrub communities.

Biological organisms play an important role in soil mixing processes, and therefore are potentially important mediators of transport of buried wastes from deeper layers to shallower layers or the soil surface. Three broad categories are evaluated for their potential effect on the redistribution of radionuclides at the Clive Facility: plants, ants, and burrowing mammals. The impact of these flora and fauna will be limited largely to the top several meters, based on the depth of their roots and burrows. Details for all three categories can be found in the *Biological Modeling* white paper (Neptune 2021p).

4.1.2.8.1 Plants

Plant-induced transport of contaminants is assumed to proceed by absorption of contaminants into the plant roots, followed by redistribution throughout all the tissues of the plant, both above ground and below ground. Upon senescence, the above-ground plant parts are incorporated into surface soils, and the roots are incorporated into soils at their respective depths.

Functional factors that contribute to the plant section of the biotic transport model include: identifying dominant plant species; grouping plant species into categories that are significantly similar in form and function with respect to the transport processes; estimating net annual primary productivity (NAPP), a measure of combined above-ground and below-ground biomass generation; determining relative abundance of plants or plant groups; and representing the density of plant roots as a function of depth below the ground surface.

Field surveys of the Clive site and surrounding areas were conducted by SWCA Environmental Consultants in September and December 2010 to identify plant species present in different vegetative associations around the Clive site (SWCA 2011). Five different vegetative associations were surveyed, with three associations representing the alkali flat/desert flat type soils found in the vicinity of Clive, and two associations representative of desert scrub/shrub-steppe habitat characteristic of slopes and slightly higher elevations with less-saline soil chemistry. A one hectare (100 m × 100 m) plot was established in each vegetative association, and each plot was surveyed for dominant plant species present, and the percent cover and density of each species. In addition, a small number of black greasewood, shadscale, halogeton, and Mojave seablite plants were excavated to obtain root profile measurements and above-ground plant dimensions.

A total of 41 plant species were identified on the five survey plots. Eighteen species each comprised at least 1% of the total cover on at least one plot. These 18 species were considered the most important for the purpose of modeling plant mediated transport of radiochemical contaminants at Clive. Species were grouped into five functional plant groups: grasses, forbs, greasewood, other shrubs, and trees. Greasewood is separated from other shrubs because of its status as a phreatophyte that can extend taproots in excess of five meters to reach groundwater. Annual and perennial grasses were grouped due to similar maximum rooting depths. Despite the ability of Greasewood to extend taproots, it will only do so if there is a water source to mine. There is no evidence in the Clive data that greasewood in the area of Clive extends to the water table. Also, the radon barrier acts as an impediment to deep rooting.

4.1.2.8.2 Ants

Ants fill a broad ecological niche in arid ecosystems as predators, scavengers, trophobionts, and granivores. However, it is their role as burrowers that is of main concern for the purposes of this model. Ants burrow for the procurement of shelter, the rearing of young, and the storage of foodstuffs. How and where ant nests are constructed plays a role in quantifying the amount and rate of subsurface soil transport to the ground surface at the Clive site. Factors relating to the physical construction of the nests, including the size, shape, and depth of the nest, are key to quantifying excavation volumes. Factors limiting the abundance and distribution of ant nests such as the abundance and distribution of plant species, and intra-specific or inter-specific competitors, also can affect excavated soil volumes. Important parameters related to ant burrowing activities include nest area, nest depth, rate of new nest additions, excavation volume, excavation rates, colony density, and colony lifespan.

Modeling soil and contaminant transport by ant species assumes that ants move materials from lower cells to those cells above while excavating chambers and tunnels within a nest. These chambers and tunnels are assumed to collapse over time and return soil from upper cells back to lower cells.

Surveys for ants at Clive were limited to surface surveys of ant colonies, including identification of ant species, measurements (length, width, and height) of ant mounds, and determination of ant nest densities in each vegetative association (SWCA 2011). Total nest depth and nest volume were extrapolated from mound surface dimensions based on correlations from data observed at the Nevada National Security Site (NNSS) (Neptune 2006) for the dominant ant species at Clive.

Only two species of ants were identified during the surveys, with the western harvester ant, *Pogonomyrmex occidentalis*, accounting for 62 of the 64 nests identified. The second ant species, a member of the genus *Lasius,* was only encountered twice, both times in the mixed grassland plot. Harvester ants also tend to create the largest and deepest burrows. Consequently, the characteristics of the harvester ants were included in the model. Site-specific investigations indicate that most ant burrowing will occur in the upper layers of the cover and will be minimal below a depth of 42 inches (SWCA (2013), p.28). For details of biological models, refer to the *Biological Modeling* white paper (Neptune 2021p).

4.1.2.8.3 Burrowing Mammals

Burrowing mammals can have a profound impact on the distribution of soil and its contents near the soil surface. The degree to which mammals influence soil structure is dependent on the behavioral habits of individual species. While some species account for a large volume of soil displacement, others are less influential. Functional factors such as burrowing depth, burrow depth distributions, percent burrow by depth, tunnel cross-section dimension, tunnel lengths, soil displacement by weight, soil displacement by volume, and animal density per hectare play a critical role in determining the final soil constituent mass by depth within the soil.

Modeling soil and contaminant transport by mammal species within the Clive DU PA Model assumes animals move materials from lower cells to those cells above while excavating burrows. Burrows are assumed to collapse over time and return soil from upper cells back to lower cells. Thus, the balance of materials is preserved through time.

Each Clive plot was surveyed for small mammal burrows during September and October 2010 (SWCA 2011). Burrows were identified by animal category. Within the survey area four categories of mammal burrows were identified: ground squirrels, kangaroo rats, mouse/rats/voles, and one badger. Due to the small number of badger and ground squirrel burrows, the decision was made to treat all burrowing mammals as a single unit for modeling purposes. Small mammal trapping was conducted on the five Clive plots during the new moon in October 2010 to identify the principal small mammal fauna present in each vegetative association. Each 1-ha plot was subdivided into 25 20-m × 20-m subplots. At the center of each subplot, two Sherman® live traps were placed, for a total of 50 traps per plot.

Deer mice (*Peromyscus maniculatus*) were the most abundant small mammal captured during trapping, and were the only mammal captured in the plots located on the Clive Facility. These plots were characterized by very low mammal densities, as evidenced by both the trapping results and the burrow surveys. With such a small population in these plots, the decision was made to average the plots. For details of biological models, refer to the *Biological Modeling* white paper (Neptune 2021p).

4.1.2.9 Erosion

The Federal Cell is subject to erosion by the forces of wind and water. The conceptual model assumes that wind blows material off-site (see Section 4.1.2.7), even while it replaces material that is removed from the cap. Water removes cap material through sheet erosion and the formation of channels (gullies).

The formation of gullies is a concern on uranium mill tailings sites and other long-term above-ground radioactive waste sites (NRC 2010). Gully erosion has the potential to move substantial quantities of both cover materials and waste, should the waste material be buried close to the surface. Gully outwash forms depositional fans on the slopes of the embankment. Gullies might form initially on the embankment through disturbance attributed to animal burrowing, or by human-induced mechanisms such as cattle paths or OHV tracks.

Version 2.0 of the Clive DU PA Model evaluates the influence of erosion on embankment performance using SIBERIA, a landscape evolution model (LEM). The LEM is applied to a representation of the Federal Cell design, with uncertainty associated with model parameters assessed through the development of probability distributions. SIBERIA was run for 1000 simulations using these distributions.

From these simulation results, a 1000-row table was developed that represents 1000 outputs of the model, for values of net erosion by depth in the top cover. This table is then implemented in the Clive DU PA Model to provide for each realization a steady-state erosion profile that includes the uncertainty in these parameters. Implementation of this approach in GoldSim is described in more detail in the *Erosion Modeling* white paper (Neptune 2021t).

4.1.2.10 Dose Assessment

The dose assessment in the Clive DU PA Model addresses potential radiation dose to any receptor who may come in contact with radioactivity released from the disposal facility into the general environment. The objective of a dose assessment in a radiological PA is to provide estimates of potential doses to humans over time from radioactive releases from a disposal facility after closure, as described in Section 3.3.7 of NRC (2000), NUREG 1573. As described below, the critical groups in the Model are defined as ranchers and recreationalists.

The radiation dose limit for protection of the general population is 25 mrem/yr, as a total effective dose equivalent (TEDE). Dose limits for radiological PAs are defined in UAC Rule R313-25-20 and10 CFR 61.41as an equivalent of 0.25 mSv (25 mrem) to the whole body, 0.75 mSv (75 mrem) to the thyroid, and 0.25 mSv (25 mrem) to any other organ of any member of the public. However, the radiation dosimetry underlying these dose metrics is based on a methodology published by the International Commission on Radiation Protection (ICRP) in

1959. More recent dose assessment methodology has been published as ICRP Publication 30 (ICRP 1979) and ICRP Publication 56 (ICRP 1989), employing the TEDE approach. As stated in Section 3.3.7.1.2 of NRC (2000), “As a matter of policy, the Commission considers 0.25 mSv/year (25 mrem/year) TEDE as the appropriate dose limit to compare with the range of potential doses represented by the older limits…”

The period of performance for a radiological PA defined in UAC Rule R313-25-9 requires evaluation for a minimum compliance period of 10 ky, with additional simulations for a qualitative analysis for the period where peak hypothetical dose occurs. The scope of this Model includes modeling of the disposal system performance to the time of peak hypothetical radiological dose (or peak radioactivity, as a proxy), and to quantify dose within the time frame of 10 ky.

4.1.2.10.1 Receptors and Exposure Scenarios

Receptors in a PA are categorized in UAC Rule R313-25-20 and -21 and10 CFR 61.41 according to the labels “member of the public” (MOP) and “inadvertent human intruder” (IHI). The regulatory basis for, and interpretation of these categories of receptors is provided in Section 1.3. The MOP is essentially a receptor who is exposed outside the boundaries of the facility. Refer to Section 5.1.7 where the definition of IHI as specifically applied in the PA is described:

> “Inadvertent intrusion is often used in terms of direct but inadvertent access to the waste (e.g., through well drilling or basement construction), for which the initiator is exposed. However, such direct activities are unlikely at this site. The types of activities here do not result in direct exposure to the waste by the initiator, but potentially to future receptors.”

Ranching Scenario. The land surrounding the Clive Facility is currently utilized for cattle and sheep grazing. Ranchers typically use off-highway vehicles (OHVs, including four-wheel drive trucks) for transport. Activities are expected to include herding, maintenance of fencing and other infrastructure, and assistance in calving and weaning. Ranchers may be exposed to contamination via the pathways outlined in Table 1.

Recreational Scenario. Recreational uses on the land surrounding the Clive Facility may involve OHV use, hunting, target shooting, rock-hounding, wild-horse viewing, and limited camping. It is assumed in the Clive DU PA Model that recreational OHV riders (“Sport” OHVers; i.e., OHV users who use their vehicles for recreation alone) and hunters using OHVs (“Hunters”), both of whom may also camp at the site, represent the most highly-exposed recreational receptors. Recreationalists may be exposed to contamination via the pathways outlined in Table 1.

Table 1. Exposure Pathways Summary.

exposure pathway	ranching	recreation
Inhalation (wind derived dust)	×	×
Inhalation (mechanically generated dust)	×	×
Inhalation (gas phase radionuclides)	×	×

exposure pathway	ranching	recreation
Ingestion of surface soils (inadvertent)	×	×
Ingestion of game meat		× (Hunter)
Ingestion of beef	×	
External irradiation—soil	×	×
External irradiation—immersion in air	×	×

The ranching and recreation scenarios are characterized by potential exposure related to activities both on the disposal site and in the adjoining area. Specific off-site points of potential exposure also exist for other receptors based upon present-day conditions and infrastructure. Unlike ranching and recreational receptors, who might be exposed by a variety of pathways on or adjacent to the site, these off-site receptors would likely only be exposed to wind-dispersed contamination, for which inhalation exposures are likely to predominate. Five specific off-site locations and receptors are evaluated in the Clive DU PA Model, including:

- Travelers on Interstate-80, which passes 4 km to the north of the site;
- Travelers on the main east-west rail line, which passes 2 km to the north of the site;
- Workers at the Utah Test and Training Range (UTTR, a military facility) to the south of the Clive Facility, who may occasionally drive on an access road immediately to the west of the Clive Facility fence line;
- The resident caretaker at the east-bound Interstate-80 rest facility (the Grassy Mountain Rest Area at Aragonite) approximately 12 km to the northeast of the site, and,
- OHV riders at the Knolls OHV area (BLM land that is specifically managed for OHV recreation) 12 km to the west of the site.

4.1.2.11 ALARA

40 CFR (2014), Section 61.42, defines a second decision rule that pertains to populations as well as individuals. The regulation states “reasonable effort should be made to maintain releases of radioactivity in effluents to the general environment as low as is reasonably achievable” (or ALARA). The ALARA concept can be applied to either individuals or populations. In the context of the Clive DU PA Model, ALARA is applied to collective doses germane to the receptor populations described in Section 4.1.2.10.

The ALARA process is also described in DOE regulations and associated guidance documents such as 10 CFR Part 834 and DOE 5400.5 ALARA (CFR (1993); DOE (1993, 1997)), and in other NRC documents (NRC 1995, 2000, 2004, 2015). The definitions in each case are very similar, indicating that exposures should be controlled so that releases of radioactive material to the environment are as low as is reasonable taking into account social, technical, economic, practical, and public policy considerations.

The probabilistic Clive DU PA Model is designed to estimate individual annual doses to hypothetical individuals in future populations that may be exposed to radionuclide releases from the Clive Facility. The Model is also able to aggregate individual doses into estimates of collective and cumulative population dose on an annual basis as well as over the 10-ky period of performance. Given this model structure, an opportunity exists with the Clive DU PA Model to evaluate ALARA in the context of population dose.

The overall implication of the various Agency regulations and guidance documents regarding ALARA is that many factors should be taken into account when considering the potential benefits of different options for disposal of radioactive waste. Previous guidance from NRC (2004) suggests several different options for addressing consequences over thousands of years, as is necessary for the DU PA. The options essentially correspond to different discount rates. NRC recommends using 3 percent and 7 percent discount rates, where the former approximates the real rate of return on long-term government debt, and the latter approximates the marginal pretax real rate of return on average investment in the private sector. NRC relied on OMB (2003) for its central arguments, noting that OMB also recognizes that special circumstances might arise when considering long time frames, for which ethical and technical arguments might support the use of lower discount rates. Consequently, NRC suggests also performing analysis with a zero percent discount rate, and sensitivity analysis across a range of possible discount rates. The most recent NRC (2015) guidance does not mention discount rates, so none are applied here (which implicitly assumes a zero rate).

In order to implement ALARA in a logical system, and so that economic factors are taken into consideration, a decision analysis is implied. Decision analysis is the appropriate mechanism for evaluating and optimizing disposal, closure, and long-term monitoring and maintenance of a radioactive waste disposal system. Decision options for disposal at Clive include engineering options and waste placement. More generally, if decision analysis is applied, then a much wider range of options can be factored into the decision model, such as transportation of waste, risk to workers, and effect on the environment.

The decision analysis in this context is essentially a benefit-cost analysis, within which different options for the placement of waste are evaluated. For each option, the Model predicts doses to the array of receptors, and the consequences of those doses are assessed as part of an overall cost model, which also includes the costs of disposal of waste for each option. The goal is to find the best option, which is the option that provides the greatest overall benefit. The consequences of risk can be measured through a simplification that is available in ALARA guidance, including NRC (2015), which provides the basis for, and history of, assigning a dollar value to person-rem as a measure of radiation dose.

In assigning a value to the person-rem cost to society of radiation dose, the agencies have simplified the basis for a full decision analysis. This is reasonable for a first pass at a decision analysis associated with the proposed disposal at Clive. Hence, the value of $5,100 is applied to the population dose. Application of the ALARA process to the Clive DU PA Model is described more completely in the *Decision Analysis* white paper (Neptune 2021d).

4.1.2.12 Groundwater Concentrations

Apart from individual and population dose evaluations, evaluation of the PA also requires comparison of groundwater concentrations with groundwater protection levels, or GWPLs. That is, the State of Utah imposes limits on groundwater contamination, as stated in the Ground Water Quality Discharge Permit (Utah 2014). Part I.C.1 of the Permit specifies that GWPLs in Table 1A of the Permit shall be used for the Class A LLW Cell, which is directly north of the proposed Federal Cell location. Table 1A in the Permit specifies general mass and radioactivity concentrations for several constituents of interest to DU waste disposal. This includes values for mass concentration of total uranium, radium, and gross alpha and beta radioactivity concentrations for specific wells where background values were found to be in exceedance of the Table 1A limits. Part I.D.1 of the Permit specifies that the performance standard for radionuclides is 500 years. Relevant GWPLs for Clive are:

- Strontium-90 42 pCi/L,
- Technetium-99 3,790 pCi/L,
- Iodine-129 21 pCi/L,
- Thorium-230 83 pCi/L,
- Thorium-232 92 pCi/L,
- Neptunium-237 7 pCi/L,
- Uranium-233 26 pCi/L,
- Uranium-234 26 pCi/L,
- Uranium-235 27 pCi/L,
- Uranium-236 27 pCi/L, and
- Uranium-238 26 pCi/L.

The main concern for the PA model is the potential for transport of ^{99}Tc, a mobile contaminant in the DU waste, to the point of compliance.

Note that, as specified in the Permit, groundwater at Clive is classified as Class IV, saline ground water (according to UAC R317-6-3 *Ground Water Classes*), and is highly unlikely to serve as a future water source. The underlying groundwater in the vicinity of the Clive site is of naturally poor quality because of its high salinity and, as a consequence, is not suitable for most human uses, and is not potable for humans. However, the Clive DU PA Model calculates estimates of groundwater concentrations at the location of a virtual well near Federal Cell for comparison with the GWPLs.

4.1.2.13 Deep Time Assessment

The approach to deep time modeling is briefly described in the *Conceptual Site Model for Disposal of Depleted Uranium at the Clive Facility* (Neptune 2021q). A more in-depth discussion of the deep time modeling methodology is described in *Deep Time Assessment for the Clive DU PA* (Neptune 2021h). The focus of the deep time evaluation is to assess the potential impact of glacial epoch pluvial lake events on the Federal Cell from 10 ky through 2.1 My post-closure. (Note that this model is termed the “deep time” model.) A pluvial lake is a consequence of periods of extensive glaciation, and results from low evaporation, increased cloud cover, increased albedo, and increased precipitation in landlocked areas. Given that long-term climatic cycles of 100 ky are considered very likely in the next 2.1 My (Hays et al. 1976; Shackleton 2000), it is assumed that deep lakes will return to the Bonneville Basin in the future. In addition to deep lakes, intermediate-sized lakes are also assumed to occur periodically during a 100-ky glacial cycle. Events that might occur in deep time other than the occurrence of intermediate lakes and the cyclic return of deep lakes (e.g., meteor strikes or a large eruption at Yellowstone) are not considered further in this model because their likelihood is relatively small, and their consequences are likely to be much greater and far reaching for human civilization.

For the deep time scenarios, the PA model provides a qualitative assessment of the future consequences of present-day disposal of DU waste to the environment. While no exposure or dose assessment is attempted, tracking of radioactive species concentrations provides insight into waste disposal and embankment construction design and performance. Long-term historical information on the area surrounding the Clive site is sparse, providing only a broad depiction of historical behavior of lake cycles in the Bonneville Basin. Thus, the model utilized for projecting into the long-term future is largely conceptual or stylized, providing a similarly broad depiction of future behavior.

There are two components of the model used to represent the deep time scenarios. The first is modeling lake formation and dynamics in the Bonneville Basin. The second is modeling the fate of the Federal Cell and disposed DU waste.

For the first component, the deep time evaluation focuses on potential releases of radioactivity following a series of pluvial lake events caused by glacial cycles assumed to occur (approximately) every 100 ky. The 100-ky glacial periodicity is based on historical ice core and the benthic marine isotope data for the past 800 ky. These cycles are also consistent with information regarding orbital forcing, and the periodicity suggested by the Milankovitch cycles.

These 100-ky glacial cycles form the basis for modeling the return and recurrence of lake events in the Bonneville Basin. The lake formation model is applied to each 100-ky cycle similarly. One deep lake is assumed to occur in each 100-ky cycle, and several intermediate lakes are allowed to form during the transgressive and regressive phases of the deep lake. Note that the current 100-ky cycle is not modeled differently than future glacial cycles, despite evidence that the current interglacial period might last for another 50 ky (Berger and Loutre 2002). In the model, therefore, an intermediate lake can return sooner than might be expected in the current 100-ky cycle. The precise timing of the return of a lake at or greater than the elevation of Clive is not as important as the event itself.

For the second component, it is assumed that destruction of the Federal Cell will result from the effects of wave action from an intermediate or deep lake. In effect, it is assumed that a lake is large enough that obliteration of the embankment will occur. In this scenario, all of the embankment material above grade is dispersed across a large localized area through wave action.. The waste material is mixed with sediment and then enters the lake system via dissolution. A simplifying, conservative assumption is to limit dissolution to a column above the waste dispersal area. This assumption is conservative because lake water will probably mix more extensively, creating greater dilution. As a result, these assumptions lead to greater concentrations of waste than is probably reasonable. The conservatism is included in this model because of the lack of data that exists to quantify the processes.

The deep time model assumes that the form of DU available for deep-time transport is U_3O_8, which is far less soluble than UO_3. Fate and transport modeling performed using the Clive DU PA Model indicates that the relative soluble UO_3 will have migrated to groundwater within 50 ky. Consequently, the deep time model focuses on U_3O_8 as the form of DU available for deep-time transport. While the lake is present, some waste in the water column will bind with carbonate ions and precipitate out into oolitic sediments, while the remaining waste will fall out with the sediment as the lake eventually recedes. The model assumes the waste is fully mixed with the accumulated sediments. This is a conservative assumption, since some waste is likely to be buried rather than mixed with future lake sediments. The extent of mixing of previous sediment with new sediment is not well understood; hence, an assumption that the sediments completely mix is expedient, and probably leads to conservative results. All of the waste that has dissolved into the lake re-enters the lake sediment once the lake recedes. Overall sediment concentrations decrease over time because the amount of waste does not change other than through decay and ingrowth, whereas more sediment is added over time.

Thus, the deep time model should be regarded as conceptual and heuristic. The intent is to present a picture of what the long-term future might hold for the DU waste disposal embankment, rather than to provide a quantitative, temporally specific, prediction of future conditions, or an assessment of exposure or dose to human receptors. The type of glacial climate change envisioned in the deep time model will probably have wide-reaching consequences for the planet and human society that are far beyond the scope of a PA for disposal of radioactive waste.

5.0 Model Structure

5.1 Summary of Important Assumptions

The results of the Clive DU PA Model depend critically on the model structure, the model specification (input probability distributions, for example), and the assumptions that underlie the Model. That is, the results are fully dependent, or conditional, on the Model. The most important assumptions are identified in this section.

5.1.1 Points of Compliance

Points of compliance in a PA are usually defined in terms of the location in the accessible environment at which human health is evaluated in the dose assessment, and the location at which groundwater concentrations are used for comparison to GWPLs. For this Model, the primary receptors (ranchers, recreators) are assumed to spend time on the site, and off the site in the general vicinity. Other receptors are defined at points in space (see Section 4.1.2.10.1). Note that the ALARA analysis addresses the same points of compliance.

Groundwater concentrations are evaluated at a virtual well located 27 m (90 ft) from the interior of the waste embankment. In the case of the proposed DU waste disposal, only the top slope section of the embankment would contain DU waste, so the effective distance from the DU waste to the well is lengthened by the width of the side slope section, to about 81 m (265 ft).

For the deep time model, there are no receptors that are considered, and doses are not calculated. Instead, concentrations of radionuclides are estimated in lake water and in lake sediment in the general vicinity of the Federal Cell.

5.1.2 Time Periods of Concern

There are four time periods that have import in this PA. The Clive DU PA Model is run fully quantitatively for dose endpoints for 10 ky. Peak mean dose is estimated and used for comparison with performance objectives for this time frame. The ALARA analysis is also performed for this period of time.

An institutional control period of 100 y is assumed, during which time doses are not calculated, because access to the site is prevented.

Groundwater concentrations are compared to GWPLs for the first 500 years of the Model, since this is the compliance period that is applied to the GWPLs under Utah Code.

The deep time model is run for 2.1 My because the DU does not achieve secular equilibrium until about that time. That is, the model is run to peak activity of the DU, rather than to peak dose, which is undefined that far into the future.

5.1.3 Closure Cover Design Options

The engineered system in the Clive DU PA Model allows for evaluation of many different disposal configurations. DU waste is assumed to not be disposed under the side slopes. There are 27 waste layers in the Model, each about 0.45-m thick, starting with Layer 1 directly under the cap. The layers are numbered one through 27, with the 27th layer at the bottom of the waste cell. Layers 22 through 27 are below grade. Only one type of waste can be placed in a specific layer. Although the Model is set up to allow for many different waste disposal configurations, only one is considered in this version of the Clive DU PA Model:

GDP contaminated waste in Layer 22

GDP uncontaminated waste in Layers 23–26

SRS waste in Layer 27

Note that fill material is assumed for the 9 m between the cap and Layer 21. This model places all waste below grade.

The initial model v1.0 had three configurations that spanned a fairly wide range of options, from disposal near the cap, to disposal primarily below grade. In DU PA v2.0, DU waste is only being considered for disposal below grade.

5.1.4 Waste Concentration Averaging

Within each waste layer, the contents of the waste are assumed to include the waste material and the fill material needed to occupy the layer volume. Since each layer represents a mixing cell, the concentration of the radionuclides is averaged throughout the layer. That is, each drum or cylinder is not modeled separately. This is typical of PA models, and is reasonable provided transport from the actual configuration does not differ greatly from transport from the modeled configuration.

5.1.5 Environmental Media Concentration Averaging

Similar to the waste layers, concentrations in the environmental media are averaged throughout the model cell that represents the medium. For example, the concentration of uranium in deep-time lake sediment is the average concentration throughout the sediment layer that is defined by its model cell.

5.1.6 Members of the Public

MOP is defined in terms of the receptors who perform activities in the vicinity of the Clive Facility. This includes receptors at specific locations offsite as described in Section 4.1.2.10.1.

5.1.7 Inadvertent Human Intrusion

Following NRC 10 CFR 61, inadvertent intrusion is defined in terms of receptors who might perform some activities onsite. This includes ranchers, hunters, and OHV enthusiasts. Inadvertent intrusion is often used in terms of direct but inadvertent access to the waste (e.g., through well drilling or basement construction), for which the initiator is exposed. However, such direct activities are unlikely at this site. The types of activities here do not result in direct exposure to the waste by the initiator, but potentially to future receptors. However, the receptors identified here are engaged in onsite activities, and are hence indirectly exposed to the DU waste.

5.1.8 Deep Time Evaluation

The deep time evaluation anticipates the return of a lake in the Bonneville Basin that is large enough to obliterate the Federal Cell. Such a lake is assumed to occur more than once in each 100-ky glacial cycle. Once the Federal Cell is obliterated, the material is assumed to disperse within the vicinity of Clive. The dispersed radionuclides then migrate into lake water through diffusion. All radionuclides that leave the sediment return to the sediment as the lake recedes, either physically or chemically. The wastes are assumed to mix with lake sediment in each lake cycle.

The outputs of interest are concentrations of radionuclides in lake water and in lake sediment, as well as radon flux after the first lake recedes.

Note that, in version 1.0 of the Clive DU PA Model, all DU waste is assumed dispersed with the arrival of the first intermediate lake. However, the DU waste in versions 1.2, 1.4, and 2.0 of the Clive DU PA Model is disposed below grade, in which case dispersion of the waste itself does not occur. In these updated model versions, only the radionuclides that have moved above the ground surface are dispersed.

5.2 Distribution Averaging

Most parameters in the Clive DU PA Model correspond to physical quantities that represent an average of some type. Some parameters represent averages over time, as they represent typical behavior that will be used throughout the 10-ky performance period, such as annual precipitation. Other parameters represent averages over space. For example, properties of vegetation represent an average vegetation effect across a model area, while soil properties represent an average across a volume of material represented by a model cell. When data are available that represent small amounts of time relative to the 10,000 years, or small areas/volumes relative to the model cells, then it is the *mean* of the data distribution that needs to be modeled.

To capture the temporal domain of the Model, time steps in this type of systems-level dynamic probabilistic model are usually on the order of several to many years. Consequently, the average effects over long time frames, assuming no catastrophic changes in the system, are far more important than the effects on the scale of days, hours, minutes, or seconds. Spatial and temporal scaling of available data, which are usually collected at points in time and space, is critical for the success of systems-level models. Scaling in this context is essentially an averaging process both spatially and temporally. Simple averaging works well if the effect on the response of a variable or parameter is linear. Otherwise, some care needs to be taken in the spatio-temporal averaging process. In addition, these types of models are characterized by differential equations and multiplicative terms. Averaging is a linear construct that does not translate directly in non-linear systems. Again, care needs to be taken to capture the appropriate systems-level effect when dealing with differential equations and multiplicative terms.

Another important statistical issue that is often overlooked in PA models is correlation between inputs. Many parameters in the Clive DU PA Model are related to one another. One parameter may be physically constrained by the value of another parameter, or they may simply tend to vary together. When joint data are available, a simple approach is to calculate the sample correlation of the parameters in the data and apply the same correlation to the parameters in the model to induce a joint distribution. A simple correlation structure may not fully capture the relationship between two parameters but often provides a reasonable first approximation.

Where data and expertise are available, it is generally preferable to develop joint distributions for the parameters by constructing a marginal distribution for one parameter and *conditional* distributions for the remaining parameters. By fitting a distinct conditional distribution of the second parameter for each possible value of the first parameter, a more realistic relationship might be constructed than can be achieved through simple correlation.

The statistical methods used for appropriate spatio-temporal scaling and correlation effects are described in the *Fitting Probability Distributions* white paper (Neptune 2021s).

5.3 Model Evaluation through Uncertainty and Sensitivity Analysis

The Clive DU PA Model is built as a probabilistic systems-level model. Systems-level modeling is geared towards decision objectives, and is a style of bottom-up modeling for which model refinement and iteration is performed in response to model evaluation. Model evaluation is performed throughout model development, but in the final stages it involves uncertainty analysis and sensitivity analysis. Quantitative assessment of the importance of inputs is necessary when the level of uncertainty in the system response exceeds the acceptable threshold specified in the decision-making framework. One of the goals of sensitivity analysis is to identify which variables have distributions that exert the greatest influence on the response.

Uncertainty is captured directly for probabilistic system-level models. The input probability distributions are used to capture the range of possible parameter values. For probabilistic models, sensitivity analysis is performed simultaneously for all input parameters. This approach is termed global sensitivity analysis. It is a very powerful tool at the disposal of probabilistic modeling for identifying parameters that are important predictors of the model output, and it is not constrained by the user's preconceptions of what may be important. In addition to global sensitivity analysis, probabilistic models can be evaluated numerically in an uncertainty analysis and for value of information. Uncertainty analysis in this context involves comparison of the output distribution to performance metrics. A determination can then be made based on the comparison of the compliance of the disposal system. Value of information analysis can be performed to identify parameters for which uncertainty reduction in the output of interest might best be achieved, if it is necessary to reduce uncertainty. This approach can also be used in the context of ALARA goals, to determine if further uncertainty reduction can reasonably be performed.

Sensitivity analysis is a very important tool for understanding the Model. For those parameters that are deemed important as a result of the analysis, and if the uncertainty analysis indicates, there are options for further model refinement. These options include further data collection, and refinement of the model. Uncertainty and sensitivity analysis are applied to each endpoint (model output) separately. Consequently, it is reasonable to expect that some of the endpoints are sensitive to different inputs. For example, output doses might be sensitive to parameters that are related to radon production and transport, whereas the groundwater concentrations might be sensitive to ^{99}Tc inventory or K_d. Consequently, each endpoint might have different needs regarding further data collection or model refinement.

Sensitivity analysis can be used to help identify those inputs for which uncertainty reduction through further information collection will have the most impact on reducing uncertainty in the model response. However, sensitivity analysis of high dimensional probabilistic models can be computationally challenging. These challenges can be met through machine learning methods applied to probabilistic simulation results. Further details are provided in *Machine Learning for Sensitivity Analysis of Probabilistic Environmental Models* (Neptune 2021k).

Another aspect of uncertainty when running probabilistic simulations is simulation stability. The final statistics of interest might relate to the mean output, or to a percentile of the output, and therefore may require a large number of simulations for stability of the estimate of the statistic. The question is, how large? The number of simulations needed can be determined by running a different number of simulations for each endpoint and statistic of interest. Otherwise, simulation uncertainty could interfere with the uncertainty and sensitivity analysis.

5.4 Clive DU PA Model Structure

The Clive DU PA Model is written using the GoldSim systems modeling software. Like other such models, its structure is hierarchical, with nested "containers" providing the means to organize the model into different conceptual parts (see Figure 3). This model uses containers to represent basic modeling constructs, such as Materials, and contaminant transport Processes that are global (model-wide) in scope. Other containers are devoted to distinct topics, such as Inventory definitions, Disposal calculations, Exposure and Dose calculations, comparisons to GWPLs, and the development of Deep Time Scenarios. Supplemental containers define dashboards used for running the model and displaying results, collected Results from calculations around the model, Simulation Settings for model controls, and Documentation. The role of each of these is discussed below. For instructions on how to use the model, consult the *User Guide for the Clive DU PA Model* (Neptune 2021i).

The purpose of this model is to simulate, to a degree sufficient for decision making, the fate and transport of radionuclides proposed for disposal in the Federal Cell, and to assess their potential effects on future individuals and populations. This is done in the realm of environmental transport modeling coupled with the modeling of health physics and toxicity to humans.

5.4.1 Materials

Any physical model of an environmental system must contain some sort of materials as a basis for representing the physical environment. Water, air, waste, soils, and other porous media are defined in this container, and are referenced throughout the model. The arrangement of these materials in space, and their interconnectivity, is intended to represent a large block of the environment, including the Clive Facility, or in this case the Federal Cell within that facility, and its surroundings. The spatial definition of the environment is in the Disposal container.

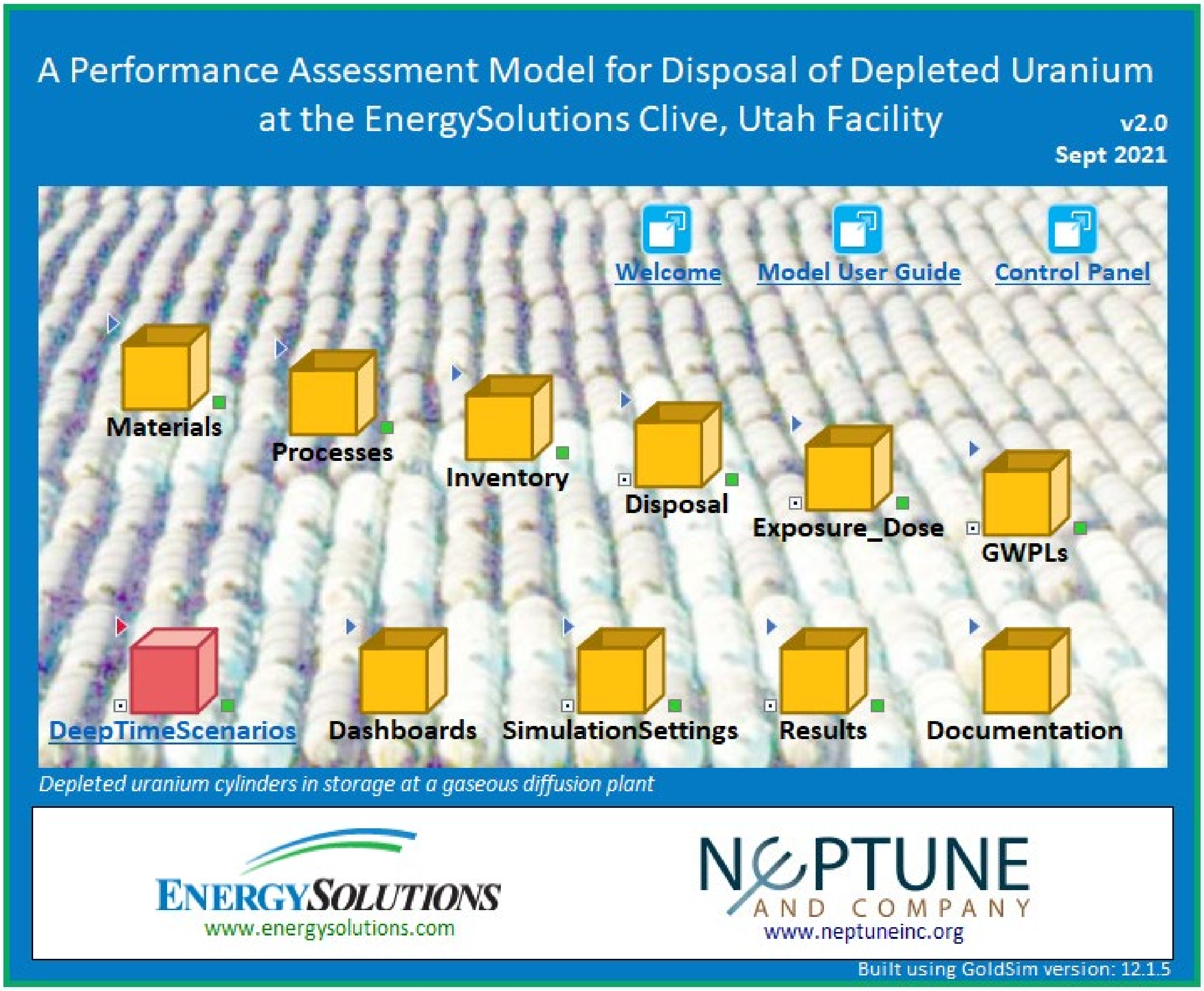

Figure 3. Top level of the Clive DU PA Model v2.0.

5.4.2 Processes

Contaminant transport in the environment is driven by several processes in this model, including advection in water, diffusion in water, diffusion in air, uptake and redistribution by plants, and disturbance by burrowing animals. The parameters defining these processes are global in model scope, and so are defined at this high level. The actual implementation of these processes in moving radionuclides in the environment is done mostly in the Disposal container.

Radioactive decay and ingrowth, chemical solubility in water, soil/water partitioning, and air/water partitioning are also fundamental processes that determine fate and transport of radionuclides, though these are defined in the Materials container since they are directly related to materials.

5.4.3 Inventory

The mass of radionuclides introduced as waste into the model is called the inventory. Inside this container, the total mass of various types of DU waste is defined, as are the concentrations of the radionuclides in each type of waste. These inventories can be selected individually or in combination by the user by using the Control Panel dashboard (see Figure 4), and are then introduced to the modeling cells that represent the waste layers, in the Disposal container.

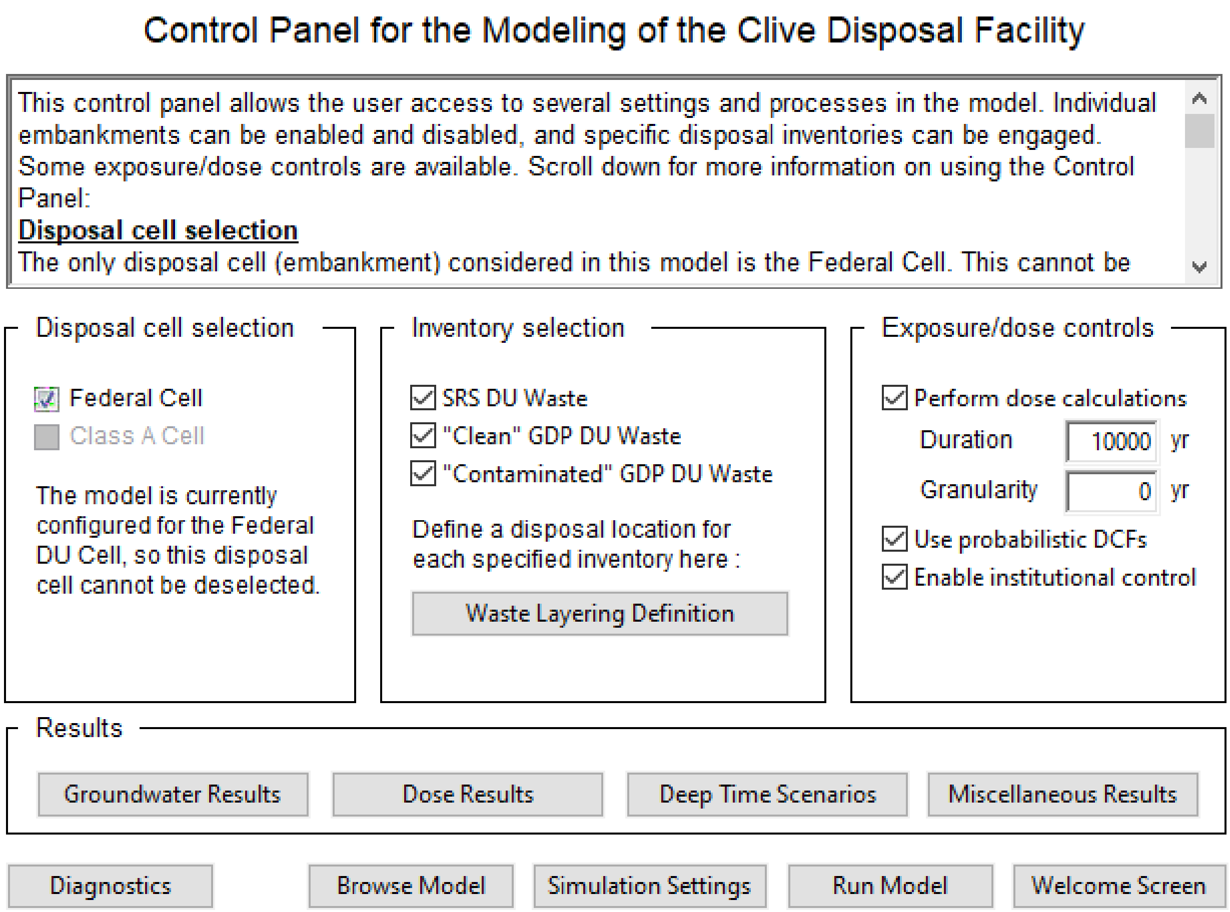

Figure 4. Control Panel for the DU PA Model v2.0.

5.4.4 Disposal

For the first 10,000 yr following disposal, calculations are performed for the fate and transport of radionuclides from the inventory into and throughout the modeled environment, in the Disposal container. Here the physical location of modeling cells is defined, each with materials representing what would be found at that location. For example, modeling cells represent the cover, waste, liner, shallow aquifer, and other porous media, as well as water and air. Cells representing the aquifer contain Unit 2 sediments and water, but no air, since this region is saturated with water by definition. Waste cells contain waste and backfill as porous media, air and water, and are provided a mass of radionuclides from the inventory. As the model progresses through time, these radionuclides migrate into other parts of the physical system, and eventually are found in environmental media (air, water, soils) that receptors will encounter. The Disposal container performs essentially all of the contaminant transport calculations necessary to estimate future concentrations of radionuclides in these exposure media.

5.4.5 Exposure and Dose

The exposure and dose calculations, which also include estimates of uranium toxicity hazard, are performed in the Exposure_Dose container. Receptors are hypothetical future humans who have behaviors similar to those of people around the site today: There are ranch workers, hunters, and OHV enthusiasts, all of whom are expected to have direct access to the site after institutional control is lost. There are also receptors who travel in the area, using highways, railroads, and access roads. These receptors are represented with a range of attributes and behaviors, from age to time spent on an OHV, and each encounters exposure media. As they breathe dust-laden air and walk on contaminated soils, for example, their exposures result in doses from radionuclides and toxic effects from uranium as a heavy metal. All of these calculations are performed in this container, and provide results that can be compared to performance objectives such as peak dose limits.

5.4.6 Groundwater Protection Level Calculations

In addition to the performance objectives provided by the State of Utah and the NRC for dose limits, there are GWPLs to be considered. In the Disposal container, the model provides radionuclide concentrations at a hypothetical monitoring well located about 27 m (90 ft) from the interior of the waste embankment. In the case of the proposed DU waste disposal, only the top slope section of the embankment would contain DU waste, so the effective distance from the DU waste to the well is lengthened by the width of the side slope section, to about 81 m (265 ft). For those radionuclides that have GWPLs defined, the maximum well concentrations within 500 yr are compared to the GWPL values. These comparison calculations are performed in the GWPLs container.

5.4.7 Deep Time

All the calculations described above are aimed at producing results for comparisons to performance objectives that pertain to the first 10,000 yr after disposal. Following that, and out to the time of peak activity, is considered deep time. Peak activity of the DU waste, which is predominantly ^{238}U, is the time at which the decay products of the parent reach secular equilibrium with the parent. In this case, the peak activity is at about 2.1 million years. For the purposes of the model, deep time is that duration from 10,000 y to 2.1 My.

Given the distinct time frame, the deep time calculations are independent of much of the rest of the model, except that the radionuclide mass in the embankment, as calculated in the Disposal container, is used as a source of radionuclides for dispersal in future lakes. The DeepTimeScenarios container produces estimates of radionuclide concentrations in the water of future lakes, and in the sediments that they deposit, as well as radon flux calculations and rancher scenario dose estimates after the first lake recedes.

5.4.8 Supplemental Containers

The Dashboards container is simply a location in the model for storing Dashboard elements, which are dialog-box-like controls for operating the model and for conveniently viewing results. The model can be executed and browsed without using any dashboards, though their convenience makes them quite useful.

The Simulation Settings container hosts a small number of elements that are used simply to control the simulation. Logical switches and values controlled by the dashboards are kept here.

The dashboards provide access to several results of general interest, most of which are collected in the Results container. In addition to those referenced by the dashboards, there are many other results that provide a more detailed look into the model. Also inside this container are the results needed for performing sensitivity analyses, such as those discussed later in this report.

The Documentation container includes records pertinent to model development, such as the Change Log, illustrations about particular model processes, and a large collection of references supporting the model. The sub-container Documentation\References holds reference materials in PDF format.

6.0 Results of Analysis

The Clive DU PA Model was run in order to evaluate the performance of the disposal system and to understand the sensitivity of input parameters on those results. Endpoints of interest include:

- groundwater concentrations of radionuclides for which GWPLs are specified,
- dose and uranium toxicity hazard to various receptors,
- ^{222}Rn flux in the deep time analysis, and
- lake water and sediment concentrations of ^{238}U in the deep time analysis.

Statistical results (e.g., mean, median, 95th percentile) are based on probabilistic simulations of 10,000 realizations. Sensitivity analysis has been performed on each of the model endpoints of interest.

The DU waste is disposed below the grade of the surface soil surrounding the embankment, about 11 m (36 ft) below the surface of the embankment. The disposal volume above the DU waste is assumed to be backfilled with clean material for the purposes of this DU analysis. The waste is arranged as follows: The bottom waste layer contains SRS DU, the four waste layers above that contain Clean GDP DU, and the top waste layer contains Contaminated GDP DU. Details regarding these wastes can be found in the *Waste Inventory* white paper (Neptune 2021b).

Each waste layer is roughly 0.45 m (18 in) in thickness. In general, the effect of the layer is that the higher the waste is emplaced in the volume, the greater influence it has on doses, which are derived from surface soils. The lower the waste, the greater its influence on groundwater concentrations. For this reason, the contaminated GDP DU wastes are placed above the clean GDP DU wastes, in order to position the ^{99}Tc that is present in contaminated wastes as far from the groundwater as possible. Details on this modeling can be found in the *Embankment Modeling* white paper (Neptune 2021a). This arrangement allows exploration of the Clive DU PA Model and hence the performance of the system.

Groundwater protection levels are defined in the Clive Facility's groundwater discharge permit (Utah 2014). Radionuclides with GWPLs and for which concentrations are evaluated include ^{90}Sr, ^{99}Tc, ^{129}I, ^{230}Th, ^{232}Th, ^{237}Np, ^{233}U, ^{234}U, ^{235}U, ^{236}U, and ^{238}U (see Section 4.1.2.12). The Clive DU PA Model estimates contributions to groundwater concentrations from the DU wastes for 500 yr, assuming transport to a hypothetical monitoring well. Details on the groundwater transport calculations are provided in the *Unsaturated Zone Modeling* and *Saturated Zone Modeling* white papers (Neptune 2021c, 2021m).

Possible human receptors are of the following basic types, and details are available in the *Dose Assessment* white paper (Neptune 2021f):

- Ranch workers, hunters, and OHV enthusiasts are expected to be present on and near the embankment after the institutional control period.
- Other receptors have doses evaluated at specific locations, including the nearby highway (Interstate-80), the Knolls OHV Recreations Area (Knolls), the nearby rail road (Railroad), the Grassy Mountain Rest Area on I-80 (Rest Area), and the Utah Test and Training Range access road (UTTR).
- All receptors are considered in population dose calculations.

Erosion and the formation of gullies in the embankment cap are modeled using SIBERIA as discussed in Section 4.1.2.9 above. The model may be run with or without inclusion of gully formation, so that their effect on modeled doses may be explored. In the following presentation of results, gully calculations are included. Details on the erosion calculations are provided in the *Erosion Modeling* white paper (Neptune 2021t).

Endpoints related to the deep time assessment include lake sediment concentrations of ^{238}U, ^{230}Th, and ^{226}Ra, and concentrations of ^{238}U, ^{230}Th, and ^{226}Ra in lake water, when lakes are present, as well as ^{222}Rn flux and corresponding rancher dose after the first lake recedes. Lake and sediment concentrations are presented in graphical format to illustrate effects with lakes coming and going with time. Summary statistics of these results are presented at 82,500 years, which is the timestep at which the greatest percentage of lakes is present in the 1000 realizations that were run. Details on the deep time calculation methods are provided in the *Deep Time Assessment* white paper (Neptune 2021h).

Results for all of these endpoints are summarized in tables below. The means and 95th percentiles are used for comparison with performance objectives. Graphs of time histories and sensitivity analysis results are also shown, although, in cases where results are qualitatively similar, only a single representative graph is presented. The results presented below in tables, sensitivity analysis results, and figures are primarily from the Clive DU PA Model v2.0 run for 10,000 realizations with seed 1. Where noted, the results presented in other figures and tables with 1000 realizations are from the Clive DU PA Model v2.0 run for 1000 realizations with seed 1. In both cases, Latin Hypercube Sampling is enabled using mid-points of strata, and Repeat Sampling Sequences is enabled. GoldSim solution precision is set to High.

Some output distributions are positively skewed, with a long tail. The long tails are probably due to a combination of factors that include skewed input distributions that reflect uncertainty in upper values of a parameter, multiplicative effects in the model, and missing correlations between some input parameters. This can lead to implausible combinations of input values. Consequently, results that are far into the tail of the output distributions might be unreliable.

6.1 Groundwater Concentrations

Peak groundwater activity concentrations within 500 yr resulting from the proposed waste disposal are calculated for all radionuclides at a hypothetical monitoring well placed about 27 m (90 ft) from the toe of the waste in the Federal Cell. In the case of the proposed DU waste disposal, only the top slope section of the embankment would contain DU waste, so the effective distance from the DU waste to the well is lengthened by the width of the side slope section to about 81 m (265 ft).

6.1.1 Summary of Results for Groundwater

For those radionuclides for which GWPLs exist, as specified in the facility's permit (Utah 2014), results are shown in Table 2. It should be noted that these statistics summarize the concentrations at 500 yrs. In general, concentrations increase with time, in which case the statistics presented are of the concentrations at 500 yrs. Because all modeled estimates are of mean concentrations, the statistics represent the mean, median, and 95th percentile of the (peak of the) mean concentration. As such, the 95th percentile is analogous to a 95% upper confidence limit on the mean. The large difference between the mean and median concentrations, when values are reported for each, indicates that these output distributions are markedly positively skewed.

Table 2. Summary statistics for peak mean groundwater activity concentrations within 500 yr, compared to GWPLs.

radionuclide	GWPL[1] (pCi/L)	activity concentration at 500 yr (pCi/L) mean	median (50th %ile)	95th %ile
^{90}Sr	42	0	0	0
^{99}Tc	3790	15	1.8E-1	81
^{129}I	21	9.9E-3	5.7E-9	6.2E-2
^{230}Th	83	2.8E-29	0	0
^{232}Th	92	2.1E-35	0	0
^{237}Np	7	8.6E-21	0	7.1E-27
^{233}U	26	2.7E-24	0	6.0E-28
^{234}U	26	1.6E-23	0	5.0E-28
^{235}U	27	1.3E-24	0	4.1E-29
^{236}U	27	2.4E-24	0	6.9E-29
^{238}U	26	1.2E-22	0	4.1E-27

[1]GWPLs are from Utah (2014), Table 1A.
Results are based on 10,000 realizations, seed 1.

Since the DU waste is emplaced below grade in the embankment, modeled monitoring well concentrations are greater than they would be if the DU were emplaced at a higher elevation within the embankment for two reasons: 1) The waste is closer to the groundwater, and so has a shorter travel distance, bringing the peak closer in time, and 2) the waste is more concentrated if it is arranged into a smaller volume, thereby decreasing the duration of breakthrough at the well, while increasing its amplitude.

For most radionuclides in Table 2 the groundwater concentrations are negligible compared to the GWPLs. The exceptions are ^{99}Tc and ^{129}I, although the 95th percentile values for these radionuclides are still more than an order of magnitude below the respective GWPLs. The distributions of these concentrations are highly skewed, largely because of the skew in some of the input distributions. For example, the distributions for K_d for ^{99}Tc and ^{129}I are expressed as left-truncated normal distributions, which is a skewed distribution.

In the case of ^{129}I, this radionuclide was not detected in any samples collected from the SRS drums (see the *Waste Inventory* white paper (Neptune 2021b)). Not only was ^{129}I not detected, but it was not identified in any sample. However, because ^{129}I may be present at concentrations below the detection limits, these limits were used directly for creating the input distribution for inventory of ^{129}I. This probably greatly overestimates the inventory of ^{129}I in the DU waste.

The ^{99}Tc inventory concentration distribution is derived from three datasets that suggest very different potential waste concentrations, with particular uncertainty in the concentration of ^{99}Tc in the GDP waste. Consequently, the input distribution covers more than one order of magnitude of possible ^{99}Tc concentrations. With more data or better information, it is reasonable to expect that this uncertainty could be reduced.

Technetium-99 is selected to represent a time history of monitoring well concentrations, as shown in Figure 5. Figure 5 shows each of the 1000 realizations, and Figure 6 shows a statistical summary of those realizations. Note that the model results are based on 10,000 realizations, on which the summary statistics in Table 2 are based. Subsequent time histories will show only the statistical summaries. Of particular interest is that the concentrations of ^{99}Tc are considerably less than the GWPL, and concentrations of ^{99}Tc increase over time up to the 500-yr compliance period.

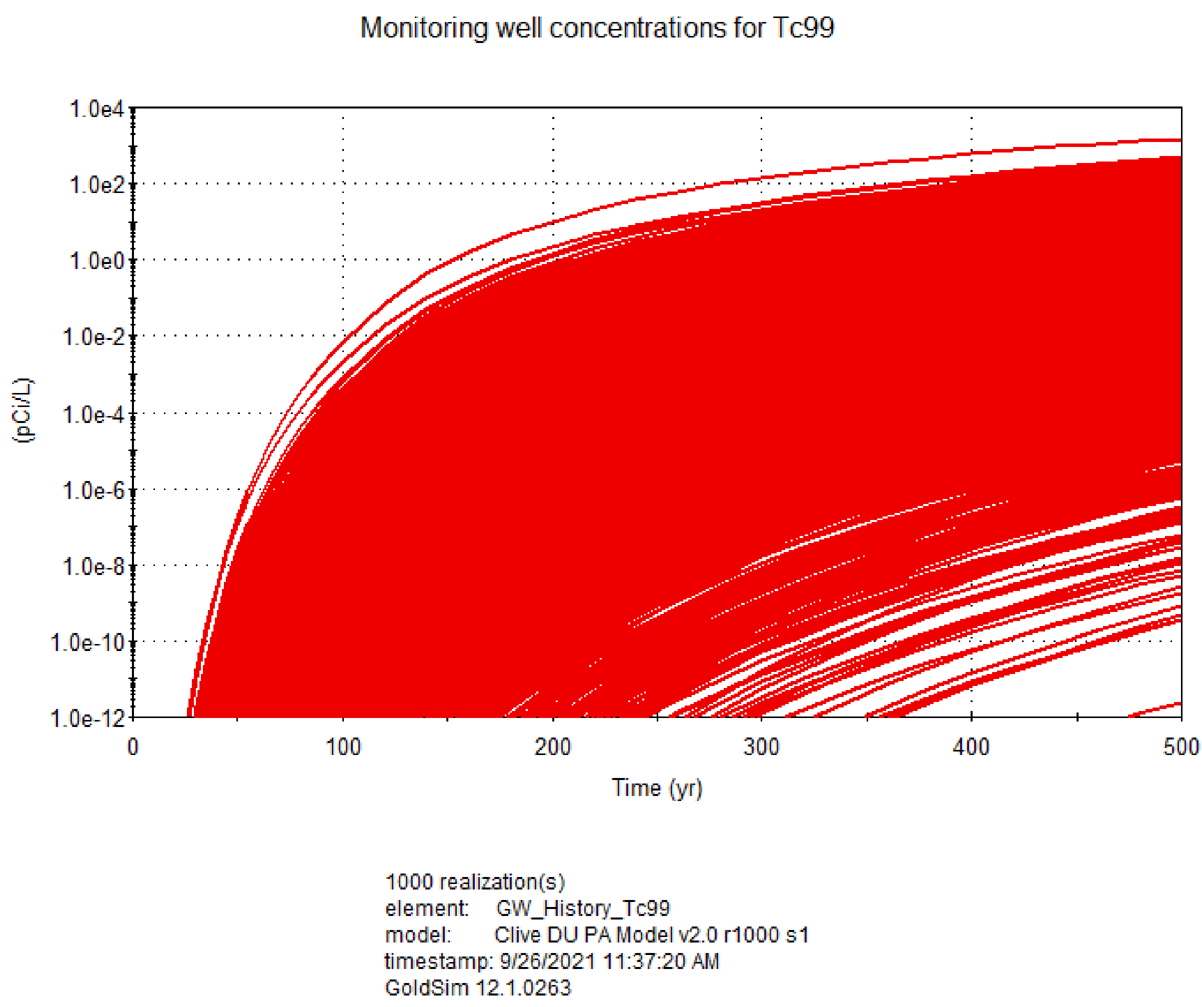

Figure 5. Time history of ^{99}Tc well concentrations; 1000 realizations shown.

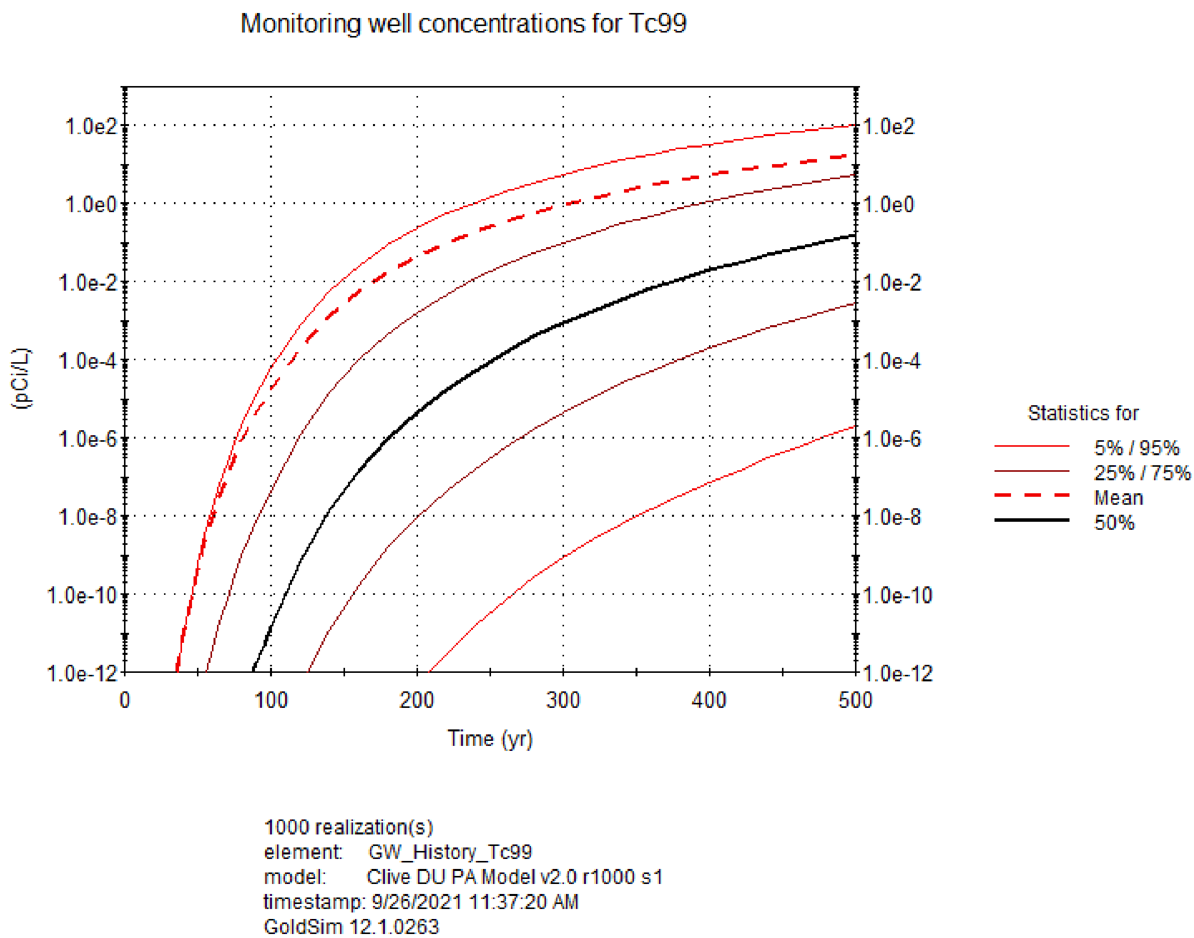

Figure 6. Time history of ^{99}Tc well concentrations: statistical summary of the 1000 realizations shown in Figure 5.

6.1.2 Sensitivity Analysis for Groundwater

A sensitivity analysis of the ^{99}Tc and ^{129}I groundwater concentrations was performed in order to determine which modeling parameters are most significant in predicting its value. As seen in Figure 7 and tablulated in Table 3, the most sensitive parameter for both ^{99}Tc and ^{129}I groundwater concentrations was net infiltration. This parameter is included in the output table from HYDRUS and affects advection of radionuclides to groundwater. The next most sensitive parameter for both radionuclide concentrations was molecular diffusivity in water, which controls diffusion. The soil-water partition coefficient (K_d) was the third most sensitive parameter for both radionuclides. K_d controls sorption to the solid phase, with higher K_d resulting in increased sorption which retards migration of the radionuclides.

Overall, the controlling mechanism is infiltration. The infiltration rate is sufficiently small that waste inventory and K_d are not the primary drivers. Note also that the sensitivity indices are not very large. It is typical in a model that is well structured and specified that a few input variables have sensitivity indices that are quite large collectively. Otherwise, the model might not be well formed, or the signal is very low. The latter appears to be the case here. Consider that the 50th percentile is essentially zero, in which case the ability of an input variable to differentiate signal responses is a challenge.

Sensitivity analyses for other results are presented in Neptune (2021g).

Table 3. Sensitivity Indices of select peak groundwater concentrations within 500 years.

Radionuclide	SI rank	input parameter	sensitivity index (SI)
waste emplaced below grade			
^{99}Tc	1	Net infiltration	0.4033
	2	Molecular Diffusivity in Water	0.2055
	3	K_d for Tc [1]	0.1456
	4	Activity Concentration of Tc-99 in SRS DU Waste	0.0564
^{129}I	1	Net infiltration	0.3991
	2	Molecular Diffusivity in Water	0.2987
	3	K_d for I [1]	0.2319

[1] For iodine and for technetium, the same K_d value was used for all materials.

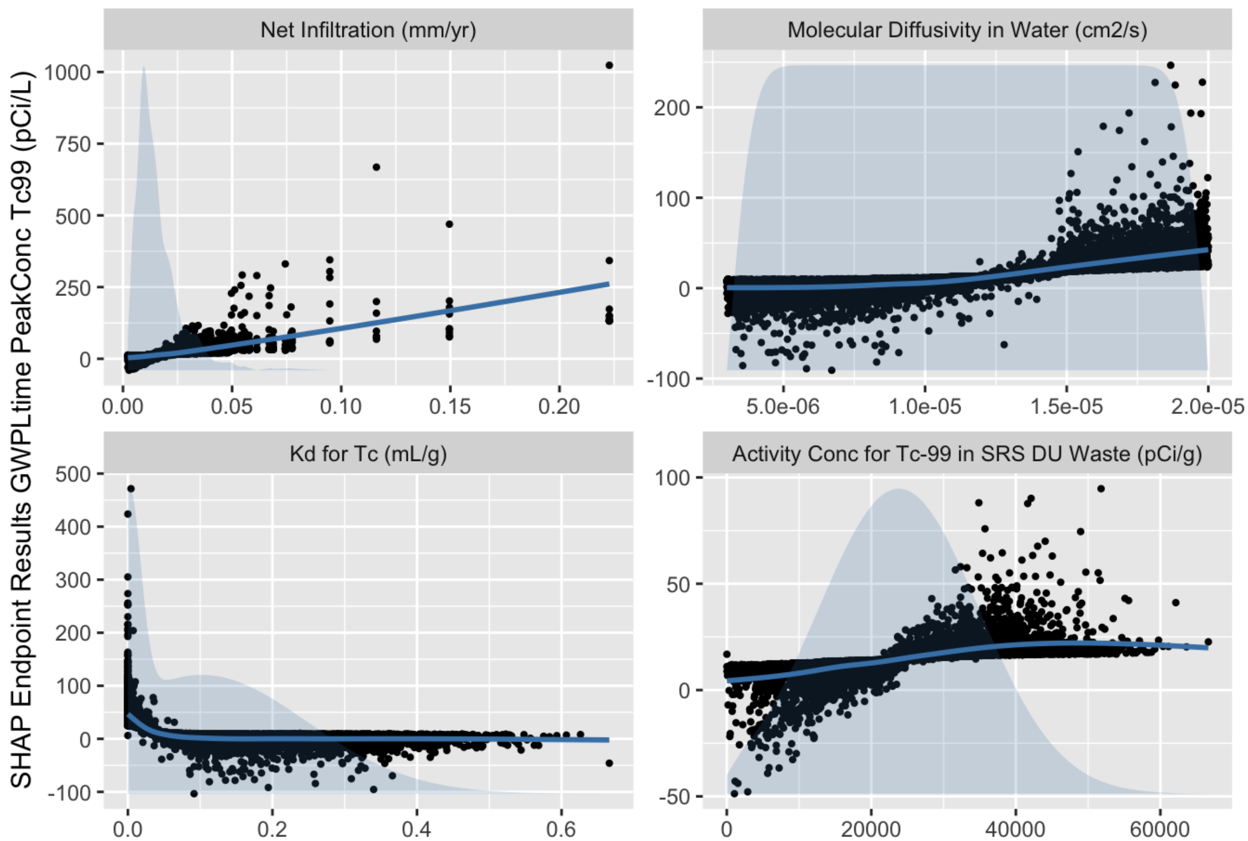

Figure 7. SHAP plot for peak ^{99}Tc groundwater concentration in 500 years.

6.2 Receptor Doses

Radiation doses to receptors are calculated as the total effective dose equivalent (TEDE), and are compared to the performance objective of a peak dose of 0.25 mSv (25 mrem) in a year within 10,000 yr (UAC 2018). Comparison with the inadvertent intrusion standard of 5 mSv (500 mrem) in a year is also considered in relation to human-induced gully erosion.

6.2.1 Summary of Results for Doses

The dose results are summarized in Table 4, which shows the statistics for peak TEDE for all receptors for DU waste emplaced below surface grade. These results include consideration of dose related to gully erosion. The greatest doses occur at or near 10,000 years. The peak mean dose results are presented in Table 4 at 10,000 years, along with median and 95th percentile values of the doses at 10,000 years.

Table 4. Peak of the mean TEDE: statistical summary within 10,000 yr.

	TEDE (mrem/yr) at 10,000 yr		
receptor	**mean**	**median (50th %ile)**	**95th %ile**
ranch worker	3.0E-2	2.4E-2	7.2E-2
hunter	2.5E-3	2.0E-3	5.9E-3
OHV enthusiast	4.0E-3	3.5E-3	8.6E-3
I-80 receptor	7.3E-7	5.6E-7	1.9E-6
Knolls receptor	2.1E-6	8.3E-7	8.3E-6
rail road receptor	1.2E-6	8.8E-7	3.0E-6
rest area receptor	1.9E-5	1.5E-5	4.5E-5
UTTR access road receptor	4.1E-4	3.3E-4	1.0E-3

Results are based on 10,000 realizations, seed 1.

Note that the doses to the offsite receptors are very small relative to the doses for receptors that may be exposed on the embankment. Consequently, the attributes of the dose results for offsite receptors are not explored in this discussion. Of greater interest are the doses to the ranchers, hunters, and OHVers. These three classes of receptors are modeled with the intent of capturing dose to each hypothetical individual in the relevant populations (see the *Dose Assessment* white paper (Neptune 2021f)). The data presented hence represent summary statistics for the peak of the mean dose to a diverse set of hypothetical individuals within each group of receptors. The peak of the mean doses occurs at 10,000 years in the Clive DU PA Model, because dose increases with time for DU. Consequently, the 95th percentile is analogous to a 95% upper confidence limit of the mean dose at 10,000 years that might be used under CERCLA, for example.

The greatest doses are to ranch workers; these doses are greater than the doses to hunters and OHV enthusiasts by about an order of magnitude. In all cases the summary statistics present values that are several orders of magnitude below the IHI performance objective of 5 mSv (500 mrem) in a year. Although the model results include consideration of dose that may occur subsequent to gully formation initiated by inadvertent intrusion, these values are also orders of magnitude belowthe MOP performance objective of 0.25 mSv (25 mrem) in a year.

An evaluation of pathway-specific doses for the three onsite receptors indicates that effectively 100% of the dose is associated with the inhalation exposure pathway. There is practically zero dose related to external radiation from soil or inadvertent soil ingestion, which is because virtually no radionuclides have been transported to surface soil on the cap through the overlying 11 m (36 ft) of embankment within 10,000 years. Even in gullies, soil concentrations of ^{210}Pb, deposited as the progeny of ^{222}Rn subsequent to air-phase diffusion, only reach concentrations of approximately 0.03 pCi/g. Because surface soil particulate radionuclide concentrations and associated dose pathways are so low, the inhalation pathway doses are necessarily related to inhalation of gas-phase radionuclides; namely ^{222}Rn.

6.2.2 Sensitivity Analysis for Doses

Sensitivity analysis was performed on the results for the mean TEDE at 10 ky to ranch workers, hunters, and to OHV enthusiasts. Sensitive parameters are summarized in Table 5, and the partial dependence plot for the ranch worker is shown in Figure 8.

Table 5. Sensitivities of peak TEDE within 10,000 yr.

receptor	SI rank	input parameter	sensitivity index (SI)
waste emplaced below grade			
ranch worker	1	Radon Escape/Production Ratio for Waste	0.4047
	2	K_d for Ra in sand	0.1229
	3	Molecular Diffusivity in Water	0.0820
hunter	1	Radon Escape/Production Ratio for Waste	0.3172
	2	Molecular Diffusivity in Water	0.1325
	3	K_d for Ra in sand	0.1105
	4	K_d for Tc [1]	0.0855
OHV enthusiast	1	Radon Escape/Production Ratio for Waste	0.6023
	2	K_d for Ra in sand	0.1715
	3	Molecular Diffusivity in Water	0.0948

[1] For technetium, the same K_d value was used for all materials.

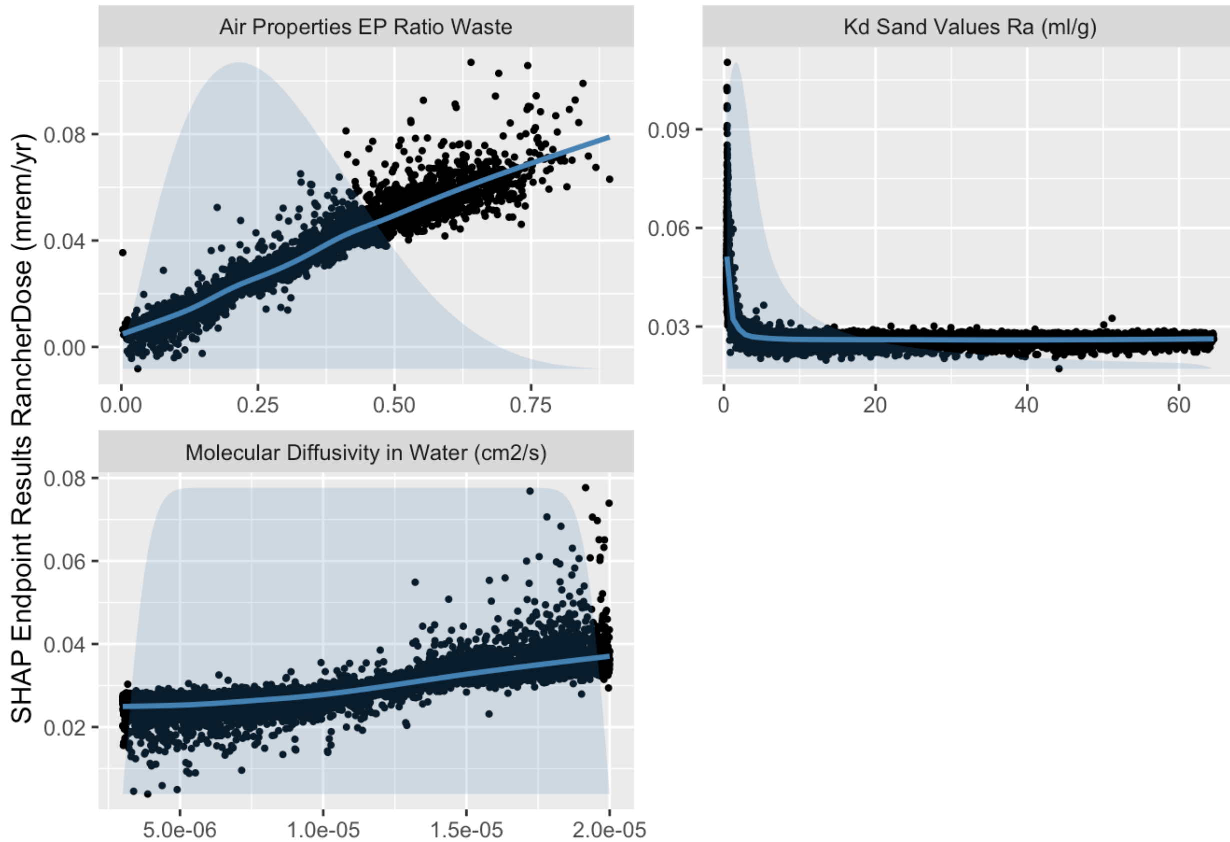

Figure 8. SHAP plots for the mean ranch worker dose, assuming waste below grade.

As shown in Table 5, the most sensitive input parameter for all receptors is the radon E/P ratio, which defines the fraction of ^{222}Rn that escapes into the mobile environment when formed by radioactive decay from its parent, ^{226}Ra. Radon that does not escape but remains within the matrix of the radium-containing waste material stays in place and decays to polonium and then to ^{210}Pb. Note that the higher the E/P ratio, the higher the dose.

The next most sensitive input is the soil/water partition coefficient (K_d) for radium in sand, the parent radionuclide of radon. Radon gas inhalation is an important dose pathway for all receptors at the ground surface. Increased radium partitioning to the solid phase tends to hinder migration of dissolved radium, which reduces surface radon flux and thus doses, as can be seen in the partial dependence plot in Figure 8. Molecular diffusivity in water is the next most important input; increased diffusion of radionuclides through the unsaturated zone tends to increase doses.

The sensitivity analysis confirms that radon is the greatest dose driver in the Model. The sensitive parameters for radiation dose are associated with the release and transport of radon. Diffusivity and K_d affect transport to the ground surface, while higher values of the radon E/P ratio are associated with higher radon doses. As described in the *Dose Assessment* white paper (Neptune 2021f), radon dose is not often calculated in a PA. Instead, radon flux at the surface of a disposal system is commonly calculated and compared to a radon-specific flux criterion. This example perhaps indicates the importance of considering the impact of radon in a dose calculation. If dose due to radon inhalation was not included in the results, the rancher doses shown in Table 4 would be orders of magnitude lower than those shown.

6.2.3 Screening Groundwater Ingestion Dose

Future potential ranch hands, hunters, and OHV users may come near the Clive site on rare occasions with only transitory exposure to the site. These future receptors may drill a well for routine water ingestion while in the area and drink the groundwater. While that scenario is not likely given the low yield and excessive salinity of the upper aquifer, the dose from groundwater ingestion can be evaluated. The calculations in the Model can be used to assess potential radiological dose to people from future ingestion of potentially impacted groundwater near the Clive site.

Total dissolved solids (TDS) levels in the upper aquifer in the vicinity of the Clive site are approximately 41,000 mg/L, a concentration far in excess of potable levels. Any future routine ingestion of radiologically impacted upper-aquifer groundwater must therefore presume desalinization. Desalinization technologies involving evaporation or condensation would result in complete removal of solutes, including site-related radionuclides of concern, and render groundwater ingestion of radionuclides an incomplete exposure pathway. Therefore, an evaluation of potential radiological dose from groundwater ingestion is performed assuming the use of a filtration technology such as reverse osmosis to generate potable water.

Model results of 10,000 realizations for peak groundwater ingestion dose show a mean dose of 0.2 mrem/yr, a median dose of 0.1 mrem/yr, and a 95th percentile of 0.8 mrem/yr. As expected, ^{99}Tc is the dominant radionuclide contributing to the groundwater ingestion dose.

6.3 Receptor Uranium Hazard Indices

Uranium hazard indices (HIs) within 10,000 yr are calculated for each receptor scenario as the sum of hazard quotients (HQs) for the ingestion exposure pathways defined in Table 1. An HQ is the ratio of the average daily dose (i.e., chemical intake) of a chemical to the corresponding reference dose for that chemical, where a reference dose is an estimate of daily exposure likely to be without appreciable risk of adverse health effects. The uranium HI values are compared to EPA’s standard HI threshold of 1.0, a level that indicates that the average daily dose is below the dose associated with health effects.

6.3.1 Summary of Results for Uranium Hazard

The uranium HI results are summarized in Table 6, which shows the statistics for the peak of the mean uranium HI for all receptors.

The HIs for uranium are extremely small relative to the threshold of 1.0, indicating essentially no possibility of observing health effects from uranium toxicity. Similar to the dose results presented above, this indicates that disposal of DU waste below grade, at the bottom of the embankment, is protective of human health and the environment. These values are in compliance with the regulatory standards. Peak mean uranium HI results, across time, occur essentially at 10,000 years since concentrations at the ground surface increase with time within 10,000 years.

Table 6. Peak of the mean uranium hazard index within 10,000 years.

	uranium hazard index at 10,000 yr		
receptor	**mean**	**median (50^{th} %ile)**	**95^{th} %ile**
ranch worker	2.3E-8	4.1E-18	7.0E-9
hunter	1.5E-9	3.4E-19	6.2E-10
OHV enthusiast	2.1E-9	4.9E-19	8.3E-10

6.3.2 Sensitivity Analysis for Uranium Hazard Index

Sensitivity analysis was performed on the results for the mean uranium hazard index to ranch workers, hunters, and to OHV enthusiasts, summarized in Table 7. The most sensitive input parameter for the ranch worker uranium HI is the solubility of UO_3. This is a relatively low sensitivity index, but it may indicate that a small amount of uranium transport occurs upward into a region where plants and animals could move small amounts to the surface. Initial upward transport of uranium could be controlled by its solubility in the waste pore space. For the hunter and OHV receptors, all inputs exhibited relatively low sensitivity indices, suggesting that the absolute uranium HI are so low that the model signal is too small to find differentiating factors that explain the results.

Table 7. Sensitivities of uranium hazard index within 10,000 yr.

receptor	**SI rank**	**input parameter**	**sensitivity index (SI)**
waste emplaced below grade			
ranch worker	1	UO_3 Solubility	0.1678
	2	Activity Concentration of Ra-226 in SRS DU Waste	0.0634
	3	Molecular Diffusivity in Water	0.0594
hunter	1	Molecular Diffusivity in Water	0.0953
	2	Bulk Density Silt Sand Gravel Mix	0.0872
	3	Activity Concentration of Ra-226 in SRS DU Waste	0.0745
OHV enthusiast	1	Molecular Diffusivity in Water	0.1074
	2	Bulk Density Silt Sand Gravel Mix	0.1065
	3	UO_3 Solubility	0.1004

6.4 ALARA

The focus of the assessment for establishing doses as low as reasonably achievable (ALARA) is an evaluation of potential doses to the entire population of hypothetical individuals. This calculation addresses the cumulative dose to all ranch workers, hunters, and OHV enthusiasts, summed across all individuals and all years of the 10,000-yr simulation. These cumulative population doses, expressed as the TEDE, are shown in Table 8.

Table 8. Cumulative population TEDE: statistical summary.

	population TEDE (person-rem) within 10,000 yr		
receptor type	**mean**	**median (50th %ile)**	**95th %ile**
total population	5.8	5.2	12
ranch worker	1.3	1.2	2.7
hunter	0.76	0.66	1.7
OHV enthusiast	3.7	3.3	7.9

These population doses represent the sum of the doses to all hypothetical individuals in each year over the 10,000-yr simulation. Table 9 shows statistics of the average number of cumulative individuals at 10,000 years for the total population as well as the different receptor types.

Table 9. Cumulative receptor population: statistical summary.

	population at 10,000 yr		
receptor type	**mean**	**median (50th %ile)**	**95th %ile**
total population	3.2E6	3.2E6	3.3E6
ranch worker	1.0E5	1.0E5	1.1E5
hunter	7.6E5	7.6E5	7.9E5
OHV enthusiast	2.3E6	2.3E6	2.4E6

One measure for evaluating the population dose levels shown in Table 8 is by comparing these doses with radiation doses related to natural sources. Average annual individual background dose related to ubiquitous natural background radiation in the United States is approximately 3.1 mSv (310 mrem) (NCRP 2009). For the total population of about 3 million individuals, natural background radiation dose is therefore approximately 930,000 rem, a level that is many orders of magnitude higher than the population doses shown in Table 8.

A second measure for these population doses can be obtained by considering the person-rem costs suggested by NRC (see the *Decision Analysis* white paper (Neptune 2021d)). Prior to 1995, NRC suggested a flat $1,000 per person-rem cost. Subsequent to 1995, NRC suggested a value of $2,000 with a discounting factor of 7% for the first 100 years, and 3% thereafter. NRC also suggested that a range of $1,000 to $6,000 might be reasonable, with a best estimate of $2,000. NRC noted that the intent of raising the person-rem costs from $1,000 to $2,000 was to accommodate discounting in an economic analysis. Note that the intent of the NRC approach is to capture the societal effects of added dose to the public. However, more recently, NRC (2015) suggests a value of $5,100 per person-rem. Further discussion is provided in Neptune (2021d). If a flat rate of $5,100 is applied to the population dose estimates provided above in Table 8, then the costs associated with these scenarios are provided in Table 10.

Table 10. Statistical summary of the flat rate ALARA costs.

simulation scenario	population ALARA costs over 10,000 yr mean	median (50th %ile)	95th %ile
total population	$29,580	$26,520	$61,200
ranch worker	$6,630	$6,120	$13,770
hunter	$3,876	$3,366	$8,670
OHV enthusiast	$18,870	$16,830	$40,290

Note that discounting could also be applied, but this would simply result in lower costs. This analysis shows that the ALARA costs involved are small (for the total population, about $6 per year, or considerably less than $1 per day) and that the estimated population dose is a fraction of natural background radiation dose. The reasons for this are that there are few receptors in the model that are involved in ranching, hunting, or OHV activities at the site at any particular time, the concentrations are low, and, hence, the individual doses are also low.

6.5 Deep Time Results

The deep time model addresses in a heuristic fashion the fate of the Federal Cell from 10 ky to 2.1 My, the time at which DU reaches secular equilibrium. The model addresses the needs identified in Section 5(a) of R313-25-9 of the UAC to perform additional simulations for the period where peak dose occurs, for which the results are to be analyzed qualitatively. Even though the deep time model runs to 2.1 My and there is huge uncertainty in predicting human society and evolution that far into the future, rancher doses are calculated to provide a context for radon fluxes which are calculated when no lake is present. The output of the deep time model is also presented in terms of concentrations of radionuclides in relevant environmental media.

The deep time model considers the return of lakes in the Bonneville Basin that reach or exceed the elevation of Clive. Two classes of lakes are considered. The first is a deep lake similar to Lake Bonneville that inundates the Clive Facility. It is deep and adds to materials that are currently on the Bonneville Basin floor. This type of lake is assumed to occur once every 100 ky in line with the 100-ky climate cycles that have occurred for the past 1 My or so. The second type of lake is shallower and is termed an intermediate lake. It is also assumed to inundate the Clive Facility and to add sediment materials but is not a deep lake like Lake Bonneville. It is more similar to the Gilbert Lake that occurred at the end of the last ice age. This type of lake is assumed to occur several times in each climate cycle in response to colder, wetter conditions.

Return of a lake at or above the elevation of Clive is assumed to result in the destruction of the Federal Cell. The above-grade embankment material and radionuclides are assumed to be dispersed through wave action. The dispersal area forms the basis for the lake volume in which radionuclides are dissolved and ultimately settle back to the basin floor through precipitation or through evaporation as the lake recedes. The lake cycle involves movement of the radionuclides, subject to continuing decay and ingrowth, from the sediment into lake water and back to sediment as the lake forms and recedes. The dispersed radionuclides are assumed to be fully mixed with the accumulated sediment. Sediment accumulates on average at the rate of about

16.5 m per 100-ky climate cycle. The current Unit 3 layer of sediment at Clive, which is derived from Lake Bonneville, is assumed to be a confining layer.

The lake cycle effects on transport processes are complex. Sediment core records show significant mixing of sediment, but also can be used to identify significant lake events in the past several hundred thousand years. The extent of sediment mixing is not well understood. The mechanisms for dispersal of a relatively soft pile of material in the middle of a desert flat are not well understood. The extent of mixing of dissolved materials in a deep lake is also not well understood. The model, consequently, is simplified to the point of acknowledging lake return, destruction of the Federal Cell, and cycling of radionuclides between periodic lakes and basin sediments.

In particular, the model overly simplifies the lake cycle processes and the effect of those processes on the transport of radionuclides. It limits the dispersal of radionuclides through time. Destruction of the Federal Cell is assumed to occur with a lake that at least reaches the elevation of Clive. This means that even a very shallow lake is assumed to destroy the embankment. With the sediment acting as one large mixing cell, lake water diffusion can occur across the entire depth of the sediment, no matter how deep. The simplified model ignores increased precipitation and cooler conditions as the time of lake return approaches, which would move radionuclides downwards in the sediment. With these simplifying assumptions, some (perhaps unreasonably) high lake water and sediment concentrations are predicted by the model.

The area of dispersal of the Federal Cell is captured with a simple distribution that reflects the area of an intermediate lake. This fixes a dispersal area. Dissolution into the lake is assumed to occur and to be mixed in the entire lake. The same dispersal area is used for both intermediate and deep lakes, limiting both the volume of water within which dissolved materials might mix and the area in which precipitates and evaporates can return.

Although the embankment material is dispersed within a specified dispersal area, isolation of any part of the sediment profile is assumed not to occur. That is, the sediment is assumed to completely mix with previous sediment for every lake event. Lake sedimentation does not allow burial or isolation of previously formed sediment layers. Since different lakes can be identified in sediment cores, this again limits the dispersal of the radionuclides.

The model therefore represents a closed system that cycles radionuclides from lake water to sediment and back again. Decreased concentrations in sediment are obtained because of the increased sediment load, but the mass of radionuclides available to diffuse into each lake is not different in time, except from decay and ingrowth.

Deep time model results such as radon flux are considered in the context of gauging system performance and may provide limited insight into the behavior of the disposal system in deep time. Based on potential future radon fluxes, a rancher dose is calculated in deep time to provide a context for the radon flux results, consistent with the rancher scenario from the first 10,000 years of the model.

Conceptually, deep time will result in a combination of repeated isolation of sediment layers and more dispersal than modeled. This will cause mixing over ever-increasing areas and volumes, rather than mixing within a closed system. Consequently, concentrations of radionuclides will decrease with each lake cycle and with each climate cycle. However, the constraints of the model do not allow lake water concentrations to decrease with each cycle, and sediment concentrations decrease only because of the additional mass of sediment within which the DU waste is mixed.

In light of the simplifications in the model, the results for the deep time scenario are presented primarily within the first 100-ky cycle, in which the first intermediate or deep lake will return and the Federal Cell will be obliterated. Consideration of model assumptions should be used when interpreting results beyond the first 100-ky cycle. Summary statistics concentrations are presented at 82,500 years, which is the timestep at which the greatest percentage of lakes is present on average in the first 100-ky cycle across 1000 realizations. The focus of the deep time results is, consequently, on the effects of dispersal on concentrations of ^{238}U and its progeny in lake water and sediments within the first 100-ky climate cycle, as well as on ^{222}Rn flux and rancher dose after the first lake recedes. Progeny of ^{238}U presented include ^{230}Th and ^{226}Ra. Unless otherwise noted, deep time results are presented for 1000 realizations in order to capture the temporal changes in these results most clearly.

6.5.1 Sedimentation and Lake Timing Results

Thickness of the sediment above the DU waste is shown in Figure 9. The next lake to reach the elevation of Clive is assumed to occur no sooner than 50 ky into the future, so only aeolian deposition, at a constant (uncertain) rate, contributes to accumulation of sediments in the vicinity of Clive. Note that the embankment exists until the advent of the first lake, so the aeolian deposition thickness up to 50 ky is the only sediment accumulation in the vicinity of Clive. When a lake reaches the Clive elevation, aeolian deposition is augmented by the deposition of lake-derived sediments. Because the number and timing of such lakes and the depth of deposited sediments are uncertain, the variability in sediment thickness after 50 ky is considerably greater than in the initial 50-ky modeling period. The change in the slope of the sediment thickness curve at approximately 75 ky reflects the deposition of sediment from deep lakes that often appear at this time within the 100-ky climate cycle. Based on variable depositional rates, sediment thickness increases with time at a mean rate of approximately 16.5 m per 100 ky climate cycle.

The increasing depth of material covering the disposed DU waste over time will result in attenuation of radon flux. However, this rate of attenuation will be partly offset by the slowly increasing activity of the radioactive progeny of ^{238}U. Modeling results indicate that sediment accumulation overwhelms the influence of progeny ingrowth. This is revealed by inspection of the results of individual model realizations, where radon flux is always highest at the model time when the first intermediate lake recedes and then decreases over time to the end of the modeling period. Hence, the time of peak radon flux is equivalent to the time when the first lake to reach the elevation of Clive (and to destroy the embankment by wave action) has just receded from the location of the below-grade disposed DU waste.

The time when the first intermediate lake returns after 50 ky is modeled as a Poisson process and varies with each model realization. 100% of intermediate lakes occur within the first 80 ky of the 1000 realization simulation. Deep lake start times are modeled as a log-normal distribution which occurs before 100 ky. As shown in Figure 10, the likelihood that the first lake to reach Clive has appeared increases with time from 50 ky such that there is approximately an 80% probability that a lake will have appeared by approximately 66 ky. At that time the advent of an intermediate lake is overtaken by the probability that a deep lake will begin within this 100-ky climate cycle.

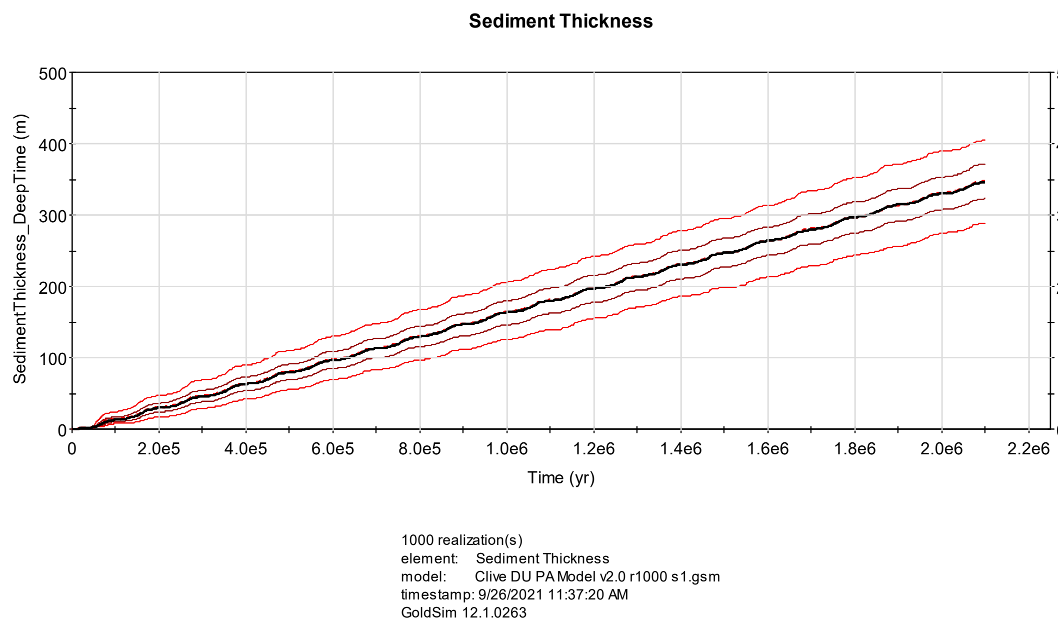

Figure 9. Evolution of sediment thickness in deep time.

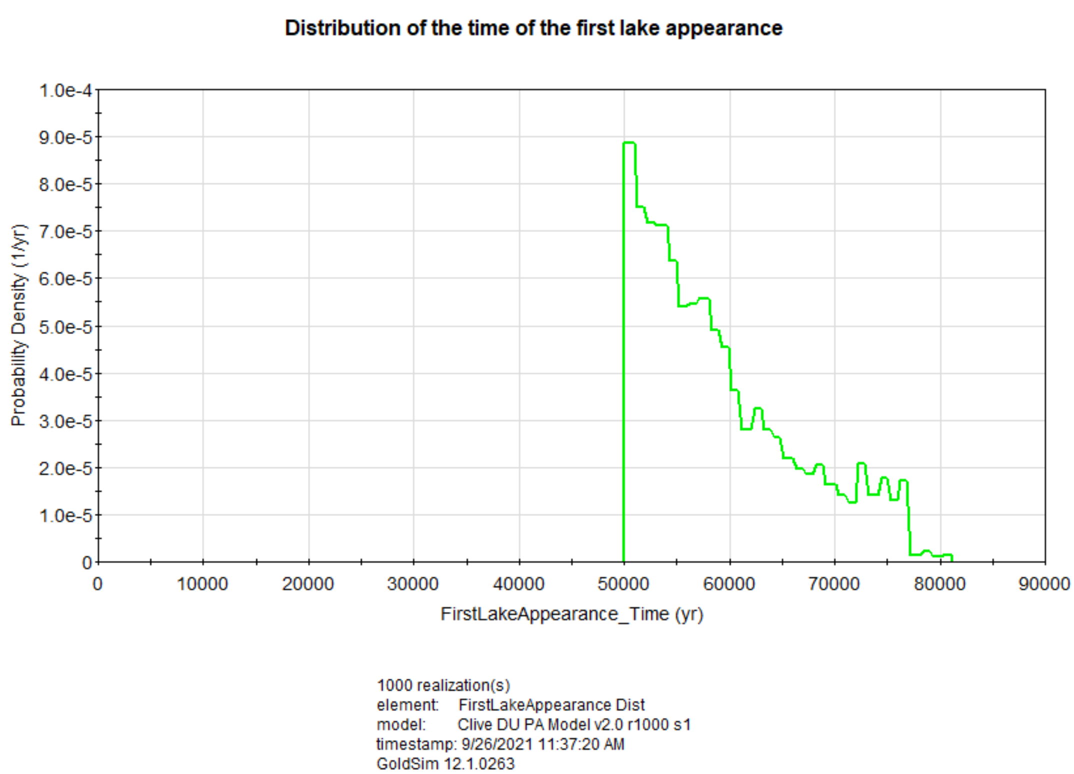

Figure 10. Time of appearance of first intermediate lake to reach the Clive elevation.

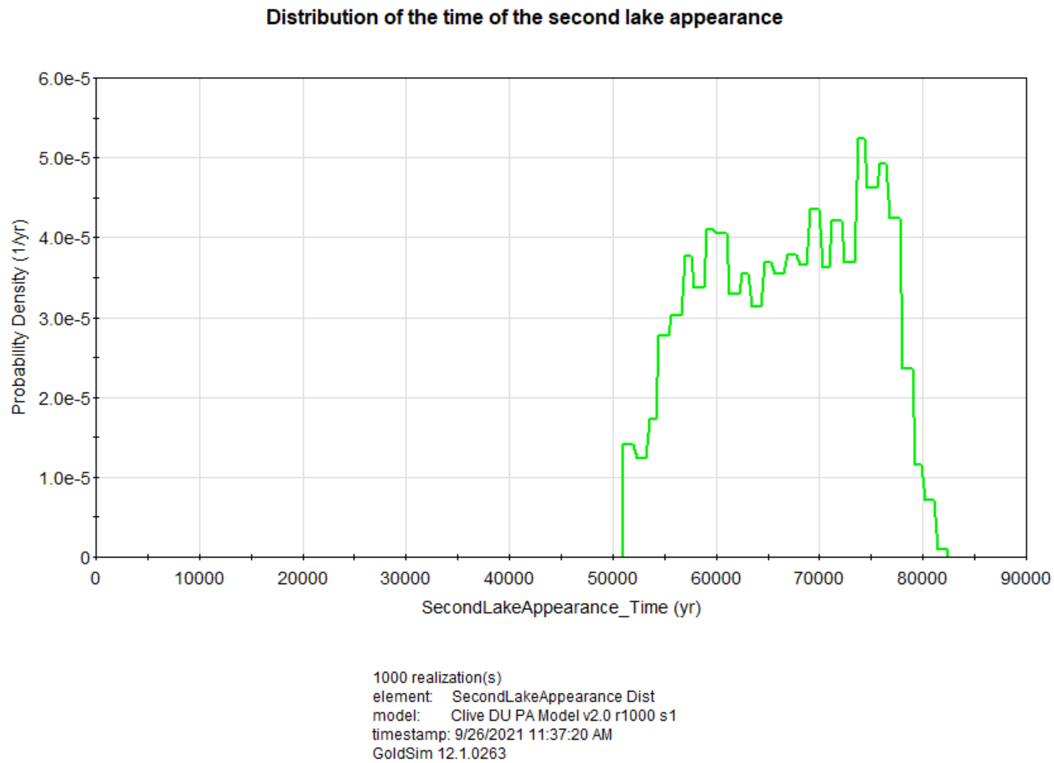

Figure 11. Time of appearance of second lake (intermediate or deep) to reach the Clive elevation.

6.5.2 Lake Sediment Concentrations

Results are presented similarly in Table 11 for concentrations of ^{238}U and its progeny in sediment derived from successive lakes. These results are statistical summaries of lake concentrations at 82.5 ky. Lake sediment concentrations are presented at 82,500 years, which is the timestep at which the greatest percentage of lakes is present on average in the first 100-ky cycle across 1000 realizations. By that point in time, ^{230}Th and ^{226}Ra have ingrown sufficiently to be present in computable concentrations.

Table 11. Statistical summary of deep time sediment concentrations at model year 82,500. Based on 1000 realizations, seed 1.

	25th Percentile	Median	Mean	95th Percentile
U-238 sediment concentration (pCi/g)	7.4E-04	4.1E-03	2.7E-02	1.3E-01
Ra-226 sediment concentration (pCi/g)	5.3E-04	2.1E-03	7.4E-03	2.8E-02
Th-230 sediment concentration (pCi/g)	5.1E-04	2.1E-3	7.0E-03	2.7E-02

Time history plots of radionuclide concentrations in future lake sediments for ^{238}U and its progeny, ^{230}Th and ^{226}Ra, are presented in Figure 12, Figure 13, and Figure 14, respectively, over 2.1 My. These plots show a large increase in concentrations as a consequence of the first lake event, with subsequent decreases as the sediment load increases.

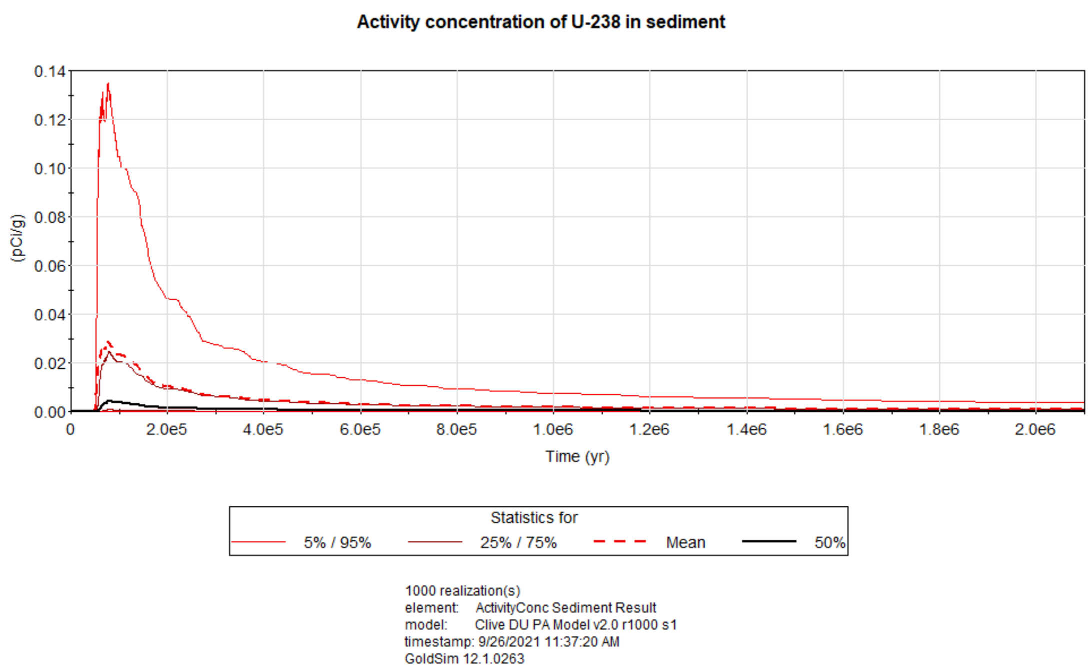

Figure 12. Time history of concentrations of uranium-238 in sediments.

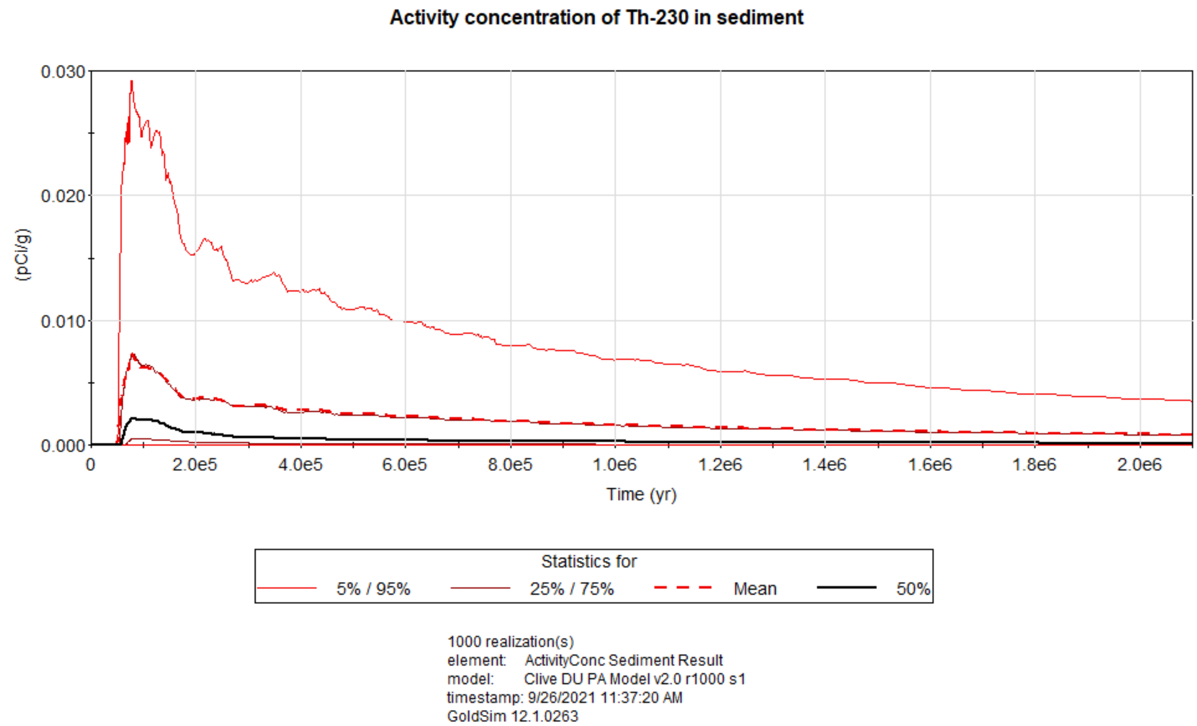

Figure 13. Time history of concentrations of thorium-230 in sediments.

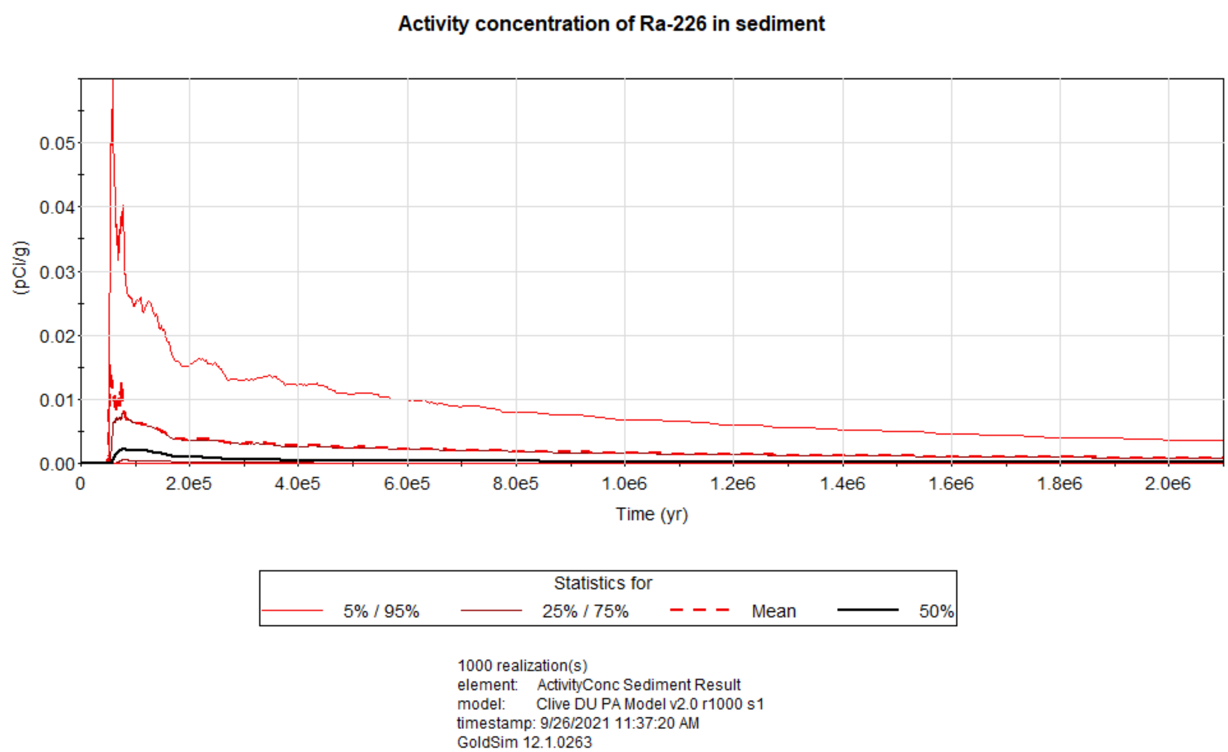

Figure 14. Time history of concentrations of radium-226 in sediments.

6.5.3 Lake Water Concentrations

A summary of lake water concentrations of ^{238}U and some of its progeny are presented in Table 12. Lake water concentrations are presented at 82,500 years, which is the timestep at which the greatest percentage of lakes is present on average in the first 100-ky cycle across 1000 realizations. By that point in time, ^{230}Th and ^{226}Ra have ingrown sufficiently to be present in computable concentrations.

Table 12. Statistical summary of deep time lake concentrations at model year 82,500. Based on 1000 realizations, seed 1.

	25th Percentile	Median	Mean	95th Percentile
U-238 lake concentration (pCi/L)	1.2E-06	5.6E-05	1.1E-02	5.9E-02
Ra-226 lake concentration (pCi/L)	6.5E-02	2.8E-01	7.7E-01	2.9
Th-230 lake concentration (pCi/L)	6.5E-02	2.8E-01	7.3E-01	2.8

Time history plots of lake water concentration statistics for ^{238}U and its progeny, ^{230}Th and ^{226}Ra, are presented in Figure 15, Figure 16, and Figure 17, respectively, across 2.1 My. These are presented on a log scale to capture the full concentration range. The jagged nature of the plots is due to the fact that lake water concentrations are zero when there is no lake present, and intermediate lakes only occur on average four times per 100 ky. Lake water concentrations tend to peak near the end of the period of the deep lake, which provides time for the radionuclides to dissolve into the lake.

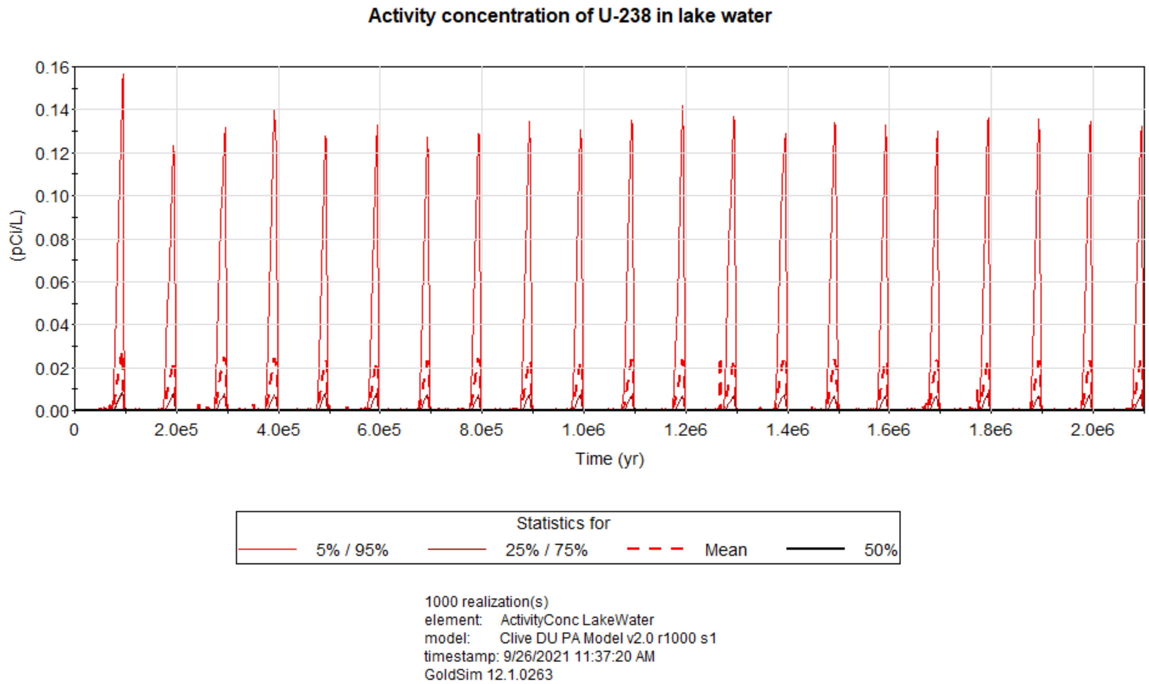

Figure 15. Time history of concentrations of uranium-238 in lake water.

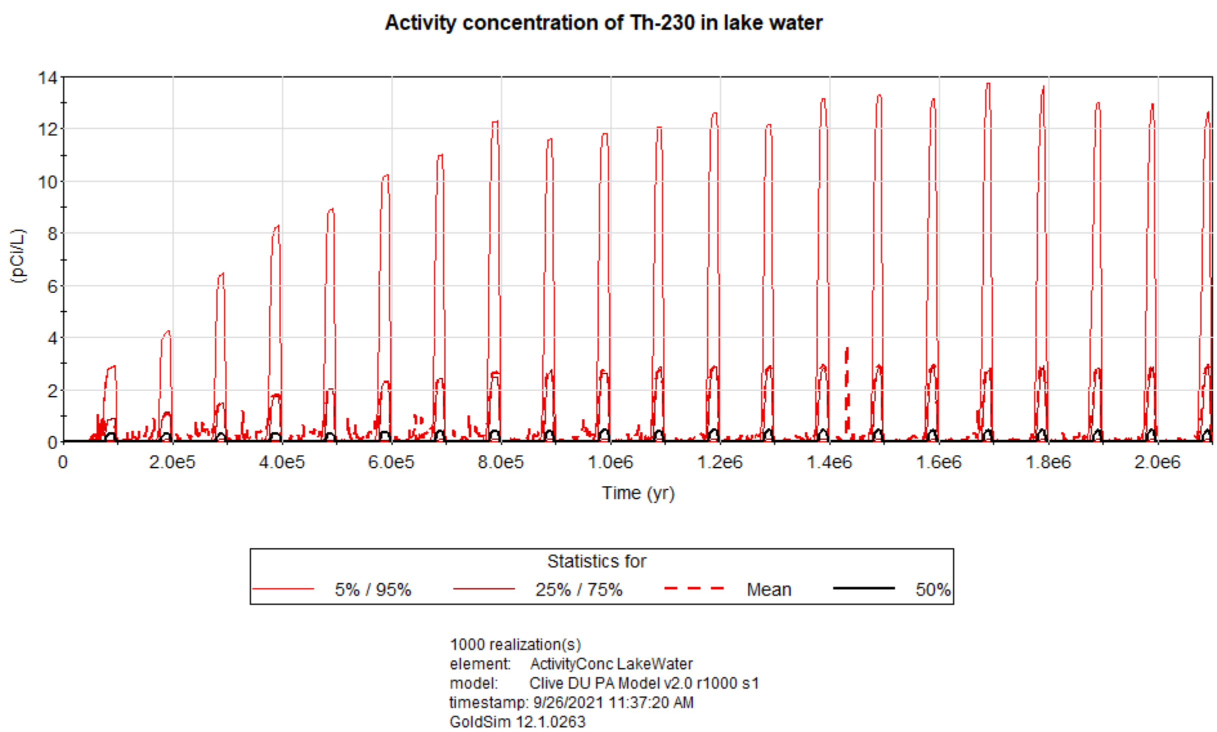

Figure 16. Time history of concentrations of thorium-230 in lake water.

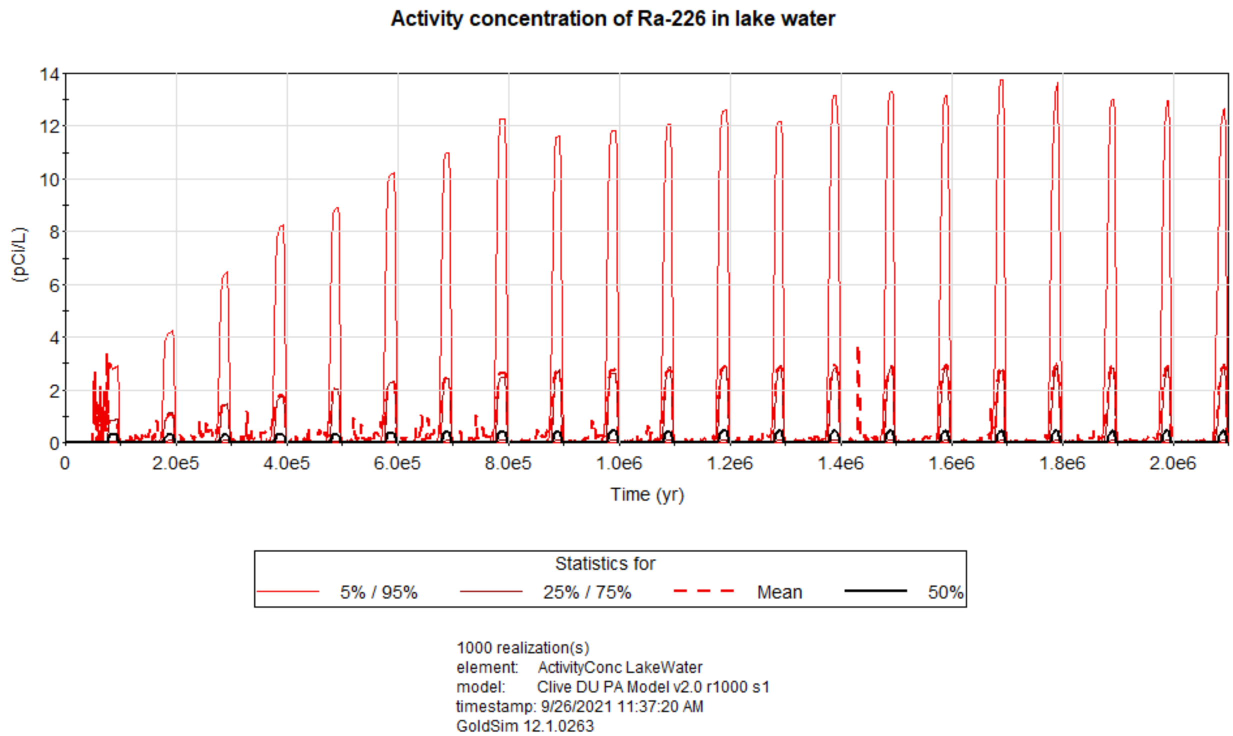

Figure 17. Time history of concentrations of radium-226 in lake water.

6.5.4 Radon Flux Results (10,000 Realizations)

A statistical summary of radon flux results after the first lake recedes are presented in Table 13. The time when the first intermediate lake returns after 50 ky is modeled as a Poisson process and varies with each model realization. Therefore, the time of peak radon flux also varies with each realization. Median values are below the 10,000-yr time frame regulatory limit of 20 pCi/m^{2}s.

Table 13. Statistical summary of radon-222 flux concentrations. Based on 10,000 realizations, seed 1.

	Radon-222 flux (pCi/m2-s)		
result	**mean**	**median (50th %ile)**	**95th %ile**
After 1st lake	24	9.0	100
Before 2nd lake	30	11	120

By comparison, peak radon flux over the 10,000-year time frame is orders of magnitude lower. Mean and median radon peak flux within 10,000 years is 0.013 and 0.011 pCi/m^2-s. The 95th percentile radon flux within 10,000 years is 0.016 pCi/m^2-s.

Radon flux over time is shown in Figure 18. Although radon flux will be highest at times closest to 50 ky, in most realizations a lake will not have occurred until closer to 60 ky. The change in the slope of radon flux curve before 100 ky in Figure 18 reflects the deposition of sediment from a deep lake that appears by this time within the 100-ky climate cycle.

The peak of the mean radon flux shown in Figure 18 is approximately 13 pCi/m^2-s across 1,000 realizations. The peak occurs at about 60,500 yr. This value is lower than the mean radon flux after the first lake recedes (above) since that value occurs at various points in time and the mean flux in Figure 18 is calculated for each point in time.

Although the median and mean sediment thickness track closely (Figure 9), the mean radon ground surface flux is much larger than the median. This strongly skewed result for radon flux is a consequence of the nonlinearities inherent in the NRC radon ground surface flux calculation. These are equations (9) through (12) in NRC (1989), here reproduced without detailed explanation:

$$J_t = 10^4 R_t \rho_t E_t \sqrt{\lambda D_t} \tanh\left(x_t \sqrt{\lambda / D_t}\right)$$

$$b_t = \sqrt{\lambda / D_t}, \quad b_c = \sqrt{\lambda / D_c}$$

$$a_t = n_t^2 D_t [1 - (1-k) m_t]^2, \quad a_c = n_c^2 D_c [1 - (1-k) m_c]^2$$

$$J_c = \frac{2 J_t e^{(-b_c x_c)}}{1 + \sqrt{a_t / a_c} \tanh(b_t x_t) + \left[1 - \sqrt{a_t / a_c} \tanh(b_t x_t)\right] e^{(-2 b_c x_c)}}$$

The definitions of variables are available in the NRC Regulatory Guide (NRC 1989), but it is clear that these equations will produce a highly nonlinear result, J_c, which is the ground surface flux of radon. So, even though all the inputs to the calculation are essentially normal distributions, the complexity of dividing one by another and involving powers (e.g., e^x) and hyperbolic tangent produces a nonlinear result.

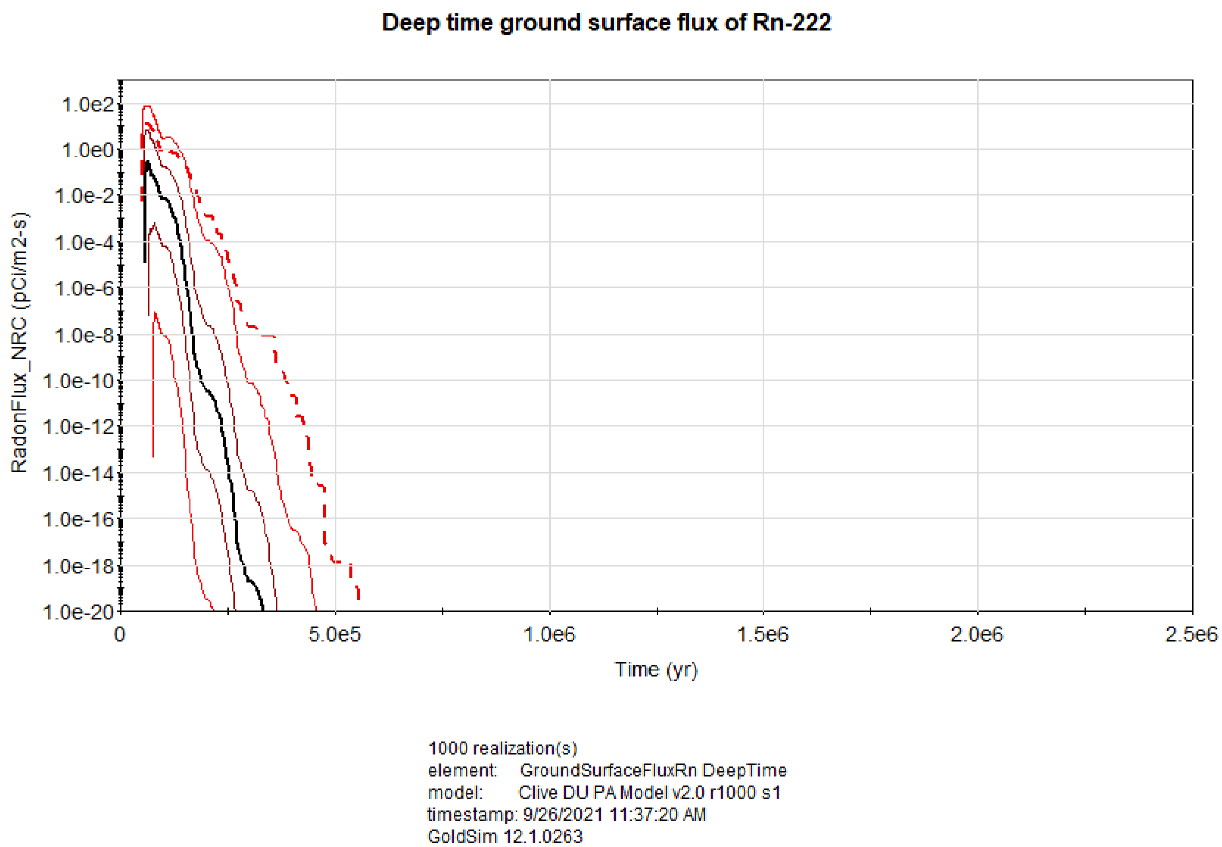

Figure 18. Radon-222 ground surface flux in deep time.

6.5.5 Rancher Radon Results (10,000 Realizations)

Doses to a rancher receptor are calculated to provide a context for the radon flux calculations, using radon flux after the first lake recedes and before the second lake (Table 14). The rancher exposure scenario provided the greatest dose to a receptor in the Model from 10,000 years, so it was used here for comparison. Rancher dose is less than 1 mrem/yr even at the 95th percentile of the results.

Table 14. Statistical summary of doses to ranchers. Based on 10,000 realizations, seed 1.

	Rancher dose (mrem/yr)		
result	**mean**	**median (50th %ile)**	**95th %ile**
After 1st lake	0.18	0.060	0.72
Before 2nd lake	0.22	0.071	0.90

One of the objectives of a PA, as defined in the UAC R313-25-9, is site stability. The performance standard for stability requires that the facility must be sited, designed, and closed to achieve long-term stability and to eliminate to the extent practicable the need for ongoing active maintenance of the site following closure. If the intent is to minimize the need for ongoing active maintenance, as stated, then obliteration of the Federal Cell in deep time achieves this goal, since concentrations are low and the need to maintain the site disappears completely. In addition, continued deposition through aeolian processes in inter-glacial periods, or through lake deposition otherwise, will continue to affect the site, either by providing additional cover, or through continued mixing with newly formed sediment layers.

7.0 Summary

This report lays out the approach taken to developing the PA model for DU waste disposal in the Federal Cell at the Clive Facility, and presents results of the updated Model (Clive DU PA Model v2.0) with accompanying sensitivity analyses. The purpose of this section is to summarize the results, to provide additional interpretation of the results, and to compare the results more directly to performance objectives in a compliance evaluation.

7.1 Interpretation of Results

Important results of the quantitative Clive DU PA Model can be summarized, given the compliance time frames of interest, in terms of doses to receptors, groundwater concentrations of soluble radionuclides, and disposal system evolution in deep time. The DU waste disposal configuration evaluated in the Model assumes burial below the grade of the area surrounding the embankment. The Model is run assuming that gullies are static in the simulation period, forming immediately in the first year.

Doses to all receptors are driven primarily by inhalation exposure to radon. Groundwater concentrations of ^{99}Tc would be expected to increase as the ^{99}Tc-containing waste is emplaced lower in the disposal facility. These concentrations are driven by infiltration and molecular diffusion. Transport mechanisms move waste either up into the accessible environment or down towards groundwater. The modeling results indicate that the groundwater performance objectives can still be satisfied when DU waste is placed below grade, which also minimizes dose to receptors on the ground surface.

For the configuration used in the Clive DU PA Model v2.0, erosion is included in the Model, but has only minimal impact on dose results since the waste is buried much deeper (11 m) than the gully maximum depth (0.35 m). The impact of gullies has not been fully developed in terms of their effect on biotic activity, radon transport, or infiltration.

The ALARA analysis results indicate that population doses are small compared to natural background radiation dose, and costs are low compared to disposal and other costs. The population doses are small because the population itself is small, and the doses to any hypothetical individual in the population are also small. Taking this ALARA approach to site performance would suggest that this is a good site for disposal of DU waste. There is room for improvement in this simple ALARA decision analysis. For example, other factors could be included in the analysis such as transportation and worker safety factors, and the cost per person rem could be reevaluated. However, the small population doses, because of the remoteness of the facility and the low individual doses, suggests that the disposal system meets ALARA-based performance objectives.

The deep time model should be regarded as heuristic or highly stylized. Nevertheless, it models the basic concepts of the return of lakes in the Bonneville Basin at or above the elevation of the Clive Facility. A sufficiently deep lake destroys the DU disposal facility, redistributes radionuclides that have moved above ground into the lake sediment, and repeats the cycles of radionuclides moving into lake water and settling back into sediment. Sedimentation rates are about 16.5 m per 100 ky, and the DU waste is assumed to mix with the sediment across time. There are several components of this heuristic model that could be regarded as conservative in the sense of over-predicting concentration in both lake water and lake sediment. For example:

1. In version 2.0 of the Model, all DU waste is disposed below grade. With this waste disposal configuration, none of the waste is dispersed directly. Waste material that would be dispersed under this scenario only includes radionuclides that have transported into the above-grade volume of the disposal system. Note also that eolian deposition occurs until the first lake returns, in which case the site will be more stable than at present and the below-grade waste will be further below grade. Dispersal of the waste occurs for the small fraction of waste that has migrated into the above-ground component of the disposal system. The model does not account for increased wetter and cooler conditions that occur before the first lake returns and that would be expected to move radionuclides downward from the embankment.
2. In the model a lake is assumed to destroy the site when it reaches the Clive elevation, which can cause mixing of waste in a very shallow lake—a lake that perhaps does not have sufficient power to destroy the facility. Research into the power needed for a lake to destroy the facility might indicate the minimum elevation needed for such an event.
3. Sediment mixing is assumed to occur with every lake cycle, even though some lake cycles might result only in burial with new sediments. The resulting concentrations reflect concentrations associated with the first lake event, consistent with the timing of the maximum lake water and lake sediment concentrations.

Peak lake water concentrations of ^{238}U at 82,500 years average about 0.011 pCi/L, even given the conservatism in the model, with a 95th percentile of about 0.059 pCi/L. The peak of the mean concentrations of ^{238}U in sediment average about 0.03 pCi/g, with a 95th percentile of about 0.1 pCi/g. Given the simplified and biased model structure, these lake water and sediment concentrations are substantial overestimates.

7.2 Comparison to Performance Objectives

Comparisons to performance objectives are presented for doses to ranch workers (since doses to other receptors are smaller), and for groundwater concentration for ^{99}Tc, the radionuclide with concentrations closest to the GWPL. The evaluations are for waste disposed below grade and they include erosion. Quantitative performance objectives do not exist for the ALARA analysis or for the deep-time concentration endpoints.

The concentrations reported by the Clive DU PA Model represent estimates of the concentration in each year, or the peak concentration within the 500-yr period of groundwater compliance. The peaks of those concentrations are collected. Because the groundwater concentration of ^{99}Tc increases with time, the peak concentrations occur at 500 yr. Since the timing of these peaks in different realizations is the same, the peak of the mean concentrations is identical to the mean of the peak concentrations. The 10,000 model realizations provide 10,000 estimates of the peak concentrations. Summary statistics for the distribution of the peak of the mean ^{99}Tc concentrations are presented in Table 15. The mean, median, and 95th percentile values are below the GWPL.

Table 15. Summary statistics for peak mean groundwater activity concentration of ^{99}Tc within 500 yr.

radionuclide	GWPL (pCi/L)	activity concentration at 500 yr (pCi/L)		
		mean	median (50th %ile)	95th %ile
^{99}Tc	3790	15	0.18	81

The results of the analyses depend critically on the Model structure, specification, and underlying assumptions. For example, the release of ^{99}Tc to the environment in the early modeling period would be restricted if waste containerization were taken into account, and ^{99}Tc inventory concentrations might be overestimated.

The dose results for ranch workers are presented in Table 16. The statistics represent summaries of the peak mean doses achieved within 10,000 yr. The 95th percentile is analogous to the 95% upper confidence interval of the mean that is commonly used to represent reasonable maximum exposure conditions in CERCLA risk assessments. Both the mean and the 95th percentile are orders of magnitude lower than the MOP performance objective of 25 mrem/yr.

Table 16. Peak mean TEDE for ranch worker: statistical summary.

receptor	TEDE (mrem/yr) at 10,000 yr		
	mean	median (50th %ile)	95th %ile
ranch worker	0.030	0.024	0.072

8.0 Conclusions

Model results are dependent on the model structure, the model specification, and the assumptions upon which they are based. All conclusions also depend on the model structure, specification, and assumptions. Changes in any aspect of the Model could cause different results. Within this context the Clive DU PA Model v2.0 demonstrates that the below-surface-grade configuration option for the subject DU waste in the Federal Cell is adequately protective of human health and the environment as projected for the next 10,000 years. Protectiveness is assessed under Utah Administrative Code R313-25-9 Section 5(a) by consideration in this PA Model of:

- dose to site-specific receptors,
- concentrations in groundwater,
- ALARA, and
- consideration of deep-time scenarios.

The Model was run with the waste buried below grade under the top slope, beneath extra fill material. It was also run with gully formation assumed to occur near the beginning of the simulation period. Simplified summary results for these scenarios are presented in Table 17.

Table 17. Summary of results of the Clive DU PA Model.

performance objective	meets performance objective?
Dose to MOP below regulatory threshold of 25 mrem in a year	Yes
Dose to IHI below regulatory threshold of 500 mrem in a year	Yes
Groundwater maximum concentration of ^{99}Tc in 500 years < 3790 pCi/L [1]	Yes
ALARA average total population cost equivalent over 10,000 years	$29,580

[1]Groundwater concentrations of all other radionuclides are significantly less than their respective GWPLs.

The configuration evaluated for the Clive DU PA Model v2.0, including erosion, demonstrates that the disposal facility can adequately protect human health and the environment when disposing of the subject DU waste:

- all disposal options evaluated exhibit doses that are less than the inadvertent intrusion performance objective,
- there are clearly disposal configurations for which the predicted doses are less than the MOP performance objective, and
- there are disposal options for which groundwater concentrations do not exceed GWPLs.

In addition, the ALARA analysis indicates that ALARA costs from population doses that might be realized for the duration of the 10 ky model are small. On a per year basis, the ALARA costs are less than $6 per year at the 95th percentile of total population dose.

The Federal Cell is assumed to be destroyed by the return of a deep lake. The deep time model indicates that concentrations in media such as lake water and sediment will continue to decrease with each lake and climate cycle and that destruction of the site will lead to dispersal of radionuclides in the Bonneville Basin.

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List of White Papers

FEP Analysis for Disposal of Depleted Uranium at the Clive Facility (Neptune 2021e)

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Machine Learning for Sensitivity Analysis of Probabilistic Environmental Models (Neptune 2021k)

Model Parameters for the Clive DU PA Model, Clive DU PA Model v2.0 (Neptune 2021j)

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DRC-2014-005989

STATE OF UTAH
DIVISION OF WATER QUALITY
UTAH WATER QUALITY BOARD
P.O. BOX 16690
SALT LAKE CITY, UTAH 84116-0690

Ground Water Quality Discharge Permit

In compliance with the provisions of the
Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended,

EnergySolutions, LLC
423 West 300 South, Suite 200
Salt Lake City, Utah 84101

hereafter referred to as the "Permittee", is granted a Ground Water Quality Discharge Permit for a Low-Level Radioactive Waste and 11e.(2) Waste Disposal Facility in accordance with conditions set forth herein. This facility currently consists of four separate operable units: a Low-Activity Radioactive Waste (LARW) cell, an 11e.(2) cell, a Mixed Waste cell, a and a Class A West cell, which are located at approximately latitude 40° 41' 18" North, longitude 113° 06' 54" West.

This modified Ground Water Quality Discharge Permit amends and supersedes all other Ground Water Discharge permits for this facility issued previously.

This modified permit shall become effective on October 9, 2014
This permit and the authorization to operate shall expire at midnight, October 9, 2019.

Rusty Lundberg
Director
Division of Radiation Control

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PART I. SPECIFIC PERMIT CONDITIONS

A. Ground Water Classification

Based on ground water quality data submitted by the permit applicant, ground water in the vicinity of the site is defined as Class IV, saline ground water.

B. Background Ground Water Quality

1. Background Quality from Existing Monitoring Wells

Based on ground water quality samples collected through December 2011, the upper boundary of background ground water quality is defined as the mean concentration plus the second standard deviation for any contaminant in any individual well as determined by the Director.

2. Determination and Revision of Background Ground Water Quality

After submittal of additional ground water quality data, background ground water quality values may be revised by the Director.

C. Ground Water Protection Levels

1. Ground Water Protection Levels, LARW cell, and Class A West cell

Based on the types of wastes to be disposed an evaluation of indicator isotopes and their mobility, and the Ground Water Quality Standards (GWQS); ground water protection levels (GWPLs) are defined as either the GWQS or the Background Concentration as listed in Tables 1A and 1B of this Permit. Ground water quality in any compliance monitoring well at the LARW cell, and Class A West cell shall comply with the GWPLs found in Table 1A, unless other GWPLs have been cited on a well and contaminant-specific basis in Table 1B, below.

2 Ground Water Protection Levels, 11e.(2) cell

Based on the types of waste to be disposed of an evaluation of indicator isotopes, their mobility, and the GWQS; GWPLs are defined as either the GWQS or the Background Concentration as listed in Tables 1C and 1D of this Permit. Ground water quality in any compliance monitoring well at the 11e.(2) cell shall comply with the GWPLs found in Table 1C, unless other GWPLs have been cited on a well and contaminant-specific basis in Table 1D, below.

3. Ground Water Protection Levels for Radiologic Parameters, Mixed Waste cell

Based on the type of waste to be disposed an evaluation of indicator isotopes, their mobility, and the GWQS; GWPLs are defined as either the GWQS or the Background Concentration as listed in Table 1E and 1F of this Permit. Ground water quality in any compliance monitoring well at the Mixed Waste cell shall comply with the GWPLs found in Table 1E, unless other GWPLs have been cited on a well and radiologic parameter-specific basis in Table 1F, below.

4 Revision of Ground Water Protection Levels

After submittal of additional ground water quality data, the ground water protection levels may be revised by the Director.

Table 1A: Ground Water Protection Levels (GWPL) – Universal to All LARW, Class A West, and Evaporation Pond Wells

Parameter	GWPL	Parameter	GWPL [1]
Field Parameters)		*Radiologic Parameters – Alpha Emitters [2] (pCi/l)*	
pH (units)	6.5 – 8.5	Neptunium-237 [3]	7
		Strontium-90	42
		Thorium-230	83
Dissolved Metals (mg/l)		Thorium-232	92
		Uranium-233	26
Uranium – total [1]	0.03	Uranium-234	26
		Uranium-235	27
		Uranium-236	27
		Uranium-238	26
		Radiologic Parameters – Beta/Gamma Emitters [4] (pCi/l)	
		Carbon-14	3,200
		Iodine-129 [5]	21
		Technetium-99	3,790
		Tritium	60,900
		Combined Radiologic Parameters (pCi/l)	
		Radium-226 + Radium-228 [6]	5

1. Total uranium GWQS of 0.03 mg/l from EPA final MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No. 236, p. 76708). Total uranium mass concentration will be calculated from isotopic uranium data.

2. All GWPL values for alpha-emitting radionuclides based on 1E-4 lifetime cancer mortality risk concentration levels provided in 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078-9, 33100-3, and Appendix C).
3. Neptunium-237, as determined by Total Radioactive Neptunium, EPA Method 907.0.
4. All GWPL values for beta/gamma emitting radionuclide parameters based on a 4 millirem/year equivalent dosage, as per 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078, 33103, and Appendix B).
5. Iodine-129, as determined by Total Radioactive Iodine, EPA Method 902.0.
6. GWQS of 5 pCi/l for combined radium-226 + radium-228 from final EPA MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No. 236, p. 76708).

Table 1B: Ground Water Protection Level Exceptions[1] – LARW, Class A West, and Evaporation Pond Wells

Well ID	Parameter	GWPL [2]	Well ID	Parameter	GWPL [2]
Inorganic/Metal Parameters (mg/l)					
GW-94	Uranium – total	0.035			
GW-95	Uranium – total	0.0320			
GW-100	Uranium – total	0.117	P3-95 SWC	Uranium – total	0.180
	Thallium	0.00422			
GW-24	Selenium	0.0634			
GW-103	Selenium	0.0580			
GW-137	Total Uranium	0.0371			
GW-138	Selenium	0.0695			
GW-141	Selenium	0.0705			
Radiologic Parameters (pCi/l)					
GW-20	Ra-226+Ra-228	5.49	GW-100	Uranium-234	68.6
				Uranium-238	43.0
GW-24	Ra-226+Ra-228	5.81			
			GW-105	Ra-226+Ra-228	6.03
GW-29	Ra-226+Ra-228	5.59			
			GW-58	Uranium-234	31.2
GW-56R	Ra-226+Ra-228	5.31			
			GW-36	Uranium-234	36.4
GW-64	Ra-226+Ra-228	5.63			
			GW-112	Ra-226+Ra-228	6.72
GW-77	Ra-226+Ra-228	5.46			
			P3-95 SWC	Uranium-234	48
GW-84	Ra-226+Ra-228	6.01		Uranium-238	79
				Ra-226+Ra-228	7.63
GW-85	Ra-226+Ra-228	7.77			
			GW-66R	Ra-226 + Ra-228	5.47
GW-86	Ra-226+Ra-228	6.19	GW-137	Ra-226+Ra228	5.54
			GW-138	Ra-226+Ra228	5.51
GW-88	Ra-226+Ra-228	5.04			
GW-89	Ra-226+Ra-228	5.04			
GW-90	Ra-226+Ra-228	5.85			
GW-91	Ra-226+Ra-228	5.92			
GW-93	Ra-226+Ra-228	5.54			

1. Table 1B exceptions constitute specific wells and parameters determined to have natural background ground water quality concentrations above GWQS, or as otherwise specified below. Background concentration is defined as the mean concentration plus the second standard deviation for any contaminant in any individual well. GW-100, GW-24, GW-103, GW-137, GW-138, and GW-141 are currently in an accelerated monitoring status for some dissolved metals, and will remain in the Permit until such time as the Director determines to remove them. This table may be blank if no GWPL exceptions are set for LARW, Class A, and Pond wells.

2. The number of significant figures used for all GWPLs determined by laboratory results previously reported by the Permittee.

Table 1C: Ground Water Protection Levels – Universal for all 11e.(2) Wells

Parameter	GWPL	Parameter	GWPL [1]
Field Parameters		*Organic Parameters – Specific to 11e.(2) (mg/l)*	
pH (units)	6.5 – 8.5		
Dissolved Metals (mg/l)			
Uranium – total[1]	0.03	Naphthalene [2]	0.02
		Diethyl Phthalate [3]	5.0
		2-Methylnaphthalene [4]	0.004
		Benzo(a)anthrancene	0.01
		Benzo(a)pyrene	0.01
		Benzo(k)fluoranthene	0.01
		Chlordane	0.002
		Chrysene	0.01
Combined Radiologic Parameters (pC/l)			
Radium-226+radium-228	5		
Radiologic Parameters (pC/l)			
Thorium-230	83		
Thorium-232	92		

1. Total uranium mass concentration will be calculated from isotopic uranium data.
2. Naphthalene GWQS derived from final EPA drinking water LHA (ibid.).
3. GWQS for diethyl phthalate based on draft EPA drinking water LHA (ibid.).
4. GWQS for 2-methylnaphthalene could not be located or determined, thanks to a lack of reference dosage information in the technical literature. Consequently, a detection monitoring approach has been taken and the GWPL set equal to the minimum achievable detection limit for the compound as a result of matrix interferences from high TDS content of Clive ground water. As health-based risk or other reference dosage information becomes available, the Director may modify the Permit and set a GWQS for 2-methlynaphthalene.

Table 1D: Ground Water Protection Level Exceptions [(1)] – 11e.(2) Wells

Well ID	Parameter	GWPL [(2)]	Well ID	Parameter	GWPL [(2)]
Inorganic/Metal Parameters (mg/l)					
GW-19A			GW-27	Uranium – total	0.039
			GW-36	Uranium – total	0.058
GW-25	Uranium – total	0.146	GW-58	Uranium – total	0.046
GW-26	Uranium – total	0.037			
	Thalliun	0.00255			

1. Table 1D exceptions constitute specific wells and parameters determined to have natural background ground water quality concentrations above GWQS, or as otherwise specified below. Background concentration is defined as the mean concentration plus the second standard deviation for any contaminant in any individual well. GW-26 is currently in an accelerated monitoring status for dissolved metal, Thallium and will remain in the Permit until such time as the Director determines to remove it. This table may be blank if no GWPL exceptions are set for 11e.(2) wells.
2. The number of significant figures used for all GWPLs determined by data evaluation and review of analytical method sensitivity.

Table 1E: Ground Water Protection Levels Universal to All Mixed Waste Wells

Parameter	GWPL	Parameter	GWPL
Dissolved Metals (mg/l)			
Uranium – total [(1)]	0.03		
Radiologic Parameters (pCi/l)			
Alpha Emitters [(2)]		*Beta/Gamma Emitters [(4)]*	
		Carbon-14	3,200
Neptunium-237 [(3)]	7	Iodine-129 [(5)]	21
Strontium-90	42	Technetium-99	3,790
Thorium-230	83	Tritium	60,900
Thorium-232	92		
Uranium-233	26		
Uranium-234	26	*Combined Radiologic Parameters (pCi/l)*	
Uranium-235	27	Radium-226 + Radium-228 [(6)]	5
Uranium-236	27		
Uranium-238	26		

1. Total uranium GWQS of 0.03 mg/l from EPA final MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No. 236, p. 76708). Total uranium mass concentration will be calculated from isotopic uranium data.
2. All GWPL values for alpha-emitting radionuclides based on 1E-4 lifetime cancer mortality risk concentration levels provided in 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078-9, 33100-3, and Appendix C).
3. Neptunium-237, as determined by Total Radioactive Neptunium, EPA Method 907.0.
4. All GWPL values for beta/gamma emitting radionuclide parameters based on a 4 millirem/year equivalent dosage, as per 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078, 33103, and Appendix B).
5. Iodine-129, as determined by Total Radioactive Iodine, EPA Method 902.0.
6. GWQS of 5 pCi/l for combined radium-226 + radium-228 from final EPA MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No.236,p.76708).

Table 1F: Ground Water Protection Level Exceptions (1) – Mixed Waste Wells

Well ID	Parameter	GWPL (2)	Well ID	Parameter	GWPL (2)

1. Table 1F exceptions constitute specific wells and parameters determined to have natural background ground water quality concentrations above GWQS, or as otherwise specified below. Background concentration is defined as the mean concentration plus the second standard deviation for any contaminant in any individual well. This table may be blank if no GWPL exceptions are set for Mixed Waste wells.
2. The number of significant figures used for all GWPLs determined by laboratory results previously reported by the Permittee.

D. Best Available Technology (BAT) Design Standard

1. Discharge Technology Performance Criteria

Best available technology for the facility will incorporate discharge technology based on the use of earthen materials in both the bottom liner and final cover. However, under no circumstances shall the facility cause ground water at the compliance monitoring wells (Part I.F.1) to exceed the ground water protection levels in Part I.C for the following minimum periods of time:

Disposal Cell	Contaminant Group	Performance Standard*
LARW, and Class A West	Heavy metals Inorganics Organics Mobile and non-mobile Radionuclides	200 years 200 years 200 years 500 years
11e.(2)	Heavy metals Inorganics Organics	200 years 200 years 200 years
Mixed Waste	Mobile and non-mobile	500 years

* Said performance standards shall be measured from the following initial startup dates: 1988 [LARW Cell], 1992 [Mixed Waste Cell], 1994 [11e.(2) Cells], and 2000 [Class A West Cell]

If after review of any environmental monitoring data collected at the facility, the Director determines that the ground water protection levels in Part I.C of the Permit may be exceeded at the compliance monitoring wells before completion of the above-minimum time periods, said potential shall constitute a violation of the Best Available Technology requirements of this Permit.

2. Authorized LARW Cell Engineering Design and Specifications

Final cover construction over the entire LARW cell was completed in October 2005. The engineering plans in Table 2A, below, are provided for reference to the cell engineering design.

Table 2A: Approved LARW Cell Engineering Design Drawings

Drawing	Last Revision Date	Subject
9407-2, Rev. E	July 28, 1998	LARW Disposal Cell – Cell Location and Excavation Limits
9407-4, Rev. V	February 1, 2005	LARW Disposal Cell – LARW Cell Closure
9407-4A, Rev. L	May 16, 2003	LARW Disposal Cell – LARW Cell Closure
9407-4B, Rev. J	May 16, 2003	LARW Disposal Cell – LARW Cell Closure
9407-5, Rev. I	February 4, 1999	LARW Disposal Cell – Site Layout
9407-6, Rev. E	July 28, 1998	LARW Disposal Cell – Site Layout
9407-7, Rev. A	June 27, 1994	Drainage Plan – Plan View
9407-7A, Rev. A	June 27, 1994	Drainage Plan – Details
9407-8, Rev. C	October 16, 1998	LARW Disposal Cell Wedge Expansion Cross Section
03046A-VO1 Rev. -	August 1, 2003	LARW Disposal Cell Closure – Plan and Details
03046A-VO2 Rev. 1	August 1, 2005	LARW Disposal Cell Closure – Sections and Details
03046A-VO3 Rev. -	August 1, 2003	LARW Disposal Cell – Radon Barrier Redesign Sections and Details
03046A-VO4 Rev. -	August 1, 2003	LARW Disposal Cell – Radon Barrier Redesign Sections and Details
03046A-VO5 Rev. -	August 1, 2003	LARW Disposal Cell – Radon Barrier Redesign Section and Details
L9	July 21, 1993	Fence Details

3. 11e.(2) Disposal Cell Design

The best available technology design standard shall be defined by, and construction of the 11e.(2) cell shall conform to the approved engineering design summarized in Table 2B, below, and the specifications listed in the currently approved LLRW and 11e.(2) CQA/QC Manual

Table 2B: Approved 11e.(2) Cell Engineering Design Drawings

Drawing	Last Revision Date	Subject
9420-4, Rev. F	March 4, 2002	11e.(2) Disposal Cell, Layout
9420-5, Rev. D	February 21, 2002	11e.(2) Disposal Cell, Cross Sections
9420-6, Rev. D	December 21, 2002	11e.(2) Disposal Cell, Ditch Cross Sections

Said 11e.(2) cell engineering design shall include, but is not limited to, the following elements:

a) Cover System – shall include the following materials, as described from the top down:

1) Top-slope Area – the top-slope shall consist of the following materials, from the top down:

i) Riprap Erosion Barrier – a 12-inch thick layer of rock armor material with a particle size ranging from 0.75 to 4.50 inches in diameter with an average diameter between 1.125 and 3.0 inches.

ii) Filter Zone – a single 12-inch thick layer of granular material with a particle size ranging from 0.3125 to 3.0 inches in diameter (coarse sand to fine cobble) and a minimum hydraulic conductivity of 42 cm/sec.

iii) Upper Radon Barrier – a layer of clay material at least 12 inches thick with a field hydraulic conductivity of 5.0E-8 cm/sec or less.

iv) Lower Radon Barrier – a layer of clay material at least 3 feet thick with a field hydraulic conductivity of 1.0E-6 cm/sec or less.

The minimum slope for top-slope areas shall be 2.1%.

2) Side-slope Area – the side-slope area shall consist of the following materials, from the top down:

A. Riprap Erosion Barrier – an 18-inch thick layer of rock armor material with a particle size ranging from 2.0 to 16.0 inches in diameter with an average diameter between 4.5 and 8.0 inches.

B. Filter Zone – a single 12-inch thick layer of granular material with a particle size ranging from 0.3125 to 3.0 inches in diameter (coarse sand to fine cobble) and a minimum hydraulic conductivity of 42 cm/sec.

C. Upper Radon Barrier – a layer of clay material at least 12 inches thick with a field hydraulic conductivity of 5.0E-8 cm/sec or less.

D. Lower Radon Barrier – a layer of clay material at least 2.5 feet thick with a field hydraulic conductivity of 1.0E-6 cm/sec or less.

The slope for side-slope areas shall be approximately 20%.

b) 11e.(2) Waste Layer – the 11e.(2) waste shall not exceed a final thickness of 47 feet above the bottom clay liner.

c) Bottom Clay Liner –The clay liner shall be a minimum of 2 feet thick, measured perpendicular to the slope, and have a field hydraulic conductivity of 1.0E-6 cm/sec or less.

4. Final Authorized Class A West Cell Engineering Design and Specifications

The best available technology design standard shall be defined by, and construction of the Class A West facility shall conform to the engineering plans summarized in Table 2C, below, and the specifications listed in the approved LLRW and 11e.(2) CQA/QC Manual:

For the Class A West cells, this engineering design includes, but is not limited to, the following elements:

a) Cover System – top-slope and side-slope areas shall include the following materials or as specified by the approved LLRW and 11e.(2) CQA/QC Manual, from the top down:
   1) An 24-inch thick erosion barrier consisting of a 1.25-inch, or greater, average diameter rock material over the top-slope area, and a 4.5-inch, or greater average diameter rock material over the side-slope area, as specified on the approved engineering drawing number 10017-C04,
   2) A 6-inch thick upper (Type A) filter zone consisting of sandy gravel material,
   3) A 12-inch compacted thickness of sacrificial soil with a minimum Residual Moisture Content of 3.5 % (by weight). Such Residual Moisture Content shall be the asymptotic value measured by ASTM Methods D-3152 and D-2325 at soil tensions above 15 bars, If the fines content (#200 sieve) of the sacrificial soil is greater than or equal to 15%, residual moisture content testing is not required,
   4) A 6-inch lower (Type B) filter zone on the top slope and 18-inch on the side slope, consisting of sandy gravel material with a minimum permeability of 3.5 cm/sec,
   5) A 2-foot thick clay radon barrier measured perpendicular to the slope. Said radon barrier will be divided into two layers:
      i. an upper layer, 1 foot thick, with a field hydraulic conductivity of 5.0E-8 cm/sec or less, and
      ii. a lower layer, 1 foot thick with a field hydraulic conductivity of 1.0E-6 cm/sec or less.

   Top slope of the embankment shall be between 2% and 4%, as specified on the approved engineering drawings, and side slopes shall be no steeper than approximately 5:1. The outside toe of the clay radon barrier/liner shall extend outward and beyond the outermost edge of the waste layer and shall merge with the bottom clay liner.

b) Waste Layer – the waste layer shall not exceed a final thickness of 74.3 feet above the top of the bottom clay liner.

c) Clay Bottom Liner – the bottom clay liner shall be constructed below natural grade. Final grade and elevation for the base of the clay liner will comply with the approved engineering design (Table 2C). This liner will be constructed after excavation of the site to the total design depth, followed by placement of imported clay materials, which meet the approved specifications for material and construction. The clay liner shall be a minimum of 2 feet thick and constructed in accordance with the approved LLRW and 11e.(2) CQA/QC Manual, and have a field hydraulic conductivity of 1.0E-6 cm/sec or less.

Table 2C: Approved Class A West Cell Engineering Design Drawings

Drawing	Last Revision	Subject
Class A West Disposal Embankment		
10014-C01, Rev. 2	1/3/12	Class A West Embankment – Embankment Features and Controls
10014-C02, Rev. 2	1/3/12	Class A West Embankment – Cross Sections
10014-C03, Rev. 3	1/5/12	Class A West Embankment – Sections and Details 1 of 2
10014-C04, Rev.3	11/3/11	Class A West Embankment – Sections and Details 2 of 2
10014-C08 Rev 1	1/5/12	Class A West Embankment-Class A, Class A North & Class A West Map
10014-C09, Rev. 1	11/4/11	Class A West Embankment – CWF Cross Sections
10014-U01, Rev.24	1/5/12	Class A West Embankment – Embankment Location Map and Buffer Zone
10014-U02, Rev. 2	1/5/12	Class A West Embankment – Environmental Monitoring

The best available technology design standard shall be defined by, and construction of the Class A and Class A North facilities shall conform to the engineering plans summarized in Table 2C1, below, and the specifications listed in the approved LLRW and 11e.(2) Construction Quality Assurance/Quality Control (CQA/QC) Plan.

Table 2C1: Approved Class A and Class A North Cell Engineering Design Drawings

Drawing	Last Revision	Subject
Class A Disposal Embankment		
9821-01, Rev. .J	2/9/09	Class A Disposal Cell – Layout Plan and Cover Details
9821-02, Rev. D	2/9/09	Class A Disposal Cell – Cross Sections
9821-03, Rev. D	7/8/09	Class A Disposal Cell – Ditch Details
9821-04, Rev. A	7/25/00	Class A Disposal Cell – Updated Drainage System
Class A North Disposal Embankment		
04080-C01 Rev. 3	2/9/09	Class A North Disposal Cell – Layout Plan and Cover Details
04080-C02 Rev.4	7/8/09	Class A North Disposal Cell – Cross Sections
04080-C03 Rev. 3	7/8/09	Class A North Disposal Cell – Ditch Details
04080-C04, Rev 3	10/26/09	Class A North Embankment Proposed CWF & LC Area, Area & Haul Road Layout
08080-C06, Rev. 4	10/26/09	Class A North Embankment Proposed CWF Area, CWF Area Plan and Details
08080-C06A	10/29/09	Class A North Embankment Proposed CWF area, CWF Area Plan and Details

5. Disposal Cell Location Restrictions

The LARW, 11e.(2), and Class A West disposal cells shall be restricted to the following locations in Section 32, Township 1 South, Range 11 West, SLBM, as specified on the currently approved engineering plans, drawings, and the approximate Latitude and Longitude Coordinates provided in Table 3 below:

Table 3: Authorized LARW, 11e.(2), and Class A West Disposal Cell Locations

Disposal Cell	Edge of Waste Position	Coordinates	
		Latitude	Longitude
LARW	NW Corner	40° 41' 11.382" N	113° 06' 51.318" W
	SW Corner	40° 40' 52. 908" N	113° 06' 51. 203" W
	SE Corner	40° 40' 52. 960" N	113° 06' 36. 734" W
	NE Corner	40° 41' 11.434" N	113° 06' 36. 848" W
11e.(2)	NW Corner	40° 41' 54.846" N	113° 06' 55.564" W
	SW Corner	40° 40' 55. 055" N	113° 07' 24. 761" W
	SE Corner	40° 40' 54. 845" N	113° 06' 55. 564" W
	NE Corner	40° 41'12.380" N	113° 06' 55.346" W
Class A West	NW Corner	40° 41' 39.609" N	113° 07' 24.754
	SW Corner	40° 41' 14. 230" N	113° 07' 24. 702" W
	SE Corner	40° 41' 14.191" N	113° 06' 55.369" W
	NE Corner	40° 41' 39.569" N	113° 06' 55.463" W

This description does not include the Mixed Waste facility, located east of the LARW Cell, which is authorized under a separate State-issued Part B Permit from the Utah Division of Solid and Hazardous Waste.

6. Definition of Class A Waste

For purposes of this Permit, Class A Low-Level Radioactive Waste (LLRW) is defined under the Utah Radiation Control Rules, UAC R313-15-1009, or as Naturally Occurring and Accelerator Produced Radioactive Materials under the Utah Radiation Control Rules, UAC R313-12-3.

7. Reserved

8. Definition of PCB/Radioactive Waste

For purposes of this Permit, PCB/Radioactive Waste to be accepted for disposal shall meet the criteria specified in R315-315-7(2)(a) or (3)(b)(i-vi) of the rules designated for disposal in a municipal or non-municipal non-hazardous landfill.

9. Definition of 11e.(2) Waste

For purposes of this Permit, 11e.(2) Waste is defined as "... tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content", as defined in Section 11e.(2) of the U.S. Atomic Energy Act of 1954, as amended.

10. Collection Lysimeters for Future Construction at the Class A West Cell

Future construction of the clay bottom liner of the Class A West Cell shall include the installation of collection lysimeters below the bottom clay liner, in accordance with the CQA Plan for Collection Lysimeter Construction currently approved by the Director and included herein as Appendix C. The Permittee shall also comply with the currently approved Operation, Maintenance and Closure Plan for Collection Lysimeters, also included herein as Appendix C. Any change to the approved design, operation, or construction specifications in Appendix C requires prior Director approval. The Permittee shall notify the Director of construction of additional lysimeters in the Class A West Cell, at least one week prior to construction.

11. Future Modification of Disposal Cell Engineering Design or Specifications

Any change in the approved engineering design or specifications requires prior submittal and Director approval. Said changes must be submitted to the Director as a written request with revised engineering drawings, specifications, ground water flow and contaminant transport models, or any other documentation deemed necessary by the Director, at least 180 days prior to the effective date desired by the Permittee.

12. Final Authorized Engineering Design and Specifications for Waste and Wastewater Related Facilities

Best available technology design standards for related facilities at the disposal site shall be defined by, and construction conform to the engineering plans and specifications summarized in Table 5, below:

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
Track 4 Railcar Decontamination Pad	T-100, Rev. 3	Aug. 14, 1999	Foundation
	T-101, Rev. 3	Aug. 16, 1999	Foundation Details
	9906-02, Rev. H	Feb 26, 2007	Wash Water System As-Built
	9906-02A, Rev. H	Feb. 26, 2007	Wash Water System As-Built
Class A West Containerized Waste Facility and Large Component Area Evaporation Basin	10014-C05, Rev. 6	May 10, 2013	Class A West Embankment – Active CWF & LC Areas: Area and Haul Road Layout
	10014-C06, Rev. 4	May 2, 2012	Class A West Embankment Large Component Area Plan & Details
	10014-C07, Rev. 4	January 10, 2014	Class A West Embankment CWF Area Plan & Details

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
	10014-C07A, Rev. 1	May 10, 2013	Class A West Embankment Active CWF Area CWF Area Plan & Details
1995 Evaporation Pond	9718-1, Rev. C	March 13, 2007	Facility Layout
	9504-3, Rev. E	Oct. 28, 1999	Storage Pond
	9504-3A, Rev. A	Oct. 28, 1999	Leak Detection System Details, As-Built
	9504-4, Rev. E	Oct. 28, 1999	Facility Details
	9718-4, Rev. A	Aug. 17, 1998	Piping Diagrams and Pump Station
	08007-C01, Rev. 2	Oct. 19, 2011	1995 Evaporation Pond HDPE Repairs, New 60 mil HDPE Liner
1997 Evaporation Pond	9718-1, Rev. C	March 13, 2007	Facility Layout
	9718-2, Rev. D	Feb. 25, 1999	Evaporation and Storage Pond
	9718-2a, Rev. B	Feb. 25, 1999	Leak Detection System Details, As-Built
	9718-3, Rev. -	Sept. 17, 1997	Details
	9718-4, Rev. A	Aug. 17, 1998	Piping Diagrams and Pump Station
2000 Evaporation Pond	0009-00, Rev. A	July 10, 2000	Site Plan and Facility Layout
	0009-01, Rev. E	Feb. 22, 2008	Plan View
	0009-02, Rev. A	Jan. 29, 2001	Cross Sections
	0009-03, Rev. B	Jan. 29, 2001	Details
	0009-04, Rev. A	Jan. 29, 2001	Sump/Side Slope Cross-Section
	0009-05, Rev. A	Jan. 29, 2001	Leak Detection Details
	0009-06, Rev. A	Feb. 22, 2008	Water Transfer Piping Details
Mixed Waste Evaporation Pond	9802-1, Rev. D	Dec. 22, 1999	Facility Layout
	9802-2, Rev. F	Dec. 22, 1999	Water Storage Facility
	9802-3, Rev. D	Dec. 22, 1999	Facility Details As-Built
	9802-4, Rev. B	Dec. 4, 1998	Water Storage Facility
	9802-5, Rev. A	Dec. 22, 1999	Leak Detection System Details, As-Built
	9803-2, Rev. -	Feb. 11, 1998	Storage Pad Drain Line As-Built
Box Washing Facility	9621-1, Rev. C	July 20, 1998	Site Plan As-Built Drawing
	9621-2, Rev. B	July 20, 1998	Foundation Plan As-Built Drawing
	9621-3, Rev. B	July 20, 1998	Elevation Views As-Built Drawing
	9621-4, Rev. B	July 20, 1998	Elevation Views As-Built Drawing
	9621-5, Rev. B	July 20, 1998	Wall Detail As-Built Drawing
Intermodal Unloading Facility	9705-1, Rev. A	July 31, 1998	Plan View
	9705-2, Rev. B	Nov. 20, 1998	Cross Section Drawings
	9813-01, Rev. B	March 13, 2007	Layout
	9813-02, Rev. A	July 31, 1998	Layout (and Details)
	0701-G03, Rev. 1	June 8, 2007	Site Layout and Facility Legend
Rail Digging Facility	0107-01, Rev. B	April 25, 2002	Site Layout
	0107-02, Rev. B	April 19, 2002	Digging Track Plan
	0107-03, Rev. B	April 12, 2002	Track and Pad Details
	0107-04A, Rev. A	April 25, 2002	Excavator Ramp
Container Storage Pad	9514-1, Rev. C	March 13, 2007	Plan, Sections and Details

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
East Truck Unloading Facility	05023-C104, Rev. 9	April 26, 2007	New Site Layout
	05023-C301, Rev. 4	Sept. 22, 2005	Cross Sections
	05023-C401, Rev. 5	Dec. 12, 2005	Truck Unloading Area Plan View
	05023-C402, Rev. 5	De. 12, 2005	Truck Unloading Dock Plan View
	05023-C403, Rev. 7	April 26, 2007	Enlarged Dock Plan View
	05023-C501, Rev. 5	Dec. 12, 2005	Truck Unloading Area Details
	05023-C502, Rev. 4	Dec. 12, 2005	Truck Dock Details
	05023-C503, Rev. 4	Dec. 12, 2005	Truck Dock Details
	05023-S1, Rev. 1	Sept. 22, 2005	Concrete Container Holding Pad Safety Protection
Shredder Facility	05056-F13, Rev._	09/30/06	Shredder Facility; Outfeed Pad Plan and Pad Details (As-Constructed)
	05056-F13A, Rev._	09/30/06	Shredder Facility; Shredder Pad Plan (As-Constructed)
	05056-F13B, Rev._	09/30/06	Shredder Facility; Shredder Pad Details (As-Constructed)
	05056-L1, Rev. 6	09/06	Shredder Facility; Site Layout Plan (As-Built)
	05056-L2, Rev. 2	Oct. 25, 2006	Shredder Facility; Containment Pad Water Management Layout Plan
	05056-C1, Rev. 10	Oct. 25, 2006	Shredding Facility; Operating Pad Layout (As-Built)
	05056-C6, Rev. 4	Oct. 25, 2006	Shredding Facility; Operating Pad – Sections and Details (As-Built)
	05056-C7, Rev 7	9/17/07	Shredding Facility; Catch Basin and Manhole Layouts (As-Built)
	05056-C8, Rev. 2	9/17/07	Shredding Facility; Drainage System Details
	05056-F1 thru -F14	Various	Details
Rotary Dump Facility	05006-C1, Rev. 3	Oct 6, 2006	Heater Building; Plan sheet
	05006-C2, Rev. 5	Oct 6, 2006	Rotary Dump Building; Plan Sheet
	05006-C3, Rev. 3	November 10, 2011	Wash Building; Plan Sheet
	05006-C5, Rev. 3	Oct 6, 2006	Rotary Dump Building; Section A-A
	05006-C6, Rev. 2	Oct 6, 2006	Rotary Dump Building; Section B-B
	05006-C12, Rev. 1	Oct 6, 2006	Heater Building; Drainage Details and Sections
	05006-C7, Rev. 1	Oct 6, 2006	Rotary Dump Building; Section C-C
	05006-C8, Rev. 1	Oct 6, 2006	Rail Car Wash Building; Section D-D
	05006-C9, Rev. 1	Oct 6, 2006	Wash Building, Drainage Plan Sheet
	05006-F1, Rev. 2	Oct 6, 2006	Rotary Dump Facility; Heater, Rotary and Wash Buildings foundation Plan and Details
	05006-F2, Rev. 3	Oct 6, 2006	Rotary Dump Facility; Heater Building Foundation Plan and Details
	05006-F10, Rev. 4	Oct 6, 2006	Rotary Dump Facility; Rotary Dumper Building Foundation Plan and Details
	05006-F13, Rev. 1	Oct 6, 2006	Rotary Dump Facility; Rotary Dumper Building Foundation Plan and Details
	05006-F25, Rev. 3	Oct 6, 2006	Rotary Dump Facility; Rotary Dumper Building Foundation Plan and Details
	05006-F26, Rev. 3	Oct 6, 2006	Rotary Dump Facility; Rotary Dumper Building Foundation Plan and Details

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
	05006-F27, Rev. 3	Oct 6, 2006	Rotary Dump Facility; Rotary Dumper Building Foundation Plan and Details
	05006-P103, Rev. 1	Sept. 20, 2007	Rotary to NW Corner Pond
	05006-V1, Rev. 2	Dec 1, 2006	Rotary Dump Facility; Water Supply and Waste Water Flow Diagram
	05006-SL100. Rev. 6	Oct 6, 2006	Rotary Dump Building; Sediment Basin Liner Plan
	05006-SL101. Rev. 6	Oct 6, 2006	Rotary Dump Building; Sediment Basin Liner Sections
	05006-SL102. Rev. 6	Oct 6, 2006	Rotary Dump Building; Sediment Basin Liner Section
	05006-F5, Rev.	November 10, 2011	Wash Building Foundation Plan and Details
	05006-F9C, Rev. 3	6/11/08	Wash Building Foundation Details
Intermodal Container Wash Building	05008-G1, Rev. 4	May 19, 2006	Intermodal Container Wash Building; Map Layout and Index
	05008-C100, Rev. 2	May 19, 2006	Intermodal Container Wash Building; Facility Location Map
	05008-C101, Rev. 4	September 26, 2006	Intermodal Container Wash Building; Plan Sheet
	05008-C102, Rev. 2	May 19, 2006	Intermodal Container Wash Building; Section A-A
	05008-C103, Rev. 3	May 19, 2006	Intermodal Container Wash Building; Section B-B
	05008-SL100, Rev. 5	August 23, 2006	Intermodal Container Wash Building; Sediment Basin Liner Plan
	05008-SL101, Rev. 5	August 23, 2006	Intermodal Container Wash Building; Sediment Basin Liner Section A-A
	05008-SL102, Rev. 5	August 23, 2006	Intermodal Container Wash Building; Sediment Basin Liner Section B-B
Decontamination Access Control Building	05015-G001, Rev. 1	February 23, 2006	Access Control Building; Map Layout and Index
	05015-C100, Rev. 1	February 23, 2006	Access Control Building; Facilities Location Map
	05015-C101, Rev. 2	February 23, 2006	Access Control Building; Floor Plan
	05015-C102, Rev. 2	February 23, 2006	Access Control Building; Elevations
	05015-C103, Rev. 3	February 23, 2006	Access Control Building, Typical Sections
	05015-C104, Rev. 0	February 23, 2006	Access Control Building, Site Layout and Gray Water Tank and Pipe
	05015-S100, Rev. 2	June 30, 2006	Access Control Building, 1000 Gallon Gray Water Tank
	05015-P100, Rev. 1	February 23, 2006	Access Control Building, Plumbing Plan
	05015-P101, Rev. 1	February 23, 2006	Access Control Building, Plumbing Details
East Side Drainage and Gray Water System Modifications	06007-G1, Rev. 5	2/26/07	East Side Drainage, Map Layout and Index
	06007-G2, Rev. 4	2/26/07	East Side Drainage, Notes and Specifications
	06007-C1, Rev. 6	7/23/12	East Side Drainage, General Site Plan
	06007-C2, Rev. 6	7/23/12	East Side Drainage, Storm Water Drainage Plan
	06007-C3, Rev. 7	2/1/2010	East Side Drainage, Intermodal Container Wash Facility Gray Water System Plan
	06007-C4, Rev. 6	3/12/08	East Side Drainage, Decon Access Control

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
			Gray Water System
	06007-D1, Rev. 7	6/10/09	East Side Drainage, Section and Details
	06007-P1, Rev. 4	2/26/07	East Side Drainage, Pipelines #4 and #5 Alignments and Profiles
	06007-SL1, Rev. 3	3/14/07	East Side Drainage, Storm Water Lift Sump Plan
	06007-SL2, Rev. 3	3/14/07	East Side Drainage, Storm Water Lift Sump Section
	06007-SL3, Rev. 3	3/14/07	East Side Drainage, Storm Water Lift Sump Section
	06007-V1, Rev. 4	7/23/12	East Side Drainage, Storm Water and Waste Flow Diagram
	06007-P2, Rev. 4	2/22/08	Pipeline 4A and 5A Extension into the 1997 Pond
Northwest Corner Evaporation Pond			
	06021-C1, Rev 5	October 19, 2011	Northwest Corner Pond; General Site Plan and Profile
	06021-C2, Rev. 8	October 19, 2011	Northwest Corner Pond; Pond Plan View
	06021-C3, Rev.5	08/29/07	Northwest Corner Pond; Sections and Details
	06021-C4, Rev. 3	08/29/07	Northwest Corner Pond; Sections and Details
	06021-C5, Rev. 3	08/29/07	Northwest Corner Pond; Sump Plan, Sections, and Details
	06021-C6, Rev. 3	08/29/07	Northwest Corner Pond; Leak Detection System Sections and Details
	06021-C7, Rev. 3	09-17-07	Northwest Corner Pond Leak Detection System Sections and Details
	06021-C10, Rev. 2	October 19, 2011	Northwest Corner Pond; Water Transfer Facility; Plan & Details
	06021-C11, Rev. 1	October 19, 2011	Northwest Corner Pond; Water Transfer Facility; Plan & Details
11e.(2) Disposal Cell Temporary Diversion Ditch	9420-7D, Rev. 1	10/15/09	Lift Section Details
DU Storage Building	088800, sheet 1of 10	8/19/10	Anchor Bolt Plan & Details
	088800, sheet 2 of 10	8/19/10	Anchor Bolt Reactions
	088800, sheet 3 of 10	8/19/10	Rigid Frame Elevation
	088800, sheet 4 of 10	8/23/10	Roof Framing
	088800, sheet 5 of 10	8/23/10	Sidewall Framing
	088800, sheet 6 of 10	8/23/10	Sidewall Framing
	088800, sheet 7 of 10	8/19/10	Endwall Framing
	088800, sheet 8 of 10	8/19/10	Endwall Framing
	088800, sheet 9 of 10	8/19/10	Detail drawings
	088800, sheet 10 of 10	8/19/10	Detail drawings
	10008 L01	8/12/10	Building Location Map
	10008 L02	8/12/10	Building Plan & Elevations
	J10197 E1	8/24/10	Electrical Plans and Schedules
	J10197 E2	8/24/10	Electrical installation Details, Wiring Diagrams and One-Line

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
	J10197 M1	8/24/10	Mechanical Plans and Schedules
	J10197 M3	8/24/10	Specifications
	10008 C01, rev. 1	11/1/10	Site Ground Plan
	10335 S1	9/2/10	Foundation Plan and Footing Schedule
	10335 S2	9/2/10	Details
	10335 S3	9/2/10	Notes
Mixed Waste Surface Impoundment	Design Drawings are listed in Attachment II-11 of the State-issued Part B Permit		
LLRW Operations Building	07015-P101 (redlined)	Feb. 7, 2008	Plumbing Plan
	07015-V1, Rev. 2	March 1, 2010	Holding Tank Sections and Details

13. Authorized Mixed Waste Cell Engineering Design and Specifications

The best available technology standards for the Mixed Waste Cell shall be defined by those requirements mandated by the Utah Division of Solid and Hazardous Waste State-issued Part B Permit, issued April 4, 2003 (as amended), hereafter State-issued Part B Permit. All Mixed Waste Cell engineering design and specifications shall comply with State-issued Permit, Module V.

14. DU Storage Building

The best available technology standards for the depleted uranium (DU) Storage Building shall be defined as the complete physical control and containment of DU within the building. For the purposes of this Permit, waste materials stored in the DU Storage Building will be exclusively limited to Savannah River Site DU material (waste stream 9021-33). The DU waste, in the DU Storage Building, is not subject to the 365-day storage requirement applicable to all other containerized waste in Part I.E.10.a.6 of this Permit.

E. BAT Performance and Best Management Practice Standards

1. Waste Restrictions

a) Allowed Class A Low Level Radioactive Waste Volume - The volume of Class A Low-level Radioactive Waste disposed in the Class A West and Mixed Waste embankments as described in drawing 10014 C01, rev 2 for the Class A West embankment, and in drawing 11009 W02, rev 0 for the Mixed Waste embankment shall not exceed a total of 10.08 million cubic yards.

b) 11e.(2) Waste – any change affecting the non-radiologic content of the waste to be disposed of in the 11e.(2) Cell, including additional types or concentrations of non-radiologic contaminants, above and beyond those defined in Table 6 below, shall require prior approval from the Director, after submittal of satisfactory technical justification to demonstrate that the requirements of Part I.D.1 of this Permit will be met.

c) Solid Waste Landfill Equivalency – PCB/Radioactive Waste shall only be disposed of as designated in the State-issued Part B Permit.

d) Mixed Waste and Class A West Cells – waste to be disposed of in the Mixed Waste and Class A West Cells shall be limited to wastes which meet the definition of Class A Low-Level Radioactive Waste (LLRW) under the Utah Radiation Control Rules, UAC R313-15-1009, or are defined as Naturally Occurring and Accelerator Produced Radioactive Materials under the Utah Radiation Control Rules, UAC R313-

2. Prohibited Wastes

a) Hazardous Waste – the disposal of hazardous waste as defined by the Utah Hazardous Waste Management Rules (UAC R315-2-3) is prohibited in the Class A West and 11e.(2) Disposal Cells. LLRW or 11e.(2) waste that exceeds the regulatory concentration levels of the Toxic Characteristic Leaching Procedure (TCLP) as defined in 40 CFR Part 261 Subpart C, Table 1 is prohibited, unless specifically authorized in Table 6 below, or with prior written approval from the Director. Waste samples shall be collected in accordance with the currently approved Waste Characterization Plan (Radioactive Material License, Condition 58); the 11e.(2) Byproduct Material License (UT 2300478) Renewal Application, Revision 5, and analyzed for those exclusive parameters listed in Table 6, below; or for PCB/Radioactive Waste, the currently approved State-issued Part B Permit.

Table 6: Maximum Allowable Concentrations in 11e.(2) Waste

Parameter	TCLP Leachate Regulatory Limit (mg/l)	Total Waste Concentration (mg/kg)
Volatile Organic Compounds		
Acetone	n/a	10.0
2-Butanone (methyl ethyl ketone)	200.0	10.0
Carbon Disulfide	n/a	10.0
Chloroform	6.0	10.0
1,1-Dichloroethane	0.5	10.0
Diethyl Phthalate	n/a	80.0
Methylene Chloride	n/a	70.0
2-Methylnaphthalene	n/a	80.0
Naphthalene	n/a	80.0
1,1,2-Trichloroethane	n/a	7.27
Vinyl Chloride	0.2	0.66

b) Liquid Waste – acceptance of liquids and liquid content of all wastes shall be in accordance with the Radioactive Materials License.

c) Chelating Agents – the disposal of any waste containing chelating agents shall be limited to the Mixed Waste Cell and is prohibited in the Class A West, and 11e.(2) Disposal Cells. The disposal of any waste in the Mixed Waste Cell containing chelating agents in excess of 22% by weight is prohibited.

3. Failure to Construct as per Approval

Failure to construct any portion of the facility in compliance with the approved engineering design and specifications or in a manner inconsistent with the LLRW and 11e.(2) CQA/QC Plan (Radioactive Materials License UT 2300249, Condition 44) shall be cause for the Director to require excavation of the materials and remedial construction, retrofit of the embankment or any other mitigative action to prevent the release of pollutants to soil or ground water.

4. Unsaturated Soil Moisture Content Monitoring

The Permittee shall conduct soil moisture content monitoring to verify performance of the engineered containment systems for the LARW, and 11e.(2), Disposal Cells in accordance with the requirements of Part 1.H.17 of this Permit and Radioactive Material License Condition 28. This monitoring shall consist of instrumentation, as approved by the Director, installed in the Cover Test Cell.

The Permittee shall maintain and replace all soil moisture instrumentation as directed by the Director.

The Director reserves the right to require similar soil moisture content monitoring in the radon barrier at the 11e.(2) Cell. The Permittee shall install and make operational any soil moisture instrumentation in compliance with the schedule to be determined by the Director.

5. Reserved

6. Open Cell Time Limitation

For each open portion of the Class A West disposal cell, final cover construction shall be completed in accordance with the approved engineering plans and specifications (Part I.D. 4) and the approved CQA/QC Manual no later than 18 years after the date of initial placement of waste in that portion of the open cell.

Any modification of this 18 -year limitation shall require prior Director approval with area-specific plans, schedule, and the submittal of justification. Said justification must be submitted to the Director at least 180 days prior to the expiration date of the respective 18-year open cell time limit. Failure to secure Director approval prior to expiration of the 18 -year deadline shall not be cause for the Permittee to postpone construction of the cover of the Class A West cell in accordance with the currently approved engineering design and specifications in Part I.D. 4 of this Permit.

The Permittee was given an extension (to 25 years) to the Open Cell Time Limitation for parts of, or all of lift areas P01, N01, N04, N06, N11, N12, N14, N15, N17, N20, N23, and M10 as defined in the Permittee's Extension request, Part I.E.6, Open Cell Time Limitation letter dated October 8, 2013. The extension is conditioned on annual precipitation of 9.32 inches or above for two consecutive years causing a reevaluation of the extension..

7. General Stormwater Management Requirements

The Permittee shall contain all stormwater runoff at the Class A West and 11e.(2) Disposal Cells which has contacted the waste (i.e., contact stormwater). The Permittee shall not begin pumpage or removal of stormwater that falls inside the restricted area that has not contacted the waste (i.e., non-contact stormwater) before beginning removal of contact stormwater, and:

a) Within 24 hours of discovery of an accumulation of contact stormwater, the Permittee shall immediately begin pumpage and removal of said stormwater in accordance with the stormwater priority schedule listed in Appendix J, BAT Performance Monitoring Plan.

b) The Permittee shall pump and remove contact stormwater in an uninterrupted manner until it is completely removed from said location. The Permittee may utilize equipment, which cannot be used at higher priority locations, at lower priority locations in accordance with Appendix J of this Permit, BAT Performance Monitoring Plan. All contact stormwater accumulated and pumped shall be disposed of in the evaporation ponds. However, contact stormwater from the Class A West and 11e.(2) disposal cells may be used for minimal engineering and dust control purposes on the waste in the Class A West disposal cell and for dust suppression activities at the Shredder and Rotary Dump Facilities.

c) Class A West Containerized Waste Facility and Large Component Evaporation Basin – precipitation that falls on the Class A West Containerized Waste Facility and Large Component Area shall be allowed to accumulate in an engineered evaporation basin constructed in accordance with the following conditions:

1) The evaporation basin shall be constructed in accordance with the design specifications in engineering drawings listed in Table 5 of this Permit and the requirements of the currently approved LLRW and 11e.(2) CQA/QC Manual (Work Element – General Requirements, specification "Runoff Control During Project" and Work Element – "Clay Liner Placement").

2) Fluid head in the evaporation basin shall not exceed a 1-foot level above the lowest point of the evaporation basin protective cover.

3) The Permittee shall ensure that the physical integrity of the clay liner is not compromised by desiccation or freeze/thaw cycles by implementing quality assurance/quality control requirements in the currently approved LLRW and 11e.(2) CQA/QC Manual (Work Element - Clay Liner Placement, specification "Liner Drying Prevention"). This requirement is met by completing an annual survey of the evaporation basin's surface to ensure that at least six inches of compacted clay is present above the top of the clay liner. This survey is to be completed no later than May 1 of each year.

8. Reserved

9. 11e.(2) Waste Storage

Storage of 11e.(2) waste at the facility shall be explicitly limited to areas within the confines of the 11e.(2) Disposal Cell having completed and approved clay liner.

10. <u>LLRW and 11e.(2) Waste Management Performance Requirements</u>

The Permittee shall operate and maintain all facilities in compliance with the following performance requirements:

a) Contaminant Containment and Spill Prevention – the Permittee shall manage all site operations to:

1) Prevent contact of wastes with the ground surface.

2) Prevent spills of wastes or liquids contained therein from any contact with the ground surface or ground water.

3) Prevent contact of surface water or stormwater run-on with the waste.

4) Control any runoff, which may have contacted the waste from subsequent contact with the ground surface or ground water by means of approved engineering containment. Any accumulations of such

contact runoff or leachates shall be removed and managed in accordance with Part I.E.7 of this Permit.

5) Prevent wind dispersal of wastes.

6) Minimize the time any waste is held in temporary storage without disposal in a disposal cell or embankment. In no case shall any waste be in temporary storage beyond 365 days after the date of waste entry into the controlled area. Once the waste is removed from temporary storage and is in a disposal cell, the 365 day restriction is no longer relevant.

7) Identify all wastes held in storage by use of clear and legible placards, signs, or labels which identify the generator, waste stream number and dates that said waste or waste container both entered the controlled area and was placed into temporary storage.

8) Maintain all waste containers in a closed, strong tight and watertight condition.

9) All containers in storage shall be inspected as required in the currently approved Appendix J of this Permit.

10) Waste in bags shall be managed as bulk waste.

b) Containerized Waste Storage Pad and Other Waste Storage Areas – the Permittee shall operate and maintain waste containers, the asphalt surface of the Containerized Waste Storage Pad, and other storage surfaces used as a waste storage area by completing the following actions, as applicable:

1) Repair or otherwise seal and render impermeable any and all cracks, ruptures, damage, or porous areas found in the asphalt surface or other storage surfaces in accordance with the currently approved Appendix K of this Permit.

2) Inspecting all containers in storage in accordance with the currently approved Appendix J of this Permit.

3) Prevent contact of waste with precipitation or stormwater by maintaining all containers in a closed and watertight condition.

4) Manage leaking containers in accordance with the Waste Characterization Plan and Radioactive Material License.

5) Adequately operate and maintain any stormwater collection sump, pump, and piping to ensure containment and conveyance of stormwaters to the approved evaporation ponds.

c) Prohibition and Restrictions for Dry Active Waste (DAW) Storage – DAW is defined as contaminated materials without soil-like texture or characteristics that has a dry weight density of 70 pounds per cubic foot or less (e.g., contaminated paper, plastic, personal protective equipment, cloth, or other similar soft-type debris). Open-air storage of DAW is prohibited at the facility. All temporary storage of DAW shall be conducted either inside buildings or in watertight containers at the Containerized Waste Storage Pad or other approved storage areas. DAW located within a disposal cell must be covered at the end of the working day with soil or soil-like waste material to prevent wind dispersal.

d) Intermodal Unloading Facility – the Permittee shall operate and maintain the LLRW Intermodal Unloading Facility to provide free draining conditions to the stormwater drainage pipeline system.

e) Management of Containerized Waste – the following locations are approved for management and storage of Class A waste received in containers (does NOT include waste received for disposal in the Containerized Waste Facility):

- Containerized Waste Storage Pad
- Intermodal Unloading Facility
- East Truck Unloading Facility storage pads
- Decontamination Facilities (Box Wash, Track #4 Rail Car Wash Facility, Intermodal Container Wash Building)
- Class A West Disposal Cell
- Shredder Facility
- Rotary Dump Facility

f) Bulk Waste Management – the following locations are approved for management and storage of bulk Class A waste:

- Intermodal Unloading Facility
- Decontamination Facilities (Box Wash, Track #4 Rail Car Wash facility, Intermodal Container Wash Building)
- Class A West Disposal Cell
- Rail Digging Facility (bulk waste transfer only, waste storage prohibited)
- Shredder Facility
- Rotary Dump Facility

11. <u>LARW, and Class A West Cell Collection Lysimeters: Operation, Maintenance and Inspection</u>

The Permittee shall operate and maintain all collection lysimeters in compliance with the currently approved Appendix C of this Permit. Said operation shall include a video inspection of each collection lysimeter constructed at the LARW, and Class A West Cells within one year following the completion of liner over the collection lysimeter pan. Afterwards video inspections will be conducted on an every other year basis. Each video inspection shall log the entire length of the drainage pipe to ensure proper operation and free drainage of each collection lysimeter. Failure to satisfactorily complete a video log inspection or a determination that free draining conditions no longer exist in a collection lysimeter shall constitute failure to maintain best available technology pursuant to Part I.G.4 of this Permit. Such failures shall be reported to the Director in accordance with the requirements of Part I.H.8 of this Permit.

12. Stormwater Drainage Works Performance Criteria

All stormwater drainage works constructed and operated at the LARW, Class A West, and 11e.(2) facilities shall be performed in accordance with the following criteria:

a) Seepage Control to Prevent Ground Water Mounding – all drainage works at the facility shall be constructed of either low-permeability clay liner materials or of an impermeable man-made conveyance in order to control and prevent seepage that alter local natural ground water hydraulic gradients or velocities. This infiltration control shall address seepage during periods of storm water storage in the drainage system.

b) Free Drainage – all stormwater drainage works shall be free draining and under gravity conditions shall convey stormwater from the contributing facilities to an off-site location, except as follows:

   1. The stormwater culvert at the southeast margin of the 11e.(2) cell, as found on the Permittee's engineering drawing 9420-7D as listed in Table 5 of this Permit. Said construction includes an engineered catch basin and lift station.

c) Temporary Stormwater Drainage Works – plans and specifications for any temporary stormwater drainage works shall be submitted for Director review and approval prior to installation. As-Built reports shall be submitted for Director approval within 30 days following installation. Prior to site closure, the Permittee shall remove all temporary stormwater drainage works as part of the site Decontamination and Decommissioning Plan required under Radioactive Material License, Condition 74.

13. Reserved

14. Wastewater Management Requirements

The Permittee shall operate and maintain all wastewater storage, treatment, and disposal facilities in accordance with Best Available Technology requirements approved by the Director, as follows:

a) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Ponds – the Permittee shall operate and maintain the evaporation ponds to prevent release of fluids to subsurface soils or groundwater, in accordance with the following requirements:

   1) Leak Detection System Pumping and Monitoring Equipment Continuous Operation – the Permittee shall provide continuous operation of the leak detection system pumping and monitoring

equipment, including, but not limited to, the submersible pump, pump controller, head/pressure transducer, and flow meter equipment in accordance with the currently approved Appendix J of this Permit.

2) Maximum Allowable Daily Leakage Volumes – the Permittee shall, in accordance with the currently approved Appendix J of this Permit, measure the volume of all fluids pumped from the respective leak detection systems of the evaporation ponds in accordance with the currently approved Appendix J of this Permit. Under no circumstance shall the leak detection system flow volume, as determined pursuant to Part I.F.13.a.3, exceed the following limits:

i. 1995 Evaporation Pond:	162 gallons/day
ii. 1997 Evaporation Pond:	171 gallons/day
iii. Mixed Waste Evaporation Pond:	171 gallons/day
iv. 2000 Evaporation Pond:	382 gallons/day
v. Northwest Corner Evaporation Pond:	326 gallons/day

Leak detection system flow volumes in excess of these limits shall constitute failure of Best Available Technology and a violation of this Permit.

3) Maximum Allowable Head – the Permittee shall measure fluid head in the respective leak detection sumps of the evaporation ponds by use of pressure transducer equipment in accordance with the currently approved Appendix J of this Permit. Under no circumstance shall fluid head in the leak detection system sump exceed a 1-foot level above the lowest point in the lower flexible membrane liner. The occurrence of leak detection system fluid levels above this 1-foot limit shall constitute failure of Best Available Technology and a violation of this Permit.

4) 2-foot Minimum Vertical Freeboard Criteria – the Permittee shall operate and maintain at least 24 inches of vertical freeboard in the evaporation ponds to ensure total containment of fluids in accordance with the currently approved Appendix J of this Permit. If at any time the Permittee operates the pond with less than 24 inches of vertical freeboard, such operation shall constitute failure of Best Available Technology and a violation of this Permit.

5) Ancillary equipment intended to facilitate evaporation shall be constructed and operated in accordance with the currently approved Appendices J and K of this Permit.

b) Decontamination Facilities - the Permittee shall operate and maintain decontamination facilities in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

c) Clive facility - All contact water (stormwater or operational) shall not leave the restricted area within Section 32.

d) Mixed Waste Surface Impoundment - Pursuant to Part I.E.16 of this Permit the Permittee shall operate and maintain the Mixed Waste Surface Impoundment in accordance with the State-issued Part B Permit.

15. Filter Construction Settlement Performance Standards

The cover system filter shall meet requirements in the CQA/QC manual. Any filter construction undertaken that does not meet the requirements in the CQA/QC manual shall constitute a violation of this Permit.

16. Mixed Waste Facility BAT Performance and Best Management Practice Standards

Performance and best management practice standards for waste storage, and stormwater and wastewater storage, treatment, and disposal at the Mixed Waste Facility shall be defined by requirements mandated by the State-issued Part B Permit.

17. Reserved

18. Evaluation of Effect of Proposed Pumping Well(s)

The Permittee will evaluate the effect of any proposed pumping well, at the facility, on the local ground water flow field and ground water monitoring. This evaluation will be undertaken with the use of analytical or numeric ground water flow models, which conform to the guidance provided to the Permittee by the Bureau of Radiation Control in the November 26, 1990 Notice of Deficiency, Comment WPC-1 K. The Permittee will submit the results of this evaluation and receive Director approval before any construction of the withdrawal well.

19. Management of Evaporation Ponds Waste Material

The Permittee shall dispose of all waste material generated during the operation of evaporation ponds in the Class A West or Mixed Waste Cell, whichever cell is appropriate for the waste. Waste material includes, but is not limited to: sludge, soil contaminated from spills or releases, miscellaneous debris, and material or equipment repaired or replaced such as synthetic liner, pumps, piping, cables, floats, etc. All material associated with the final demolition of evaporation ponds, including underlying contaminated soil, must be disposed of in the Class A West or Mixed Waste Cell and is expressly prohibited from disposal in the 11e.(2) cell.

20. Shredder Facility

The Permittee shall operate and maintain the Shredder Facility in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

21. Rotary Dump Facility

The Permittee shall operate and maintain the Rotary Dump Facility in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit. .

22. Intermodal Container Wash Building

The Permittee shall operate and maintain the Intermodal Container Wash Building in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

23. Decontamination Access Control Building

The Permittee shall operate and maintain the Decontamination Access Control Building in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

24. East Side Drainage Project

The Permittee shall operate and maintain the East Side Drainage Project in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit. .

25. Horizontal Hydraulic Gradient Performance Standard

The Permittee shall operate the facility to prevent the shallow aquifer horizontal hydraulic gradient, based on fresh water equivalent ground water elevations, of any sub area, from exceeding the cell-specific Horizontal Hydraulic Gradient Limits specified in Part I.H.2.(d) of this Permit.

The Permittee shall operate and maintain the stormwater culvert, catch basin, and lift station at the southeast margin of the 11e.(2) cell to transfer stormwater in an un-interrupted manner to the Southwest Pond, in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively, of this Permit.

26. Vertical Hydraulic Gradient Performance Standard

The Permittee shall maintain a neutral or upward hydraulic gradient in all nested or paired monitoring wells at the facility required by Part I.H.2[c] of this Permit. Said neutral hydraulic gradient is defined as equal freshwater elevation in both wells of the pair, pursuant to Part I.H.2(a) of this Permit. Upward hydraulic gradient is defined as a condition where the deeper well of the pair exhibits a higher or greater freshwater elevation than the shallow well. For well pair GW-19A and GW-19B, this performance standard shall become effective after completion of the shallow aquifer de-watering required by Part I.I.2 of this Permit.

27. DU Storage Building Performance Standard
The Permittee shall operate and maintain the DU Storage Building in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan, Appendices J and K, referenced in Part I.I.5 of this Permit.

F. Compliance Monitoring

1. Compliance Monitoring Wells

Ground water monitoring wells used as compliance monitoring points shall meet the following requirements:

a) LARW, Class A West, and 11e.(2) Compliance Monitoring Wells – the following wells shall be sampled and analyzed for purposes of compliance monitoring

1) LARW Cell – existing wells GW-128, GW-16R, GW-20, GW-22, GW-23, GW-24, GW-29, GW-56R, GW-64, GW-77, GW-103, GW-104, and GW-105.

2) 11e.(2) Cell – existing wells GW-19A, GW-20, GW-24, GW-25, GW-26, GW-27, GW-28, GW-29, GW-36, GW-37*, GW-38R*, GW-57, GW-58, GW-60, GW-63, GW-126, GW-127 and piezometer PZ-1*. *Wells GW-37, GW-38R, and piezometer PZ-1 shall be monitored only for ground water elevations.

3) Class A West Cell – existing wells GW-88, GW-89, GW-90, GW-91, GW-92, GW-93, GW-25, GW-94, GW-26, GW-95, GW-27, GW-99, GW-100, GW-101, GW-102 GW-106, GW-107, GW-108, GW-142, GW-143, GW-144, GW-145, GW-146, GW147, GW-148, GW-149, and GW-150.

b) Mixed Waste Cell Compliance Monitoring Wells (radiologic contaminants only) – the following wells shall be sampled and analyzed for purposes of compliance monitoring: GW-133, GW-134, GW-135, GW-136, I-1-30, GW-151, GW-152, GW-153, GW-154, and I-3-30*.

* Well I-3-30 shall be monitored only for ground water elevations.

c) Evaporation Pond Monitoring Wells – monitoring wells P3-95 NECR, P3-95 SWC, and P3-97 NECR shall be sampled and analyzed for purposes of compliance monitoring for the 1995 and 1997 Ponds, well GW-66R shall be sampled and analyzed for purposes of compliance monitoring for the Mixed Waste Pond, and wells GW-19A, GW-36, and GW-58 shall be sampled and analyzed for purposes of compliance monitoring for the 2000 Evaporation Pond in addition to the 11e.(2) cell. Monitoring well GW-129 shall be sampled and analyzed for purposes of compliance monitoring for the Northwest Corner Evaporation Pond

d) Deep Aquifer Monitoring Wells– the Permittee shall monitor heads in all deep aquifer monitoring wells, including, but not limited to monitoring wells I-1-100, GW-19B, GW-27D, GW-148D, and GW-153D.

e) Well Construction Criteria – any ground water monitoring well used as a compliance monitoring point shall be:

1) Located hydrologically downgradient of waste disposal,
2) Completed exclusively in the uppermost aquifer,
3) Located as close as practicable to the waste and no more than 90 feet from edge of waste,
4) Constructed in conformance to guidelines found in the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1.

f) Well Network Early Warning Requirement – any network of ground water monitoring wells used as points of compliance shall be adequately constructed, both in location and spacing, to provide early warning of a contaminant release from a waste embankment before the contaminant leaves the embankment's 100-foot wide buffer zone, as defined in Table 7, below. For purposes of this Permit, early warning shall be provided by a compliance monitoring well network with an inter-well spacing distance to be approved by the Director.

g) Buffer-Zone Requirements– waste disposal is prohibited inside the buffer zone, as described in Tables 3 and 7 of this Permit.

Table 7: Buffer Zone Boundary Locations

Disposal Cell	Edge of Buffer Zone Position	Coordinates	
		Latitude	Longitude
LARW	NW Corner	40° 41' 12.366" N	113° 06' 52.622" W
	SW Corner	40° 40' 51.915" N	113° 06' 52.494" W
	SE Corner	40° 40' 51.976" N	113° 06' 35.429" W
	NE Corner	40° 41' 12.427" N	113° 06' 35.556" W
Class A West	NW Corner	40° 41' 40.599" N	113° 07' 26.054" W
	SW Corner	40° 41' 13. 245" N	113° 07' 25. 996" W
	SE Corner	40° 41' 13.201" N	113° 06' 54.167" W
	NE Corner	40° 41' 40.556" N	113° 06' 54.165" W
11e.(2)	NW Corner	40° 41' 13.587" N	113°0 7' 25.832" W
	SW Corner	40° 40' 54.077" N	113° 07' 26.070" W
	SE Corner	40° 40' 53.849" N	113° 06' 54.279" W
	NE Corner	40° 41' 13.359" N	113° 06' 54.037" W

h) Protection of Monitoring Network – all compliance monitoring wells must be protected from damage due to surface vehicular traffic or contamination due to surface spills. All monitoring wells shall be maintained in full operational condition for the life of this Permit.

The criteria for determining full operational condition are:

1) Accessibility – each well must be accessible for sampling and shall not be located in an area of standing water.

2) Casing Measuring Point – each well shall have a permanent surveyed reference point such as the top of the protective casing.

3) Physical Integrity – any physical disturbance to any well, which may alter the surveyed water level measuring point, is prohibited. In addition, all wells shall have an adequate surface seal around the well casing to prevent surface or storm water from entering the well.

4) Chemical Integrity – all well and sampling materials shall be constructed of inert materials to prevent the introduction of contaminants from leaching or corrosion.

5) Silt Content – if the measured water column of any well is less than 90% of the theoretical water column, the monitoring well shall be redeveloped prior to sampling.

Any well that becomes damaged beyond repair or is rendered unusable for any reason will be replaced by the Permittee within 90 days or as directed by the Director.

i) Notification of Ground-water Monitoring Event - At least 30 calendar days prior to the annual Ground Water Monitoring Event, required under Part I.H.1, the Permittee will submit a written notice and schedule, with approximate dates and wells that will be sampled to the Director.

2. <u>BAT Compliance Monitoring Points</u>

The Permittee shall inspect, sample, analyze, or otherwise monitor other points of compliance in order to confirm compliance with this Permit. These points are defined in the BAT Performance Monitoring Plan, Appendix J of this Permit.

3. <u>Future Modification of Compliance Monitoring Systems or Equipment</u>

If at any time the Director determines that additional systems, mechanisms or instruments are necessary to monitor ground water quality or Best Available Technology compliance at the facility, the Permittee shall submit within 30 days of receipt of notification, a plan and compliance schedule to modify the compliance monitoring equipment, for Director approval. Any failure to construct the required compliance monitoring system or equipment in accordance with the approved plan and schedule shall constitute a violation of this Permit.

4. Reserved

5. Monitoring Requirements and Frequency

Measurements or analysis done for monitoring will be conducted in compliance with the requirements below, and reported to the Director as per the requirements of Part I.H.

a) Water Level Measurements – water level measurements shall be made quarterlyy in each monitoring well and piezometer listed in Part I.F.1. The quarterly water level measurements will be compared to the measurements from the previous quarter, and if the difference between measurements is greater than 0.4 feet, the Permittee shall notify the Director within 15 days of the discovery, and shall immediately increase the water level measurement frequency to monthly for each well meeting this condition. Additionally:

- For well pairs listed I Part IH.2.c, if an upward vertical gradient (as defined in Part I.E.26) is observed in any water level data, the Permittee shall notify the Director within 30 days of the discovery and shall immediately increase the water level measurement to monthly at well pairs meeting the upward gradient condition.
- The frequency of water level measurements at compliance monitoring wells GW-19A, GW-19B, GW-60, GW-63, and PZ-1 will remain monthly.

Return to quarterly water level measurement frequency will be approved by the Director.

Measurements made in conjunction with annual ground water sampling shall be completed prior to any collection of ground water samples in accordance with the currently approved Water Monitoring Quality Assurance Plan in Appendix B of this Permit. These measurements will be made from a permanent single reference point clearly demarcated on the top of the well or surface casing. Measurements will be made to the nearest 0.01 feet.

b) Specific Gravity Measurements – ground water-specific gravity measurements shall be made annually in each monitoring well and piezometer in conjunction with each annual ground water quality sampling event.

c) Ground Water and Pore Water Quality Sampling and Analysis – except for permit renewal parameters listed in Part I.F.5.c.3 grab samples of ground water from compliance monitoring wells and pore water from lysimeters (as available) will be collected for analysis on an annual basis, in conformance with Part II.A and B and the currently approved Water Monitoring Quality Assurance Plan in Appendix B of this Permit.

1) Ground/Pore Water Analytical Methods – methods used to analyze ground water samples must comply with the following:

   vi. Are methods cited in the currently approved Water Monitoring Quality Assurance Plan, Appendix B of this Permit, and

   vii. Have detection limits which do not exceed the Ground Water Quality Standards or Protection Levels listed in Tables 1A and 1C of this Permit.

2) Analysis Parameters – the following analyses will be conducted on all samples collected for ground water monitoring:

   i. Field Parameters – dissolved oxygen, pH, temperature, specific gravity, and specific conductance.

   ii Laboratory Parameters – including:

      o General Inorganic Parameters: Chloride, Sulfate, Carbonate, Bicarbonate, Sodium, Potassium, Magnesium, Calcium, bromide, iron, and total anions and cations

      o General Radiologic Parameters: potassium-40, gross beta

      o All Protection Level Parameters – individual analysis for all parameters found in Part I.C, Tables 1A, 1B, 1C, 1D, 1E, and 1F of this Permit

3) Permit Renewal Parameters – groundwater samples will be collected for chemical analysis in each compliance monitoring well prior to Permit renewal and reported with the Comprehensive Groundwater Quality Evaluation Report submitted as part of Permit Renewal. The analyses shall consist of the following:

   Inorganics and Trace Dissolved Metals (All wells except Mixed Waste wells): cyanide, fluoride, total nitrate/nitrite (as N) , antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, and zinc.

   Organic Parameters (All LARW, Class A West, and Evaporative Pond wells): acetone, 1, 2-dichloroethane, 2-butanone, methylene chloride, carbon disulfide, chloroform, 1,1,2-trichloroethane, vinyl chloride.

   Organic Parameters (All 11e.(2) wells): acetone, 1,2-dichloroethane, 2-butanone, methylene chloride, carbon disulfide, chloroform.,

   If any Permit renewal parameter is found to be greater than the mean concentration plus two times the standard deviation concentration (background concentration) using the statistics found in the

Comprehensive Groundwater Quality Evaluation Report for that parameter, the Permittee shall go into an accelerated monitoring program for that well and parameter. Additionally, if any compliance monitoring well for the Mixed Waste embankment has a parameter that exceeds the GWPLs for the Mixed Waste Embankment, than wells along the east side of the LLRW embankment will immediately be sampled for that parameter.

6. <u>Collection Lysimeter Sampling</u>

Collection lysimeter sampling shall be conducted in compliance with the currently approved Water Monitoring Quality Assurance Plan as provided in Appendix B of this Permit. Sample analysis shall conform to the requirements of Part I.F.5(c) of this Permit.

Water quality samples shall be collected within 24 hours of initial discovery of fluid. The priority of sample parameters shall conform to the currently approved Appendix C of this Permit, with special emphasis on selection of mobile and predominant contaminants found within the capture area of the lysimeter.

7. <u>Modification of Monitoring or Analysis Parameters</u>

If at any time the Director determines the monitoring or analysis parameters to be inadequate, the Permittee shall modify all required monitoring parameters immediately after receipt of written notification from the Director. Upon any change in the currently approved waste parameters defined in Conditions 6, 7, and 8 of the Utah Radioactive Material License UT 2300249, the Permittee shall revise the currently approved Water Monitoring Quality Assurance Plan in Appendix B.

8. <u>Waste Characterization Monitoring</u>

a) Class A Waste – all Class A waste received by the Permittee shall be fully characterized to determine its chemical and radiological constituents and the presence and concentration of any chelating agents both before shipment and emplacement for disposal, in accordance with the requirements of the currently approved Waste Characterization Plan in the Radioactive Material License UT 2300249, Condition 58 and for PCB/Radioactive Waste, in the currently approved State-issued Part B Permit. Said waste characterization shall include sampling and analysis of all contaminants authorized by Part I.E.1 and of those prohibited by Part I.E.2 of this Permit.

b) 11e.(2) Waste – all 11e(2) Waste received by the Permittee shall be fully characterized both before shipment and after arrival at the facility to identify any new non-radiologic contaminants not authorized by this Permit by Parts I.E.2 and I.E.5. Said waste characterization shall include sampling and analysis of all non-radiologic contaminants prohibited by Part I.E.2 of this Permit.

The Permittee shall maintain records of all Class A, and 11e.(2) Waste sampling and analysis on site.

9. Waste Liquid Content Monitoring

All wastes received shall be tested for liquids in accordance with the currently approved LLRW Waste Characterization Plan in the Radioactive Material License, Condition 58. In accordance with UAC R313-15-1009(2)(a)(iv), solid waste received for disposal shall contain as little free-standing and non-corrosive liquid as reasonably achievable, but shall contain no more free liquids than 1% of the volume of the waste. In the event that solid waste is received or observed to contain free liquids in excess of 1% by volume, within 24 hours of identification, the Licensee/Permittee shall notify the Division of Radiation Control that the shipment(s) failed the requirements for acceptance.

10. Post-Closure Monitoring

Post-closure monitoring shall conform to the requirements of the currently approved Post-Closure Monitoring Plan in Appendix F of this Permit.

11. On-Site Meteorological Monitoring

The Permittee shall provide continuous monitoring of the following minimum meteorological parameters, in accordance with the currently approved Weather Station Monitoring Plan found in Appendix G of this Permit:

a) Wind direction and speed

b) Temperature

c) Daily Precipitation

d) Pan evaporation

The Permittee shall maintain records of this monitoring on site. The Permittee shall submit an annual meteorological report for the facility in compliance with the requirements of Part I.H.10 of this Permit.

12. Containerized Waste Storage Areas: Leakage/Spill Monitoring and BAT Status

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

13. Evaporation Ponds Monitoring

a) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Pond Daily Monitoring – the Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

b) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Pond Leak Detection System Pump Tests – the Permittee shall conduct a pump test of the evaporation pond's leak detection sump within 5 days of discovery that the average daily leak detection system flow volume exceeds the following limits:

1) 1995 Evaporation Pond: 155 gallons/day

2) 1997 Evaporation Pond: 160 gallons/day

3) Mixed Waste Evaporation Pond: 160 gallons/day

4) 2000 Evaporation Pond: 355 gallons/day

5) Northwest Corner Evaporation Pond: 300 gallons/day

Said pump test shall comply with the currently approved BAT Contingency Plan in Appendix K of this Permit.

c) Annual Monitoring – on an annual basis, the Permittee shall:

1) Collect water quality samples from fluids stored in the approved evaporation ponds.

2) Analyze said water samples for all ground water quality protection level parameters defined in Part I.F.5.c.2, above, including a complete gamma spectroscopic analysis.

Sampling and analyses at all evaporation ponds shall comply with the currently approved Water Monitoring Quality Assurance Plan in Appendix B of this Permit.

d) Annual Pump Inspection – on an annual basis, the Permittee shall remove the submersible pump from the leak detection system of the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds and check both the winding resistance and insulation resistance. If either the winding resistance or insulation resistance is outside of the manufacturer specifications, the pump will be replaced and/or repaired with a pump that satisfies all manufacturer specifications within 24 hours. Within 30 days of completing the annual pump inspection, a bor-o-scope video inspection shall be performed to ensure the pump was correctly reinstalled.

14. <u>Confined Aquifer Head Monitoring</u>

The Permittee shall conduct monthly monitoring of water levels and annual specific gravity measurements in all wells completed in the deep confined aquifer, including, but not limited to: I-1-100, GW-153D, GW-19B, GW-148D, and GW-27D. Annual water levels and specific gravity measurements shall be made in conjunction with the annual ground water quality sampling event.

15. <u>Mixed Waste Leachate Monitoring</u>

On an annual basis, the Permittee shall collect representative samples of leachate from the Mixed Waste Cell leachate collection system (upper leachate collection access pipe) and analyze for radioactive contaminants. If no leachate is present during the annual sampling event, no sample is required. Said radioactive contaminants shall include:

a) All Ground Water Protection Level Parameters found in Tables 1E and 1F of this Permit

b) A complete gamma spectroscopic analysis to determine all other gamma-emitting radioisotopes that may be present

16. Intermodal Unloading Facility Monitoring

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit. .

17. Box-Washing Facility Monitoring

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

18. Rail Car Wash Facility Monitoring

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

19. Reserved

20. Open Cell Time Limit Monitoring

The Permittee shall demonstrate compliance with the open cell time limitation requirements of Part I.E.6 of this Permit by observing and recording the following dates of completion for each working area in the Class A West cell:

a) Initial placement of waste on the first lift on the clay liner

b) Completion of construction of the clay radon barrier

The Permittee shall maintain records of this monitoring. All monitoring records shall comply with the requirements of Part II.G of this Permit.

21. Reserved

22. BAT Performance Monitoring Plan

The Permittee shall demonstrate compliance with the BAT requirements and performance standards and Best Management Practices in Parts I.D and I.E of this Permit by implementing the most current BAT Performance Monitoring Plan approved by the Director and provided in Appendix J of this Permit.

23. BAT Contingency Plan

In the event that BAT failure occurs at any facility, the Permittee shall implement the most current BAT Contingency Plan approved by the Director and provided in Appendix K of this Permit to regain the BAT requirements and performance standards and Best Management Practices specified in Parts I.D and I.E of this Permit.

24. Stormwater Monitoring

The Permittee shall demonstrate compliance with stormwater removal requirements of Part I.E.7 of this Permit by maintaining daily written records for stormwater management activities:

a) Date, time, and location of discovery of stormwater accumulation

b) Date and time when stormwater removal activities were initiated at each location

c) Date and time when stormwater removal was completed at each location

d) First and last name(s) of all personnel involved with stormwater removal activities

e) Unique identity of locations of where stormwater was removed

f) Type of stormwater removed: contact or non-contact stormwater

g) Identify equipment used to remove contact and non-contact stormwater

h) Volumes of stormwater removed at each location

i) Location(s) where stormwater was disposed

25. <u>Shredder Facility</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

26. <u>Rotary Dump Facility</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

27. <u>Intermodal Container Wash Building</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

28. <u>Decontamination Access Control Building</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit. :

29. <u>East Side Drainage Project</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

30. <u>DU Storage Building Monitoring</u>

The Permittee shall perform monitoring in accordance with the BAT Performance Monitoring Plan, Appendix J of this Permit.

G. Non-Compliance Status. Ground Water Monitoring and Best Available Technology

1. <u>Noncompliance with the Ground Water Protection Levels</u>

Noncompliance with the ground water protection levels in Part I.C, Tables 1A, 1B, 1C, 1D, 1E, and 1F as applied to the compliance monitoring wells defined in Part I.F.1 of this Permit shall be defined as follows:

a) Monitoring for probable out-of-compliance shall be defined as any one sample in excess of the protection level in Tables 1A, 1B, 1C, 1D, 1E, or 1F of this Permit for any parameter from the same compliance monitoring well.

b) Out-of-Compliance Status –defined as two (2) consecutive samples in excess of the protection level in Tables 1A, 1B, 1C, 1D, 1E, or 1F of this Permit for any parameter from the same compliance monitoring well.

c) Other Methods to Determine Ground Water Quality Compliance Status – at the discretion of the Director, other methods may be employed to determine the compliance status of the facility with respect to ground water quality data, including:

1) Trend and/or Spatial Analysis – analysis of any contaminant concentration trend through time in a single compliance monitoring point, and /or spatial analysis of the same from any group of compliance monitoring points.
2) EPA RCRA Statistical Methods – other applicable statistical methods may be used to determine out-of-compliance status, as defined in the EPA document "Statistical Analysis of Ground Water Monitoring Data at RCRA Facilities", February 1989, or as amended.

2. Requirements for Ground Water Monitoring for Probable Out-of-Compliance Status

The Permittee shall evaluate the results of each round of ground water sampling and analysis to determine existence of probable out-of-compliance status as defined in Part I.G.1(a) of this Permit. Upon any determination that probable out-of-compliance status exists, the Permittee shall:

a) Notify the Director of the probable out-of-compliance (POOC) status within 30 days of the initial detection.

b) Immediately implement a schedule of quarterly ground water sampling and analysis for the well(s)/parameter(s) of concern, consistent with the requirements of Part I.F.5(b) and the currently approved Water Monitoring Quality Assurance Plan, Appendix B of this Permit. This quarterly sampling will continue until the compliance status can be determined by the Director.

3. Requirements for Ground Water Out-of-Compliance Status

a) Notification and Accelerated Monitoring – the Permittee shall evaluate the results of each round of ground water sampling and analysis to determine existence of out-of-compliance status as defined in Part I.G.1(b) of this Permit. Upon any determination that an out-of-compliance status exists the Permittee shall:

1) Verbally notify the Director of the out-of-compliance status within 24 hours, and provide written notice within 5 days of the detection and

2) Immediately implement an accelerated schedule of monthly ground water monitoring of the monitoring wells of concern for the parameters in question. This monitoring shall continue for at least 2 months or until the facility is brought into compliance, as determined by the Director. At the discretion of the Director, the Permittee may be required to sample and analyze for additional inorganic, organic, or radiochemical parameters in order to determine the compliance status of the facility.

b) Source and Contamination Assessment Study Plan – within 30 days of the verbal notice to the Director required in Part I.G.3(a) of this Permit, the Permittee shall submit for Director approval an assessment study plan and compliance schedule for:

1) Assessment of the source or cause of the contamination and determination of steps necessary to correct the source.

2) Assessment of the extent of the ground water contamination and any potential dispersion.

3) Evaluation of potential remedial actions to restore and maintain ground water quality and ensure that the ground water standards will not be exceeded at the compliance monitoring wells, and best available technology will be reestablished.

c) Contingency Plan – in the event that Out-of-Compliance status is determined as per Part I.G.1(b) or (c), and upon written notification from the Director, the Permittee shall immediately implement the currently approved Contingency Plan in Appendix A of this Permit.

4. <u>Definition and Requirements for Failure to Maintain Best Available Technology</u>

a) Definition of Failure to Maintain Best Available Technology (BAT) Requirements – any violation of the BAT Design Standards in Part I.D, including design, design specifications, or construction requirements shall constitute failure to meet the best available technology requirements of this Permit. Any violation of the BAT Performance Standards in Parts I.D.1 or I.E shall also constitute failure to meet the best available technology requirements of this Permit

b) Requirements for Failure to Maintain Best Available Technology – in the event that the Permittee fails to maintain best available technology in accordance with Parts I.D and I.E, above, the Permittee shall:

1) Notify the Director verbally within 24 hours of discovery of the BAT failure, and provide written notice within 5 days of discovery.

2) Submit within 5 days of discovery a complete written description of:

i. The cause of the BAT failure,

ii. Any measures taken by the Permittee to mitigate the BAT failure,

iii. Time frame of the discovery of the BAT failure and any mitigation measures were implemented, and

iv. Evidence to demonstrate that any discharge or potential discharge caused by the BAT failure did not and will not result in a violation of UAC 19-5-107.

c) BAT Contingency Plan – In the event that a BAT failure occurs at any facility, the Permittee shall implement the currently approved BAT Contingency Plan provided in Appendix K of this Permit to regain the BAT requirements and performance standards and the Best Management Practices specified in Parts I.D and I.E of this Permit.

5. Affirmative Defense Relevant to Best Available Technology Failures

In the event that a compliance action is initiated against the Permittee for violation of Permit conditions relating to best available technology, the Permittee may affirmatively defend against that action by demonstrating the following:

a) The Permittee submitted notification according to UAC R317-6-6.13,

b) The failure was not intentional or caused by the Permittee's negligence, either in action or in failure to act,

c) The Permittee has taken adequate measures to meet permit conditions in a timely manner or has submitted to the Director, for Director approval, an adequate plan and schedule for meeting permit conditions, and

d) The provisions of UAC 19-5-107 have not been violated.

H. Reporting Requirements

Notwithstanding any other environmental reporting required by the Radioactive Material License, the Permittee shall submit the following reporting information.

1. Ground-Water Monitoring

Monitoring required in Part I.F of this Permit, shall be reported according to the following schedule, unless modified by the Director:

a) Routine Annual Monitoring

Time Period	Report Due By
January 1 thru December 31	March 1

b) Accelerated Monitoring

Monitoring required in Part I.G.2 and Part I.G.3 of this Permit, shall be reported on a semi-annual schedule according to the following schedule, unless modified by the Director:

Time Period	Report Due By
1st (January thru June)	September 1
2nd (July thru December)	March 1

The Permittee shall include within the written report a summary table of wells, sampling dates, analytes, and a more detailed discussion of each analyte and associated well will also be provided in the report.

2. Water Level Measurements

The Permittee shall comply with the following ground water level reporting requirements:

a) General Requirements – monthly and quarterly water level measurements from all ground water monitoring wells will be reported annually in both measured ground-water elevations, and saline ground-water elevations above mean sea level. In addition, annual freshwater equivalent head elevations will be reported for each well and will be derived from annual ground water specific gravity measurements made in that well during each annual sampling event.

b) Maps and Diagrams Format – distribution of freshwater equivalent head shall be summarized on an annual basis in the form of quarterly potentiometric maps of the uppermost aquifer for each water level measurement event, and shall be submitted with the annual monitoring report required by Part I.H.1

c) Vertical Hydraulic Gradient Reporting – on a quarterly basis the Permittee shall calculate summaries of head data for each shallow/intermediate aquifer nested well group, including but not limited to: I-1-30 / I-1-100, GW-153 / GW153D, GW-19A / GW-19B, GW-27/GW-27D, and GW-148/GW-148D. Said summaries shall include measured water level depth, and calculations of ground water level elevations, both saline and fresh water equivalents, in both the shallow and confined aquifers for each water level measurement event (monthly or quarterly) and include calculations of both the saline and fresh water equivalent vertical gradients (ft/ft) for each nested well group. These summaries shall be submitted with the annual monitoring report as required by Part I.H.1.

d) Horizontal Hydraulic Gradient Reporting – on a quarterly basis the Permittee shall calculate the following and provide within the annual monitoring report as required by Part I.H.1:

1) A site-wide summary of maximum, minimum, and average horizontal hydraulic gradient for all shallow-aquifer compliance monitoring wells based on saline and fresh water equivalent ground water elevations and

2) Individual disposal cell summary of maximum, minimum, and average horizontal hydraulic gradient based on saline and fresh water equivalent ground water elevations for the Class A West LARW, 11e.(2), and Mixed Waste disposal facilities. Determination of these individual hydraulic gradients shall be made after division of each disposal cell into smaller sub-areas for purposes of hydraulic gradient comparisons through time, as approved by the Director. On an individual cell basis, the Permittee shall identify the cell sub-areas where the monthly maximum, minimum, and average hydraulic gradients occurred, as summarized in the August 31, 2004 letter response from Envirocare of Utah Inc. to DRC comments regarding the 2003 2nd Semi-Annual Ground Water Report.

In the event that the average fresh water equivalent horizontal hydraulic gradient of any sub-area exceeds the cell-specific Permit limit listed below, the Permittee shall report and identify the sub-area in which the exceeded limit occurred within the annual ground water monitoring report required by Part I.H.1 of this Permit.

Disposal Cell	Fresh Water Equivalent Horizontal Hydraulic Gradient Limit
Class A West	1.00E-3
LARW	9.67E-4
Mixed Waste	1.00E-3
11e.(2)	3.29E-3

3. Ground Water and Pore Water Quality Sampling

Reporting will include:

a) Field Data Sheets – or copies thereof, including the field measurements, required in Part I.F.5(c)(2) of this Permit, and other pertinent field data, such as:

1) Groundwater well number, date and time, names of sampling crew, type of sampling pump or bail, measured casing volume, volume of water purged before sampling, volume of water collected for analysis.

b) Results of Ground Water, Pore Water, and Surface Water Analysis – including date sampled, date received; and the results of analysis for each parameter, including: value or concentration, units of measurement, reporting limit (minimum detection limit for the examination), analytical method, the date of the analysis, counting error for each radiochemical analysis, and total anions and cations for each inorganic analysis.

c) Quality Assurance Evaluation – with every sampling report the Permittee shall include a quality assurance evaluation of the reported ground water and pore water data. Said report shall evaluate the sample collection techniques, sample handling and preservation, and analytical methods used in sampling with the objective of verifying the accuracy of the compliance monitoring results.

d) Electronic Data Files and Format – the Permittee shall provide an electronic copy of all laboratory results for ground water, pore water, and surface water quality sampling. Said electronic files shall consist of a Comma Separated Values (CSV) file or equivalent format, or as otherwise approved by the Director.

4. Spill Reporting

The Permittee shall report as per UAC 19-5-114, any spill or leakage of waste or waste liquids which come in contact with native soil or ground water in compliance with Part II.I of this Permit. For spills of solid waste greater than 100 kg, the spill must be reported to the Division of Radiation Control within 7 calendar days of discovery.

5. Post-Closure Monitoring

Reporting of post-closure monitoring shall comply with the requirements of the currently approved Post-Closure Monitoring Plan in Appendix F of this Permit.

6. Annual "As-Built" Report

The Permittee shall submit an annual "As-Built" Report to document interim construction of the Class A West, and 11e.(2) Disposal cells in compliance with the currently approved design and specifications and LLRW and 11e.(2) Construction Quality Assurance/Quality Control Manual . This report will be submitted for the Director's approval on or before December 1 of each calendar year, and will be prepared in accordance with the LLRW and 11e.(2) Construction Quality Assurance/Quality Control Manual.

7. Waste Characterization Reporting

In the event that a new contaminant is detected in any waste at the facility, which has not been authorized by Part I.E.1, or if concentrations of approved contaminants are detected above the limits established in Part I.E.2 of this Permit, the Permittee shall notify the Director in writing within 7 calendar days from the date of discovery.

8. Collection Lysimeter Reporting

The Permittee shall provide a verbal report to the Director within 24 hours of discovery of the presence of any fluid in the standpipe of the collection lysimeters. The Permittee shall provide a written report of the incident to the Director within 7 calendar days of discovery. The Permittee shall provide a report of the any required video log survey of the lysimeter's drainpipe, as required by Parts I.E.11 and I.F.6 of this Permit, on or before December 31 of each calendar year.

9. Reporting of Mechanical Problems or Discharge System Failures

The Permittee shall meet all requirements of reporting any mechanical or discharge system failure as outline in Appendix K of the Permit, the BAT Contingency Plan.

10. Meteorological Reporting

On or before March 1 of each calendar year, the Permittee shall submit an annual meteorological report for the previous meteorological year (January 1 to December 31), The report will also include a summary report of all meteorological data collected for the life of the facility. Said report shall compare the data observed against regional normal values, as available, and provide summary statistics of all meteorological data collected for Director approval.

The objective of this report shall be to show that the meteorological assumptions made in the infiltration and unsaturated zone modeling used to support issuance of the Permit were conservative or representative of the actual conditions at the site.

11. Containerized Waste Storage Area Reporting

Reporting requirements shall conform to BAT requirements found in Appendices J and K of this Permit.

12. Evaporation Ponds Reporting

a) Annual Water Quality Sampling –annual water quality samples collected shall be reported in conjunction with the ground water quality monitoring report required by Part I.H.1 of this Permit.

b) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Pond Daily Monitoring – Reporting requirements shall conform to BAT requirements found in Appendices J and K of this Permit

c) Annual Pump Inspection – results of the annual pump inspection and bor-o-scope video inspection conducted in accordance with Part I.F.13.d shall be submitted for the Director's approval as part of the 1st Semi-annual BAT Monitoring Report.

13. Annual Ground Water Usage Report

On or before March 1 of each calendar year the Permittee shall survey and report the location of all ground water withdrawals within at least a 1-mile radius of the facility boundary. The purpose of this report will be to locate all points near the facility where ground water is pumped or otherwise removed for any consumptive use, including domestic, agricultural, or industrial purposes. This report shall include a survey of water right appropriations found in the area of interest, identify the owners thereof, and disclose the physical location and depths of all such ground water withdrawals.

14. Reserved

15. Mixed Waste Cell Leachate Reporting

The Permittee shall report the results of Mixed Waste Leachate water quality sampling and analysis required by Part I.F.15 of this Permit with the annual ground water monitoring reports required by Parts I.H.1 and I.H.3.

16. BAT Non-Compliance Reporting Requirements

For all facilities subject to requirements under the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan (Appendix J and K, respectively) the Permittee shall provide verbal notification to the Director of any BAT failures that are not corrected within 24 hours. All such verbal notifications shall be followed-up with a written notification within 7 calendar days.

17. Annual Cover Test Cell Report

On or before March 1 of each calendar year the Permittee shall submit an annual report for Director approval. The annual report shall provide the data collected in the past year, analyze the data, and interpret the meaning of the data.

18. Reserved

19. Reserved

20. BAT Semi-annual Monitoring Report

The Permittee shall submit a semi-annual BAT monitoring report to document compliance with the BAT performance standards mandated by Part I.E of this Permit. The report shall provide results, calculations, and evaluations of BAT monitoring data required in Part I.F of this Permit, including but not limited to the following:

a) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Ponds – the Semi-annual BAT monitoring report shall include:

   1) A quality assurance evaluation of all daily leak detection system flow volume and head data collected,

   2) Results of daily flow and head monitoring of the leak detection sump at each pond,

   3) Results of weekly calculation of daily average flow volumes from the leak detection sump at each pond, pursuant to Part I.F.13.a.3 of this Permit,

   4) An evaluation of any apparent trends in daily flow and head monitoring with respect to the pond's ability to comply with the BAT performance standards mandated by Part I.E.14 of this Permit.

b) Stormwater Management – the BAT Semi-annual report shall include daily stormwater monitoring records generated pursuant to Part I.F.24.

c) Reporting Schedule – the BAT Semi-annual Monitoring Report shall be submitted for Director approval in accordance with the following schedule:

Half	Report Due On
1st (January –June)	September 1
2nd (July-December)	March 1

*The Second Half Report shall include results of the required annual pressure tests for dual-walled pipe as identified in Part I.F.2.m.

21. Manifest Radioisotope Inventory Report

180 days prior to Permit expiration, the Permittee shall submit for Director approval a summary report of activities for radioisotopes including, but not limited to Aluminum-26, Berkelium-247, Calcium-41, Californium 250, Chlorine-36, Rhenium-187, Terbium-157, and Terbium-158; as listed in the current Radioactive Materials License (UT#2300249) Condition 29.E. Said report will be generated from the Clive facility Manifest Inventory (Permittee's EWIS database). The report shall provide a summary of all manifest inventory data available for radioisotopes disposed at the LARW, Class A West, 11e.(2), Mixed Waste, and any other embankment (excluding the Vitro Embankment) at the Clive facility;, and will include, but is not limited to: (1) total of individual radioisotopes activity (mCi), (2) radioisotope half-life (years, days, minutes, etc.), (3) distributions coefficients for each radioisotope (L/kg), and (4) the current overall average activity concentration of each radioisotope, determined by dividing each isotope's total individual inventoried activity disposed by the mass of the current waste (pCi/gm) found in all embankments listed at the facility.

22. Comprehensive Ground Water Quality Evaluation Report

180 days prior to Permit expiration, the Permittee shall submit for Director approval a comprehensive ground water quality evaluation report for the site. In submittal of this report, the Permittee shall present an evaluation of all ground water and vadose zone water quality data available for the LARW, Class A West, 11e.(2), and Mixed Waste facilities. Said report shall be similar to the March 19, 2014 Comprehensive Ground Water Quality Evaluation Report and shall include but not be limited to:

a) Graphs of temporal concentration trends for all compliance monitoring parameters and current compliance wells across the entire period of record, and an evaluation of parameter temporal relationships,

b) Number of water quality data available for each compliance monitoring parameter for each current compliance well,

c) Statistical tests of normality for each compliance monitoring parameter water quality data population, including univariate tests or equivalent. Normality testing will not be required for parameters with datasets consisting of greater than 50% nondetections, as the intent of normality testing is not to determine if detection limits are normally distributed.

d) Calculation of mean concentration and standard deviation on direct concentration values for all compliance monitoring parameters and current compliance wells. For water quality parameter populations that fail the normality test, provide mean concentrations and standard deviations on transformed values that are normally distributed,

e) Calculation of mean concentration plus the second standard deviation for comparison with existing ground water protection levels to identify parameters that warrant an evaluation for ground water protection level adjustments based on natural variations in background concentrations for all compliance monitoring parameters and current compliance wells, and

f) Isoconcentration maps of spatial concentration trends across Section 32 and an evaluation of facies and spatial relationships of water quality parameters that warrant an evaluation for ground water protection level adjustments based on section e) above.

Compliance monitoring parameters are those parameters listed in Tables 1A through 1F for which a GWPL is established.

23. Reserved

24. Revised Hydrogeologic Report

180 days prior to Permit expiration, the Permittee shall submit for Director approval a revised hydrogeologic report for the disposal facility and surrounding area. In submittal of this report the Permittee shall provide a description of hydrogeologic conditions at the facility current through the time of report submittal. Said report shall be similar to the December 2, 2013 Revised Hydrogeologic Report. This report will include, but is not limited to an evaluation of:

a) Ground-water hydraulics, including ground-water flow directions, velocities, and hydraulic gradients, in both the horizontal and vertical directions, and will include equipotential maps, cross-sections, and related calculations, and

b) An updated evaluation and reinterpretation of the site hydrogeology using all available data including new or additional data acquired since the last Director approved hydrogeologic report .

I. Compliance Schedule

1. Ground Water Institutional Control Plan

The Permittee shall submit a ground water institutional control plan for Director approval at the time the site Decontamination and Decommissioning Plan required under Condition 74 of Radioactive Materials License #UT 2300249 is submitted. In submittal of this plan the Permittee shall eliminate future inadvertent intrusion into potentially contaminated ground water at the disposal facilities and subsequent routes of exposure to the public and the environment. Said plan shall include at least one of the options listed in the July 27, 1998 Utah Division of Radiation Control Request for Information.

2. Reserved.

3. Background Ground Water Quality Report for the new Mixed Waste Compliance Wells.

The Permittee shall submit for Director approval four quarters of sampling, for all Mixed Waster parameters listed in Table 1E of this Permit, for new Mixed Waste embankment wells:

GW-151 GW-152 GW-153 GW-154

to evaluate which parameters, if any, require additional data so that it can be included in the Ground Water Protection Level Exceptions for Mixed Waste, Table 1F. This report shall include the wells and parameters needing additional evaluation. The Director does not anticipate the background concentrations for any parameter listed in Table 1E to be greater than their respective ground water protection levels. As a result, compliance monitoring for these parameters will commence in the new Mixed Waste Embankment wells with the Permittee's completion of the four quarters of sampling. With the completion of this quarterly sampling if any parameter (s) in any well requires additional evaluation, with which to calculate background values for inclusion in the Mixed Waste Exceptions Table, Table 1F, a minimum of an additional four quarters of sampling will commence, to build a data population. The Permittee will then submit a background ground water quality report for the Mixed Waste embankment parameters and compliance monitoring wells to be listed in Table 1F of this Permit .

This report shall include inter-well descriptive statistics for each Parameter, and well in question, such as:

a. Graphs of temporal concentration trends in each well for each compliance monitoring parameter with an evaluation of seasonal and analytical variations,

b. Normality testing along with a discussion of those data points, if any, that are outliers and justification of why the outliers should or should not be removed from the population prior to performing statistical calculations for each compliance monitoring parameter,

c. Calculation of mean concentration and standard deviation for each compliance monitoring parameter in each well, and

d. Calculation of mean concentration plus two (2) standard deviations for each compliance monitoring parameter in each well.

Compliance monitoring parameters are those parameters listed in Table 1E for which a GWPL is established.

After review and approval of this report, the Director may reopen this Permit and revise the ground water protection levels for the Mixed Waste embankment compliance wells. Compliance monitoring will continue in compliance monitoring wells GW-130, GW-131, and GW-132 until their abandonment.

4. Background Ground Water Quality Report for the new Class A West Compliance Wells.

The Permittee shall submit for Director approval four quarters of sampling, for all Class A West parameters listed in Table 1A of this Permit, for new Class A West embankment wells:

GW-142, GW-143, GW-144, GW-145, GW-146, GW-147, GW-148, GW149, and GW-150

to evaluate which parameters, if any, require additional data so that it can be included in the Ground Water Protection Level Exceptions for Class A West, Table 1B. This report shall include the four quarters of sampling data for all wells, and more detail on wells and parameters needing additional evaluation. The Director does not anticipate the concentrations of any parameter listed in Table 1A to be greater than their respective ground water protection levels. As a result, compliance monitoring for these parameters will commence in the new Class A West Embankment wells with the Permittee's completion of the four quarters of sampling. With the completion of this quarterly sampling, if any parameter (s) in any well requires additional evaluation with which to calculate background values for inclusion in the Class A West Exceptions Table, Table 1B, a minimum of an additional four quarters of sampling will commence, to build a data population. The Permittee will then submit a background ground water quality report for the Class A West embankment compliance monitoring parameters and compliance monitoring wells to be listed in Table 1B of this Permit .

This report shall include inter-well descriptive statistics for each Parameter, and well in question, such as:

a. Graphs of temporal concentration trends in each well for each monitoring parameter with an evaluation of seasonal and analytical variations,

b. Normality testing along with a discussion of those data points, if any, that are outliers and justification of why the outliers should or should not be removed from the population prior to performing statistical calculations for each compliance monitoring parameter,

c. Calculation of mean concentration and standard deviation for each compliance monitoring parameter in each well, and

d. Calculation of mean concentration plus two (2) standard deviations for each compliance monitoring parameter in each well.

Compliance monitoring parameters are those parameters listed in Table 1E for which a GWPL is established.

After review and approval of this report, the Director may reopen this Permit and revise the ground water protection levels for the Class A West embankment compliance wells. Compliance monitoring will continue in compliance monitoring wells GW-81, GW-82, GW-83, GW-84, GW-85, GW-86 until their abandonment, and in compliance monitoring wells GW-109, GW-110, GW-111, GW-112, GW-137, GW-138, GW-139, GW-140, and GW-141 until the new Class A West embankment wells are installed, and their abandonment.

PART II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling

Samples taken in compliance with the monitoring requirements established under Part I shall be representative of the monitored activity. Failure by the Permittee to conduct all ground water and pore water sampling in compliance with the currently approved Water Monitoring Quality Assurance Plan in Appendix B of this Permit shall be considered a failure to monitor and may subject the Permittee to enforcement action.

B. Analytical Procedures

Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.3(L), unless other test procedures have been specified in this Permit. All sample analysis shall be performed by laboratories certified by the State Health Laboratory, or otherwise after prior written approval by the Director.

C. Penalties for Tampering

The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this Permit shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

D. Reporting of Monitoring Results

Monitoring results obtained during each reporting period specified in the Permit, shall be submitted to the Director, at the following address:

Utah Department of Environmental Quality
Division of Radiation Control
195 North 1950 West
P.O. Box 144850
Salt Lake City, Utah 84114-4850
Attention: Ground Water Quality Program

E. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this Permit shall be submitted no later than 14 days following each schedule date.

F. Additional Monitoring by the Permittee

If the Permittee monitors any pollutant more frequently than required by this Permit, using approved test procedures as specified in this Permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.

G. Records Contents

Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements,
2. The individual(s) who performed the sampling or measurements,
3. The date(s) and time(s) analyses were performed,

4. The individual(s) who performed the analyses,
5. The analytical techniques or methods used, and
6. The results of such analyses.

H. Retention of Records

The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this Permit, and records of all data used to complete the application for this Permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

I. Twenty-Four Hour Notice of Noncompliance Reporting

1. The Permittee shall verbally report any noncompliance which may endanger public health or the environment as soon as possible, but no later than 24 hours from the time the Permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24-hour number, (801) 536-4123, or to the Division of Water Quality, Ground Water Protection Section at (801) 538-6146, during normal business hours (8:00 am – 5:00 pm Mountain Time).
2. A written submission shall also be provided to the Director within 5 days of the time that the Permittee becomes aware of the circumstances. The written submission shall contain:
   a) A description of the noncompliance and its cause,
   b) The period of noncompliance, including exact dates and times,
   c) The estimated time noncompliance is expected to continue if it has not been corrected, and
   d) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
3. Reports shall be submitted to the addresses in Part II.D, Reporting of Monitoring Results.

J. Other Noncompliance Reporting

Instances of noncompliance not required to be reported within 24 hours shall be reported at the time that monitoring reports for Part II.D are submitted.

K. Inspection and Entry

The Permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the Permit;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

L. Monitoring Well "As-Built" Reports

In the event that additional ground water monitoring wells are required by the Director, diagrams and description describing the final completion of the monitoring wells shall be submitted within 60 days of construction of each well. These reports will include:

1. Casing: depth, diameter, type of material, type of joints.
2. Screen: length, depth interval, diameter, material type, slot size.
3. Sand Pack: depth interval, material type and grain size.
4. Annular Seals: depth interval, material type.
5. Surface Casing(s) and Cap: depth, diameter, material type.
6. Survey Coordinates and Elevation: ground surface and elevation of water level measuring point in feet above mean sea level, measured to 0.01 of a foot. Said coordinates and elevation shall be conducted and certified by a Utah Licensed Land Surveyor, or a Utah registered professional engineer.
7. Results of slug tests to determine local aquifer permeability in the vicinity of the well. Said tests shall conform with ASTM Method 4044-91. Test results and data analysis thereof shall be submitted for Director approval.

M. Plugging and Abandonment Reports

Within 30 days of completion of plugging and abandonment of any environmental measurement system or instrument, including but not limited to ground water monitoring wells, piezometers, soil tensiometers or moisture instrumentation, or any other stationary device to make environmental measurements, the Permittee shall submit an "As-Plugged" report for Director approval. Failure to comply with any condition of said approval shall constitute a violation of this Permit.

PART III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The Permittee must comply with all conditions of this Permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. The Permittee shall give advance notice to the Director of the Water Quality Board of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

B. Penalties for Violations of Permit Conditions

The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil penalty not to exceed $10,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under Section 19-5-115(2) of the Act a second time shall be punished by a fine not exceeding $50,000 per day. Nothing in this Permit shall be construed to relieve the Permittee of the civil or criminal penalties for noncompliance.

C. Need to Halt or Reduce Activity not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

D. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this Permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Failure to maintain all treatment and control systems in fully functional operating order or condition at the facility is a violation of this Permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the Permit.

PART IV. GENERAL REQUIREMENTS

A. Prior Approval

Pursuant to UAC R317-6-6.1.A, the Permittee may not construct, install, or operate waste or wastewater storage, treatment, or disposal facilities, or any other facility that discharges or may discharge pollutants that may move directly or indirectly into ground water without a ground water discharge permit from the Director. Pursuant to UAC R317-6-6.3.J, the Permittee shall submit engineering plans, specifications, and plans for operation and maintenance of a proposed facility prior to Director approval.

B. Planned Changes

The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.

C. Modification of Approved Engineering Design, Specifications, or Construction

Any modification to the approved engineering design, specifications, or construction of the facility cited in this Permit shall require prior Director approval. Said facilities shall include, but are not limited to:

1. Waste and Wastewater Disposal and Containment Facilities – including all related engineering containment such as liner, cover, and drainage systems,
2. Waste and Wastewater Handling and Storage Facilities – used to handle, manage or store wastes prior to permanent disposal,
3. Decontamination Facilities – used to decontaminate equipment used in the transportation or disposal of waste, and
4. Environmental Monitoring Systems and Equipment – including ground water monitoring wells, piezometers, meteorological monitoring equipment, soil moisture and lysimeter instrumentation, or any other permanent system, mechanism, or instrument to make environmental measurements required by this Permit.

D. Anticipated Noncompliance

The Permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

E. Permit Actions

This Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

F. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee must apply for and obtain a permit renewal or extension. The application should be submitted at least 180 days before the expiration date of this Permit.

G. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.

H. Other Information

When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.

I. Signatory Requirements

All applications, reports or information submitted to the Director shall be signed and certified.

1) All permit applications shall be signed as follows:
   a) For a corporation: by a responsible corporate officer.
   b) For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
   c) For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.
2) All reports required by the permit and other information requested by the Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
   a) The authorization is made in writing by a person described above and submitted to the Director, and,
   b) The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
3) Changes to Authorization. If an authorization under Part IV.I.2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV.I.2 must submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
4) Certification. Any person signing a document under this section shall make the following certification: "I certify under penalty of law that this document and all

5) Attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

J. Penalties for Falsification of Reports

The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

K. Availability of Reports

Except for data determined to be confidential by the Permittee, all reports prepared in accordance with the terms of this Permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits, effluent data, and ground water quality data shall not be considered confidential.

L. Property Rights

The issuance of this Permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

M. Severability

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Permit, shall not be affected thereby.

N. Transfers

This Permit may be automatically transferred to a new Permittee if:

1. The current Permittee notifies the Director at least 30 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new Permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,The Director does not notify the existing Permittee and the proposed new Permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.

O. State Laws

Nothing in this Permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-117 of the Act.

P. Reopener Provision

This Permit may be reopened and modified, following proper administrative procedures, to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occur:

1. If new ground water standards are adopted by the Board, the Permit may be reopened and modified to extend the terms of the Permit or to include pollutants covered by new standards. The Permittee may apply for a variance under the conditions outlined in R317-6-6.4(D)
2. Changes have been determined in background ground water quality.
3. Determination by the Director that changes are necessary in either the Permit or the facility to protect human health or the environment.

APPENDIX A:

Contingency Plan
for
Exceedances of Ground Water Protection Levels

SUBMITTED: August 5, 1991

APPROVED: September 24, 1991

RETITLED: June 30, 1999

APPENDIX B:

Water Monitoring Quality Assurance Plan

APPROVED: December 5, 1991

LATEST REVISION: August 30, 2011

APPENDIX C:

Construction Quality Assurance Plan for Collection Lysimeter Construction and Operation, Maintenance, and Closure Plans for Collection Lysimeters and Related Approvals

SUBMITTED: September 16, 1992 and October 21, 1992, respectively

APPROVED: September 21, 1992 and November 27, 1992, respectively

REVISED: June 27, 2011

APPENDIX D:

Reserved

APPENDIX E:

Procedure
for
Certification of 11e.(2) Material

REVISED: March 1994

APPENDIX F:

Post-Closure Monitoring Plan for LARW and 11e.(2) Disposal Cells

APPROVED: September 13, 1994

REVISED: January 18, 2000

APPENDIX G:

Weather Station Monitoring Plan

APPROVED: September 14, 1994
REVISED: October 31, 2008

APPENDIX H:

Reserved

APPENDIX I:

Reserved

APPENDIX J:

Best Available Technology (BAT) Performance Monitoring Plan

LATEST REVISION: September 25, 2013

APPENDIX K:

Best Available Technology (BAT) Contingency Plan

LATEST REVISION: September 25, 2013

NAC-0017_R6

Erosion Modeling for the Clive DU PA

Clive DU PA Model v3.0

8 March 2023

Prepared by

NEPTUNE AND COMPANY, INC.
1435 Garrison St, Suite 201, Lakewood, CO 80215

1. Title: Erosion Modeling for the Clive DU PA		
2. Filename: Erosion Modeling v3.0 working draft.docx		
3. Description: The purpose of this white paper is to address specific details of the erosional processes that may affect cover performance for the proposed Federal Cell at the Clive, Utah waste disposal site.		
	Name	Date
4. Originator	Kelly Crowell	6 March 2023
5. Reviewer	Kate Catlett, Sean McCandless	8 March 2023
6. Remarks 6 March 2023: R6; Revised to replace analog site calibration of SIBERIA with site-specific calibration. – K. Crowell 24 Sept 2021: R5; Substantial re-write for probabilistic erosion modeling of revised Federal Cell embankment dimensions in support of DU PA v2.0. – K. Crowell, P. Duffy 29 Oct 2015: R4; Removed gully screening model for DU PA v1.4. – M. Sully 14 July 2014: R1; Revisions for Round 3. – M. Sully		

CONTENTS

FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

ACC-A	Average Cover Conditions cover scenario A (Table 5)
ACC-B	Average Cover Conditions cover scenario B (Table 5)
ARS	Agricultural Research Service
DWMRC	Division of Waste Management and Radiation Control
$\beta_{1,10th}$	Value of b1 corresponding to the 10th percentile of RHEM sediment yields
$\beta_{1,50th}$	Value of b1 corresponding to the 50th percentile of RHEM sediment yields
$\beta_{1,90th}$	Value of b1 corresponding to the 90th percentile of RHEM sediment yields
B	basal stem cover percentage
BC	biological crust cover percentage
BG	bunch grass cover percentage
DEM	digital elevation model
DU	Depleted Uranium
EAMS	Erosion Assessment and Modelling System
ET	evapotranspiration
F	foliar cover percentage
FB	forb cover percentage
G	ground cover percentage
HEM	Hillslope Erosion Model
IRS	Infiltration and Runoff Simulator
L	litter cover percentage
LEM	Landscape Evolution Model
NOAA	National Oceanic and Atmospheric Administration
OHV	off-highway vehicle
PA	Performance Assessment
PMF	probably maximum flood
R	rock cover percentage
RHEM	Rangeland Hydrology and Erosion Model
ROI	Region of Interest
RSY_{ith}	Average sediment yield predicted by RHEM at 120 m, *i*-th percentile of 1000 realizations
S	shrub cover percentage
SG	sod grass cover percentage
TDP	dew point temperature
USDA	United States Department of Agriculture
WEPP	Water Erosion Prediction Project

1.0 Erosion Model Input Distribution Summary

A summary of parameter values and distributions used in the erosion modeling component of the Clive Depleted Uranium Performance Assessment Model v3.0 (the Clive DU PA v3.0) is provided in Table 1. Additional information on the derivation and basis for these inputs is provided in subsequent sections of this report.

Table 1. Summary of distributions for erosion modeling.

Parameter	Distribution	Units	Notes
Erosion values, as a percentage of the top slope cover area, are provided to the GoldSim model as a table of 1000 rows. This table is provided in “Clive Model Parameters.xls” as an electronic attachment to the Clive DU PA Model Parameters Document. See Section 5.0 for additional information.			

Table 2 provides a summary of distributions used for probabilistic RHEM and SIBERIA simulations, which are used to derive the inputs for v3.0 of the DU PA.

Table 2. Summary of distributions for RHEM and SIBERIA simulations (see Section 4.3).

Cover Type	Distribution	parameters (percent)			
		BG	FB	S	Bare
Foliar	Dirichlet	5.9	5.4	23.4	65.3
Ground (Rock)	Uniform	13.5	16.5	NA	NA
		B	L	BC	Bare
Ground (non-Rock)	Dirichlet	10.1	9.3	80.6	NA

Elevations sampled from the initial CAD-derived digital elevation model (DEM) were perturbed with random roughness by adding elevation to each grid node drawn from the distribution defined in Table 3.

Table 3. Distribution for spatial roughness added to cover design DEM.

Distribution	Mean (m)	SD (m)
Normal	0.0	0.002

2.0 Introduction

An engineered hybrid above-ground cover design has been planned for the proposed Federal Cell at the Clive, Utah waste disposal site (Figure 1**)**. The hybrid cover design includes an evapotranspiration (ET) cover for the top slope and riprap armoring on the side slopes. Details of the cover design are provided in the *Embankment Modeling* white paper (Neptune 2021a). The purpose of this *Erosion Modeling* white paper is to address specific details of the erosional processes that may affect cover performance. This paper is organized to give a brief overview of erosional processes and then to present the overall modeling approach, assumptions, and implementation in the Clive DU PA Model.

Above-ground covers of waste repositories are subject to erosion by the forces of wind and water. The proposed Federal Cell at the Clive, Utah waste disposal site has an engineered above-ground cover that is subject to these erosional processes. Both wind and water erosion are represented in the Clive DU PA Model. Details of wind erosion modeling and the effects on dose to potential receptors are addressed in detail in the *Atmospheric Transport Modeling* white paper (Neptune 2021d), and are not addressed further in this white paper. Water erosion via the return of Lake Bonneville or a small lake is not discussed in this document, but is addressed in the *Deep Time Assessment* white paper (Neptune 2021b). Other water erosional processes are described below.

There are two types of water erosion described in the *Conceptual Site Model* paper (Neptune 2021e): sheet erosion and gully erosion (channel formation). The approach used in the Clive DU PA Model to evaluate the influence of erosion on embankment performance utilizes results from a landscape evolution model (LEM) applied to a representation of the revised embankment design.

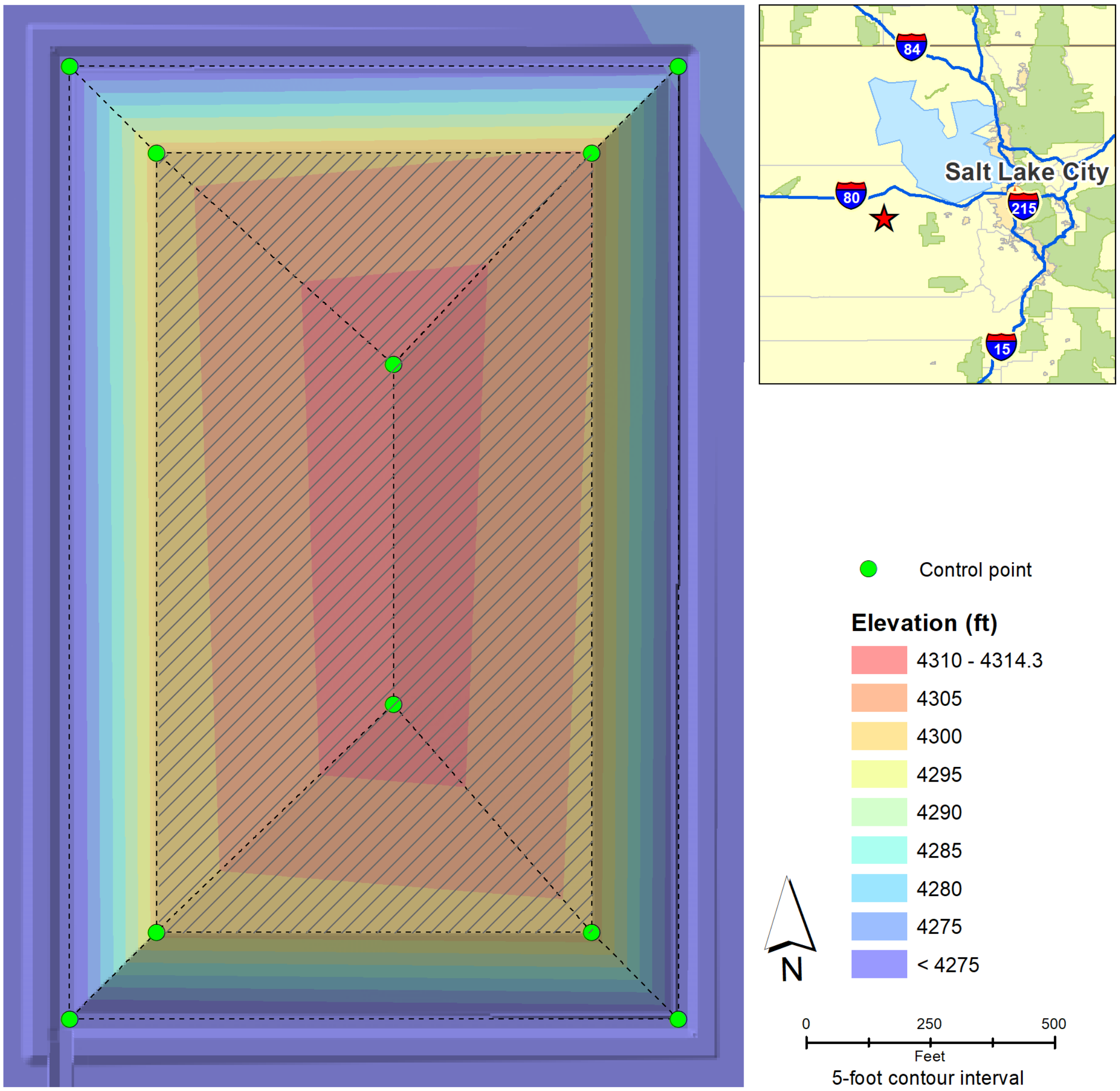


Figure 1. DEM of the cover proposed for the Federal Cell at the Clive, UT waste disposal site. The top slope of the cover is indicated by hatching.

2.1 Sheet Erosion

Sheet erosion is erosion of soil particles by water flowing overland as a "sheet" in a downslope direction. During rainfall events when rain falls faster than water can infiltrate, runoff can occur, acting as a mechanism for eroding cover materials. Sheet erosion is a uniform process over the area of the cover and depends largely on the steepness and shape of the slope, soil texture, and cover characteristics, as well as rainfall intensity. This is different from erosion that flows in defined channels (i.e., gully erosion), which is discussed in Section 2.2.

On the top slope of the embankment, where slopes are gradual (about 2% slope), sheet erosion will be slower than on the steeper side slopes of the cell (about 20% slope). As soil moves down slope by sheet erosion, it is likely that this material would be replenished by deposition of clean eolian silt from the surrounding environs (i.e., a net balance of zero change). Supporting data and discussion of eolian deposition is found in the *Deep Time Assessment* white paper (Neptune 2021b). Since the steep side slopes are armored with riprap, sheet erosion will occur predominantly in fine sediments deposited over the riprap.

2.2 Gully Erosion

Gully erosion is a process that occurs when water flows in narrow channels, particularly during heavy rainfall events. Gully erosion typically results in a gully that has an approximate "V" cross section that widens (lateral growth) and deepens (vertical growth) through time until the gully stabilizes. The formation of gullies is a concern on uranium mill tailings sites and other long-term above-ground radioactive waste sites (NRC 2010). Gully erosion has the potential to move substantial quantities of both cover materials and waste, should the waste material be buried close to the surface. It occurs when surface water runoff becomes channeled and repeatedly removes soil along drainage lines, creating a depositional fan of the removed materials.

The engineered cover at the Clive facility may be subject to gully erosion via a disturbance attributed to an animal burrow, large animal tracks, the root of a fallen tree or shrub (tree throw), or an off-highway vehicle (OHV) track. Sheetwash tends to transition into concentrated flow over 30 meters of profile length (Merkel 2001; USDA 2010), after which rilling and gullying may develop. An operational threshold of 1 ft^2 (0.93 m^2) for a cross-sectional area has been used to distinguish between rills and gully channels by Hauge (1977) and Poesen et al. (2011).

3.0 Evapotranspiration Cover Design

The composition of the embankment cover is an important factor in determining its erodibility. At the Clive facility, the top-slope portion of the Federal Cell is an evapotranspiration (ET) cover composed of a 0.3-m (12 in) thick Surface Layer of native vegetated Unit 4 material with 15 percent gravel mixture on the top slope and a rip rap Surface Layer for the side slope. The functions of this layer are to control runoff, minimize erosion, and maximize water loss from ET. This layer of silty clay provides storage for water accumulating from precipitation events, enhances losses due to evaporation, and provides a rooting zone for plants that will further decrease the water available for downward movement. Underlying the Surface Layer is the Evaporative Zone Layer. This layer is also composed of Unit 4 material and is 0.3 m (12 in) thick. The purpose of this layer is to provide additional storage for precipitation and additional depth for plant rooting zone to maximize ET. The Frost Protection Layer is below the Evaporative Zone Layer, and is 0.5 m (18 in) thick. The purpose of this layer is to protect layers below from freeze/thaw cycles, wetting/drying cycles, and to inhibit plant, animal, or human intrusion.

The embankment side slopes will have a riprap Surface Layer, consistent with other embankments at the Clive site (Energy*Solutions* 2021). Appendix A of this paper includes details on how the embankment design is represented in SIBERIA for landscape evolution modeling.

4.0 Erosion Modeling

Landscape evolution models are based on the concept that, while the runoff response of a landform to rainfall depends on the shape of the landform, the landform shape also adjusts through erosion processes acting during the runoff event. This concept is applied by considering the interaction of hillslope erosion processes (sheet erosion and rilling) with channel growth (gully formation) process in the model (Willgoose et al. 1991a, 1991b).

The landscape evolution model SIBERIA (version 8.33, Willgoose (2005)) was selected for this analysis. Landscape evolution models such as SIBERIA capture the interaction between the runoff response and the elevation changes of the landform surface over long time periods. This capability makes models such as SIBERIA particularly well suited for waste site modeling.

SIBERIA depicts landscape evolution using the mass present in the domain at time zero, but does not account for aggrading conditions of aeolian deposition (i.e., particles moved to the domain by wind). Based on previous site-specific field studies, the rate of aeolian deposition is estimated to be approximately 55 cm per 10,000 years with an uncertainty range of approximately 45 – 66 cm per 10,000 years (Neptune 2021b).

The modeling approach has two steps: 1) obtain parameters for SIBERIA, and 2) build a domain according to the design criteria for the cover (described in Appendix A). An appropriate set of parameters was identified through climate and landcover comparisons, along with traditional erosion model simulations.

The SIBERIA model generates time-series of spatially explicit rasters of topography. While there are myriad ways to summarize and present the information from these outputs, several key statistics of interest are presented in this work. These statistics are used to assess key aspects of the erosion process at the site. Results of erosion are presented as mean, median, and 95th percentile values of erosion depth simulated by the SIBERIA model for specific timepoints of interest. The ability to depict spatially explicit erosion processes through time and quantify processes is one of the most powerful aspects of the SIBERIA model.

Erosion results for SIBERIA simulations of three realizations selected from 1000 random vegetation and ground cover conditions are presented with similar detail, with plots derived from the set of simulations as a whole for context. Finally, the derivation of a table which encodes the spatial distribution of gully channelization for each of the 1000 realizations of cover conditions is described. The table serves as the abstraction of gully erosion into the Clive DU PA GoldSim model.

4.1 Conceptual and Mathematical Model Description

Landscape evolution models like SIBERIA are physically based numerical models that simulate changes to a surface over long time periods. The SIBERIA landscape evolution model (version 8.26), as reported by Wilson et al. (2005), was applied to this analysis. The SIBERIA model predicts evolution of topography on the basis of an average annual erosion event (Willgoose et al. 1991a) that would produce the same amount of erosion as both large and small erosional rain events over a long period of time. Specifically, SIBERIA is based on parameterizing the sediment yield caused by a storm with a recurrence interval of 2.33 years, an interval that has been shown to represent the long-term average annual erosion (Willgoose 2005). Modeled erosion patterns are spatially explicit and erosion rates change as the modeled topography approaches equilibrium in response.

SIBERIA is designed to operate on scales of hundreds to thousands of years, but erosion is generally driven by individual storms on the scale of hours to days. As a result, other tools are needed to develop the long-term average erosion and sediment yield rates used to parameterize SIBERIA. These tools bridge the time scale under which erosion occurs (individual storms) with long-term averages needed for SIBERIA (hundreds to thousands of years). Ideally, data connecting individual storms of a variety of recurrence intervals with erosion rates would be available for different catchment areas so that a long-term average erosion rate could be determined, and SIBERIA could be calibrated to these data. However, these types of data rarely exist, and do not exist for the Clive site.

A key aspect of the conceptual model implemented in SIBERIA as described by Willgoose et al. (1991a, 1991b) is that, while the runoff response of a landform to rainfall depends on the shape of the landform, the landform shape also adjusts through erosion processes acting during the runoff event. Hydrology and erosion models applied by SIBERIA are based on commonly used soil erosion prediction models that are well documented. SIBERIA, however, can be applied to estimates of long-term erosion because of its ability to adjust landform elevations over time in response to erosion processes (Willgoose 2005). The model explicitly considers the interaction of hillslope erosion processes with the channel growth process. Channel initiation depends on hillslope form, which determines discharge and slope at a point and the resistance of the catchment at that point to channelization (Willgoose 2005).

Coulthard (2001) describes the model in the following manner. Elevations describing the catchment or landform are assigned to square cells in a sub-horizontal grid. At every iteration, runoff discharge for each grid cell is calculated using runoff parameters and the contributing area. When this discharge exceeds a threshold, sediment transport occurs and material moves from one cell to another in the steepest downhill direction. Channel initiation and development is dependent on the discharge. Runoff is not modeled explicitly. There is no mass balance for water or runoff routing in the model (Willgoose 2005). Discharge is related to the area contributing water to a point using parameters developed through calibration to data or other auxiliary models. A diffusive transport process is included to simulate processes such as soil creep, rain splash, rock slides, and animal burrowing (Wilson et al. 2005) that would move material to channels where it could be transported from the system.

Runoff is calculated in SIBERIA through a relationship between the runoff discharge and the area draining through the point as:

$$Q = \beta_3 A^{m_3}$$

where

Q	is runoff discharge [L^3/L-T],
A	is contributing area [L^2], and
β_3 and m_3	are fitting parameters.

The runoff discharge is then used to calculate sediment transport as:

$$Q_s = \beta_1 Q^{m_1} S^{n_1} + D_z S$$

where

Q_s	is sediment flux [L^3/L-T],
S	is slope [L/L],
D_z	is diffusion coefficient [L^3/L-T], and
β_1, m_1, and n_1	are fitting parameters.

The first term in the equation represents fluvial transport processes and the second term diffusive processes. Fitting parameters in the above equations are estimated by calibration to data or auxiliary models.

In SIBERIA the value of the variable Y is used to describe whether a point in the model is a channel ($Y \cong 1$) or a hillslope ($Y \cong 0$).

The channel indicator function is:

$$\frac{\partial Y}{\partial t} = f(d_t, Y, \frac{a}{a_t})$$

where

d_t	is rate of channel growth at a point,
a	is channel initiation function, and
a_t	is channel initiation function threshold.

The channel initiation function is given by:

$$a = \beta_5 Q^{m_5} S^{n_5}$$

where β_5, m_5, and n_5 are parameters. Channel parameterization is much more difficult, so the SIBERIA manual recommends default values for d_t, β_5, m_5, and n_5 given a lack of available information to describe these in more detail (Willgoose 2005).

The parameters m_1, and n_1 affect the long-term evolution of landscape form with β_1 controlling the rate of evolution. Willgoose et al. (1991c) developed a relationship between mean slope and contributing area in stream channels of the form:

$$S \propto A^{-\alpha}$$

$$\alpha = \frac{(m_1 m_3 - 1)}{n_1}$$

where

S	is slope,
A	is contributing area, and
m1, m3, n1	are parameters described above

with α valued between 0.4 and 0.7.

Figure 2 shows a cartoon of trends observed in log-log plots of slope vs. area following Willgoose et al. (1991c). At small areas diffusion dominates sediment transport and slope tends to increase. When advection becomes dominant, slope decreases with increasing area, tending toward a line with slope $-\alpha$. Values of α obtained through calibration can serve as a diagnostic.

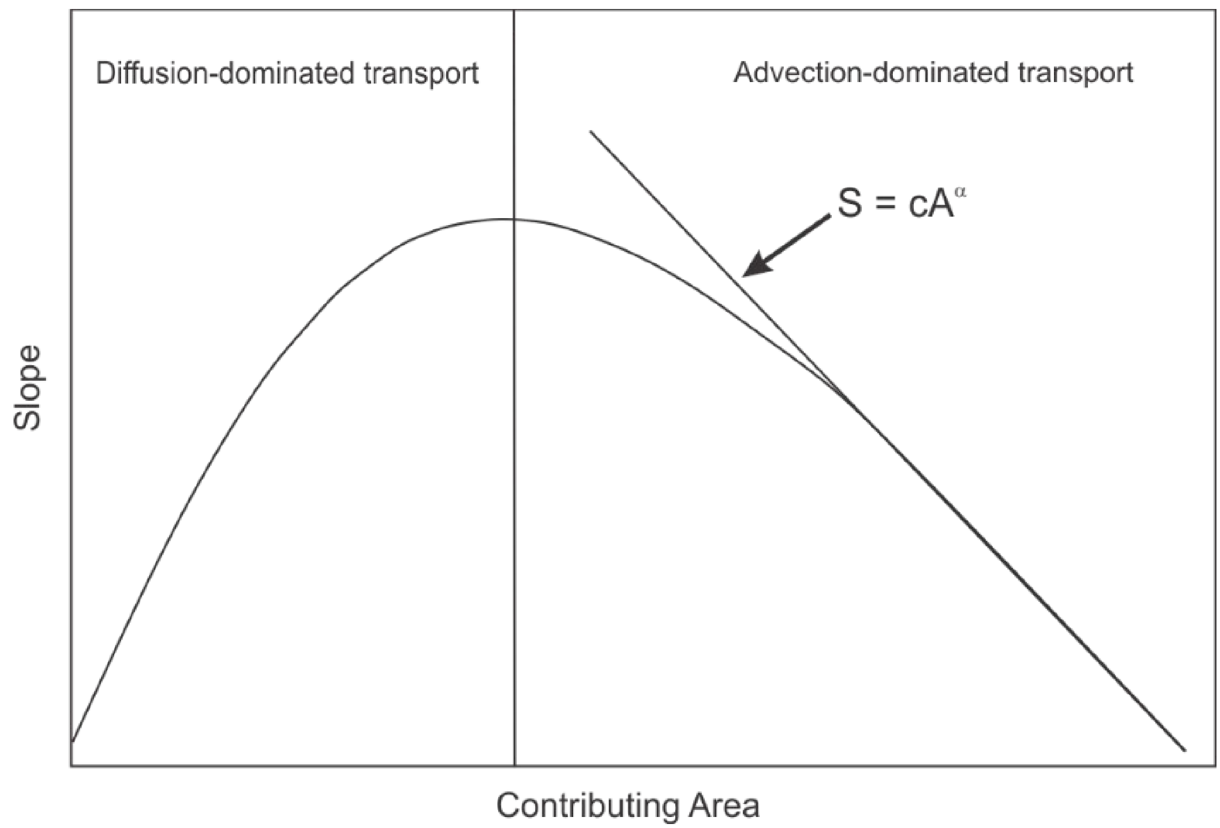


Figure 2. Cartoon of slope-area plots (after Willgoose et al. (1991c)).

4.2 SIBERIA Parameterization

Steady-state values for the SIBERIA input parameters need to be estimated as a first step for the erosion modeling work. Input parameters describe the rate of erosion that affects long-term landscape evolution. In nature, landscape-forming runoff events occur sporadically—perhaps once every 10, 20, or 1000 years—not annually. As a result, erosion that occurs in a given year cannot be applied as an annual average, because the cumulative effect of large events needs to be incorporated in the long-term averages used for landscape evolution modeling.

With respect to the way the input parameters for SIBERIA are defined, the identification of a representative storm that drives erosion is critical. Based on research conducted by the authors of the SIBERIA model, the recommended return period for the representative storm is approximately 2.33 years (Willgoose 2005).

One challenge for the application of the SIBERIA model in this context is that no studies of erosion that would directly inform the input parameters for application on the proposed Federal Cell have been performed. Consequently, parameters were developed by matching predictions for erosion from the Rangeland Hydrology and Erosion Model (RHEM; Hernandez et al. (2017)).

RHEM predicts runoff and erosion for a single hillslope profile using a synthetic storm series over 300 years generated by the CLIGEN weather simulator model (Flanagan and Livingston 1995). The hillslope profile is characterized by shape, slope, length, soil texture class, and cover conditions.

Cover is input as areal proportions of plant or foliar cover and ground cover, with each ranging from 0 – 100 percent. Foliar cover is derived from prevalence of plants assigned to each of four plant communities: shrub, forb, bunch grass, and sod grass. Ground cover is based on plant basal stems, litter, rock, and biocrust prevalence.

The CLIGEN model generates the storm series using a climate station parameter file which provides statistics of meteorological variables including temperature, precipitation depth and frequency, insolation, and wind speed and direction. A set of climate station parameter files is provided by USDA-ARS (https://www.ars.usda.gov/ARSUserFiles/50201000/WEPP/cligen/stations.zip), or a site-specific file can be developed from an adequate meteorological data record, if available. A climate station file for Dugway, UT in the official distribution was used to drive RHEM simulations for the Clive site model.

The calibration method uses the Nelder-Mead downhill-walking simplex method to obtain values for the SIBERIA parameters b_1, m_1, and n_1 which predicted sediment yields that best matched RHEM predictions for a set of eighteen linear profiles for each set of cover conditions considered.

Sediment yield for calibration reference was modeled using the RHEM batch tool, a Python script which reads simulation parameters from rows of a spreadsheet and submits them to a web service (https://github.com/ARS-SWRC/rhem_batch_csip). These were generated in August, 2021, using RHEM version 2.3 and CLIGEN version 5.3.

4.2.1 Climate Comparison

The nearest National Oceanic and Atmospheric Administration (NOAA) station with a long-term record is located in Dugway, UT approximately 64 km (40 miles) to the south-southeast of Clive, UT. In order to determine whether the Dugway station is an appropriate analog for the Clive site, a comparison of temperature and precipitation records is conducted.

The Dugway and Clive sites show agreement for temperature data between the two locations, both on an annual scale (Figure 3) and with monthly mean temperatures (Figure 4) (Trinity Consultants 2021).

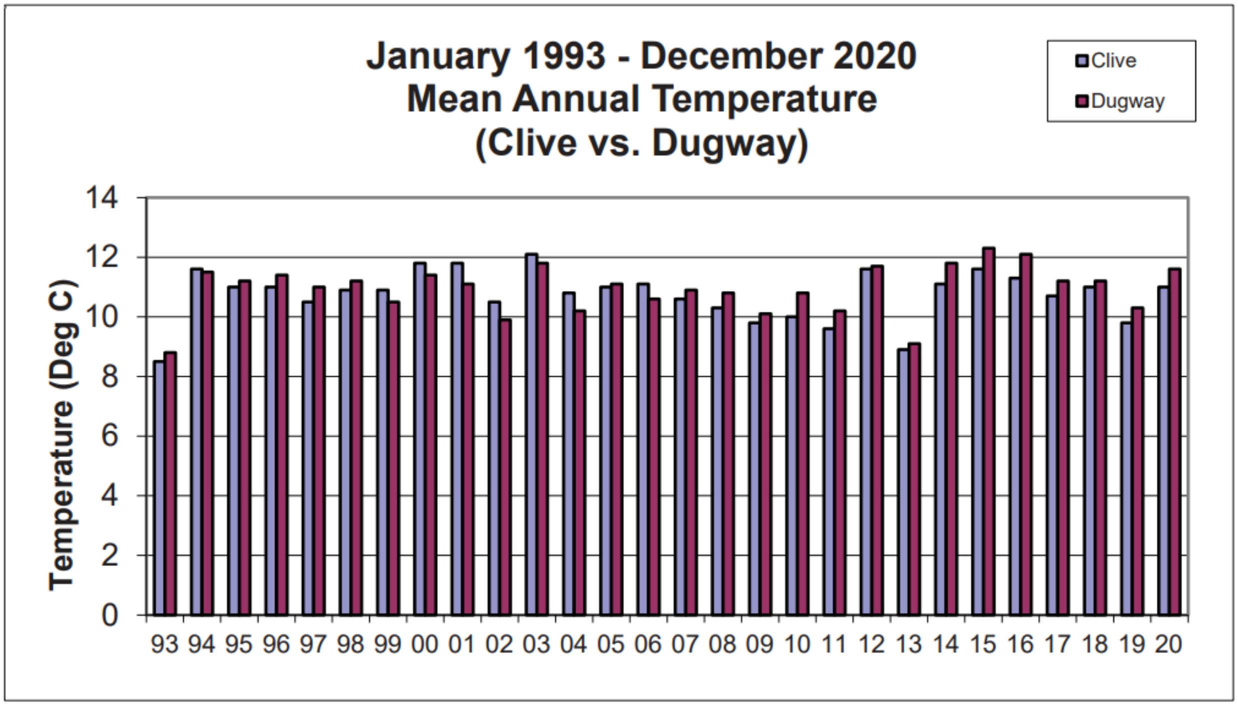


Figure 3. Annual temperature comparison between Clive and Dugway.

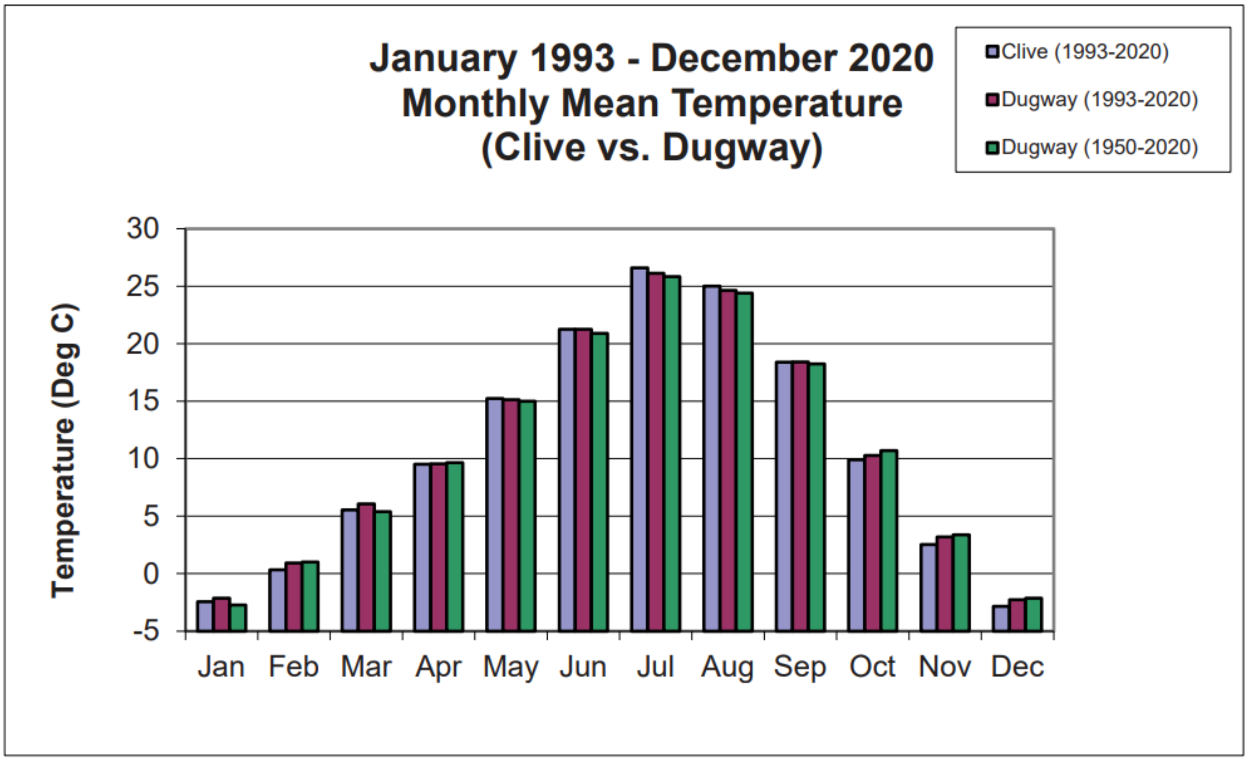


Figure 4. Monthly mean temperature comparison between Clive and Dugway.

The distribution of precipitation throughout the year is shown in Figure 5. Precipitation measurements taken at the site over the 19-year period of 1993 to 2011 show a mean annual value of 21.9 cm (8.62 inches) (MSI 2012). Precipitation exceeds the annual mean from January through June and again in October and is below the mean for the remaining months.

Comparison of precipitation measurements at the Clive site and at the Dugway station done by MSI (2012) shows close correspondence between the monthly mean precipitation values (Figure 6). As part of the annual site weather data report (Trinity Consultants 2021), the preparer corroborates that precipitation remains consistent between these two locations, as shown previously in the MSI (2012) work.

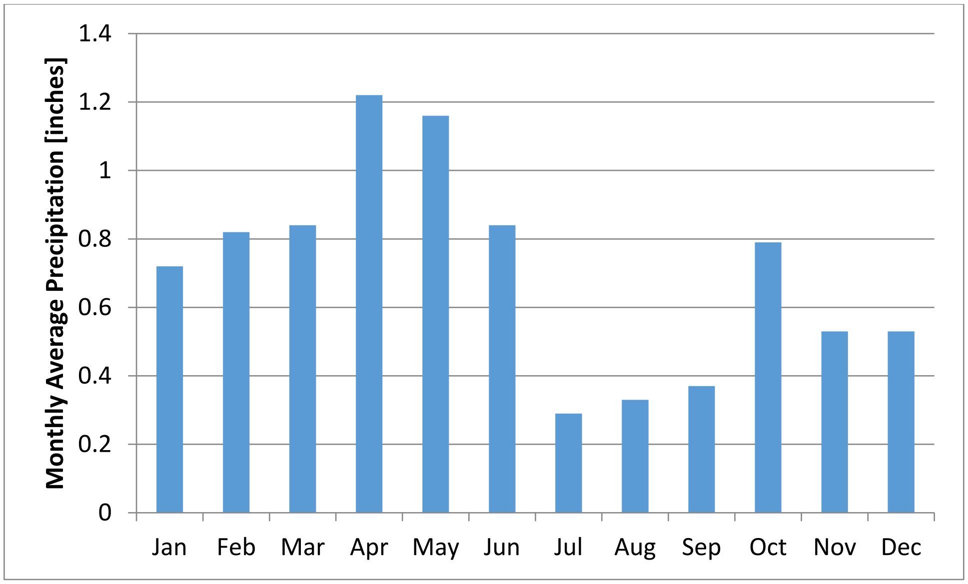


Figure 5. Monthly mean precipitation measured at the Clive site (MSI 2012).

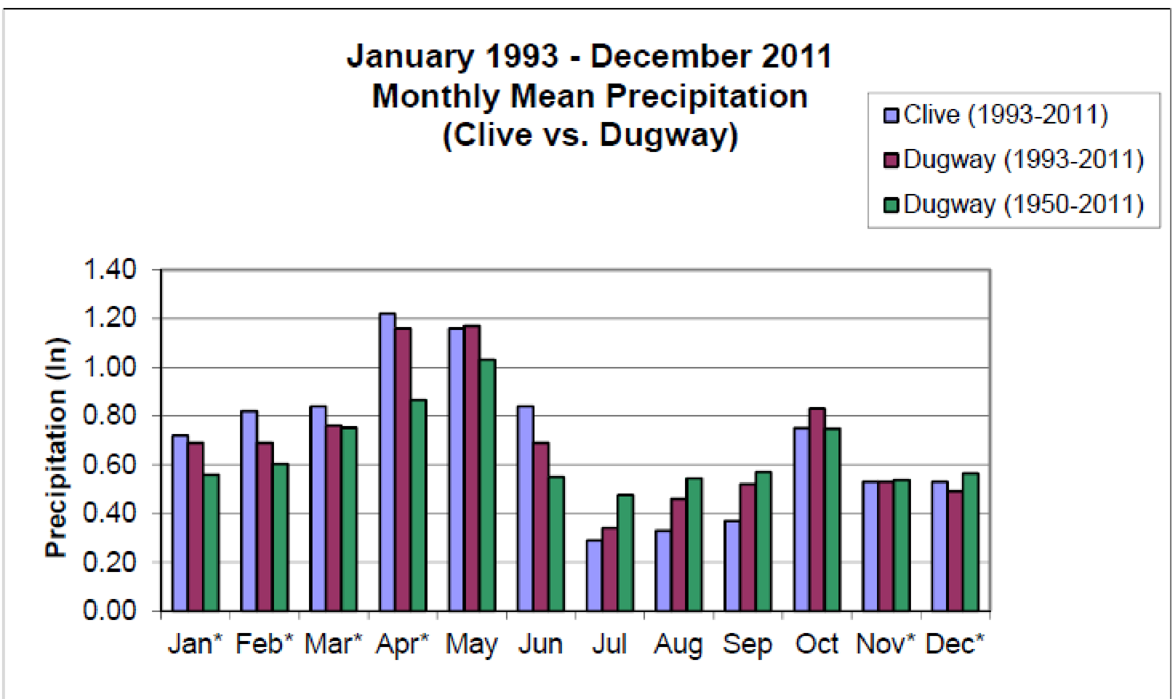


Figure 6. Monthly mean precipitation for Clive and Dugway stations. (*Means based on 18 years of data.)

Data are taken from the Western Regional Climate Center (wrcc.dri.edu). Precipitation and temperature data are first compared on an annual scale to explore the overall amount of rainfall driving erosional events between the sites. They are then compared monthly to explore seasonal variability and storm intensity, given that intensity is what drives large erosional events.

Table 4 presents average annual temperature and precipitation data for Dugway. Monthly precipitation at Dugway is fairly consistent, with the wettest period occurring in spring (Figure 7). May is the wettest month and, on average, receives more than one inch of precipitation (Figure 7).

Table 4. Summary statistics for annual temperature and precipitation at Dugway, UT.

	Min	1st Q	Median	Mean	3rd Q	Max	SD	YRS
Precip	3.4	5.9	7.7	7.7	9.2	15.1	2.5	50
temp	47.9	50.8	51.5	51.4	52.0	53.6	1.1	50

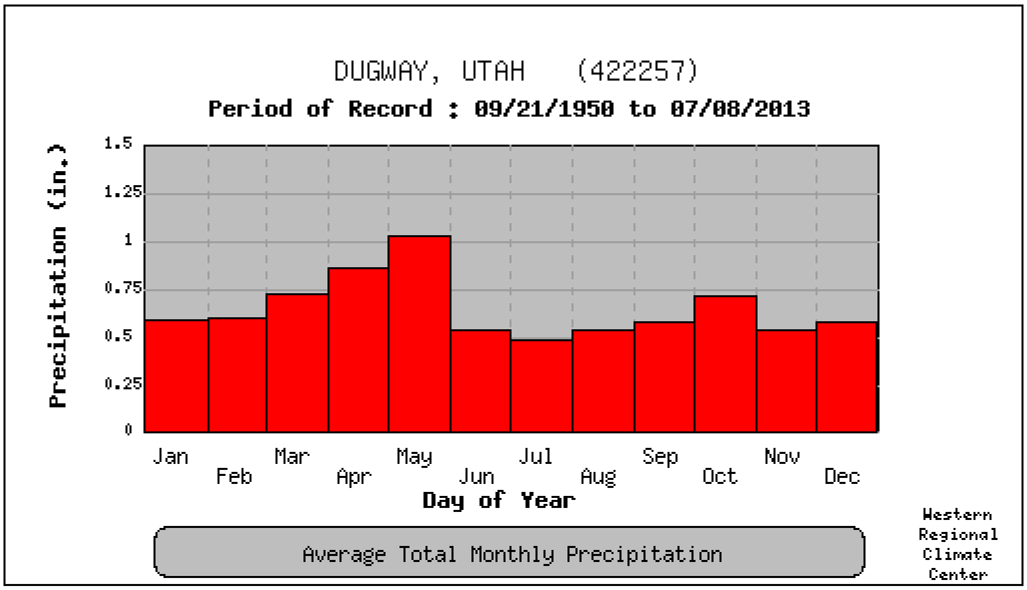


Figure 7. Average monthly precipitation for Dugway, UT. Taken from Western Region Climate Center (https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ut2257).

4.2.2 Foliar and Ground Cover

The ground cover and foliar cover are also important considerations, with ground cover likely a dominant term in affecting erosion rates compared to foliar cover. A 2012 ecological study identified nine plots on or near the Clive facility (one from a previous 2010 study and eight new plots) that were analogs to the ecological setting expected to develop on an ET cover system like the one proposed for the Federal Cell. These plots underwent extensive field study including examination of soils, vegetation diversity, areal cover and density, animal diversity, and burrow and ant mound densities and dimensions (SWCA 2012). This report has the most recent and relevant data to estimate ground and foliar cover at the Clive site.

All of the analog cover plots identified “well-developed” biological soil crusts as the dominant feature of the ground cover, with limited additional cover of litter, cobble, and bare ground. In a response to DRC Interrogatories, SWCA also reported that, “Over the long-term (> 5 years), the top and sides of the cover system will be stabilized by biological soil crust organisms and native vegetation” (SWCA 2013). SWCA reports biological soil crusts as covering 79.2% of the ground at the cover analog plots.

Foliar percentages were estimated from Table 3 of SWCA (2012), which lists the average cover of all plant species found at the site. Added together, the plant species average total coverage results in 35.6% canopy coverage expected on the ET cover at the Clive site. Ground cover is also reported in Table 3, with biological soil crusts making up 79.2%, litter making up 7.9%, and cobble making up 6.7%.

4.2.3 The Rangeland Hydrology and Erosion Model (RHEM)

RHEM advances hillslope erosion modeling on rangeland conditions beyond the IRS+HEM models and other traditional erosion models such as WEPP. RHEM models infiltration and runoff from a 300-year simulated storm series generated by the CLIGEN model (Flanagan and Livingston 1995) from statistical descriptions of a range of meteorological variables. Model parameters are based on rainfall-runoff plot experiments exclusively on rangeland sites. As of version 2.3, RHEM is implemented as a component of the KINEROS2 model (Goodrich et al. 2002).

The RHEM Web Tool (https://dss.tucson.ars.ag.gov/rhem/) provides entry for RHEM-specific parameters from which a KINEROS2 input file is generated, which may be downloaded for use with an executable file on a workstation.

RHEM simulation outputs include annual averages of precipitation depth, runoff depth at the end of the profile, total erosion, sediment yield, or net erosion. Return frequency estimates for precipitation depth, runoff depth, and total erosion and sediment yield for intervals from 2 years to 100 years are also provided.

Average annual sediment yield is the quantity of interest for comparing with SIBERIA output. RHEM predicts total erosion and sediment yield in units of T ha^{-1} y^{-1}.

For each simulation, hillslope profile geometry is specified, a soil texture is selected, a CLIGEN climate station is selected from a list of stations available in the CLIGEN climate station database, and foliar and ground cover conditions are input as percentages. Alternatively, a larger number of simulations may be run with a Python script which reads simulation parameters from rows of a spreadsheet and submits them to a web service (https://github.com/ARS-SWRC/rhem_batch_csip), as was done for the current work.

RHEM simulations on hillslope profiles of up to 120 m length are supported by the USDA-ARS RHEM team (Mariano Hernandez, pers. comm., 2021). Profiles along the east side of the top slope cover are 120 m in length, while profiles on the other slopes can range from 140 – 145 m long. Beyond 120 m, increased concentration of flow and channelization will not be accounted for in the model. An LEM calibrated with RHEM model output may be expected to underestimate gully incision rates around the periphery of the top slope.

RHEM cover proportions are estimated from contributions of particular plant communities and ground cover types (Hernandez et al. 2017). Constituents of the foliar cover proportion (F) include shrubs, bunch grasses, forbs, and sod grasses:

$$F = S + BG + FB + SG$$

Ground cover proportion (G) is estimated from coverage of plant basal stems, rocks, litter, and biological crust:

$$G = B + R + L + BC$$

The valid range of each proportion F and G is 0 – 100 percent. Both individual cover classes as well as the sums F and G contributed to particular RHEM parameters, including hydraulic friction, hydraulic conductivity, and soil erodibility.

4.2.3.1 RHEM with Average Cover Conditions

One source of uncertainty assessed in this work deals with how information from plant surveys is used to inform modeling efforts. The difference can be distilled as a distinction between using averages of averages versus sums of averages to depict average cover conditions (ACC). These two approaches are denoted ACC-A (averages of averages) and ACC-B (sums of averages). The impact of these different approaches was quantitatively assessed through a simulation representing average cover conditions performed with RHEM on a 120-m linear profile with a silty clay soil. Input parameters for ACC-A were based on SWCA (2012), Table 3. Input parameters for ACC-B were based on SWCA (2012), Table 2. Input parameters, including values for foliar and ground cover proportions developed from those tables, are listed below in Table 5. Sediment yields predicted by RHEM for the two scenarios are show in Figure 8.

Table 5. Average RHEM input cover conditions (shape, length, slope, soil, weather station, foliar cover, ground cover).

Soil texture class	Silty clay	
Slope shape	Uniform	
length	120 m	
slope	0.024 (2.4 %)	
Cover class	ACC-A	ACC-B
Bunch grass (BG)	5.9	0.7
Forbs (FB)	6.6	3.1
Shrubs (S)	22.2	15.5
Sod grass (SG)	0.0	0.0
Basal stem (B)	8.6	24.9
Rock (R)	15.0	15.0
Litter (L)	7.9	8.5
Biological crust (BC)	68.5	51.0

RHEM-predicted Average annual sediment yield (T ha^{-1} y^{-1})	0.155	0.141

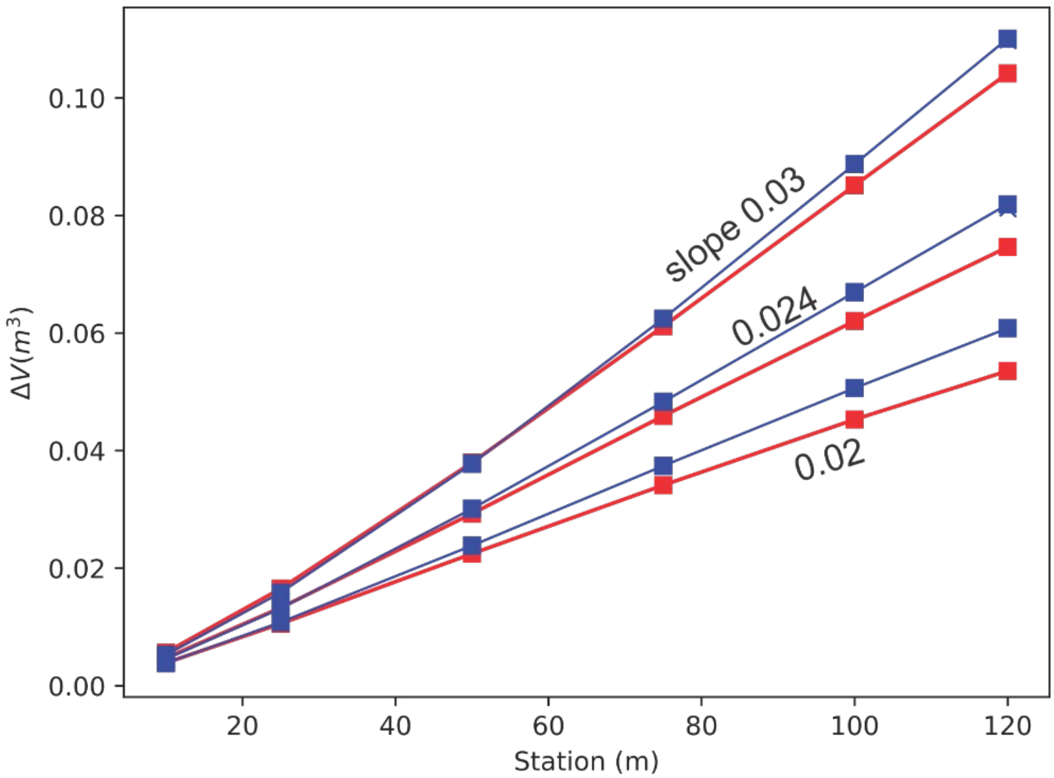


Figure 8. Annual average sediment yield predicted by RHEM for scenarios ACC-A (blue) and ACC-B (red).

Foliar cover proportions for the average cover conditions are based on the summed cover percentage for each plant species classification. No sod grass species is listed.

Average ground cover proportions reported in SWCA (2012) include three of the four ground cover types needed by RHEM. For the RHEM simulation, the rock cover proportion was set to 15 percent to reflect the gravel admixture specified for the Surface Layer of the top of the cover. Plant litter was set to 7.9 percent as given in SWCA (2012), Table 3.

Plant basal stem coverage percentage was initially set to the average plant density per square meter appearing in Table 3 of SWCA (2012). Since different plants have varying basal stem diameters, this was selected to represent the minimum cover fraction for that cover class.

An alternative basal stem cover fraction estimate is obtained from the sum of the mean plant density for each observed species listed on individual plots in Table 2 of SWCA (2012), since multiple species were recorded on several sampled plots. By that method the basal stem cover fraction is 24.9 percent. Basal stem and litter cover fractions significantly influence effective hydraulic conductivity in the RHEM model equations. Increasing either cover type increases estimated hydraulic friction and hydraulic conductivity, increasing infiltration and consequently decreasing runoff, runoff velocity, and erosion.

Biological crust coverage is decreased from 68.5 to 51.0 in response to increased rock cover and the addition of basal stem cover. In the average cover condition simulation, it was assumed that biological crust would cover ground that was not occupied by another ground cover type. Average annual sediment yield predicted by RHEM for each cover configuration appears in the final row of Table 5. Cover conditions with B set to 8.6% is referred to as scenario ACC-A, and with B set to 24.9% as scenario ACC-B.

The gravel admixture specified for the upper 30 cm (12 in) of the top slope (Energy*Solutions* 2021) establishes a minimum R value of 15 percent through stereology principles (McBratney and Moran 1990). Under the assumption that these gravels will not be mobilized by the probable maximum flood (PMF) per NRC (2002), R should approach 100 percent as finer particles are preferentially removed by erosion.

Increasing R enhances the hydraulic friction factor, which reduces runoff velocity. However, each of L, B, and BC enhances the friction factor a greater degree while also directly contributing to hydraulic conductivity. Increasing R to 90% while reducing B and L to 8% and 2%, respectively, increases predicted sediment yield by approximately 33% compared to scenario ACC-A. Standard SIBERIA does not allow increasing β_1 through time to capture this effect. β_1 may be varied through time with custom Fortran programming in a skeletal source file distributed with SIBERIA and setting a flag to call the user-defined subroutine. This effort is beyond the scope of the current modeling.

Conversely, selective transport of fine particles is the process driving armor development, which reduces incision (Hancock and Willgoose 2021). The disconnect with RHEM is likely due to rill-related parameters held constant while the splash and sheet erodibility coefficient varies with changing cover conditions. Al-Hamdan et al. (2017) provide an equation in which rock cover decreases the concentrated flow erodibility coefficient K_ω to a greater degree than other ground cover fractions. Implementing this was impossible for these simulations since the Linux executable was not then available and obtaining official simulation results for the large number of profile simulations was possible only using the batch engine web service.

4.2.4 Calibrating SIBERIA with RHEM

Lacking site-specific erosion data, values for the β_1, m_1, and n_1 parameters are obtained by matching sediment yields predicted by SIBERIA to reference sediment yields modeled by RHEM, e.g., those illustrated in Figure 8 for the average cover condition scenarios ACC-A and ACC-B.

RHEM simulations are performed for linear hillslope profile slopes of 2, 2.4, and 3 percent on profile lengths of 10, 25, 50, 75, 100, and 120 m to produce a set of 18 reference sediment yields. SIBERIA simulations are repeatedly run under control of a Python script which implements the Nelder-Mead optimization algorithm operating on the three parameters of interest. The SIBERIA model domain for calibration is constructed as a set of linear planes of appropriate slope and length. SIBERIA simulations are run for 60 years (Nearing 2004).

The runoff rate coefficient β_3 and area exponent m_3 were set to 1.0 since only sediment yield was used for calibration and subsequent forward modeling. Diffusivity is set to zero since advective parameters are the calibration targets. Other runoff- and erosion-related SIBERIA parameters are set to default values obtained from a database distributed with the Erosion Assessment and Modelling System application (EAMS, http://telluricresearch.com/; Willgoose pers. comm. 2003).

The SIBERIA calibration DEM is constructed as three linear planes of gradient 0.02, 0.024, and 0.03. A larger calibration domain with slopes 0.02, 0.4, …, 0.16 is shown in Figure 9. Grid cell resolution is 1 m. A single column is sampled as the Region of Interest (ROI) for each profile. The ROI columns are isolated to avoid run-on interference from walls between profiles, and low-erodibility regions are defined along walls and around the lateral DEM edges to further reduce erosion and potential interference from neighboring profiles.

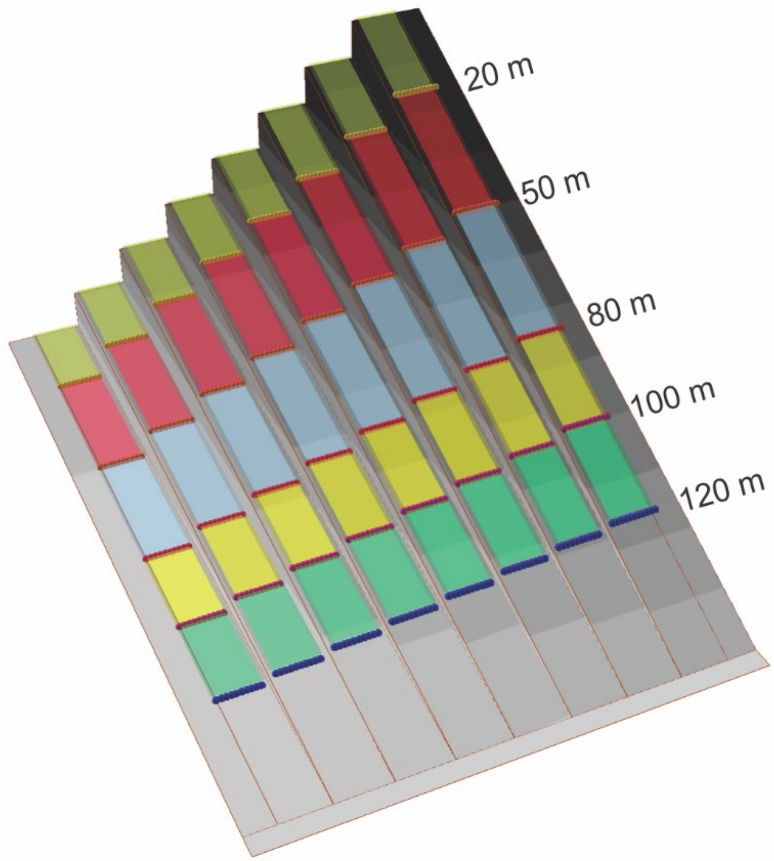


Figure 9. Example SIBERIA calibration domain simulating a set of rainfall-runoff plots on slopes 0.02, 0.4, …, 0.16.

Matching sediment yield is defined through the summed squared differences between sediment yields predicted by SIBERIA and that predicted by RHEM at each reference location. The Nelder-Mead calibration routine minimizes an objective function O defined as:

$$O = \sum_{i=1}^{S}\sum_{j=1}^{L}\left(RHEM_{i,j} - SIBERIA_{i,j}\right)^2$$

where

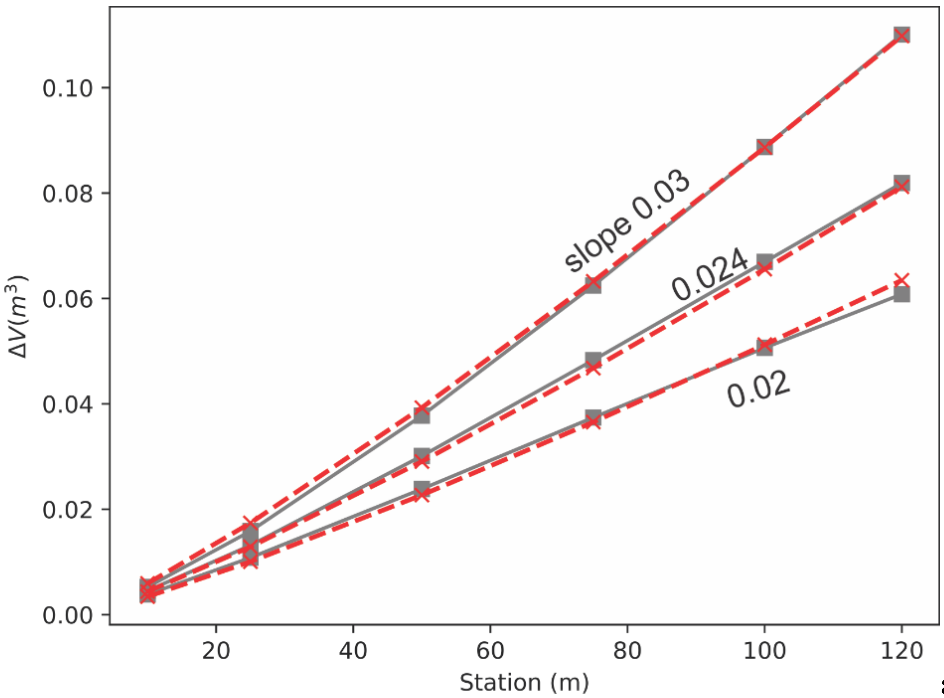
S	is the number of profiles of different slope modeled by RHEM,
L	is the number of lengths along each profile modeled by RHEM,
RHEMi,j	is sediment yield on profile with slope *i* at length *j* output by RHEM, and
SIBERIA,i,j	is sediment yield on profile with slope *i* at length *j* calculated from SIBERIA output.

The Nelder-Mead algorithm operates by tracking a geometric simplex constructed in parameter space where each vertex of the simplex is a configuration of parameter values at which the objective function is evaluated. New trial parameter sets are proposed through geometric transformations biased to move a vertex away from vertices corresponding to higher values of the objective function. For the three parameters under consideration here, the simplex is a set of four parameter sets forming a tetrahedron in parameter space.

For calibration, sediment yield is expressed in terms of volume. Sediment yield predicted by RHEM is converted from mass per area to volume (m^3) through the bulk density and multiplied by 60 years. In SIBERIA the total elevation change above each point in the calibration domain output DEM is summed and converted to volume through the GridXY grid resolution parameter value of 1.0 m. Parameter values obtained are on a per unit-width basis and may be applied to desired grid resolutions, with scaling performed internally by SIBERIA.

Multiple starting configurations are tested for each calibration attempt to avoid obtaining parameter values representing suboptimal local objective function minima. The Nelder-Mead implementation has performed very well against conjugate gradient-type minimization algorithms.

Best-matching calibration sediment yields are compared to the reference RHEM-generated sediment yields for average cover condition scenarios ACC-A and ACC-B in Figure 10. An example of convergence to a suboptimal parameter set is shown in Figure 11.



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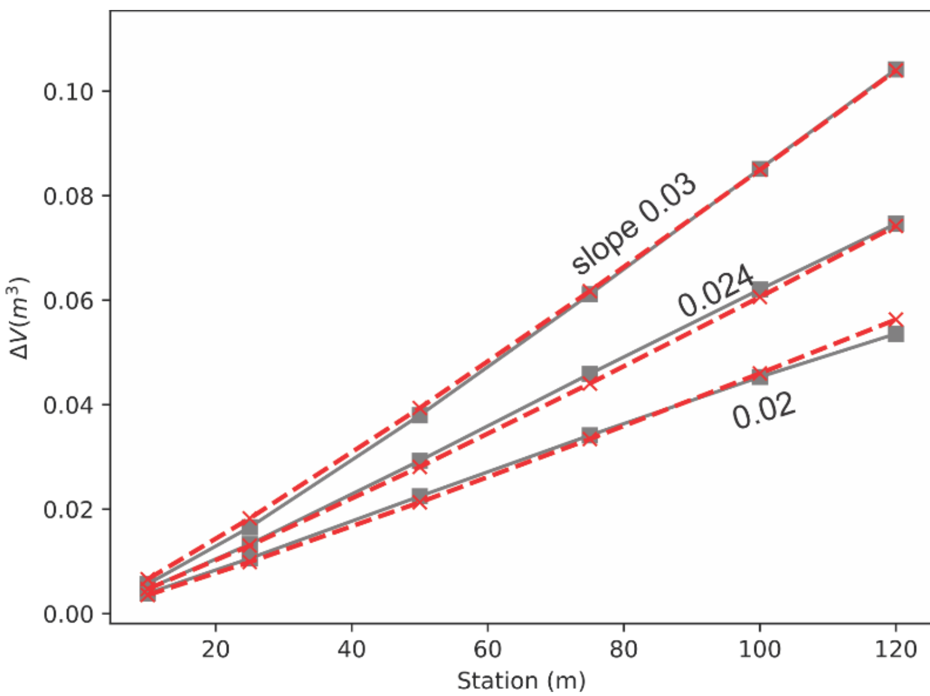


b

Figure 10. Calibrated (red) and reference (gray) sediment yields for average cover condition scenarios a) ACC-A and b) ACC-B.

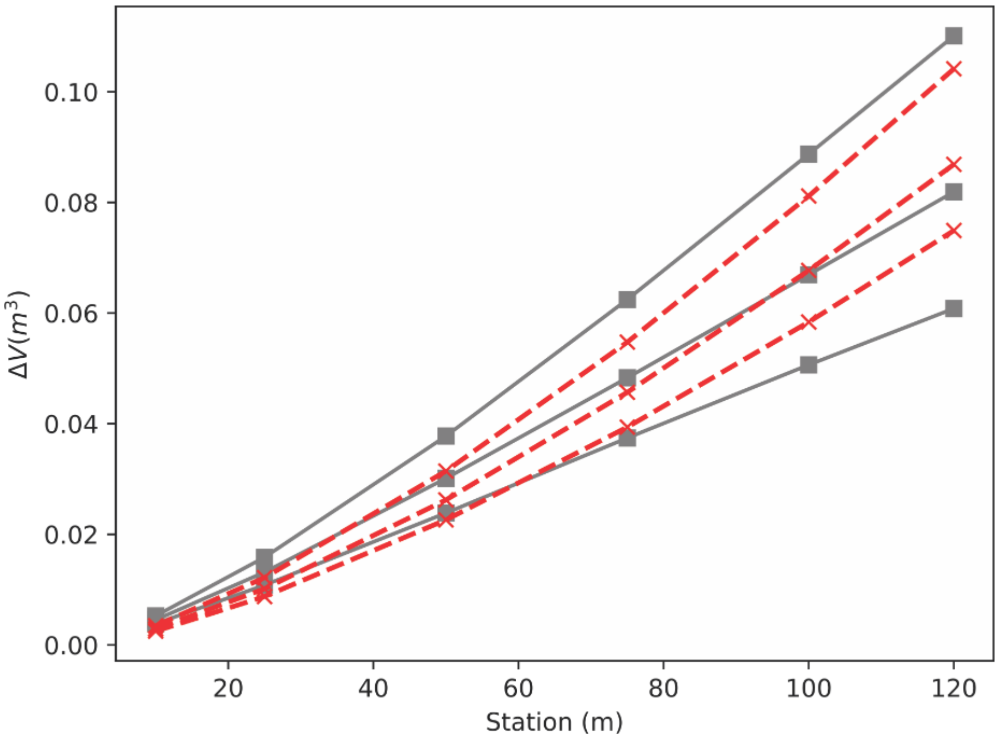


Figure 11. Calibrated (red) and reference (gray) sediment yields for average cover condition scenario ACC-A resulting from a local, suboptimal minimum of the objective function. The top pair of lines represents slope =0.03; the middle pair slope = 0.024; the bottom pair slope = 0.02.

4.3 Probabilistic SIBERIA Simulations

A set of 1000 realizations of foliar and ground cover conditions was generated from statistical distributions developed to center on average cover conditions of scenario ACC-A (Table 5). RHEM simulations were run for a set of profile lengths and slopes for each cover condition realization as described below.

4.3.1 Randomized Cover Conditions

One thousand RHEM simulations were run for linear profiles and slopes described above using random values for the range of cover types contributing to foliar and ground cover types (Appendix B). The distributions of cover conditions and average annual sediment yield predicted by RHEM are illustrated in Figure 12 and Figure 13, respectively.

Foliar cover is based on random draws from a Dirichlet distribution with alpha parameters that provide expected values equal to the mean foliar cover from SWCA (2012), Table 2. Twelve plant species were assigned to a set of cover categories (Trees, Shrubs, Forbs, Bunch Grass, Sod Grass, and Biological Crust) using internet resources, and the mean for each category was the total coverage of the species in that category. Any remaining percentage of cover not covered by one of these species is assumed to be bare (no plants). The area described in SWCA (2012) contains approximately 5.9% bunch grass, 5.4% forbs, 23.4% shrubs, and 65.3% bare ground.

No trees, sod grass, or cryptogams were identified. The alpha parameter vector for the Dirichlet distribution for foliar cover is (5.9, 5.4, 2.3, 65.3). 1000 random draws were taken from this distribution to generate a table of proportions.

Ground cover in the region is 79.2% biological crust (SWCA (2012)). Litter cover makes up approximately 7.9% of ground cover, rock/cobble makes up approximately 6.7%, and basal stem cover makes up approximately 8.6%. Ground cover has the additional requirement that the cobble cover layer will be engineered to be approximately 15% of ground cover, with an assumed tolerance range of 13.5% – 16.5%. As such, a pseudo-Dirichlet approach is used to model the proportions of ground cover. The target means for this process are 15% cobble, 8.6% basal cover, 7.9% litter cover, and 68.5% biocrust. The additional cover proportion needed to reach 15% cobble is reassigned from biocrust, which is assumed to be the "filler" cover for this location (i.e., anyplace not covered by cobble, basal stem, or litter cover will be filled by biocrust).

The process begins by drawing a value for the cobble layer from a U(0.135, 0.165) distribution; this ensures that the requirements for the cobble layer are met. A draw is then selected from the remaining proportions from a Dirichlet distribution modeling proportions of "non-cobble ground cover," where the means of the non-cobble cover types have been rescaled to represent their contribution to non-rock cover (approximately 10.1% basal, 9.3% litter, and 80.6% biocrust). The Dirichlet draws are then scaled by (1-Cobble) so that the total proportions sum to one and the expected values match the cover means.

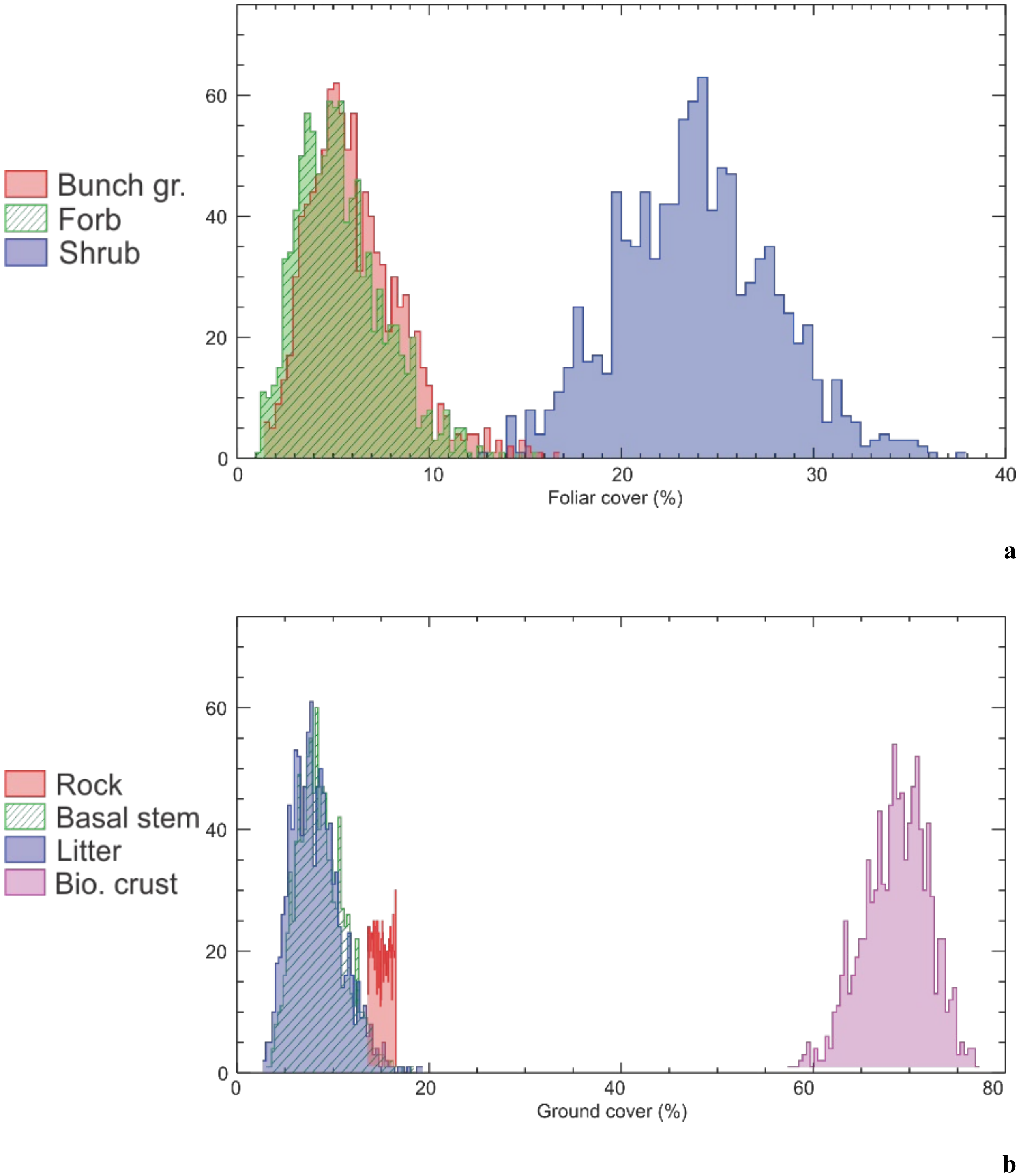


Figure 12. Distributions of (a) foliar and (b) ground cover conditions.

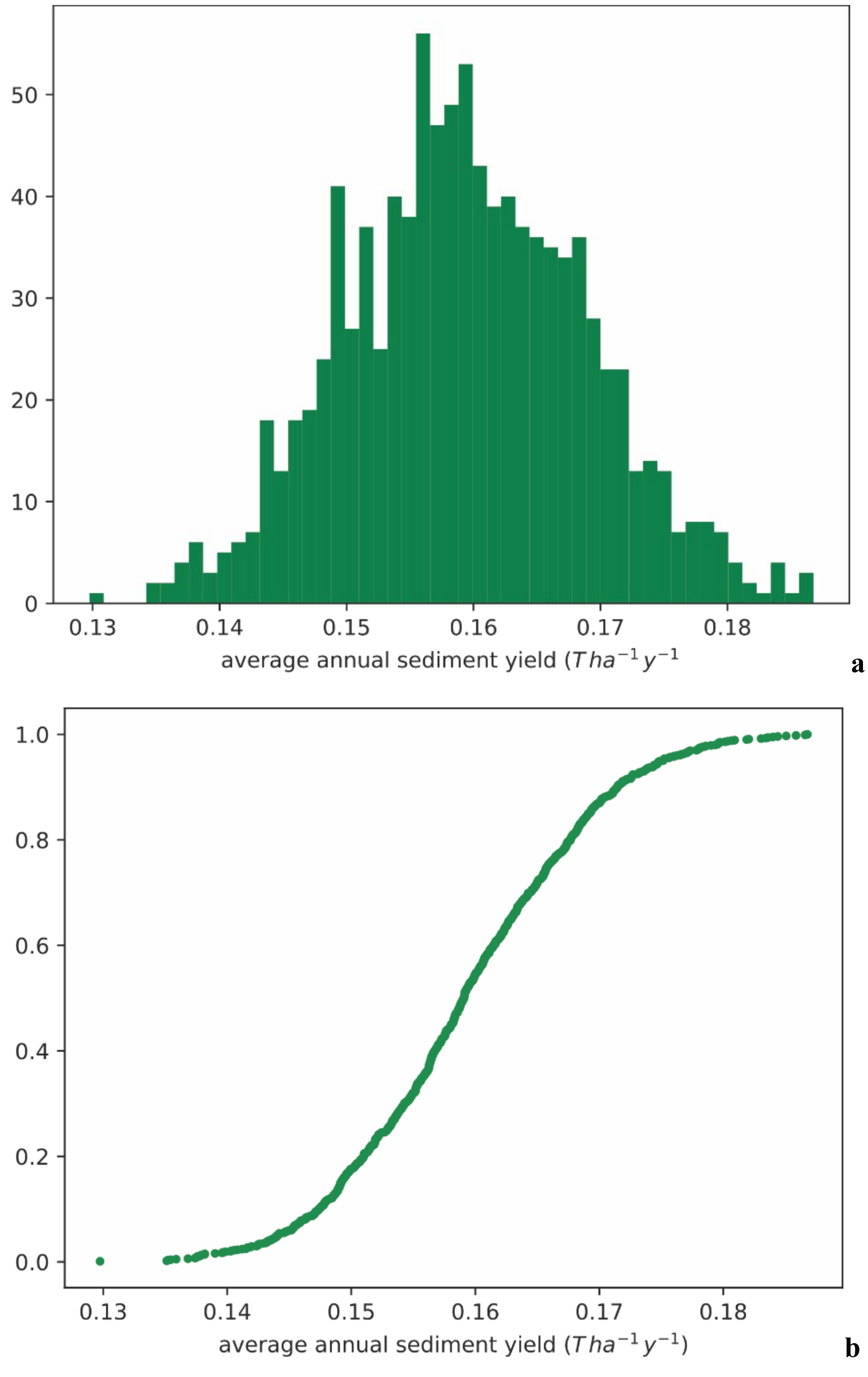


Figure 13. (a) Average annual sediment yield predicted by RHEM using 1000 realizations of cover condition statistical distributions. Average annual sediment yield was sampled at 120 m and averaged across the three slopes represented in the calibration domain and (b) cumulative distribution of the average annual sediment yield.

4.3.2 Calibration

Calibration was undertaken against reference sediment yield datasets generated by RHEM for each of the 1000 cover condition realizations. Details of calibration results by draw and profile are recorded in Appendix C. A set of six calibrations using different starting configurations were run for each realization of cover conditions.

The calibration algorithm exits after the range of objective function values tracked in the simplex is reduced to a value set to 10^{-4}, or after 300 iterations of the algorithm. In 15 cases, the best-performing calibration of the six had not converged to the tolerance threshold but had exited after iteration 300. Further assessment indicated they still represent a reasonable calibrated parameter set on the basis of parameter value, objective function values, and plots of sediment yield. Sediment yields for the best calibration case for one of these cases is shown in Figure 14.

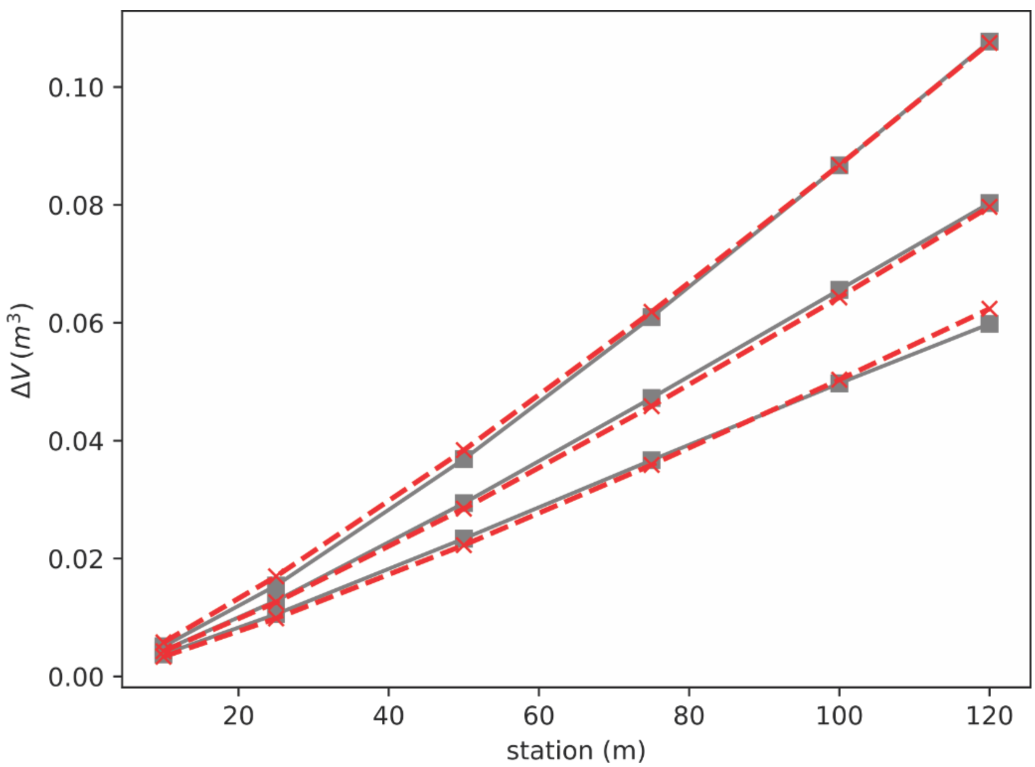


Figure 14. RHEM-generated reference sediment fluxes (gray) and best-matching SIBERIA-generated sediment yields from calibration (red), cover conditions realization 557.

Values obtained for the range of calibrated parameters are summarized in Table 6 and Figure 15.

Table 6. β_1, m_1, n_1 calibrated values statistics.

	β_1	m_1	n_1
count	1000	1000	1000
mean	0.001066	1.173884	1.354432
std	0.000216	0.012286	0.030175
min	0.000592	1.133373	1.259579
25%	0.000908	1.165579	1.33434
50%	0.001053	1.173661	1.355525
75%	0.001202	1.182442	1.37453
max	0.001957	1.216256	1.461512

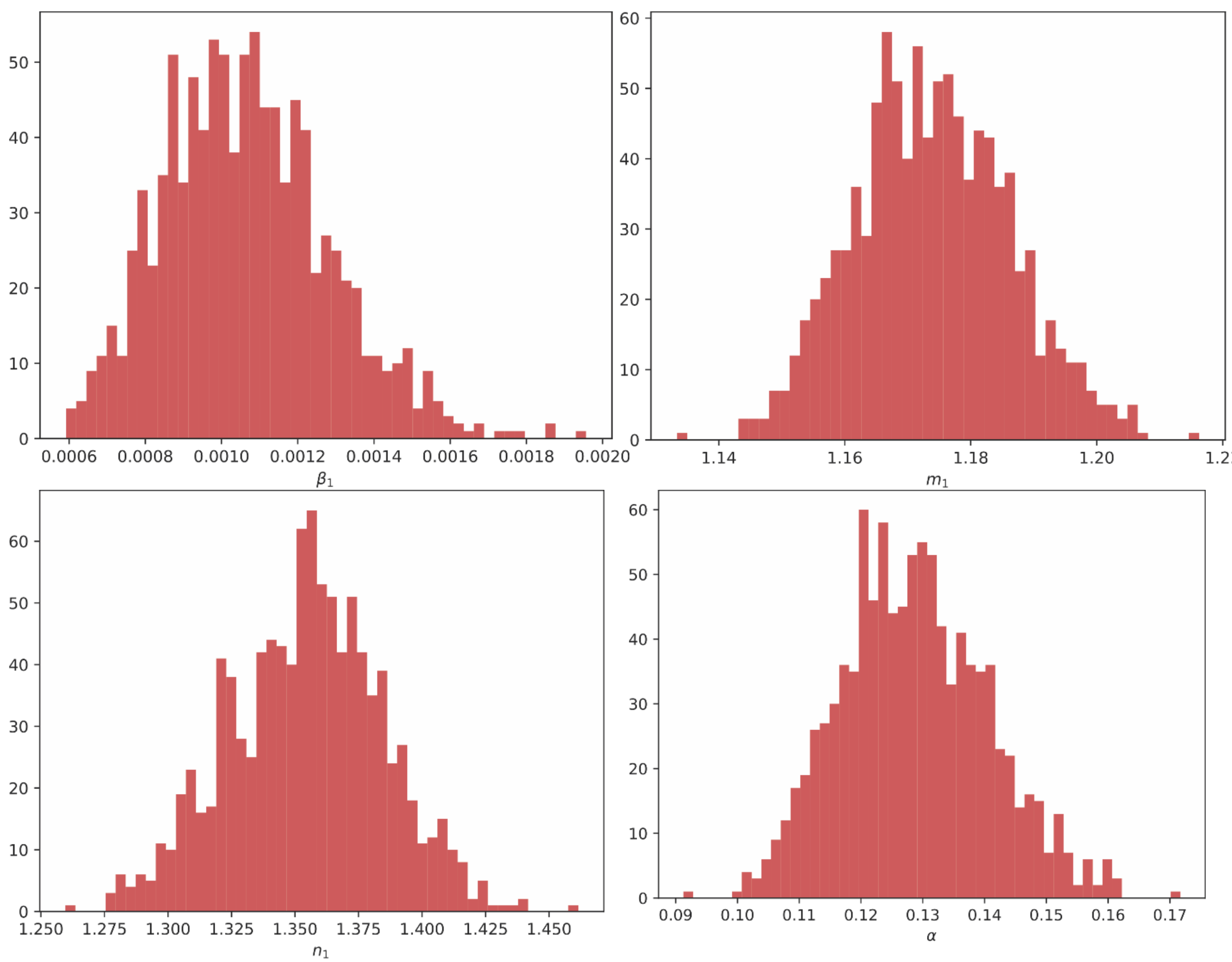


Figure 15. Histograms of calibrated values of β_1, m_1, n_1 and α.

The values of $m_1 \sim 1$ and $1 \lesssim n_1 \lesssim 2$ obtained correspond to erosion dominated by sheetwash without gullying (Hancock and Willgoose 2021). The corresponding values of the α exponent on contributing area in the $S \propto A^{-\alpha}$ relationship range from 0.09 – 0.17, far outside the range 0.4 – 0.7 reported by Tarboton et al. (1989) for catchments in equilibrium. However, the top surface of the cover modeling domain is effectively entirely uplands hillslope and the parameter values obtained result in very good matches to reference sediment yields predicted by RHEM.

4.3.3 SIBERIA Simulations

One thousand SIBERIA simulations were run with β_1, m_1, and n_1 parameters obtained by calibrating using RHEM simulations based on the 1000 realizations of cover conditions.

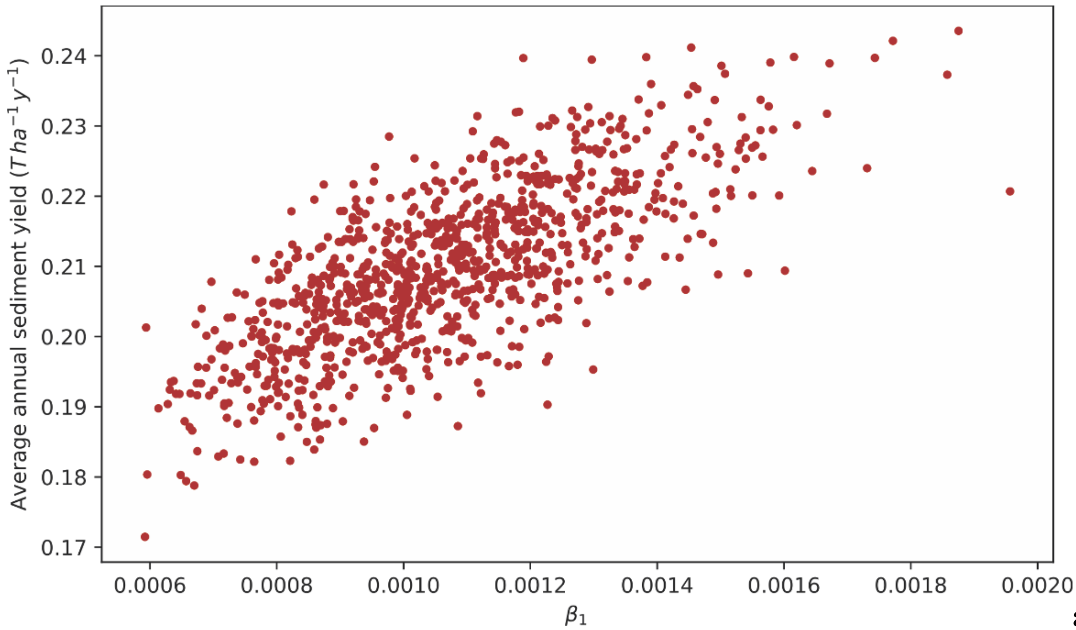
Table 7 lists cover conditions and parameter values for realizations that correspond to the 10th- ($\beta'_{1,10th}$) and 90th- ($\beta'_{1,90th}$) percentiles of the range of resulting β_1 values.

Table 7. Cover conditions (percent), parameter values, and sediment yield (T ha^{-1} y^{-1}) estimated from 10,000-year SIBERIA simulation for selected realizations.

Realization *k*	BG	FB	S	B	R	L	BC	$\beta_{1,k}$	m_1	n_1	*SY*
169 ($\beta_{1,10th}$)	9.0	10.8	19.4	9.5	14.6	9.5	66.3	7.8078x10^{-4}	1.1892	1.3163	0.193
006 ($\beta_{1,90th}$)	4.2	4.8	19.5	7.7	14.4	7.4	70.5	1.37270 x 10^{-3}	1.1620	1.3926	0.223

Overall, predictions of average annual sediment yields ranged from 0.171 – 0.244 T ha^{-1} y^{-1}. Figure 16 shows the distribution of average annual sediment yield values and their variation with β_1.

In addition to the final results at 10 ky, output from the 1000 SIBERIA simulations was selected at 2 ky, 5 ky, and 8 ky. This was done to reduce storage requirements for model output while providing for monitoring the simulation progress and allowing for detecting unexpected results. Table 8 lists median, mean, and 95th percentile values for elevation changes on the top slope and side slopes for realizations RSY_{10th} and RSY_{90th}. Spatial patterns of erosion corresponding to these simulations are illustrated as shaded-relief images in Figure 17.



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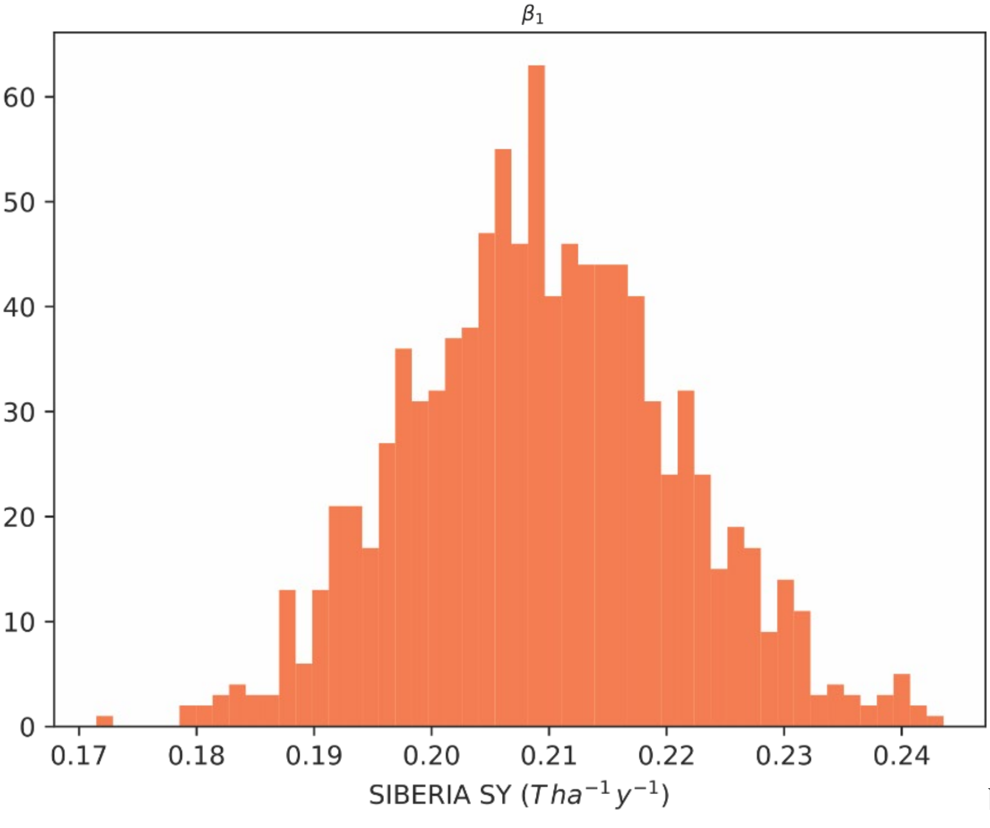

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Figure 16. (a) Average annual sediment yield from the top slope predicted by SIBERIA simulations as β_1 varies. (b) Distribution of annual average sediment yield predicted from 1000 SIBERIA 10,000-year simulations.

Table 8. Erosion and erosional deposition on the top and side slopes of the Federal Cell over 10,000 years (cm) for simulations using RSY_{10th} and RSY_{90th}.

Erosion (depth below starting surface, cm)												
		cover top slopes					cover side slopes					
	mean		median			95.00%	mean		median			95.00%
year	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}
2000	-3.7	-4.3	-2.6	-3.2	-10.2	-11.3	-2.6	-2.8	-0.6	-0.7	-11.1	-11.5
5000	-7.9	-9.1	-7.0	-8.3	-15.20	-16.4	-3.9	-4.3	-1.4	-1.8	-15.1	-16.0
8000	-11.7	-13.5	-11.1	-13.0	-19.5	-21.1	-4.8	-5.4	-2.3	-2.8	-16.0	-17.3
10000	-14.2	-16.4	-13.7	-16.0	-22.2	-24.1	-5.4	-6.0	-2.7	-3.3	-17.9	-18.9
Erosional deposition (height above starting surface, cm)												
		cover top slopes					cover side slopes					
	mean		median			95.00%	mean		median			95.00%
year	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}	RSY_{10th}	RSY_{90th}
2000	0.2	0.1	0.1	0.1	0.3	0.1	9.8	11.0	6.5	7.6	32.4	34.8
5000	n/a[1]	n/a	n/a	n/a	n/a	n/a	16.3	17.7	12.0	13.9	44.3	46.4
8000	n/a	n/a	n/a	n/a	n/a	n/a	21.1	23.0	17.7	19.8	53.1	56.6
10000	n/a	n/a	n/a	n/a	n/a	n/a	24.1	26.6	20.8	23.2	59.2	64.6

[1]n/a = not applicable (no data)

The maps in Figure 17 depict similar evolved terrain. This is not surprising since the range of sediment yield predicted by RHEM across the random cover conditions all resulted in SIBERIA parameterizations well within the sheet erosion-rilling regime following Hancock and Willgoose (2021).

Applying a cross-sectional area threshold of 1 ft^2 (0.93 m^2) for classifying a rill as a gully (Hauge 1977; Poesen et al. 2011) indicates "gullies" per se are created during the simulations. Incision is reduced compared to that predicted by a parameterization with $m_1 = 1.62$, $n_1 = 0.86$ ($\alpha = 0.72$) applied across a wider range of slope with sediment yields of similar magnitude modeled by the Hillslope Erosion Model (Wilson et al. 2005) and $m_1 = 1.64$, $n_1 = 0.69$ ($\alpha = 0.93$) calibrated against field data (Willgoose and Riley 1998). The reported calibrated n_1 values are lower than the minimum value of 1.0 listed in Hancock and Willgoose (2021) and Kirkby (1971); however, Hancock et al. (2019) note n_1 values as low as 0.5 in mining applications, ascribed to armoring.

Figure 18 shows cross sections sampled along south-to-north transects on the western face of the top slope from each of the scenarios summarized in Table 8, plotted on the same vertical scale. Rill and gully channel depth is magnified by vertical exaggeration of ~1300, which makes differences in gully incision across the scenarios more visible. Maximum incision occurs near the edge of the top slope in each case, while channels have merged into one-third to one-fourth the number of channels near the ridge line.

Erosion Modeling for the Clive DU PA

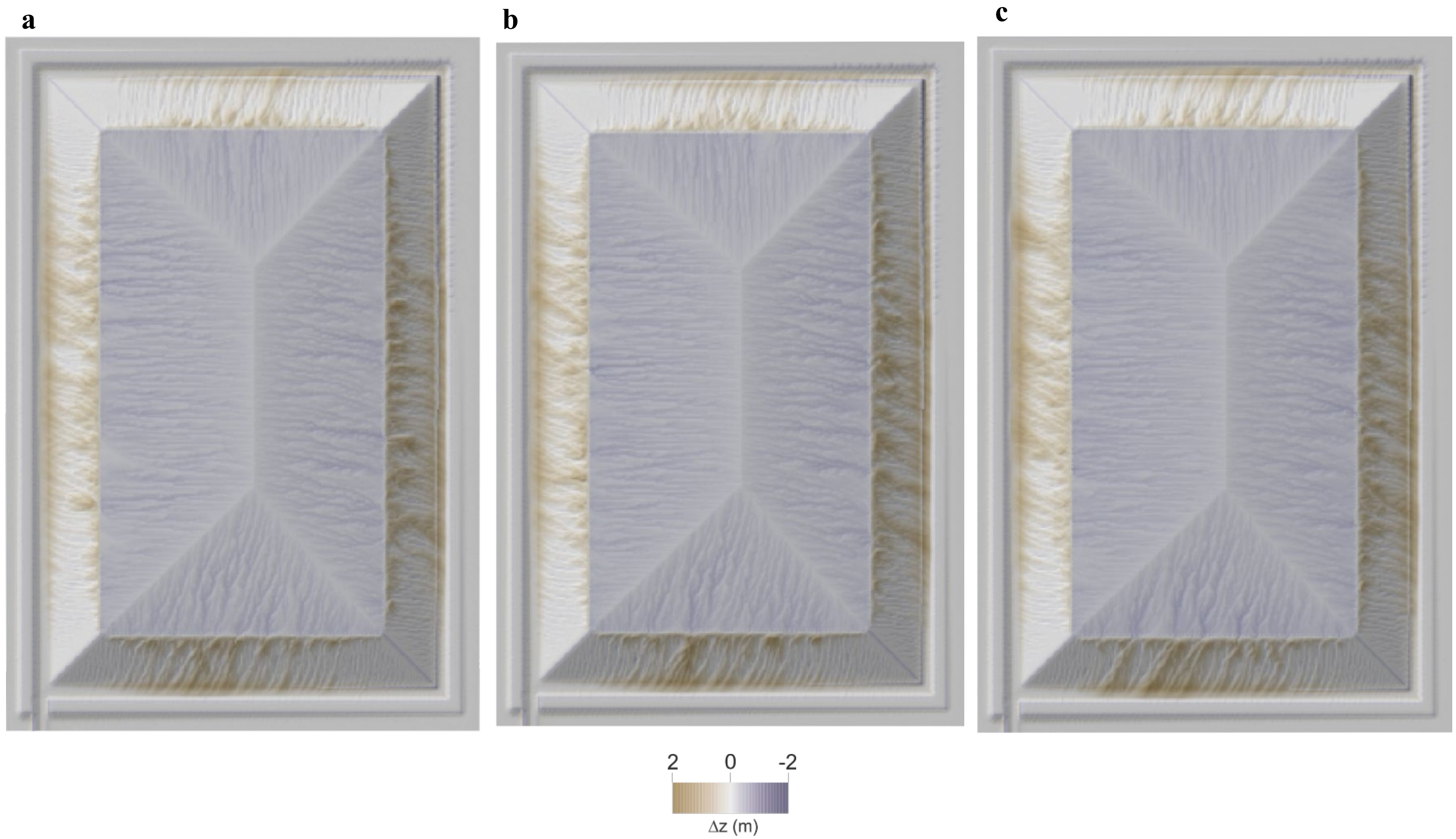

Figure 17. Plan view of SIBERIA modeling results at 10 ky for parameterizations using (a) 10th percentile of RHEM-predicted sediment yield (RSY$_{10th}$), (b) 50th percentile, (c) 90th percentile.

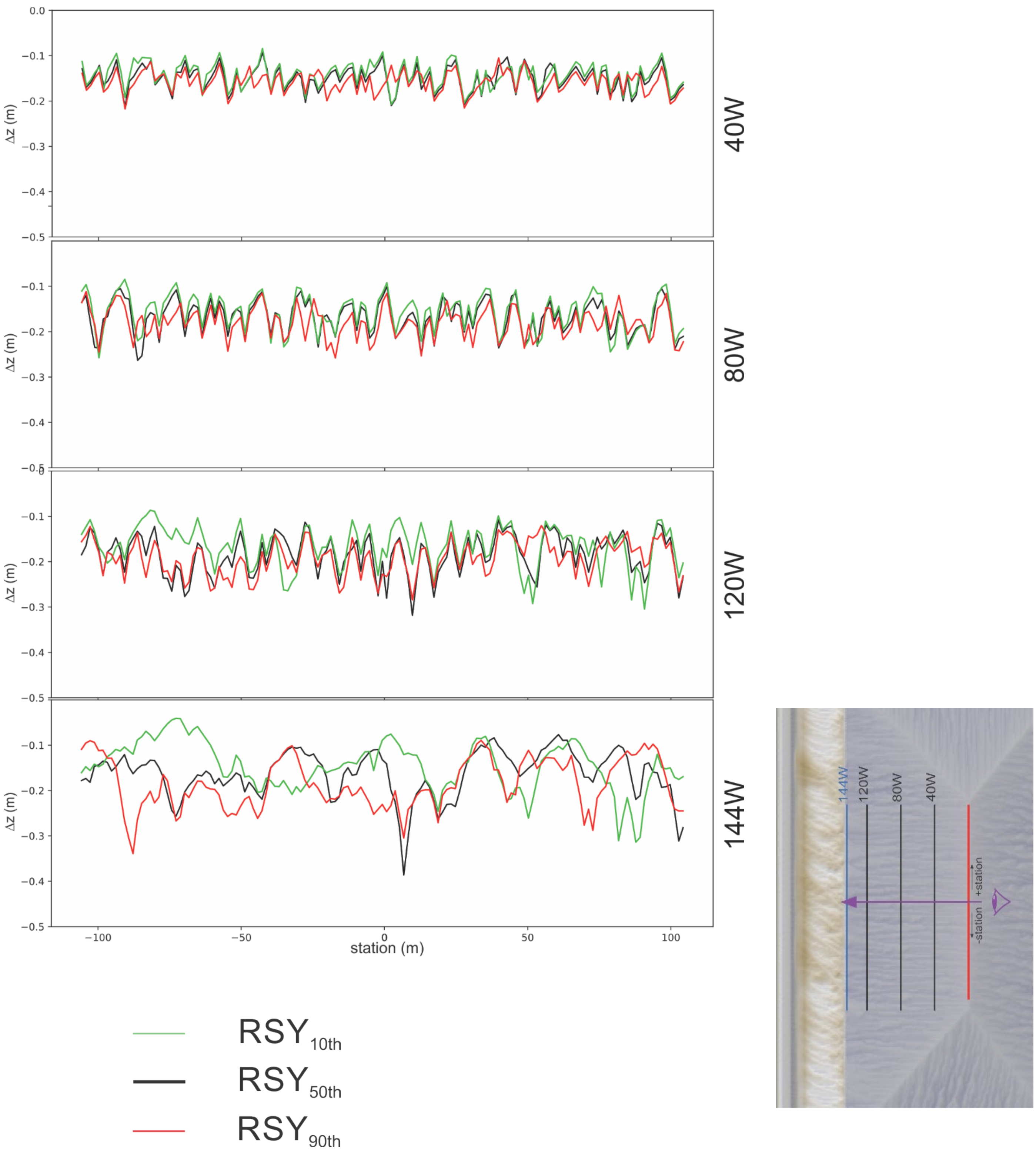

Figure 18. Cross sections of elevation sampled along the western side of the top slope, looking downslope toward the west. Vertical exaggeration is 1300.

4.4 Model Uncertainty

While other investigators have described limitations of the SIBERIA model for their particular site (Wilson et al. 2005), the primary model structure uncertainty for the SIBERIA simulations is the requirement of an effective geomorphic event to capture effects of a long-term time series of storms. Simulating sediment transport using SIBERIA requires that a representative storm be chosen as a forcing function that is applied on a uniform (usually annual) timestep. This effective geomorphic event is intended to represent the landscape forming effects of events that occur intermittently in nature. Simplifying transient climate to steady state may influence the results under some conditions. SIBERIA, however, is one of the few landscape evolution models that has been corroborated with experimental and field measurements.

The current implementation does not incorporate effects of armoring by admixed gravels as fine material is selectively eroded. The β_1 parameter would be expected to reduce through time. Hancock and Willgoose (2021) note that m_1 and n_1 are expected to change, with armor and soilscape evolution modeling suggesting periods of 200 – 500 years potentially needed to develop equilibrium surface grading on hillslopes.

Since site-specific sediment transport data are not available for the Clive site, a synthetic parameterization approach was used. In the absence of field data, RHEM was used to simulate rainfall-runoff plots with a range of vegetation and ground cover conditions from which calibration datasets could be generated. This does introduce uncertainty embedded within aspects of the modeling approach; however, the use of probability distributions to quantitatively depict uncertainty in key parameters makes the impact of this uncertainty in the key outputs explicit.

5.0 Implementation in the Clive DU PA Model

In the Clive DU PA Model, the area exposed by the gullies in each vertical layer is used in the dose calculations. The area of waste and cover layers below the surface exposed by gullies and the resulting fan of material from gully excavation of the disposal cell is the exposure area for gullies. The volume of the top slope removed by the lowest layer of gullies is used to calculate a concentration of radionuclides in the material that was removed. This concentration of material is assumed to be spread out over the exposure area of the gullies and fan and is used for dose calculations.

The results of the 1000 realizations described in section 4.3provide the proportion of the area of the cover or waste layer that has a gully bottom at the defined cell depths. A total of 15 depth increments are assigned to represent fractions of the cover and waste material layers and these correspond to the GoldSim cells used to represent the waste and cover column. A simple illustration of the gully output from SIBERIA with reference to area and volume used in the DU PA Model can be seen in the example illustration below (Figure 19). The 1000 realizations of the fraction of top slope area as a function of depth are stored in the GoldSim model as a lookup table, and are provided with the white paper *Model Parameters for the Clive DU PA Model* (Neptune 2021c). Each realization has an assigned index value ranging from 1 to 1000.

At the start of each GoldSim simulation, a value is drawn randomly from a discrete distribution of integers ranging from 1 to 1000. This number corresponds to the realization number and row in the lookup table that will be used for the gully area–depth distribution for that GoldSim simulation. The area exposed by gullies for each vertical cell layer is calculated by multiplying the fraction of gully area by the entire top slope area.

The exposure area of the fan is assumed to be the same as the exposure area of the gullies. The total exposed waste area is calculated by summing the area of the gullies and the area of the fan. These areas are used for exposure assessment in the DU PA Model.

Next the volume of waste removed by gullies in the lowest layer is calculated for each layer. The volume of material removed by the gully is estimated as the volume of every vertical layer multiplied by the fraction of area of each layer exposed by the gully as shown in Figure 19. It is assumed that the gully is a vertical excavation straight up from the bottom of the gully to the top. This assumption is conservative but makes the best estimate available given the level of spatial discretization of the SIBERIA modeling.

The volume removed by the gully bottom from each vertical layer is multiplied by the concentration of each radionuclide in that layer to get the concentration of radionuclides at the bottom of the gully. The activity mass of radionuclides per mass of soil removed is used in the dose calculations related to gully formation. Note that gully formation in the Clive DU PA Model does not change over time. It is assumed that simulated terrain at 10,000 years approximates the steady state of gullies, and gully areas and volumes are fixed for a realization at values derived from this output. In other words, the final state of gullying on the cover at the end of 10,000 years in the SIBERIA realizations becomes the constant state of gullying beginning at DU PA model year 1 and continuing throughout each DU PA realization.

5.1 Gully Geometry

The gully area and volume calculations described above are illustrated by the cartoon of a hypothetical cross section in Figure 19. The original terrain along this cross section was level with the topography of the Surface Layer, and at the end of the simulation the terrain has been eroded to the cross-section traced in black. As defined in a PA model, the Surface Layer is very thin compared to deeper layers. The width of each column is equal to the grid resolution of a two-dimensional erosion model. Simulated erosion has lowered the surface to the black profile. A depth threshold has been defined to distinguish gully erosion from sheet flow erosion.

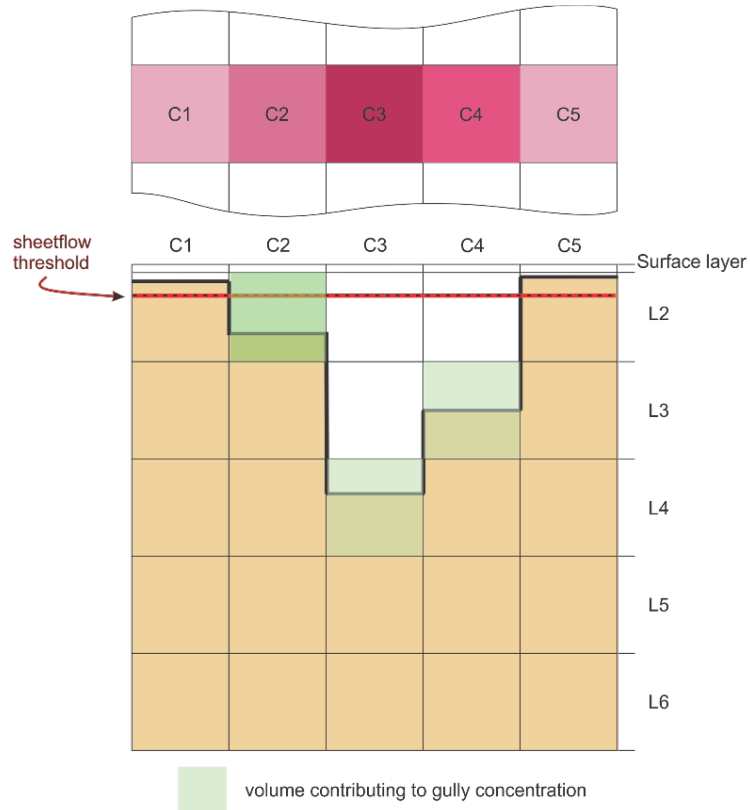

Figure 19. Cartoon illustrating the method used to describe gully erosion in the GoldSim model.

Along this cross section, columns C1 and C5 have not eroded below the sheet flow erosion threshold and are excluded from further consideration for a particular realization of the GoldSim model. In other words, columns C1 and C5 are assumed to be unimpacted by erosion. Columns C2, C3, and C4 are counted as gullies, with gully bottoms eroded into layers L2, L4, and L3, respectively. The entire thickness of the layer into which a gully bottom has eroded contributes to the volume of material used for calculating contaminant mobilization, indicated by green shading.

The threshold for sheet flow erosion was set to a depth of 0.05 m. The threshold was selected by visually interpreting the cross sections of simulated terrain developed at 10,000 years using the average cover conditions scenario. A section of the 80 m-downslope cross section of the west side of the central ridgeline of 14 is shown in Figure 19 with the 0.05 m depth threshold. This threshold falls just along the divides between gully channels, which suggests erosion was not directly due to channelized flow.

The uppermost layers defined in the Clive DU PA Model are shown in Table 9.

Table 9. Top six layer depths defined in the GoldSim model.

Layer	Thickness (m)	Layer bottom (m)
1	0.01	0.01
2	0.2948	0.3048
3	0.1524	0.4572
4	0.1524	0.6096
5	0.1524	0.7620
6	0.1524	0.9144

In Figure 20, model node centers are marked at elevation change values from the average cover conditions result with black circles. The symbols locate the layer to which the node is assigned in a given realization. In this case, erosion does not progress beyond the base of layer 2 along this segment of the cross-section.

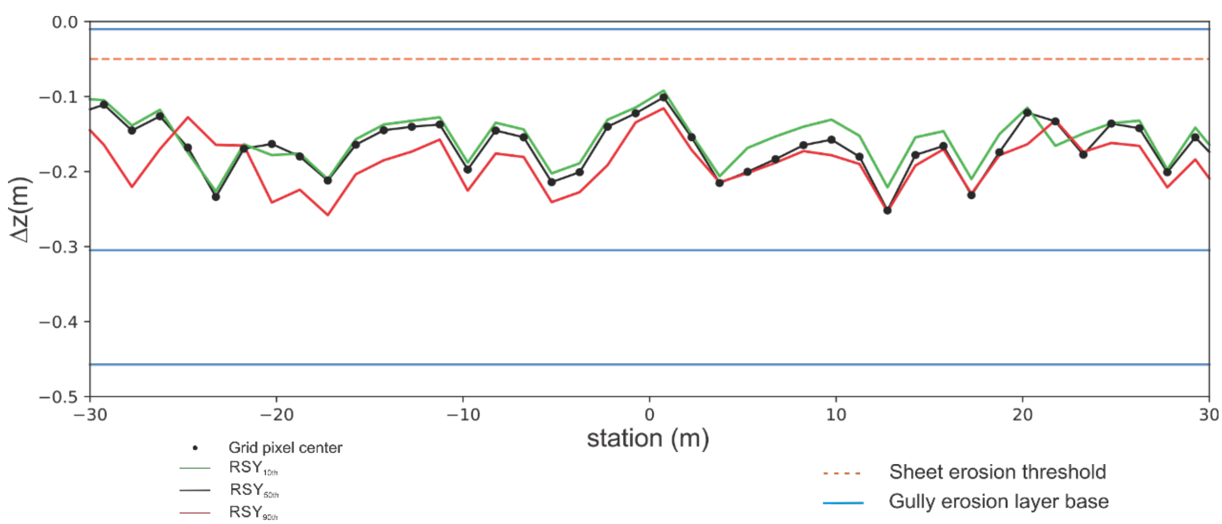

Figure 20. Detail of Figure 18 with sheet flow threshold and upper cover layers added. Vertical exaggeration is 120.

5.2 Spatial Distribution of Gully Erosion

Each row of the lookup table contains the proportionate area of the top slope eroded into each cover layer. The total number of model nodes which end in a given layer is divided by the total number of model nodes representing the top slope. There are 56,782 model nodes in the region defining the top slope, which is equivalent to an area of 12.8 ha on a 1.5 m model grid spacing. The calculation for a cover layer is performed by counting the number of model nodes which have eroded into the appropriate depth interval and dividing by 56,782.

Table 10 is an example, with entries for the average cover conditions and simulations using the 10th and 90th percentiles of the RSY values. No gullies end in Layer 1 since its 0.01 m depth is shallower than the sheet flow threshold. No gullies end in Layer 6 since the Frost Protection Layer inhibits erosion.

Table 10. Sample of GoldSim model gully erosion lookup table with entries corresponding to the 10th- and 90th-percentile values of RSY. A row derived from the average cover conditions has been added for context.

	L1	L2	L3	L4	L5	L6
10th pctile	0	0.999014	0.000986	0	0	0
median	0	0.9998345	0.001655	0	0	0
90th pctile	0	0.9995949	0.004051	0	0	0

Sheet erosion and rilling have lowered the top cover into the second layer with a minor amount of incision into essentially the third layer in these example cover condition scenarios. Incision into the fourth layer occurred in nine draws.

Overall statistics of the areal proportion of the cover top in each layer are shown in Table 11.

Table 11. Proportion (percent) by area of cover top eroded into cover layers across 1000 cover condition realizations.

	L0	L1	L2	L3	L4	L5	L6
count	1000	1000	1000	1000	1000	1000	1000
mean	0	3.5E-08	0.997205	0.002794	9.16E-07	0	0
std	0	1.11E-06	0.001607	0.001605	1.41E-05	0	0
0%	0	0	0.989345	0.000106	0	0	0
25%	0	0	0.996333	0.001603	0	0	0
50%	0	0	0.997446	0.002554	0	0	0
75%	0	0	0.998397	0.003667	0	0	0
100%	0	0.000035	0.999894	0.010655	0.00037	0	0

Figure 21 is a graphic representation of incision into cover layers of the top slope at 10,000 years across the 1000 RSY erosion scenarios. In this figure, nine scenarios are predicted to incise into Layer 4, the lower half of the Evaporative Zone Layer.

The spatial distribution of layer assignments after the 10,000 y simulation using simulations RSY_{10th}, RSY_{50th}, and RSY_{90th} are shown as maps in Figure 22.

Erosion Modeling for the Clive DU PA

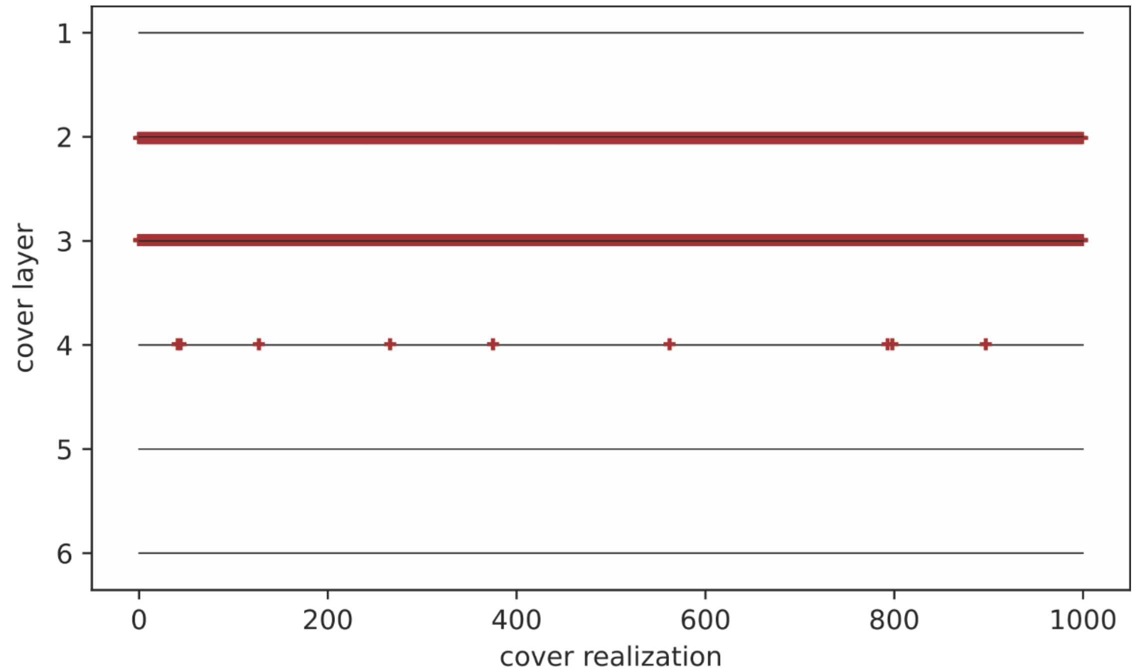

Figure 21. Incision into cover layer on top slope for each RSY quantile, indicated by "•". Presence of "•" only indicates incision into the layer and does not reflect areal or vertical extent of incision into a layer.

Erosion Modeling for the Clive DU PA

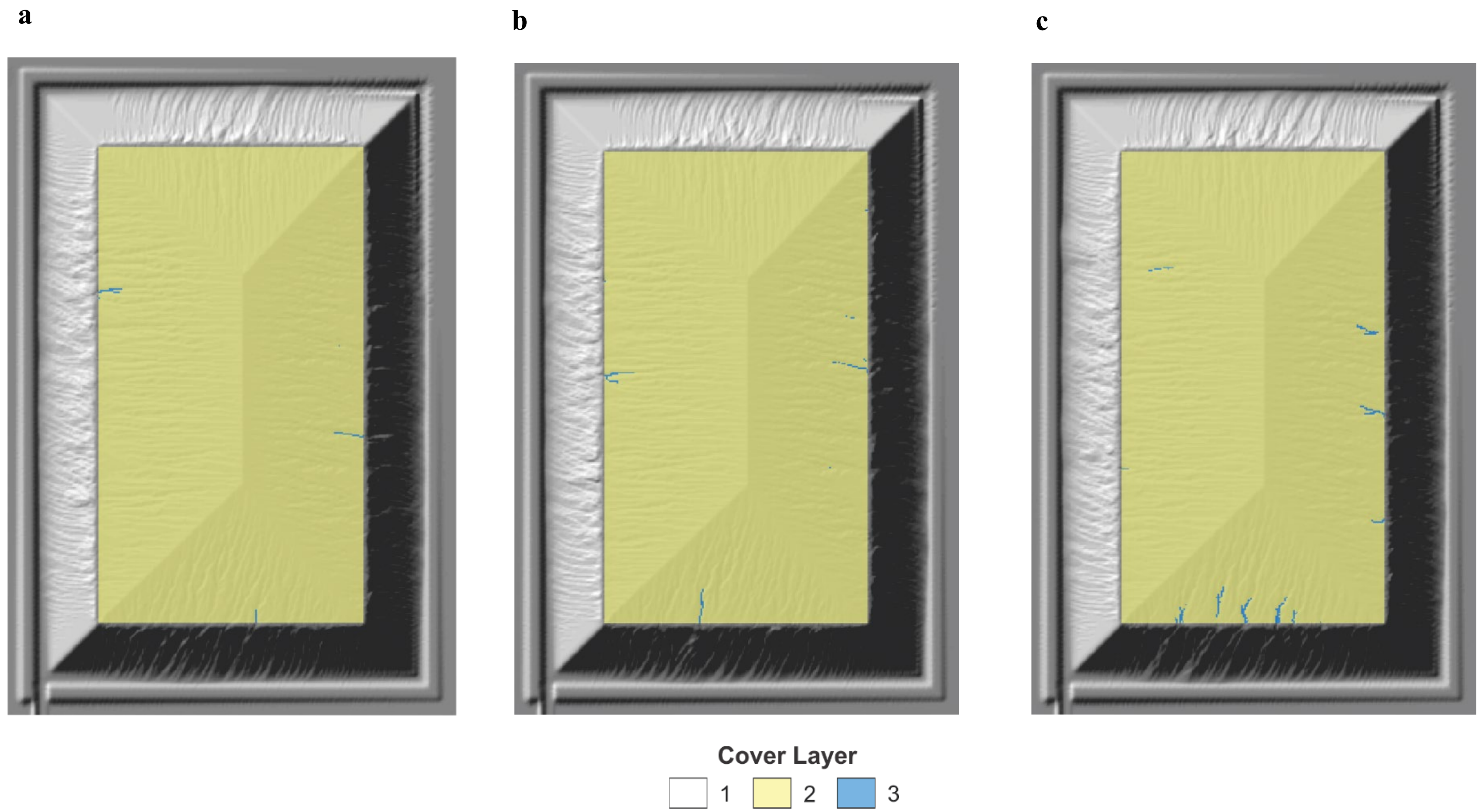

Figure 22. Maps of cover layer assignments based on erosion at 10 ky for simulations parameterized as (a) RSY_{10th}, (b) RSY_{50th}, and (c) RSY_{90th}.

6.0 Conclusions

A SIBERIA landscape evolution model of the proposed Federal Cell design shows minimal erosion in the next 10,000 years. Across the 1000 simulations, more than ninety-nine percent of the area of the top slope does not erode below the Surface Layer (Layer 2). The lower half of the Evaporative Zone Layer (Layer 4) remains intact in all but nine of the simulations. These results indicate that the Frost Protection Layer is unlikely to be breached within 10,000 years.

These results are conservative with respect to cover degradation since the value of β_1 is held steady over 10,000 years, neglecting the expected effect of armoring as fine particles are selectively eroded.

If the impact of aeolian deposition is considered, then the effects of erosion are further reduced. In fact, previous estimates of aeolian deposition rates are much greater than erosion rates over the same period. While both of these processes occur in preferential patterns, it is still unlikely that erosion will be a dominant driver of surface elevation over the next 10,000 years.

Since SIBERIA does not account for aggrading conditions of aeolian deposition (i.e., particles moved to the domain by wind), it is intrinsically conservative with respect to depicting the potential for the cover to degrade. Based on previous site-specific field studies, the rate of aeolian deposition is estimated to be approximately 55 cm per 10,000 years with an uncertainty range of approximately 45 – 66 cm per 10,000 years (Neptune 2021b).

7.0 References

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Appendix A: SIBERIA Modeling Domain

Within the Clive site, an ET cover has been proposed over the Federal Cell. Design drawings, such as Figure 23, are found in Energy*Solutions* (2021). The relatively flat top slopes of this cover consist of a gravel-amended native soil to enhance evapotranspiration, while the steeper side slopes are modeled with a riprap surface to improve resistance to erosion. This work focuses on potential erosion over long time periods on the revised cover design.

The top surface of the SIBERIA domain was constructed according to this design document (Energy*Solutions* 2021) at 1.5 m resolution. An additional ~30 m buffer is added around the base of the cover. This is comprised of natural grade material with roads, ditches, and other land surface characteristics included in the design.

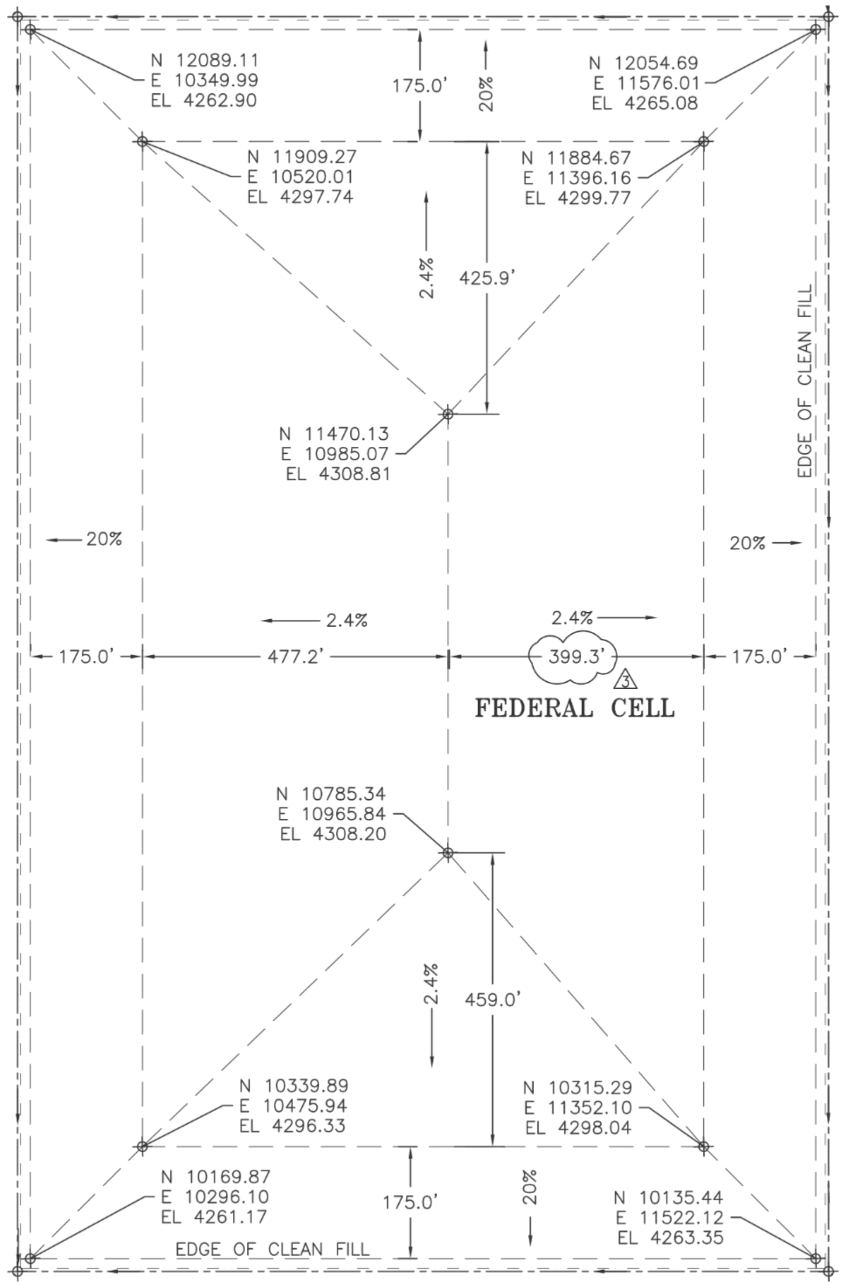

Figure 23. Revised (2021) Federal Cell footprint (from drawing 14004-C01, rev 2, Energy*Solutions* (2021)).

Capability to model different materials in three dimensions was introduced as a "layers" model in SIBERIA version 8.33. In this version of SIBERIA, the materials within the 3D domain of the cover are defined by varying the β_1 parameter. This β_1 parameter is used to define the ET cover (top 61 cm [2 ft] of the top slopes), waste, and natural soil conditions around the base of the Federal Cell. The bedrock, riprap, Frost Protection Layer, and engineered features outside the Federal Cell (such as roads or ditches) are set to $0.01\beta_1$, 1% of the value for β_1. A separate test model using the Rangeland Hillslope Erosion Model (RHEM) results in no erosion on the riprap-covered side slopes of the Federal Cell; however, no erosion at all over the full 10,000 years of the 3D landscape evolution model in SIBERIA is deemed unreasonable and non-physical, so a 1:100 scaling factor for β_1 is used instead of setting erosion to 0 in modeled layers besides the ET cover and natural ground conditions following Wilson et al. (2005) and Shobe et al. (2017). Thicknesses of the side slopes, Frost Protection Layer, and ET cover are modeled exactly according to the cover design criteria.

Appendix B: Coverdraws Table

The file “table_for_Erosion_WP_Appendix_B_with_cover_draws.pdf” presents the 1000 realizations of cover conditions and the resulting model parameters and predictions by RHEM and SIBERIA.

The columns are:

Draw:	serial number in set of realizations
Bunch Grass:	percent foliar cover, bunch grass (BG)
Forb:	percent foliar cover, forbes (F)
Shrub:	percent foliar cover, shrubs (S)
Bare:	percent foliar cover, bare; dummy variable for Dirichlet distribution
Basal Stem:	percent ground cover, plant basal stems (B)
Litter:	percent ground cover, litter (L)
Biocrust:	percent ground cover, biological crust (BC)
SY (RHEM):	sediment yield predicted by RHEM for cover conditions in realization averaged across slopes at 120 m (T ha^{-1} y^{-1})
β_1:	calibrated value for β_1 parameter
m_1:	calibrated value for m_1 parameter
n_1:	calibrated value for n_1 parameter
SY (SIBERIA):	sediment yield predicted by SIBERIA across the top slope for cover conditions in realization (T ha^{-1} y^{-1})
Alpha:	ratio $(m_1 – 1)/n_1$

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_I'	SY (SIBERIA)
0	4.41	5.50	30.02	60.06	13.76	5.46	7.42	73.37	0.154	1.012E-05	-0.147
1	5.30	6.16	24.51	64.04	15.79	4.44	9.61	70.16	0.159	1.044E-05	-0.151
2	3.45	3.62	25.20	67.73	15.45	9.59	7.06	67.90	0.159	1.043E-05	-0.152
3	6.71	3.21	17.25	72.83	14.72	3.98	11.64	69.66	0.169	1.110E-05	-0.158
4	4.05	1.97	23.07	70.91	16.37	8.18	5.20	70.25	0.171	1.123E-05	-0.159
5	6.02	6.19	23.64	64.16	14.83	7.08	9.00	69.08	0.154	1.013E-05	-0.147
6	4.20	4.83	19.51	71.46	14.37	7.67	7.43	70.52	0.166	1.092E-05	-0.156
7	2.52	5.17	27.40	64.90	13.97	11.66	6.47	67.90	0.150	9.884E-06	-0.144
8	6.62	3.50	22.98	66.90	16.14	8.86	7.24	67.76	0.159	1.046E-05	-0.151
9	14.56	7.38	17.92	60.14	15.68	5.24	9.13	69.95	0.152	1.000E-05	-0.144
10	13.48	2.31	23.25	60.95	14.65	9.51	4.09	71.75	0.155	1.015E-05	-0.149
11	4.88	7.71	29.60	57.82	15.79	6.56	13.22	64.43	0.140	9.181E-06	-0.137
12	4.56	5.05	34.64	55.76	15.31	7.42	7.69	69.58	0.145	9.515E-06	-0.138
13	6.58	5.29	17.94	70.18	14.06	8.02	7.15	70.77	0.164	1.079E-05	-0.154
14	3.65	1.54	27.99	66.82	15.83	7.49	5.69	70.99	0.165	1.083E-05	-0.154
15	9.55	5.35	28.16	56.94	15.63	9.56	12.71	62.10	0.134	8.830E-06	-0.130
16	4.02	5.51	24.29	66.17	14.27	9.39	13.34	63.00	0.145	9.494E-06	-0.140
17	5.98	10.69	21.04	62.30	13.85	9.18	8.59	68.38	0.147	9.669E-06	-0.142
18	3.45	4.43	23.83	68.29	15.80	16.97	9.17	58.06	0.141	9.271E-06	-0.137
19	6.15	4.17	29.83	59.85	13.97	6.46	16.04	63.53	0.137	9.018E-06	-0.132
20	5.28	3.66	27.04	64.02	14.11	11.67	6.29	67.93	0.150	9.850E-06	-0.143
21	6.90	5.80	29.11	58.20	13.71	13.81	8.44	64.04	0.134	8.823E-06	-0.130
22	4.52	9.44	22.74	63.29	14.27	11.03	10.16	64.54	0.143	9.380E-06	-0.136
23	5.91	3.15	22.19	68.75	16.08	11.96	7.31	64.65	0.155	1.021E-05	-0.147
24	6.76	3.32	23.81	66.11	14.40	5.81	5.03	74.76	0.167	1.098E-05	-0.157
25	6.95	2.15	20.62	70.28	16.25	6.79	9.55	67.41	0.164	1.080E-05	-0.156
26	9.00	3.65	33.23	54.12	14.61	5.08	11.68	68.63	0.140	9.196E-06	-0.135
27	8.40	3.52	17.65	70.43	15.09	11.36	9.36	64.19	0.155	1.016E-05	-0.148
28	5.77	5.40	24.03	64.80	15.98	7.35	6.62	70.06	0.160	1.051E-05	-0.151
29	7.94	4.62	25.44	62.00	16.13	7.57	7.38	68.93	0.154	1.014E-05	-0.147
30	8.85	8.30	22.62	60.23	15.89	7.77	7.27	69.08	0.151	9.918E-06	-0.145
31	3.12	5.96	31.39	59.53	15.21	10.42	5.67	68.70	0.148	9.701E-06	-0.141
32	6.50	4.32	25.38	63.81	13.87	5.86	5.69	74.58	0.162	1.064E-05	-0.153
33	9.52	3.12	22.15	65.21	14.75	8.68	5.98	70.59	0.159	1.043E-05	-0.150
34	3.68	4.23	28.61	63.49	13.96	11.57	4.61	69.85	0.152	9.997E-06	-0.146
35	1.25	4.35	25.13	69.26	14.49	12.74	6.94	65.83	0.153	1.007E-05	-0.148
36	4.37	3.61	23.55	68.47	16.31	8.20	9.95	65.54	0.158	1.037E-05	-0.150
37	9.60	1.18	25.20	64.02	14.41	5.21	10.85	69.52	0.155	1.019E-05	-0.148
38	2.80	4.68	25.07	67.45	15.43	8.50	5.36	70.71	0.163	1.074E-05	-0.155
39	9.10	8.65	19.69	62.56	14.37	7.36	5.19	73.08	0.158	1.036E-05	-0.149
40	6.35	7.80	25.27	60.57	15.29	10.44	7.63	66.64	0.145	9.558E-06	-0.140
41	3.28	3.22	35.15	58.34	15.81	7.28	6.30	70.61	0.152	9.957E-06	-0.143
42	8.40	4.60	25.58	61.42	14.25	8.10	3.97	73.69	0.157	1.034E-05	-0.150
43	5.83	2.82	27.86	63.49	13.56	12.12	2.99	71.32	0.154	1.012E-05	-0.148
44	5.14	3.74	17.21	73.90	16.02	8.27	8.84	66.87	0.167	1.099E-05	-0.158
45	8.87	5.42	24.71	61.00	15.92	6.85	9.06	68.17	0.151	9.931E-06	-0.145
46	7.31	7.66	25.39	59.64	15.59	9.76	7.05	67.59	0.147	9.635E-06	-0.142
47	9.69	2.80	19.16	68.34	15.92	11.29	8.69	64.10	0.154	1.010E-05	-0.149
48	4.67	5.26	24.74	65.33	15.41	4.23	7.12	73.24	0.166	1.089E-05	-0.156
49	14.86	2.92	30.28	51.94	13.64	5.51	6.29	74.56	0.145	9.499E-06	-0.140
50	6.20	7.53	21.04	65.23	13.94	9.25	4.98	71.83	0.158	1.038E-05	-0.150
51	5.77	8.68	24.72	60.83	16.31	10.95	10.83	61.91	0.140	9.190E-06	-0.136
52	2.76	2.80	21.37	73.06	14.74	6.44	9.61	69.21	0.167	1.099E-05	-0.155
53	7.56	5.11	30.79	56.54	14.32	6.09	6.69	72.90	0.150	9.829E-06	-0.143
54	9.76	3.58	20.94	65.71	15.47	9.34	10.96	64.23	0.150	9.828E-06	-0.144
55	4.50	4.06	22.44	69.00	15.45	7.41	11.73	65.42	0.156	1.026E-05	-0.146
56	3.76	5.99	27.12	63.13	15.41	5.74	15.00	63.85	0.145	9.538E-06	-0.141
57	10.78	5.01	23.24	60.97	16.32	6.38	9.99	67.31	0.151	9.898E-06	-0.143
58	3.60	4.59	23.63	68.17	14.26	11.53	10.85	63.37	0.148	9.692E-06	-0.141
59	5.24	2.94	21.80	70.02	14.58	9.64	5.51	70.27	0.164	1.079E-05	-0.154
60	8.86	7.78	17.60	65.76	15.83	5.54	5.40	73.23	0.167	1.095E-05	-0.155
61	8.07	4.63	25.40	61.90	14.51	7.69	6.79	71.01	0.154	1.012E-05	-0.146
62	8.35	5.13	21.06	65.45	16.48	8.87	5.52	69.12	0.160	1.053E-05	-0.152
63	6.72	4.62	25.39	63.28	15.40	5.50	13.87	65.23	0.148	9.731E-06	-0.142
64	10.10	7.09	16.94	65.88	14.52	13.14	8.78	63.57	0.145	9.541E-06	-0.139
65	7.96	4.78	19.08	68.18	15.34	12.46	7.46	64.73	0.153	1.004E-05	-0.148
66	2.21	11.33	18.37	68.10	13.82	11.37	6.94	67.87	0.153	1.008E-05	-0.147
67	4.22	3.54	20.99	71.24	15.42	12.22	6.24	66.12	0.159	1.047E-05	-0.150
68	3.88	3.04	26.70	66.38	13.83	9.14	4.43	72.60	0.161	1.061E-05	-0.153
69	9.75	8.43	24.54	57.28	15.86	10.11	7.91	66.12	0.141	9.292E-06	-0.135
70	8.88	2.86	21.90	66.36	13.79	10.44	7.39	68.38	0.154	1.010E-05	-0.148
71	10.92	7.90	20.05	61.13	14.95	12.53	5.91	66.60	0.145	9.540E-06	-0.139
72	4.99	5.63	28.20	61.19	14.45	7.64	7.34	70.57	0.152	9.984E-06	-0.146
73	2.91	7.05	24.93	65.12	15.07	9.08	8.35	67.50	0.153	1.004E-05	-0.146
74	6.79	2.69	19.53	70.99	15.58	13.35	5.33	65.74	0.159	1.045E-05	-0.150

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
75	4.08	6.19	22.98	66.75	14.43	8.23	5.61	71.73	0.162	1.062E-05	-0.152
76	4.82	2.54	21.83	70.82	15.13	7.04	9.59	68.24	0.164	1.075E-05	-0.154
77	5.09	7.51	23.83	63.58	16.04	7.21	5.94	70.81	0.159	1.047E-05	-0.150
78	2.90	4.61	21.56	70.93	14.67	11.09	11.65	62.59	0.151	9.892E-06	-0.144
79	2.97	4.98	23.73	68.32	16.23	3.82	11.48	68.48	0.163	1.073E-05	-0.153
80	3.34	5.98	20.23	70.45	16.16	6.34	9.28	68.23	0.165	1.085E-05	-0.156
81	2.77	2.03	24.81	70.39	14.60	10.17	9.92	65.31	0.155	1.020E-05	-0.149
82	2.18	8.93	25.14	63.75	15.39	4.76	8.19	71.66	0.160	1.049E-05	-0.151
83	4.34	2.23	24.11	69.31	16.27	7.20	6.20	70.32	0.168	1.107E-05	-0.158
84	6.63	4.56	27.62	61.18	16.13	3.48	3.72	76.66	0.168	1.104E-05	-0.157
85	5.89	7.98	23.09	63.05	16.43	9.69	7.71	66.17	0.151	9.903E-06	-0.145
86	5.15	12.63	17.88	64.34	14.49	6.18	4.73	74.60	0.163	1.069E-05	-0.153
87	4.91	2.72	24.36	68.00	13.89	6.96	6.37	72.78	0.165	1.084E-05	-0.155
88	4.99	2.35	19.33	73.34	14.34	6.08	6.98	72.60	0.174	1.141E-05	-0.159
89	6.86	1.80	18.39	72.95	13.77	7.88	4.47	73.88	0.174	1.143E-05	-0.161
90	5.66	4.00	27.42	62.92	13.76	10.89	8.89	66.46	0.145	9.535E-06	-0.139
91	4.78	3.57	27.36	64.29	16.33	6.01	12.43	65.22	0.152	9.968E-06	-0.147
92	6.25	3.15	18.65	71.95	16.22	11.41	9.18	63.19	0.158	1.036E-05	-0.150
93	4.75	9.39	25.29	60.56	14.17	9.38	6.94	69.50	0.148	9.704E-06	-0.143
94	5.32	6.33	17.89	70.45	16.36	8.48	12.08	63.09	0.156	1.023E-05	-0.148
95	6.91	4.30	16.77	72.02	16.42	5.90	5.92	71.76	0.176	1.155E-05	-0.164
96	1.62	4.32	18.65	75.41	15.72	7.63	9.45	67.20	0.169	1.109E-05	-0.156
97	3.69	3.18	19.62	73.51	14.83	10.57	6.95	67.66	0.164	1.080E-05	-0.155
98	2.07	3.51	26.83	67.58	13.76	7.22	5.69	73.33	0.165	1.082E-05	-0.154
99	3.74	5.95	24.38	65.93	16.47	7.33	5.31	70.89	0.164	1.079E-05	-0.155
100	6.81	3.49	26.90	62.80	13.97	4.93	11.52	69.57	0.152	9.984E-06	-0.146
101	5.20	8.44	23.81	62.54	14.48	5.29	9.13	71.10	0.155	1.017E-05	-0.148
102	6.90	1.53	23.13	68.45	15.90	10.50	2.96	70.64	0.166	1.094E-05	-0.156
103	7.81	3.15	27.90	61.14	14.01	7.30	10.63	68.06	0.147	9.649E-06	-0.141
104	2.05	4.84	21.58	71.54	14.42	8.32	7.12	70.14	0.165	1.086E-05	-0.156
105	6.97	8.93	30.29	53.82	14.61	11.48	7.11	66.81	0.135	8.880E-06	-0.132
106	7.37	4.80	28.71	59.13	13.99	11.66	8.12	66.23	0.140	9.206E-06	-0.136
107	5.59	5.79	24.01	64.61	13.68	5.21	9.70	71.42	0.157	1.030E-05	-0.148
108	4.91	4.74	22.51	67.83	14.17	9.68	8.62	67.53	0.155	1.016E-05	-0.148
109	4.17	5.65	21.95	68.24	14.46	10.91	6.77	67.87	0.156	1.027E-05	-0.150
110	4.67	5.18	28.67	61.48	15.37	7.48	7.65	69.50	0.153	1.003E-05	-0.144
111	7.59	4.33	25.14	62.94	14.43	8.24	7.48	69.85	0.153	1.006E-05	-0.145
112	4.31	10.58	22.27	62.84	14.13	14.88	4.58	66.40	0.144	9.483E-06	-0.140
113	2.48	3.84	25.35	68.33	14.72	10.35	8.65	66.28	0.154	1.013E-05	-0.145
114	4.05	8.32	18.61	69.02	13.52	8.85	5.36	72.27	0.163	1.072E-05	-0.154
115	4.85	8.61	29.09	57.46	16.49	6.19	18.57	58.75	0.131	8.633E-06	-0.129
116	3.22	3.69	22.36	70.73	16.38	9.97	5.39	68.26	0.166	1.091E-05	-0.153
117	5.65	6.10	26.60	61.64	16.04	7.28	8.39	68.28	0.152	1.000E-05	-0.145
118	8.30	6.97	15.96	68.77	15.37	9.64	10.25	64.73	0.154	1.010E-05	-0.146
119	5.99	8.86	19.88	65.27	14.29	8.83	8.54	68.34	0.152	1.002E-05	-0.146
120	4.01	6.65	25.10	64.24	13.98	8.03	7.49	70.51	0.155	1.015E-05	-0.149
121	4.65	3.88	22.94	68.54	15.84	12.26	12.46	59.44	0.145	9.516E-06	-0.139
122	4.01	3.30	35.14	57.56	16.43	8.92	7.87	66.78	0.145	9.525E-06	-0.141
123	5.45	11.59	19.24	63.72	14.15	7.75	7.49	70.61	0.154	1.011E-05	-0.147
124	3.12	2.69	20.38	73.81	15.01	6.23	5.14	73.62	0.178	1.171E-05	-0.163
125	5.96	5.93	24.10	64.01	13.56	8.53	9.08	68.83	0.150	9.882E-06	-0.145
126	10.05	3.94	24.05	61.96	13.51	9.22	4.05	73.22	0.156	1.022E-05	-0.149
127	3.62	5.11	25.99	65.28	15.17	9.66	8.55	66.62	0.152	9.983E-06	-0.145
128	6.58	9.55	17.61	66.26	15.33	12.88	6.98	64.81	0.149	9.811E-06	-0.142
129	2.82	3.96	22.34	70.88	15.55	7.17	10.19	67.09	0.162	1.065E-05	-0.153
130	3.75	5.52	20.03	70.70	13.99	7.79	7.73	70.49	0.164	1.077E-05	-0.154
131	11.58	5.13	24.66	58.62	13.90	7.39	9.65	69.05	0.145	9.508E-06	-0.140
132	2.69	5.44	21.19	70.68	15.62	6.66	5.55	72.16	0.172	1.129E-05	-0.161
133	5.24	5.66	26.45	62.65	14.37	5.97	7.92	71.73	0.156	1.026E-05	-0.147
134	3.16	6.33	29.34	61.17	14.79	6.95	7.41	70.85	0.153	1.006E-05	-0.146
135	2.42	8.57	17.51	71.50	13.94	4.08	7.48	74.51	0.173	1.135E-05	-0.160
136	5.58	5.29	17.33	71.81	16.26	15.55	5.34	62.85	0.156	1.023E-05	-0.146
137	9.54	3.68	26.40	60.38	15.14	6.12	10.29	68.44	0.149	9.806E-06	-0.145
138	6.92	6.25	24.76	62.06	14.18	6.13	3.69	76.00	0.162	1.067E-05	-0.153
139	7.92	1.79	24.75	65.55	14.74	7.93	8.67	68.65	0.156	1.024E-05	-0.148
140	2.87	6.87	24.54	65.72	15.23	11.25	7.11	66.41	0.152	9.978E-06	-0.146
141	5.19	9.80	20.49	64.53	16.46	14.31	4.12	65.12	0.150	9.854E-06	-0.144
142	8.04	5.40	20.69	65.88	15.20	13.30	10.06	61.43	0.143	9.399E-06	-0.139
143	2.51	6.29	26.03	65.17	15.19	4.91	9.92	69.99	0.159	1.042E-05	-0.148
144	4.75	6.23	24.21	64.80	14.14	4.98	12.81	68.07	0.152	9.986E-06	-0.145
145	3.46	3.74	20.51	72.29	14.06	9.66	5.79	70.49	0.166	1.091E-05	-0.156
146	4.86	2.50	22.28	70.36	15.95	5.63	6.40	72.02	0.173	1.135E-05	-0.162
147	7.36	4.12	25.37	63.15	13.98	9.16	8.78	68.08	0.149	9.801E-06	-0.144
148	3.00	2.08	23.23	71.69	16.21	7.23	11.09	65.46	0.162	1.065E-05	-0.153
149	6.19	4.79	24.29	64.72	16.20	6.70	8.18	68.92	0.159	1.042E-05	-0.150

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
150	4.31	4.41	24.91	66.37	14.24	9.87	6.74	69.16	0.156	1.025E-05	-0.148
151	7.84	5.23	28.94	57.99	15.73	9.33	6.11	68.83	0.147	9.675E-06	-0.142
152	7.59	6.50	24.72	61.19	13.68	5.44	10.96	69.92	0.149	9.803E-06	-0.146
153	4.13	7.07	25.90	62.89	16.27	6.69	13.20	63.83	0.147	9.633E-06	-0.141
154	5.27	3.69	25.25	65.79	15.68	7.91	7.58	68.82	0.158	1.041E-05	-0.150
155	8.44	5.75	28.07	57.74	14.96	10.93	5.11	69.00	0.145	9.539E-06	-0.140
156	7.22	4.62	24.40	63.76	13.81	15.04	5.19	65.96	0.145	9.512E-06	-0.141
157	5.96	4.40	26.92	62.72	14.38	12.71	6.58	66.33	0.146	9.573E-06	-0.142
158	11.88	3.08	22.91	62.14	15.11	7.06	7.65	70.18	0.155	1.016E-05	-0.148
159	8.82	2.78	29.53	58.87	15.27	8.80	4.70	71.23	0.152	9.991E-06	-0.145
160	6.54	5.31	22.60	65.55	15.21	13.42	9.96	61.40	0.143	9.371E-06	-0.140
161	5.40	5.10	24.96	64.53	15.40	10.88	3.58	70.14	0.158	1.037E-05	-0.149
162	4.49	4.04	21.97	69.51	13.80	9.67	11.90	64.64	0.151	9.898E-06	-0.143
163	9.38	2.81	20.57	67.24	15.80	8.85	7.61	67.74	0.159	1.045E-05	-0.151
164	3.71	5.22	19.70	71.36	15.47	10.45	5.31	68.77	0.165	1.085E-05	-0.155
165	11.50	2.44	23.69	62.37	15.84	6.27	4.12	73.77	0.164	1.075E-05	-0.153
166	6.79	3.97	26.58	62.66	15.89	8.66	9.83	65.62	0.149	9.769E-06	-0.142
167	1.25	3.76	23.80	71.19	14.40	5.28	12.78	67.54	0.160	1.054E-05	-0.152
168	6.47	7.69	23.21	62.64	15.52	9.84	11.45	63.19	0.143	9.389E-06	-0.138
169	8.95	10.84	19.38	60.82	14.64	9.55	9.55	66.26	0.143	9.417E-06	-0.139
170	7.47	5.14	19.73	67.65	13.67	11.67	5.80	68.86	0.155	1.022E-05	-0.148
171	3.10	5.67	22.69	68.54	15.57	8.67	5.60	70.15	0.164	1.079E-05	-0.154
172	4.09	7.18	22.46	66.27	14.45	9.70	7.30	68.54	0.155	1.016E-05	-0.148
173	5.23	2.20	28.51	64.06	14.60	9.95	3.54	71.92	0.159	1.044E-05	-0.153
174	3.29	7.64	22.78	66.30	15.03	5.93	7.99	71.06	0.161	1.060E-05	-0.150
175	3.99	5.99	30.74	59.28	14.70	11.15	8.98	65.16	0.140	9.194E-06	-0.137
176	5.31	3.25	18.29	73.15	14.21	8.82	5.05	71.91	0.171	1.123E-05	-0.160
177	5.33	6.60	29.99	58.08	14.22	4.60	15.44	65.73	0.139	9.148E-06	-0.135
178	6.41	6.80	29.53	57.27	16.42	6.03	6.42	71.13	0.152	9.978E-06	-0.145
179	3.28	2.41	33.40	60.91	13.61	9.36	6.82	70.21	0.149	9.790E-06	-0.143
180	3.76	6.20	21.82	68.21	14.53	7.67	8.03	69.77	0.160	1.054E-05	-0.152
181	6.72	4.39	30.19	58.70	15.30	11.26	9.07	64.37	0.140	9.170E-06	-0.136
182	6.14	7.62	21.28	64.96	15.71	6.08	8.43	69.77	0.159	1.043E-05	-0.149
183	3.33	2.06	32.29	62.32	13.85	10.03	5.89	70.22	0.151	9.948E-06	-0.144
184	6.45	7.05	19.37	67.13	14.86	10.46	6.13	68.55	0.157	1.031E-05	-0.148
185	5.86	4.93	27.21	62.00	14.29	11.67	7.19	66.85	0.146	9.570E-06	-0.141
186	3.98	7.73	29.04	59.25	15.98	10.59	8.49	64.94	0.142	9.355E-06	-0.139
187	4.72	3.11	29.06	63.11	15.02	6.36	4.61	74.02	0.163	1.070E-05	-0.154
188	5.43	8.62	25.22	60.74	16.47	6.41	5.64	71.48	0.158	1.035E-05	-0.150
189	8.94	3.24	27.74	60.08	15.31	6.38	6.72	71.60	0.155	1.017E-05	-0.146
190	3.62	8.89	23.41	64.08	13.72	5.85	6.44	73.99	0.160	1.052E-05	-0.151
191	9.41	6.09	20.35	64.15	13.55	6.92	3.23	76.30	0.164	1.080E-05	-0.154
192	4.83	3.74	23.89	67.54	14.27	8.84	3.99	72.90	0.165	1.083E-05	-0.156
193	10.68	1.88	26.42	61.02	15.29	9.48	6.01	69.22	0.152	9.961E-06	-0.145
194	7.05	2.97	29.24	60.74	16.17	8.30	7.46	68.07	0.151	9.936E-06	-0.144
195	6.41	3.45	29.30	60.84	14.06	8.92	3.93	73.09	0.155	1.019E-05	-0.148
196	2.62	3.01	25.27	69.11	14.80	10.73	5.52	68.96	0.160	1.054E-05	-0.152
197	7.92	4.86	25.13	62.09	13.72	5.06	9.56	71.67	0.154	1.012E-05	-0.146
198	1.75	5.22	25.30	67.72	16.26	10.39	4.95	68.40	0.161	1.059E-05	-0.151
199	11.20	4.23	28.19	56.37	16.16	6.52	6.08	71.24	0.151	9.896E-06	-0.144
200	3.93	3.49	22.05	70.53	15.12	5.21	14.79	64.87	0.157	1.030E-05	-0.149
201	3.90	9.27	27.33	59.50	15.27	11.37	10.72	62.63	0.137	9.000E-06	-0.132
202	2.86	4.18	16.64	76.32	16.21	4.59	9.31	69.89	0.178	1.168E-05	-0.166
203	3.16	5.78	23.99	67.06	16.37	10.82	10.98	61.83	0.148	9.743E-06	-0.144
204	3.17	4.12	31.06	61.65	14.49	7.28	11.14	67.09	0.147	9.643E-06	-0.143
205	3.71	3.55	30.28	62.46	14.63	8.06	4.20	73.10	0.159	1.044E-05	-0.148
206	10.87	3.24	24.80	61.09	15.54	10.30	9.71	64.45	0.144	9.438E-06	-0.138
207	9.68	4.11	21.64	64.58	14.21	4.32	5.39	76.08	0.167	1.098E-05	-0.157
208	3.14	6.05	23.97	66.84	14.09	7.57	11.88	66.45	0.151	9.946E-06	-0.142
209	2.51	2.32	28.93	66.25	14.16	7.77	6.12	71.95	0.161	1.059E-05	-0.151
210	5.34	5.96	27.16	61.54	14.30	4.32	9.49	71.89	0.155	1.017E-05	-0.147
211	3.00	4.48	24.43	68.09	16.47	8.52	10.36	64.65	0.156	1.023E-05	-0.148
212	13.02	5.75	24.20	57.03	15.33	10.40	6.19	68.08	0.144	9.432E-06	-0.139
213	7.40	2.49	25.64	64.47	16.16	4.02	7.38	72.43	0.165	1.087E-05	-0.157
214	5.54	3.20	20.97	70.29	15.10	10.68	5.41	68.81	0.163	1.072E-05	-0.154
215	6.92	11.44	23.15	58.48	14.80	7.26	6.64	71.30	0.149	9.821E-06	-0.144
216	8.47	2.84	23.82	64.87	14.11	15.03	7.45	63.41	0.143	9.381E-06	-0.138
217	4.69	5.57	24.16	65.58	13.53	8.04	7.22	71.21	0.157	1.030E-05	-0.147
218	2.27	2.88	21.30	73.54	15.81	7.78	11.41	65.01	0.162	1.067E-05	-0.153
219	7.20	9.92	25.41	57.47	15.67	5.54	4.98	73.81	0.155	1.017E-05	-0.146
220	6.56	7.46	19.93	66.06	16.34	5.05	6.26	72.34	0.167	1.097E-05	-0.157
221	7.20	5.04	27.50	60.26	14.50	8.07	5.59	71.84	0.153	1.005E-05	-0.144
222	7.26	5.37	25.07	62.30	13.55	10.76	4.02	71.67	0.153	1.004E-05	-0.147
223	9.97	5.20	27.08	57.74	14.87	8.50	7.87	68.76	0.145	9.527E-06	-0.139
224	6.53	4.04	28.30	61.14	14.60	9.61	8.76	67.03	0.146	9.588E-06	-0.140

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
225	12.96	4.88	21.81	60.35	14.12	6.08	8.94	70.85	0.151	9.923E-06	-0.142
226	3.24	5.12	25.42	66.21	13.77	6.27	6.90	73.06	0.162	1.066E-05	-0.152
227	7.22	5.90	24.90	61.98	14.30	8.08	7.35	70.27	0.152	9.993E-06	-0.144
228	8.28	3.17	14.00	74.55	13.59	7.75	9.60	69.05	0.166	1.092E-05	-0.155
229	7.57	5.91	19.86	66.66	15.97	7.89	5.73	70.41	0.163	1.071E-05	-0.154
230	5.39	2.12	23.00	69.49	13.90	5.74	9.75	70.61	0.163	1.073E-05	-0.154
231	7.33	3.42	28.75	60.50	14.48	5.37	7.89	72.25	0.155	1.016E-05	-0.148
232	2.76	9.02	20.48	67.74	15.18	5.22	11.49	68.11	0.158	1.040E-05	-0.148
233	6.94	8.08	20.01	64.97	13.52	7.48	10.55	68.45	0.151	9.907E-06	-0.144
234	2.75	4.87	19.58	72.80	15.31	5.56	11.18	67.95	0.166	1.090E-05	-0.155
235	2.73	3.99	24.15	69.12	14.86	3.91	13.24	67.99	0.160	1.053E-05	-0.153
236	8.38	3.43	16.60	71.59	14.40	8.59	8.64	68.36	0.163	1.070E-05	-0.152
237	4.98	6.02	30.90	58.11	15.55	8.23	7.72	68.50	0.146	9.621E-06	-0.142
238	5.53	6.46	27.06	60.95	16.02	3.20	13.59	67.19	0.150	9.844E-06	-0.144
239	4.90	6.15	20.14	68.80	14.39	7.30	12.45	65.86	0.154	1.011E-05	-0.146
240	10.15	2.79	21.13	65.93	13.56	9.89	8.38	68.17	0.152	1.000E-05	-0.144
241	6.40	6.17	23.22	64.20	15.93	10.52	8.94	64.62	0.149	9.762E-06	-0.143
242	3.76	7.27	21.41	67.56	15.69	11.31	11.67	61.32	0.146	9.613E-06	-0.141
243	9.21	4.39	25.69	60.71	16.22	8.35	12.45	62.98	0.142	9.351E-06	-0.137
244	8.57	2.41	26.06	62.96	14.32	6.48	8.46	70.73	0.155	1.019E-05	-0.147
245	5.04	4.71	15.78	74.46	15.44	7.88	8.27	68.41	0.169	1.112E-05	-0.158
246	5.09	4.55	20.88	69.47	15.66	6.67	4.88	72.79	0.171	1.127E-05	-0.160
247	9.33	2.60	18.48	69.59	13.54	9.33	10.19	66.94	0.155	1.019E-05	-0.146
248	7.48	3.92	18.59	70.01	16.08	12.66	7.59	63.66	0.155	1.020E-05	-0.147
249	3.06	4.88	29.66	62.40	14.02	7.00	8.76	70.22	0.152	9.997E-06	-0.146
250	5.38	5.31	19.78	69.53	14.03	12.33	6.43	67.21	0.156	1.022E-05	-0.149
251	3.50	4.50	32.22	59.77	15.51	12.21	2.98	69.29	0.150	9.838E-06	-0.144
252	5.60	1.14	28.95	64.31	16.29	4.22	11.95	67.55	0.157	1.029E-05	-0.149
253	4.34	9.16	21.11	65.39	14.86	8.08	9.93	67.13	0.152	9.981E-06	-0.144
254	3.83	2.06	34.63	59.49	15.42	7.68	8.19	68.70	0.149	9.783E-06	-0.143
255	5.98	4.35	23.54	66.14	14.77	9.20	4.80	71.24	0.161	1.056E-05	-0.151
256	2.14	8.22	29.05	60.58	14.60	8.17	11.52	65.71	0.142	9.359E-06	-0.137
257	4.42	4.52	31.70	59.36	16.29	6.45	7.12	70.13	0.153	1.007E-05	-0.145
258	3.97	10.07	25.75	60.21	16.26	9.60	6.21	67.93	0.149	9.800E-06	-0.143
259	4.15	5.22	23.46	67.18	15.59	8.26	5.87	70.28	0.163	1.068E-05	-0.153
260	7.01	7.92	21.22	63.84	14.95	11.87	5.33	67.85	0.151	9.916E-06	-0.144
261	8.67	5.80	23.20	62.33	13.85	8.89	8.84	68.42	0.148	9.735E-06	-0.142
262	3.42	5.47	25.78	65.34	14.69	9.03	4.75	71.52	0.160	1.049E-05	-0.151
263	5.59	3.96	33.95	56.49	15.18	6.60	12.93	65.29	0.139	9.101E-06	-0.133
264	2.85	6.54	27.16	63.44	15.12	11.11	8.02	65.75	0.147	9.683E-06	-0.143
265	5.33	7.27	29.00	58.39	14.11	8.16	5.48	72.26	0.150	9.846E-06	-0.145
266	6.26	5.91	18.25	69.59	14.56	5.92	7.84	71.67	0.167	1.094E-05	-0.156
267	6.59	5.74	21.24	66.43	15.04	6.04	5.73	73.19	0.166	1.090E-05	-0.157
268	9.62	4.70	22.22	63.46	15.20	14.35	8.39	62.07	0.141	9.284E-06	-0.136
269	8.54	2.63	22.03	66.80	15.25	4.08	5.38	75.29	0.172	1.131E-05	-0.161
270	3.71	11.52	26.84	57.94	14.38	8.95	6.19	70.48	0.146	9.598E-06	-0.140
271	9.96	2.72	25.70	61.62	13.74	10.85	6.79	68.61	0.147	9.683E-06	-0.143
272	5.70	2.94	17.60	73.77	15.94	6.88	13.72	63.47	0.161	1.056E-05	-0.151
273	6.02	4.44	21.54	68.00	16.44	10.43	4.99	68.14	0.162	1.062E-05	-0.152
274	5.30	7.27	15.46	71.97	14.23	10.45	6.03	69.30	0.164	1.074E-05	-0.154
275	6.45	5.03	34.31	54.21	16.44	4.19	6.30	73.07	0.151	9.945E-06	-0.143
276	6.41	8.65	17.03	67.91	14.56	8.17	7.06	70.21	0.160	1.054E-05	-0.151
277	4.37	4.87	23.98	66.78	14.40	6.87	11.56	67.16	0.154	1.009E-05	-0.147
278	7.85	4.94	22.52	64.69	15.10	10.60	8.89	65.42	0.149	9.786E-06	-0.142
279	5.09	3.73	20.44	70.75	15.03	9.82	9.51	65.63	0.158	1.035E-05	-0.149
280	3.83	2.70	31.77	61.70	14.23	6.72	6.95	72.09	0.155	1.020E-05	-0.146
281	8.10	6.92	17.56	67.42	13.89	8.46	9.49	68.17	0.155	1.015E-05	-0.146
282	5.12	1.70	27.53	65.65	13.66	4.75	6.31	75.29	0.166	1.092E-05	-0.156
283	3.30	3.52	29.26	63.93	15.14	6.28	9.35	69.22	0.156	1.022E-05	-0.147
284	2.89	6.10	20.76	70.24	14.60	7.40	6.09	71.91	0.168	1.101E-05	-0.156
285	5.78	6.24	26.25	61.74	16.18	8.60	7.52	67.70	0.152	9.954E-06	-0.144
286	5.81	7.46	18.90	67.83	15.70	6.06	7.87	70.38	0.164	1.078E-05	-0.155
287	3.15	8.95	27.18	60.73	15.63	13.56	11.34	59.46	0.134	8.786E-06	-0.130
288	4.05	3.91	31.31	60.72	13.54	7.17	7.59	71.70	0.151	9.941E-06	-0.146
289	5.58	5.99	26.78	61.65	14.27	11.47	7.60	66.67	0.145	9.507E-06	-0.141
290	4.10	11.71	23.93	60.26	15.06	7.07	9.44	68.43	0.147	9.686E-06	-0.141
291	9.03	2.52	23.92	64.52	15.85	7.00	7.19	69.96	0.160	1.049E-05	-0.151
292	4.58	3.03	28.43	63.95	16.25	6.63	10.10	67.02	0.154	1.014E-05	-0.146
293	9.39	3.64	16.96	70.01	15.35	6.46	7.31	70.88	0.168	1.105E-05	-0.158
294	4.73	3.32	22.93	69.02	14.27	9.06	8.80	67.87	0.158	1.035E-05	-0.150
295	5.50	6.31	21.96	66.22	13.88	6.66	3.70	75.75	0.167	1.099E-05	-0.157
296	10.79	1.20	20.19	67.83	14.85	9.26	7.68	68.21	0.159	1.042E-05	-0.150
297	4.98	3.94	24.26	66.82	13.57	6.85	9.01	70.57	0.158	1.039E-05	-0.149
298	9.54	3.64	23.35	63.47	13.52	9.95	7.13	69.41	0.151	9.907E-06	-0.144
299	8.93	2.53	24.18	64.36	13.68	6.26	7.83	72.23	0.158	1.040E-05	-0.149

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
300	6.40	7.20	26.58	59.82	15.39	8.38	12.49	63.74	0.140	9.209E-06	-0.134
301	3.31	5.40	21.20	70.09	14.36	9.50	7.35	68.79	0.161	1.055E-05	-0.151
302	2.64	4.77	31.40	61.19	14.40	10.04	9.99	65.57	0.143	9.382E-06	-0.139
303	3.74	3.91	28.45	63.90	14.27	8.62	8.19	68.92	0.152	1.001E-05	-0.146
304	5.25	5.90	27.18	61.68	13.60	7.55	9.83	69.01	0.148	9.712E-06	-0.143
305	5.50	9.73	21.81	62.97	16.45	10.48	3.14	69.93	0.157	1.031E-05	-0.149
306	5.90	3.75	23.71	66.63	16.46	9.09	7.10	67.34	0.159	1.044E-05	-0.150
307	5.48	4.83	25.47	64.23	13.70	8.19	10.52	67.59	0.149	9.789E-06	-0.144
308	4.09	4.40	23.24	68.27	16.10	6.42	10.21	67.28	0.160	1.054E-05	-0.153
309	6.16	6.68	28.41	58.75	15.07	4.90	9.40	70.64	0.150	9.880E-06	-0.144
310	6.25	6.77	23.83	63.15	13.66	7.57	8.50	70.28	0.152	9.982E-06	-0.145
311	4.03	3.13	22.81	70.04	16.12	8.58	10.30	65.00	0.158	1.041E-05	-0.149
312	14.06	3.76	19.89	62.30	14.56	6.31	8.36	70.78	0.155	1.017E-05	-0.146
313	7.10	5.16	31.85	55.88	13.69	7.22	7.98	71.11	0.144	9.459E-06	-0.138
314	9.36	4.16	26.40	60.07	14.67	8.12	7.26	69.94	0.150	9.852E-06	-0.144
315	4.83	5.42	25.25	64.50	14.99	6.39	15.47	63.15	0.145	9.528E-06	-0.139
316	3.12	8.10	24.24	64.53	16.00	10.15	6.00	67.85	0.155	1.016E-05	-0.147
317	5.40	8.22	19.57	66.80	15.18	10.46	9.18	65.18	0.151	9.922E-06	-0.143
318	3.63	5.01	16.13	75.23	15.46	10.43	8.59	65.52	0.164	1.079E-05	-0.154
319	4.29	5.68	30.72	59.32	16.00	8.83	6.02	69.16	0.150	9.870E-06	-0.143
320	8.63	6.78	23.25	61.34	15.10	10.93	8.91	65.05	0.143	9.428E-06	-0.141
321	6.83	6.34	14.08	72.75	14.38	7.35	10.21	68.05	0.163	1.073E-05	-0.155
322	4.84	9.57	23.88	61.71	15.74	10.09	8.55	65.62	0.146	9.599E-06	-0.140
323	5.17	2.77	25.68	66.38	15.32	7.69	14.48	62.51	0.147	9.669E-06	-0.141
324	3.04	6.41	23.72	66.83	14.27	12.63	7.50	65.60	0.149	9.807E-06	-0.143
325	2.62	9.19	20.98	67.21	13.85	5.38	4.31	76.47	0.170	1.114E-05	-0.158
326	8.22	5.20	25.56	61.02	16.05	10.11	8.98	64.85	0.145	9.545E-06	-0.140
327	3.54	4.19	14.77	77.50	14.00	5.42	9.35	71.23	0.176	1.156E-05	-0.162
328	6.04	4.08	30.07	59.81	14.20	11.93	5.70	68.16	0.145	9.512E-06	-0.140
329	7.68	5.78	34.74	51.80	15.07	7.07	6.70	71.16	0.141	9.284E-06	-0.138
330	4.29	8.59	16.40	70.72	16.45	14.72	6.09	62.74	0.154	1.013E-05	-0.147
331	8.15	4.76	14.13	72.96	13.59	11.01	7.16	68.25	0.161	1.060E-05	-0.151
332	3.60	4.03	21.53	70.84	15.03	6.46	7.49	71.02	0.169	1.108E-05	-0.156
333	5.29	11.65	20.31	62.75	16.03	5.81	4.63	73.53	0.163	1.068E-05	-0.155
334	6.16	5.55	28.46	59.83	13.70	10.15	9.18	66.98	0.142	9.312E-06	-0.137
335	7.97	10.77	23.63	57.63	14.89	9.16	4.98	70.97	0.148	9.705E-06	-0.140
336	6.02	1.12	26.80	66.07	16.06	5.51	4.77	73.67	0.170	1.116E-05	-0.158
337	3.41	4.67	22.66	69.26	16.32	13.91	7.22	62.55	0.152	9.996E-06	-0.145
338	6.67	3.47	24.05	65.81	14.10	11.06	4.74	70.09	0.157	1.029E-05	-0.149
339	5.90	5.91	20.91	67.28	14.37	8.12	7.48	70.02	0.159	1.046E-05	-0.151
340	7.08	5.38	23.61	63.93	14.73	10.04	9.40	65.84	0.148	9.705E-06	-0.140
341	2.76	4.74	21.06	71.45	15.03	12.47	11.02	61.48	0.150	9.846E-06	-0.145
342	3.94	8.80	30.50	56.77	14.69	9.20	12.65	63.46	0.134	8.800E-06	-0.131
343	3.75	6.93	18.45	70.87	15.95	8.46	10.12	65.47	0.160	1.048E-05	-0.151
344	5.23	3.63	33.24	57.89	14.43	6.56	11.12	67.89	0.143	9.413E-06	-0.138
345	9.16	4.98	22.45	63.42	15.88	5.68	8.36	70.08	0.158	1.039E-05	-0.150
346	7.09	5.02	17.72	70.17	16.02	5.23	6.32	72.43	0.173	1.136E-05	-0.161
347	3.83	7.11	28.16	60.90	14.81	7.78	5.55	71.86	0.154	1.014E-05	-0.147
348	5.92	6.18	27.65	60.26	15.03	8.99	8.83	67.15	0.146	9.578E-06	-0.140
349	5.28	5.53	22.88	66.31	14.32	8.17	4.81	72.70	0.163	1.068E-05	-0.154
350	5.37	5.57	25.49	63.57	13.93	9.14	10.31	66.62	0.147	9.636E-06	-0.143
351	4.76	8.97	21.74	64.53	15.50	6.59	4.52	73.39	0.164	1.078E-05	-0.151
352	5.65	2.92	20.67	70.76	15.07	7.00	6.63	71.29	0.169	1.112E-05	-0.159
353	8.29	3.89	23.80	64.02	15.81	11.39	5.04	67.76	0.154	1.010E-05	-0.146
354	5.68	5.90	23.27	65.15	13.83	6.77	6.30	73.10	0.161	1.056E-05	-0.152
355	6.90	6.63	28.50	57.97	16.22	9.09	13.25	61.43	0.136	8.919E-06	-0.133
356	3.07	7.19	23.13	66.61	13.90	7.58	6.60	71.93	0.160	1.053E-05	-0.153
357	2.39	1.99	17.58	78.04	15.04	13.19	9.79	61.98	0.160	1.051E-05	-0.151
358	8.75	7.29	19.85	64.12	13.90	6.87	6.88	72.35	0.158	1.037E-05	-0.148
359	11.05	3.66	19.49	65.80	15.92	9.45	7.92	66.71	0.155	1.020E-05	-0.147
360	9.38	4.48	17.86	68.28	13.93	7.34	6.88	71.84	0.163	1.073E-05	-0.156
361	3.58	2.46	25.78	68.18	13.62	8.61	3.59	74.17	0.166	1.094E-05	-0.155
362	9.54	3.47	25.51	61.48	14.57	10.64	6.72	68.07	0.148	9.730E-06	-0.143
363	5.93	7.40	19.57	67.10	14.58	10.31	5.96	69.15	0.157	1.032E-05	-0.151
364	16.34	3.83	20.09	59.74	13.76	7.80	11.76	66.67	0.142	9.334E-06	-0.137
365	5.81	5.10	23.48	65.61	15.06	10.96	6.09	67.89	0.154	1.014E-05	-0.147
366	6.91	5.67	28.03	59.39	14.43	5.04	12.60	67.93	0.145	9.543E-06	-0.140
367	12.75	4.57	17.47	65.21	16.46	10.64	8.60	64.30	0.151	9.926E-06	-0.143
368	3.44	4.07	31.13	61.36	14.26	8.33	7.34	70.07	0.151	9.909E-06	-0.145
369	4.72	9.11	20.98	65.19	13.53	6.18	17.21	63.08	0.142	9.320E-06	-0.139
370	7.46	2.65	20.48	69.41	15.44	10.33	8.10	66.14	0.158	1.038E-05	-0.148
371	6.13	8.87	25.46	59.55	14.46	6.20	7.06	72.28	0.152	1.001E-05	-0.144
372	4.00	4.44	20.60	70.96	13.89	6.23	9.57	70.31	0.164	1.078E-05	-0.155
373	6.88	3.95	23.18	65.99	16.15	12.83	4.94	66.08	0.154	1.012E-05	-0.147
374	6.79	3.74	21.92	67.55	14.46	14.49	7.88	63.18	0.147	9.627E-06	-0.140

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
375	4.72	5.80	21.42	68.05	15.13	4.60	6.81	73.46	0.169	1.112E-05	-0.158
376	5.04	4.04	23.74	67.18	16.45	5.55	8.49	69.51	0.164	1.078E-05	-0.156
377	7.97	7.35	19.94	64.74	14.51	4.81	11.92	68.76	0.154	1.012E-05	-0.147
378	4.83	2.22	29.28	63.67	15.58	7.81	7.47	69.15	0.156	1.025E-05	-0.149
379	8.76	7.41	21.55	62.27	15.65	12.40	10.84	61.11	0.139	9.123E-06	-0.134
380	7.41	6.03	21.73	64.83	15.04	9.02	7.48	68.47	0.154	1.014E-05	-0.147
381	3.30	2.57	22.93	71.20	16.38	5.58	9.19	68.85	0.169	1.109E-05	-0.159
382	9.66	2.13	27.33	60.88	13.95	8.15	13.30	64.61	0.141	9.237E-06	-0.137
383	5.22	5.05	21.59	68.14	15.55	11.59	14.27	58.59	0.142	9.339E-06	-0.137
384	7.03	3.70	20.34	68.94	15.64	4.24	13.82	66.29	0.159	1.043E-05	-0.150
385	4.73	7.41	23.98	63.89	13.59	4.61	5.53	76.27	0.164	1.078E-05	-0.151
386	5.60	12.71	24.87	56.81	16.42	6.01	9.00	68.58	0.146	9.577E-06	-0.140
387	11.23	5.35	15.75	67.66	15.32	11.28	7.92	65.48	0.154	1.009E-05	-0.145
388	4.95	8.09	24.90	62.06	14.11	7.71	7.11	71.07	0.153	1.004E-05	-0.146
389	6.21	1.31	20.53	71.95	13.84	4.83	5.92	75.41	0.176	1.158E-05	-0.163
390	5.63	3.30	26.63	64.44	15.27	10.26	7.68	66.79	0.152	9.955E-06	-0.144
391	9.80	1.24	17.89	71.07	14.77	6.68	7.51	71.04	0.169	1.111E-05	-0.158
392	7.49	3.32	26.68	62.51	14.92	11.38	9.39	64.31	0.144	9.448E-06	-0.139
393	1.30	7.07	26.49	65.13	14.01	5.66	8.29	72.04	0.159	1.044E-05	-0.152
394	10.54	3.52	19.38	66.57	16.35	3.68	6.84	73.13	0.170	1.120E-05	-0.158
395	5.69	4.86	17.71	71.74	16.12	9.15	13.89	60.84	0.153	1.003E-05	-0.146
396	4.47	5.34	18.81	71.38	16.49	7.63	4.79	71.09	0.173	1.138E-05	-0.160
397	4.98	5.43	24.36	65.23	14.77	7.46	4.24	73.53	0.164	1.076E-05	-0.154
398	3.38	1.85	25.11	69.65	15.54	7.60	8.17	68.70	0.164	1.076E-05	-0.153
399	15.46	2.15	19.77	62.62	15.14	6.98	7.72	70.16	0.156	1.023E-05	-0.147
400	8.74	7.80	15.70	67.76	14.02	6.58	8.26	71.13	0.161	1.058E-05	-0.150
401	4.60	3.73	21.10	70.56	16.00	7.53	6.38	70.10	0.169	1.109E-05	-0.157
402	2.72	5.20	19.46	72.62	13.68	8.62	6.29	71.42	0.167	1.098E-05	-0.156
403	3.71	3.18	22.61	70.50	15.61	6.40	9.67	68.31	0.164	1.080E-05	-0.154
404	7.91	4.76	29.60	57.74	13.77	10.19	8.29	67.74	0.141	9.239E-06	-0.137
405	2.83	3.09	22.19	71.89	14.77	9.34	9.04	66.85	0.161	1.055E-05	-0.151
406	3.53	6.62	22.28	67.57	16.20	5.11	11.36	67.32	0.160	1.048E-05	-0.152
407	7.07	3.50	23.67	65.76	15.09	8.79	12.97	63.15	0.147	9.634E-06	-0.141
408	5.70	3.59	29.42	61.29	15.89	10.78	6.08	67.25	0.149	9.818E-06	-0.144
409	12.02	1.75	33.54	52.69	16.25	7.67	5.14	70.95	0.145	9.535E-06	-0.139
410	7.30	6.24	27.06	59.40	13.83	10.69	7.92	67.56	0.142	9.353E-06	-0.136
411	6.59	9.05	27.05	57.31	15.23	9.00	9.22	66.55	0.141	9.266E-06	-0.136
412	3.66	3.36	27.61	65.37	13.61	10.42	5.33	70.64	0.156	1.023E-05	-0.147
413	7.25	8.47	28.35	55.93	14.27	6.32	3.37	76.05	0.153	1.008E-05	-0.147
414	10.58	4.72	29.47	55.22	14.65	8.88	4.30	72.17	0.147	9.650E-06	-0.143
415	3.43	5.78	22.20	68.59	13.75	6.97	5.67	73.61	0.166	1.093E-05	-0.156
416	12.18	4.96	26.45	56.42	16.44	10.47	9.58	63.51	0.138	9.052E-06	-0.134
417	8.22	4.53	24.14	63.10	15.41	5.92	6.48	72.19	0.161	1.055E-05	-0.150
418	14.58	4.67	22.96	57.80	15.76	8.77	8.69	66.78	0.144	9.440E-06	-0.137
419	5.56	2.86	27.64	63.94	15.69	11.12	10.04	63.15	0.145	9.546E-06	-0.140
420	11.28	6.04	14.84	67.85	14.21	4.91	7.57	73.32	0.166	1.093E-05	-0.157
421	6.49	4.11	24.03	65.37	14.63	11.35	11.43	62.60	0.144	9.439E-06	-0.138
422	6.10	3.71	20.25	69.95	14.11	7.60	6.55	71.73	0.166	1.092E-05	-0.155
423	9.11	6.96	19.25	64.67	14.46	11.23	4.52	69.80	0.155	1.016E-05	-0.147
424	5.91	6.35	21.17	66.56	14.75	8.26	5.11	71.88	0.162	1.067E-05	-0.155
425	12.81	5.15	25.77	56.28	14.18	8.86	6.06	70.91	0.145	9.534E-06	-0.140
426	2.29	7.95	18.97	70.78	16.08	10.17	5.61	68.15	0.164	1.079E-05	-0.154
427	7.53	2.32	20.65	69.50	15.03	8.79	6.60	69.58	0.164	1.077E-05	-0.152
428	5.58	2.74	30.16	61.52	14.74	7.68	7.87	69.72	0.152	9.977E-06	-0.145
429	2.29	3.44	21.33	72.94	16.36	8.18	4.47	70.99	0.175	1.148E-05	-0.162
430	6.83	3.57	32.78	56.83	14.92	8.06	6.97	70.05	0.146	9.613E-06	-0.141
431	5.50	6.82	13.83	73.85	14.60	8.16	6.53	70.71	0.171	1.121E-05	-0.158
432	5.97	6.82	19.11	68.10	16.17	10.95	7.35	65.53	0.156	1.025E-05	-0.148
433	3.34	2.92	22.74	71.00	14.72	16.15	5.89	63.24	0.151	9.938E-06	-0.146
434	5.20	8.14	21.71	64.96	13.77	7.97	12.16	66.10	0.147	9.668E-06	-0.141
435	2.87	3.05	29.52	64.57	15.57	12.92	5.03	66.49	0.151	9.949E-06	-0.144
436	4.14	5.20	19.73	70.93	16.34	5.30	10.41	67.96	0.166	1.092E-05	-0.157
437	4.04	9.52	23.31	63.14	16.19	9.42	5.47	68.93	0.155	1.018E-05	-0.146
438	3.51	5.05	22.65	68.79	14.58	4.57	11.38	69.47	0.162	1.062E-05	-0.152
439	6.03	2.45	20.45	71.07	16.07	4.88	5.36	73.69	0.178	1.168E-05	-0.165
440	13.21	4.55	23.72	58.52	16.49	7.27	10.38	65.86	0.145	9.522E-06	-0.139
441	5.53	4.08	22.33	68.07	14.54	7.42	5.92	72.12	0.165	1.085E-05	-0.158
442	5.96	8.57	22.62	62.85	16.22	4.80	4.34	74.64	0.166	1.090E-05	-0.155
443	5.73	2.92	22.88	68.48	13.90	10.16	7.22	68.72	0.157	1.034E-05	-0.149
444	4.83	4.07	17.01	74.09	14.74	10.87	7.10	67.29	0.164	1.078E-05	-0.156
445	4.80	3.07	25.45	66.69	16.27	9.93	9.30	64.50	0.153	1.005E-05	-0.145
446	12.89	4.98	26.00	56.14	16.16	7.55	8.80	67.48	0.144	9.432E-06	-0.139
447	9.82	7.13	19.80	63.24	14.05	11.07	7.92	66.96	0.147	9.645E-06	-0.140
448	8.02	4.18	17.80	70.00	14.39	7.85	6.19	71.56	0.167	1.095E-05	-0.156
449	3.65	5.45	24.81	66.09	15.24	13.89	7.49	63.38	0.147	9.635E-06	-0.141

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	$\beta_1{}'$	SY (SIBERIA)
450	6.12	3.89	19.28	70.71	13.60	8.79	5.80	71.82	0.165	1.087E-05	-0.157
451	13.39	6.77	22.51	57.32	14.76	6.14	8.46	70.64	0.147	9.689E-06	-0.143
452	8.97	4.47	20.84	65.71	16.33	10.51	7.44	65.71	0.154	1.012E-05	-0.146
453	3.99	7.58	22.28	66.15	14.23	8.06	8.24	69.46	0.156	1.024E-05	-0.147
454	8.26	4.60	19.74	67.40	15.26	4.50	11.64	68.60	0.160	1.050E-05	-0.149
455	3.27	4.75	24.99	67.00	15.12	9.05	10.70	65.13	0.152	9.957E-06	-0.146
456	7.94	9.15	19.92	62.99	16.41	8.71	3.94	70.94	0.159	1.046E-05	-0.152
457	4.89	7.89	25.67	61.56	13.80	5.41	4.12	76.68	0.162	1.064E-05	-0.154
458	3.58	4.33	24.23	67.86	14.11	8.35	9.45	68.09	0.156	1.024E-05	-0.148
459	3.77	4.36	28.03	63.84	15.35	8.93	12.47	63.26	0.145	9.510E-06	-0.141
460	3.50	5.43	19.63	71.44	16.36	7.53	5.76	70.35	0.171	1.125E-05	-0.159
461	3.39	4.63	22.29	69.69	16.41	8.39	10.52	64.67	0.158	1.038E-05	-0.151
462	2.82	8.51	25.13	63.54	14.62	6.68	8.21	70.48	0.155	1.020E-05	-0.149
463	4.39	5.40	28.91	61.30	13.95	5.95	5.82	74.27	0.158	1.036E-05	-0.150
464	9.21	6.40	19.40	65.00	15.95	7.97	8.88	67.20	0.155	1.017E-05	-0.148
465	5.77	5.50	29.44	59.29	14.94	10.83	4.85	69.39	0.148	9.715E-06	-0.142
466	5.12	5.72	16.42	72.74	16.25	6.58	8.30	68.88	0.170	1.118E-05	-0.159
467	5.79	8.54	22.68	62.99	13.69	5.55	10.02	70.73	0.153	1.004E-05	-0.144
468	3.99	6.00	23.18	66.83	16.45	8.33	6.64	68.58	0.161	1.058E-05	-0.152
469	3.80	11.72	24.04	60.44	15.26	14.77	7.07	62.91	0.138	9.044E-06	-0.135
470	7.60	8.83	22.23	61.34	16.32	7.35	5.15	71.18	0.157	1.033E-05	-0.147
471	5.89	5.33	27.84	60.95	13.72	6.52	8.09	71.67	0.152	9.986E-06	-0.145
472	5.85	2.74	21.76	69.65	14.50	5.59	6.72	73.19	0.170	1.117E-05	-0.161
473	2.53	4.60	27.30	65.57	14.30	7.67	8.82	69.21	0.155	1.020E-05	-0.146
474	7.60	5.58	23.77	63.05	15.71	6.67	4.33	73.28	0.163	1.069E-05	-0.153
475	7.02	10.86	24.91	57.22	16.16	11.21	12.57	60.07	0.132	8.650E-06	-0.130
476	3.89	8.46	19.42	68.23	14.00	12.45	5.46	68.09	0.155	1.017E-05	-0.147
477	3.39	2.27	20.49	73.85	16.14	9.93	8.30	65.63	0.165	1.082E-05	-0.154
478	12.09	8.24	19.89	59.77	15.27	7.86	4.62	72.24	0.154	1.013E-05	-0.148
479	8.61	6.38	23.94	61.08	14.52	7.20	8.29	69.99	0.151	9.912E-06	-0.144
480	8.73	2.65	19.96	68.66	16.01	5.57	9.00	69.42	0.165	1.087E-05	-0.155
481	6.00	2.97	27.54	63.49	15.63	11.54	4.47	68.36	0.154	1.011E-05	-0.144
482	5.18	3.73	21.14	69.95	15.22	4.64	7.16	72.99	0.172	1.130E-05	-0.159
483	6.53	4.93	25.95	62.59	14.87	6.90	7.61	70.63	0.155	1.020E-05	-0.149
484	7.88	8.19	25.98	57.96	14.48	6.57	11.90	67.04	0.141	9.289E-06	-0.137
485	5.74	2.87	23.67	67.72	15.42	12.10	13.08	59.40	0.143	9.385E-06	-0.139
486	5.34	5.11	29.62	59.93	14.64	9.41	4.84	71.11	0.151	9.942E-06	-0.148
487	5.28	6.15	25.46	63.11	16.01	8.11	6.48	69.40	0.156	1.026E-05	-0.148
488	7.80	9.76	24.16	58.29	13.89	11.40	7.89	66.83	0.139	9.154E-06	-0.135
489	10.63	7.60	20.13	61.64	15.73	11.77	7.62	64.88	0.145	9.512E-06	-0.141
490	5.69	9.15	21.07	64.08	15.75	12.47	8.80	62.98	0.144	9.484E-06	-0.138
491	4.12	6.99	25.74	63.15	13.87	12.23	10.67	63.23	0.139	9.161E-06	-0.136
492	9.23	5.98	20.15	64.64	15.66	12.64	9.22	62.47	0.145	9.501E-06	-0.137
493	6.77	8.07	24.78	60.39	14.05	5.23	8.54	72.18	0.153	1.003E-05	-0.146
494	9.72	5.84	20.26	64.18	14.66	7.29	5.98	72.06	0.159	1.048E-05	-0.151
495	2.05	6.76	23.04	68.15	15.61	9.10	5.45	69.84	0.163	1.070E-05	-0.152
496	3.94	8.20	25.92	61.94	14.64	6.75	5.78	72.82	0.157	1.033E-05	-0.149
497	3.48	2.55	26.04	67.93	14.47	10.13	5.08	70.32	0.161	1.058E-05	-0.153
498	4.41	4.06	23.37	68.17	15.75	7.55	8.52	68.19	0.161	1.057E-05	-0.153
499	3.78	2.43	23.35	70.44	14.22	8.43	10.92	66.44	0.157	1.029E-05	-0.147
500	5.97	5.74	19.47	68.82	16.41	8.48	6.27	68.84	0.164	1.080E-05	-0.154
501	5.76	7.76	23.39	63.09	14.21	11.32	15.24	59.23	0.134	8.788E-06	-0.130
502	5.84	5.48	23.03	65.65	16.28	9.05	3.68	70.99	0.163	1.073E-05	-0.153
503	4.63	5.57	29.78	60.02	15.18	10.54	5.16	69.12	0.149	9.791E-06	-0.144
504	4.77	1.57	23.91	69.75	15.93	8.12	7.10	68.84	0.165	1.086E-05	-0.155
505	4.35	3.56	20.83	71.25	15.95	5.63	6.14	72.28	0.174	1.146E-05	-0.162
506	9.89	10.63	20.55	58.94	13.54	8.36	9.07	69.02	0.143	9.413E-06	-0.138
507	4.85	6.80	18.95	69.40	15.17	8.48	7.14	69.21	0.162	1.067E-05	-0.153
508	4.69	6.55	23.06	65.69	15.50	6.29	3.91	74.30	0.168	1.103E-05	-0.156
509	6.39	7.11	25.70	60.80	15.69	6.10	5.46	72.75	0.158	1.040E-05	-0.151
510	8.55	3.60	17.34	70.51	14.04	8.19	7.52	70.25	0.164	1.077E-05	-0.154
511	7.75	4.59	21.57	66.09	14.87	7.05	5.98	72.10	0.163	1.071E-05	-0.154
512	4.02	4.50	17.70	73.77	14.77	11.20	5.60	68.43	0.166	1.089E-05	-0.155
513	6.43	7.20	17.53	68.84	14.03	12.24	7.09	66.64	0.153	1.008E-05	-0.145
514	4.67	3.58	31.04	60.71	15.54	8.29	5.31	70.86	0.155	1.016E-05	-0.145
515	8.29	10.68	21.39	59.64	13.72	7.58	9.47	69.23	0.145	9.533E-06	-0.139
516	8.63	4.99	22.69	63.69	14.13	5.77	8.71	71.39	0.157	1.029E-05	-0.149
517	12.27	6.51	15.12	66.09	15.32	10.82	5.62	68.25	0.156	1.026E-05	-0.146
518	8.76	5.72	22.95	62.57	15.30	9.85	10.58	64.27	0.144	9.491E-06	-0.139
519	3.08	10.00	25.28	61.65	13.60	8.34	10.55	67.52	0.144	9.490E-06	-0.139
520	4.02	8.96	23.41	63.62	15.36	5.08	5.01	74.54	0.165	1.082E-05	-0.154
521	6.63	1.55	24.05	67.77	14.76	5.24	9.22	70.79	0.164	1.075E-05	-0.154
522	3.63	5.81	19.55	71.01	15.42	11.58	5.15	67.85	0.162	1.067E-05	-0.153
523	13.59	1.25	25.81	59.35	16.25	6.97	8.16	68.61	0.151	9.921E-06	-0.145
524	4.72	2.64	27.06	65.59	14.99	7.03	6.01	71.98	0.163	1.068E-05	-0.152

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	$\beta_1{}'$	SY (SIBERIA)
525	7.79	8.85	20.74	62.62	15.01	7.64	8.35	69.01	0.152	9.984E-06	-0.145
526	5.06	6.31	23.32	65.32	15.78	8.54	6.37	69.30	0.158	1.041E-05	-0.151
527	5.29	4.18	19.60	70.93	14.78	5.90	11.95	67.37	0.161	1.059E-05	-0.152
528	8.57	11.44	24.76	55.23	14.47	8.84	5.36	71.33	0.144	9.459E-06	-0.138
529	1.98	4.10	27.04	66.89	15.99	12.22	6.58	65.21	0.153	1.007E-05	-0.146
530	4.04	8.25	23.34	64.37	16.38	13.38	7.24	63.00	0.146	9.611E-06	-0.140
531	5.85	8.22	26.51	59.42	14.71	13.63	8.70	62.96	0.136	8.928E-06	-0.133
532	5.62	4.79	28.61	60.99	14.60	9.28	9.83	66.29	0.144	9.486E-06	-0.139
533	8.39	3.72	27.23	60.66	16.50	9.79	12.28	61.43	0.140	9.210E-06	-0.137
534	6.95	4.83	22.48	65.74	13.54	9.26	12.48	64.73	0.145	9.558E-06	-0.140
535	5.04	8.11	24.97	61.88	15.62	8.22	10.50	65.67	0.147	9.634E-06	-0.141
536	11.97	3.96	20.93	63.13	15.91	9.07	4.82	70.21	0.158	1.036E-05	-0.150
537	4.29	4.79	23.92	67.00	15.33	5.12	6.13	73.42	0.168	1.105E-05	-0.158
538	3.83	13.56	17.61	65.00	15.56	6.44	10.26	67.73	0.154	1.010E-05	-0.148
539	5.26	4.74	16.83	73.17	13.50	7.74	8.90	69.85	0.165	1.084E-05	-0.154
540	8.02	3.71	21.94	66.33	14.10	8.18	7.07	70.65	0.159	1.043E-05	-0.152
541	4.45	4.12	22.43	69.00	15.55	12.36	8.78	63.31	0.152	9.959E-06	-0.145
542	5.15	5.12	27.49	62.23	16.48	7.31	5.74	70.47	0.158	1.040E-05	-0.151
543	6.62	7.18	17.21	68.99	15.62	11.06	9.25	64.07	0.153	1.006E-05	-0.147
544	3.32	3.90	25.60	67.17	14.00	6.18	10.66	69.16	0.157	1.033E-05	-0.148
545	6.58	6.31	20.16	66.96	13.72	10.18	10.60	65.50	0.149	9.760E-06	-0.140
546	7.28	4.54	25.20	62.98	15.01	9.29	10.24	65.46	0.147	9.641E-06	-0.141
547	9.59	5.95	14.03	70.44	14.13	6.81	4.05	75.00	0.173	1.136E-05	-0.158
548	3.83	5.25	20.40	70.53	13.92	9.59	9.88	66.60	0.156	1.023E-05	-0.148
549	8.69	2.39	24.67	64.26	13.60	7.90	7.54	70.96	0.155	1.021E-05	-0.148
550	9.55	5.40	23.14	61.90	15.46	12.23	6.01	66.29	0.147	9.670E-06	-0.142
551	7.92	4.60	16.37	71.12	14.04	5.64	6.38	73.94	0.172	1.131E-05	-0.163
552	4.40	6.67	35.33	53.60	15.48	7.53	5.32	71.67	0.146	9.565E-06	-0.140
553	3.64	1.18	27.95	67.22	14.34	11.86	13.70	60.10	0.141	9.257E-06	-0.135
554	4.69	4.80	21.81	68.70	15.60	12.01	7.02	65.36	0.155	1.019E-05	-0.146
555	3.35	2.92	24.70	69.03	14.83	12.30	8.61	64.25	0.152	9.957E-06	-0.143
556	9.26	4.23	26.56	59.95	15.45	8.67	4.95	70.93	0.153	1.007E-05	-0.147
557	4.66	5.48	27.28	62.59	15.87	9.79	6.56	67.78	0.152	9.982E-06	-0.145
558	4.82	5.15	17.36	72.67	16.32	5.99	8.96	68.73	0.170	1.118E-05	-0.159
559	3.16	7.55	26.23	63.06	15.48	8.59	11.14	64.79	0.146	9.609E-06	-0.140
560	5.40	11.87	24.62	58.11	13.81	6.96	7.22	72.01	0.148	9.725E-06	-0.143
561	4.29	10.03	22.10	63.58	15.49	9.02	9.02	66.47	0.149	9.820E-06	-0.144
562	6.40	3.22	22.03	68.35	14.85	8.80	11.26	65.08	0.153	1.006E-05	-0.146
563	5.15	4.53	28.40	61.93	16.11	4.67	9.51	69.71	0.156	1.025E-05	-0.150
564	4.80	3.29	19.02	72.89	13.84	6.59	11.80	67.76	0.162	1.064E-05	-0.151
565	2.87	5.26	24.62	67.26	15.51	7.00	5.25	72.23	0.166	1.094E-05	-0.155
566	4.72	7.92	27.52	59.84	16.19	6.22	6.99	70.60	0.154	1.013E-05	-0.146
567	4.63	6.07	17.57	71.73	15.35	13.93	8.34	62.38	0.153	1.003E-05	-0.147
568	5.64	6.20	24.61	63.55	13.68	10.17	5.89	70.26	0.152	9.999E-06	-0.144
569	6.21	2.31	24.96	66.51	14.55	8.67	8.12	68.66	0.157	1.029E-05	-0.149
570	3.88	9.52	27.99	58.60	16.24	5.92	8.49	69.35	0.150	9.851E-06	-0.146
571	3.33	2.72	26.94	67.01	16.29	8.08	6.40	69.22	0.163	1.069E-05	-0.153
572	5.05	7.61	24.03	63.32	13.55	6.70	5.24	74.51	0.160	1.049E-05	-0.148
573	4.91	8.41	23.90	62.78	15.82	7.42	8.92	67.84	0.152	9.994E-06	-0.144
574	7.79	5.21	29.04	57.95	13.50	7.23	10.56	68.70	0.142	9.353E-06	-0.138
575	6.92	5.45	25.49	62.14	13.82	11.94	11.33	62.91	0.138	9.064E-06	-0.135
576	9.60	7.42	24.82	58.15	16.07	9.08	6.15	68.70	0.148	9.706E-06	-0.142
577	5.23	5.18	23.08	66.50	15.90	8.59	8.49	67.02	0.157	1.029E-05	-0.148
578	6.96	7.03	20.19	65.82	13.60	16.10	9.08	61.22	0.138	9.090E-06	-0.134
579	2.10	3.50	22.58	71.81	13.59	13.70	9.28	63.43	0.150	9.864E-06	-0.144
580	8.21	4.05	16.28	71.46	15.77	15.06	10.16	59.00	0.148	9.694E-06	-0.141
581	7.15	15.23	20.92	56.69	15.41	8.21	7.61	68.77	0.143	9.395E-06	-0.138
582	3.46	5.02	25.85	65.66	14.31	9.13	6.38	70.18	0.157	1.031E-05	-0.150
583	4.58	1.97	24.02	69.43	14.41	6.96	8.72	69.91	0.163	1.070E-05	-0.152
584	12.22	5.37	21.00	61.40	15.62	8.07	9.72	66.58	0.148	9.724E-06	-0.143
585	9.74	5.12	23.95	61.19	15.98	8.05	12.17	63.79	0.144	9.454E-06	-0.139
586	4.34	3.51	21.77	70.38	14.23	5.51	6.21	74.04	0.172	1.129E-05	-0.160
587	6.91	3.76	19.98	69.34	15.93	9.56	8.05	66.45	0.160	1.049E-05	-0.151
588	6.33	1.77	21.56	70.34	14.74	8.68	13.48	63.09	0.152	9.997E-06	-0.146
589	7.55	2.10	26.88	63.47	14.14	8.92	11.97	64.97	0.145	9.505E-06	-0.140
590	3.19	2.50	20.69	73.61	15.63	8.99	9.26	66.11	0.164	1.077E-05	-0.154
591	3.98	4.24	17.68	74.10	15.48	15.95	9.13	59.44	0.150	9.875E-06	-0.144
592	4.97	6.12	26.13	62.78	14.62	12.16	7.70	65.52	0.145	9.517E-06	-0.139
593	7.17	1.72	24.05	67.06	15.39	9.51	5.45	69.65	0.161	1.059E-05	-0.153
594	5.59	10.58	25.23	58.61	13.85	7.24	6.82	72.09	0.149	9.789E-06	-0.144
595	8.10	2.48	25.02	64.40	15.25	7.59	6.74	70.43	0.159	1.042E-05	-0.148
596	5.49	8.22	27.59	58.69	15.48	10.16	6.04	68.33	0.146	9.608E-06	-0.141
597	7.26	5.19	30.76	56.79	14.06	8.15	14.48	63.32	0.133	8.740E-06	-0.132
598	9.34	6.05	23.80	60.81	14.81	8.10	6.27	70.82	0.153	1.003E-05	-0.146
599	4.91	10.82	26.98	57.29	14.88	13.94	4.59	66.59	0.139	9.146E-06	-0.135

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
600	4.59	4.85	20.25	70.31	14.40	13.34	6.92	65.34	0.154	1.010E-05	-0.148
601	5.20	1.58	24.50	68.72	14.38	12.49	4.28	68.85	0.159	1.042E-05	-0.151
602	4.57	2.78	29.45	63.21	15.13	9.97	6.72	68.17	0.152	9.984E-06	-0.146
603	8.67	8.79	30.17	52.36	15.05	7.91	5.94	71.10	0.141	9.287E-06	-0.136
604	5.62	6.86	22.97	64.56	15.99	9.15	8.35	66.52	0.153	1.003E-05	-0.143
605	7.17	5.41	19.67	67.75	13.97	9.08	4.14	72.80	0.164	1.077E-05	-0.154
606	6.02	2.38	24.82	66.78	13.64	10.25	7.96	68.15	0.153	1.007E-05	-0.145
607	8.39	3.04	12.28	76.28	15.66	6.92	12.18	65.23	0.167	1.099E-05	-0.155
608	4.91	5.69	21.38	68.02	16.25	9.03	10.61	64.11	0.154	1.010E-05	-0.145
609	7.20	3.96	24.20	64.64	13.80	11.00	8.59	66.61	0.148	9.708E-06	-0.140
610	4.05	4.52	31.08	60.36	15.08	7.56	7.51	69.85	0.151	9.926E-06	-0.146
611	10.81	2.77	21.25	65.17	15.08	9.83	8.25	66.84	0.152	1.002E-05	-0.146
612	6.82	4.89	19.89	68.40	15.05	6.12	8.51	70.31	0.164	1.075E-05	-0.155
613	7.05	7.85	22.40	62.71	16.31	8.11	6.88	68.70	0.155	1.018E-05	-0.147
614	12.41	6.52	18.34	62.74	15.18	12.85	4.78	67.19	0.149	9.790E-06	-0.143
615	5.84	6.16	20.90	67.10	15.90	5.62	8.99	69.48	0.162	1.066E-05	-0.154
616	8.90	3.51	18.07	69.53	13.89	11.40	11.92	62.79	0.148	9.714E-06	-0.141
617	7.46	4.26	25.35	62.93	15.08	6.30	8.02	70.60	0.156	1.028E-05	-0.149
618	4.86	2.83	28.97	63.33	15.87	8.57	13.78	61.78	0.143	9.406E-06	-0.138
619	6.31	4.81	21.22	67.66	15.90	5.97	9.56	68.57	0.162	1.062E-05	-0.152
620	5.28	4.16	26.49	64.07	16.31	6.47	7.19	70.02	0.160	1.051E-05	-0.152
621	6.22	5.03	23.53	65.22	14.05	5.26	11.36	69.33	0.155	1.017E-05	-0.146
622	3.66	5.73	17.21	73.40	13.86	8.97	12.35	64.83	0.156	1.026E-05	-0.149
623	6.29	5.07	27.59	61.05	15.80	14.22	4.15	65.84	0.146	9.573E-06	-0.142
624	8.01	4.54	22.89	64.56	13.94	8.39	6.06	71.61	0.157	1.034E-05	-0.150
625	3.51	7.61	16.51	72.38	13.63	7.11	7.09	72.17	0.168	1.105E-05	-0.157
626	4.70	7.76	19.54	68.00	15.32	6.60	7.59	70.49	0.163	1.074E-05	-0.153
627	8.46	7.16	24.31	60.07	15.26	5.00	6.70	73.03	0.157	1.030E-05	-0.149
628	6.68	4.97	17.34	71.00	13.85	10.10	9.80	66.25	0.156	1.024E-05	-0.148
629	6.51	6.85	13.91	72.74	16.18	9.65	7.33	66.83	0.165	1.086E-05	-0.155
630	6.79	5.14	24.52	63.55	15.12	4.98	12.33	67.57	0.152	9.989E-06	-0.146
631	4.59	4.49	25.52	65.40	16.06	7.37	9.89	66.69	0.155	1.018E-05	-0.148
632	4.87	7.17	22.98	64.98	14.05	5.75	18.86	61.34	0.140	9.204E-06	-0.136
633	6.34	9.03	17.58	67.05	15.63	12.27	6.22	65.87	0.153	1.007E-05	-0.147
634	5.11	11.47	22.22	61.20	16.04	7.66	14.15	62.16	0.140	9.214E-06	-0.136
635	4.95	4.49	25.31	65.26	13.57	7.21	13.16	66.06	0.148	9.696E-06	-0.141
636	2.92	1.62	25.64	69.82	15.58	8.77	8.84	66.80	0.160	1.052E-05	-0.152
637	7.62	3.11	27.20	62.08	15.97	6.80	7.27	69.96	0.156	1.027E-05	-0.149
638	3.55	5.01	29.45	61.99	14.18	10.58	12.05	63.19	0.139	9.131E-06	-0.136
639	6.52	3.33	22.21	67.94	14.84	10.50	5.72	68.94	0.159	1.048E-05	-0.151
640	6.57	4.75	23.56	65.12	13.74	5.57	6.21	74.48	0.163	1.073E-05	-0.153
641	3.60	6.27	28.14	61.99	15.96	7.97	4.13	71.95	0.159	1.045E-05	-0.150
642	7.18	3.24	20.76	68.81	14.93	9.84	6.67	68.56	0.160	1.054E-05	-0.152
643	4.49	6.69	22.40	66.42	13.85	8.25	11.30	66.60	0.150	9.875E-06	-0.144
644	4.05	8.06	17.54	70.35	13.89	7.44	10.29	68.38	0.159	1.045E-05	-0.150
645	5.45	5.65	29.51	59.39	16.01	9.74	7.50	66.76	0.146	9.601E-06	-0.142
646	4.35	3.36	23.88	68.41	15.22	7.37	7.74	69.67	0.163	1.071E-05	-0.153
647	1.35	3.81	31.08	63.76	14.64	7.41	8.82	69.12	0.154	1.009E-05	-0.145
648	8.66	2.65	22.87	65.83	14.85	9.10	11.10	64.95	0.150	9.823E-06	-0.142
649	7.93	3.08	24.51	64.48	15.81	9.73	7.70	66.76	0.153	1.006E-05	-0.147
650	7.12	4.81	28.36	59.71	14.01	9.30	13.36	63.33	0.136	8.964E-06	-0.132
651	3.91	6.39	22.99	66.71	14.34	9.47	4.49	71.70	0.161	1.058E-05	-0.152
652	6.67	3.70	18.82	70.81	15.27	10.87	8.45	65.41	0.158	1.037E-05	-0.150
653	6.29	4.46	22.99	66.26	16.00	9.37	6.29	68.34	0.159	1.044E-05	-0.151
654	9.45	4.88	29.99	55.68	15.82	5.91	9.95	68.31	0.144	9.459E-06	-0.139
655	3.19	4.15	20.64	72.02	14.05	9.69	11.07	65.19	0.156	1.022E-05	-0.149
656	5.01	6.59	23.49	64.90	16.17	7.16	6.78	69.89	0.160	1.052E-05	-0.152
657	9.10	4.73	24.63	61.53	15.17	7.74	10.57	66.51	0.147	9.668E-06	-0.141
658	2.70	6.15	25.57	65.58	14.44	10.85	6.57	68.14	0.153	1.005E-05	-0.146
659	7.65	1.42	27.95	62.98	14.46	5.65	7.85	72.04	0.158	1.038E-05	-0.149
660	9.09	3.91	35.86	51.15	15.05	14.60	4.48	65.87	0.131	8.637E-06	-0.128
661	7.57	3.77	27.29	61.36	13.75	10.48	5.62	70.14	0.149	9.822E-06	-0.144
662	8.57	6.77	17.91	66.75	15.93	6.41	7.52	70.15	0.163	1.069E-05	-0.153
663	5.92	8.08	19.14	66.85	14.87	8.20	9.73	67.20	0.154	1.014E-05	-0.146
664	6.41	7.92	15.82	69.85	14.95	7.59	9.26	68.20	0.161	1.055E-05	-0.151
665	5.50	2.76	31.15	60.59	16.27	10.70	8.78	64.25	0.144	9.476E-06	-0.141
666	4.58	9.01	26.65	59.75	15.46	8.08	8.62	67.84	0.147	9.651E-06	-0.141
667	4.91	6.12	23.48	65.49	14.99	8.61	6.41	69.98	0.158	1.039E-05	-0.150
668	5.84	4.85	20.25	69.06	14.10	6.64	9.20	70.07	0.162	1.062E-05	-0.151
669	3.08	2.82	26.59	67.51	16.35	9.92	7.44	66.29	0.158	1.036E-05	-0.150
670	4.17	4.90	16.79	74.14	13.61	8.32	8.11	69.96	0.167	1.094E-05	-0.155
671	7.53	2.01	24.07	66.38	15.23	8.72	5.45	70.60	0.162	1.062E-05	-0.154
672	3.25	4.83	23.51	68.41	14.50	11.05	9.33	65.13	0.152	9.961E-06	-0.145
673	6.24	2.35	24.28	67.13	14.74	7.69	7.42	70.15	0.161	1.057E-05	-0.150
674	2.59	2.89	23.57	70.95	14.02	8.57	4.42	72.98	0.169	1.111E-05	-0.160

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
675	5.08	6.77	19.40	68.75	13.60	8.03	5.42	72.96	0.165	1.082E-05	-0.154
676	5.60	4.65	24.49	65.26	15.82	8.74	7.31	68.13	0.157	1.029E-05	-0.149
677	5.14	3.36	28.15	63.35	14.19	5.98	8.97	70.86	0.156	1.022E-05	-0.149
678	10.52	1.70	23.31	64.46	14.04	13.47	7.41	65.08	0.145	9.559E-06	-0.140
679	3.53	8.32	23.40	64.75	13.75	9.33	11.38	65.53	0.145	9.555E-06	-0.141
680	5.90	4.01	21.72	68.37	14.06	9.47	6.01	70.45	0.161	1.057E-05	-0.151
681	2.83	4.68	19.26	73.22	16.16	6.67	8.26	68.91	0.171	1.122E-05	-0.159
682	5.28	10.27	20.64	63.82	14.18	11.13	12.80	61.89	0.139	9.116E-06	-0.135
683	2.85	8.59	24.76	63.80	16.22	11.59	6.69	65.51	0.150	9.826E-06	-0.146
684	5.22	3.05	22.45	69.28	13.96	6.24	16.76	63.04	0.149	9.781E-06	-0.144
685	5.02	2.40	22.50	70.08	13.89	7.00	9.00	70.11	0.162	1.068E-05	-0.152
686	5.89	4.65	23.80	65.67	14.92	11.40	4.34	69.35	0.157	1.029E-05	-0.149
687	7.66	4.36	20.06	67.92	15.60	9.03	9.22	66.15	0.156	1.027E-05	-0.150
688	3.76	8.10	24.14	64.00	14.66	7.10	8.37	69.88	0.155	1.016E-05	-0.148
689	5.12	3.27	24.79	66.82	14.37	12.51	7.61	65.51	0.150	9.841E-06	-0.145
690	5.36	6.45	24.65	63.54	16.45	5.41	12.00	66.14	0.152	1.001E-05	-0.145
691	10.57	3.71	24.84	60.88	14.99	9.83	6.60	68.58	0.149	9.811E-06	-0.145
692	3.00	4.33	22.61	70.06	14.89	7.23	10.06	67.83	0.161	1.055E-05	-0.151
693	4.51	6.72	22.20	66.57	14.90	7.48	3.42	74.21	0.167	1.098E-05	-0.157
694	8.80	4.59	28.95	57.66	14.35	8.60	10.16	66.90	0.141	9.246E-06	-0.137
695	4.68	5.64	16.47	73.21	15.84	4.70	8.31	71.14	0.175	1.147E-05	-0.161
696	6.54	6.44	25.33	61.69	15.84	10.52	7.74	65.90	0.147	9.666E-06	-0.143
697	5.40	5.67	23.26	65.67	15.50	7.31	5.25	71.94	0.163	1.073E-05	-0.155
698	7.95	6.18	24.23	61.65	15.80	7.91	4.69	71.60	0.158	1.035E-05	-0.149
699	6.94	8.92	20.75	63.39	15.26	10.52	8.37	65.85	0.148	9.699E-06	-0.141
700	4.89	7.22	20.04	67.85	15.96	10.45	7.06	66.54	0.157	1.031E-05	-0.149
701	10.54	2.49	22.68	64.28	16.50	5.29	7.40	70.81	0.163	1.070E-05	-0.152
702	6.45	2.34	22.93	68.29	16.39	12.94	12.97	57.70	0.143	9.395E-06	-0.138
703	5.75	4.27	29.90	60.08	14.55	10.46	14.07	60.91	0.134	8.808E-06	-0.131
704	5.54	3.18	23.15	68.12	15.01	7.48	9.12	68.39	0.160	1.048E-05	-0.152
705	7.00	3.10	28.68	61.23	14.18	6.33	8.84	70.66	0.152	9.995E-06	-0.144
706	5.05	2.38	29.88	62.69	15.10	16.50	9.69	58.72	0.134	8.811E-06	-0.130
707	8.55	5.78	24.42	61.24	13.69	11.14	12.81	62.35	0.136	8.924E-06	-0.134
708	4.09	6.16	23.48	66.27	16.25	7.63	5.32	70.80	0.164	1.077E-05	-0.155
709	9.30	5.88	23.25	61.58	15.86	5.38	5.54	73.21	0.161	1.058E-05	-0.153
710	9.10	3.68	28.16	59.07	14.62	4.85	7.60	72.94	0.154	1.014E-05	-0.148
711	7.00	9.08	24.46	59.47	13.99	11.88	6.78	67.35	0.142	9.321E-06	-0.138
712	8.93	1.77	18.67	70.62	16.44	7.83	6.23	69.50	0.170	1.114E-05	-0.158
713	8.12	2.89	26.99	62.00	15.06	7.82	10.00	67.12	0.149	9.777E-06	-0.141
714	6.29	5.32	23.38	65.00	14.50	6.31	11.41	67.78	0.153	1.002E-05	-0.147
715	2.05	6.62	25.92	65.40	16.11	5.99	13.82	64.08	0.150	9.876E-06	-0.146
716	4.85	6.40	23.59	65.16	13.82	9.84	6.19	70.16	0.155	1.016E-05	-0.145
717	10.44	5.76	17.92	65.88	14.17	8.05	8.07	69.71	0.156	1.027E-05	-0.150
718	5.00	5.52	24.09	65.39	14.53	8.38	7.12	69.97	0.157	1.030E-05	-0.149
719	6.68	6.77	17.09	69.47	14.00	7.19	9.85	68.97	0.159	1.048E-05	-0.151
720	3.49	4.21	25.93	66.37	13.77	10.82	9.58	65.82	0.148	9.745E-06	-0.142
721	7.72	6.14	25.06	61.09	14.75	10.88	7.55	66.82	0.145	9.552E-06	-0.140
722	7.36	5.80	21.03	65.82	13.85	9.84	10.11	66.19	0.149	9.776E-06	-0.144
723	3.62	6.78	35.19	54.41	14.34	6.16	7.74	71.75	0.145	9.499E-06	-0.140
724	9.35	4.95	28.44	57.25	16.05	8.27	10.03	65.66	0.142	9.319E-06	-0.138
725	5.34	3.43	17.81	73.42	16.33	4.18	6.13	73.37	0.181	1.192E-05	-0.166
726	5.87	6.21	20.93	67.00	15.69	6.69	9.26	68.36	0.159	1.046E-05	-0.151
727	5.83	8.55	20.38	65.24	15.77	5.00	8.44	70.79	0.161	1.060E-05	-0.153
728	4.80	8.22	14.73	72.25	15.98	2.86	5.90	75.27	0.181	1.191E-05	-0.167
729	4.47	10.27	20.66	64.60	14.17	8.25	11.96	65.62	0.146	9.620E-06	-0.142
730	4.97	7.49	24.06	63.47	16.45	8.86	3.13	71.56	0.161	1.060E-05	-0.152
731	4.45	4.34	21.65	69.56	14.30	10.15	5.13	70.42	0.163	1.070E-05	-0.153
732	8.54	2.97	15.87	72.62	14.18	11.77	8.25	65.80	0.158	1.039E-05	-0.151
733	5.34	3.99	20.91	69.76	14.11	11.95	6.73	67.21	0.156	1.026E-05	-0.148
734	7.18	1.16	21.68	69.99	16.34	9.86	9.74	64.06	0.157	1.034E-05	-0.149
735	6.85	5.05	23.14	64.96	14.86	12.38	7.00	65.76	0.149	9.781E-06	-0.143
736	4.56	3.83	26.69	64.92	14.44	6.02	8.63	70.91	0.158	1.040E-05	-0.149
737	6.85	5.57	27.49	60.10	16.22	7.28	5.84	70.66	0.155	1.017E-05	-0.148
738	14.17	5.40	29.49	50.94	14.76	13.66	8.51	63.07	0.126	8.288E-06	-0.124
739	4.12	7.31	23.46	65.12	15.08	7.90	5.73	71.29	0.160	1.050E-05	-0.149
740	2.33	5.51	19.75	72.41	14.60	5.86	6.15	73.39	0.174	1.142E-05	-0.161
741	8.40	4.74	18.48	68.38	15.33	5.36	7.86	71.45	0.167	1.095E-05	-0.157
742	4.65	4.62	29.42	61.31	15.05	9.67	6.38	68.90	0.150	9.878E-06	-0.144
743	5.75	2.44	31.98	59.83	14.06	9.71	5.75	70.48	0.149	9.788E-06	-0.143
744	4.75	3.99	27.19	64.06	13.98	9.63	11.45	64.94	0.145	9.509E-06	-0.141
745	6.32	7.87	21.75	64.06	14.25	10.69	8.25	66.81	0.148	9.721E-06	-0.142
746	6.25	7.29	16.08	70.39	13.74	8.56	10.25	67.45	0.157	1.032E-05	-0.150
747	4.50	2.61	27.64	65.25	16.16	10.79	8.64	64.42	0.150	9.887E-06	-0.144
748	4.51	9.98	20.31	65.20	14.81	11.44	10.52	63.23	0.144	9.471E-06	-0.140
749	3.85	3.55	17.19	75.42	14.90	10.10	8.64	66.35	0.165	1.084E-05	-0.156

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
750	3.89	2.57	21.09	72.45	15.91	8.55	6.85	68.68	0.168	1.106E-05	-0.158
751	5.74	9.33	28.80	56.13	14.25	7.85	11.20	66.70	0.138	9.041E-06	-0.135
752	5.28	2.51	25.96	66.25	15.94	3.97	4.53	75.56	0.174	1.141E-05	-0.160
753	5.21	8.79	15.21	70.79	14.60	5.49	8.69	71.21	0.167	1.096E-05	-0.158
754	5.93	4.96	21.72	67.39	13.96	6.45	7.15	72.44	0.163	1.073E-05	-0.153
755	8.78	6.50	26.92	57.80	14.45	5.96	6.08	73.51	0.153	1.002E-05	-0.146
756	6.09	3.35	24.06	66.50	14.54	9.42	7.88	68.16	0.155	1.021E-05	-0.150
757	1.77	5.49	31.35	61.39	16.33	3.58	10.72	69.36	0.155	1.019E-05	-0.148
758	7.53	4.05	26.41	62.01	16.13	9.81	6.17	67.89	0.152	1.000E-05	-0.144
759	5.22	6.06	26.13	62.59	16.43	5.94	7.05	70.58	0.159	1.044E-05	-0.149
760	3.84	6.31	26.24	63.61	14.09	8.45	9.69	67.77	0.149	9.802E-06	-0.145
761	2.06	4.70	28.52	64.73	15.67	8.01	4.32	72.00	0.163	1.068E-05	-0.152
762	6.83	6.66	15.93	70.57	14.27	8.04	7.21	70.48	0.164	1.080E-05	-0.153
763	5.03	5.85	18.15	70.97	16.44	8.96	6.98	67.62	0.165	1.085E-05	-0.156
764	4.43	4.67	27.16	63.75	13.54	7.84	3.96	74.65	0.161	1.055E-05	-0.153
765	5.20	5.14	20.12	69.53	14.02	6.44	8.01	71.52	0.165	1.083E-05	-0.156
766	8.92	6.62	25.97	58.49	15.59	7.54	6.55	70.32	0.150	9.874E-06	-0.144
767	3.74	5.71	27.28	63.27	16.43	10.45	6.67	66.45	0.152	9.966E-06	-0.144
768	2.44	4.53	26.97	66.06	15.32	8.93	7.94	67.80	0.156	1.023E-05	-0.148
769	7.18	5.40	24.68	62.74	15.13	4.38	5.89	74.60	0.164	1.076E-05	-0.153
770	4.34	7.97	17.31	70.38	16.27	10.18	10.71	62.83	0.154	1.014E-05	-0.148
771	9.91	7.40	26.44	56.25	16.20	8.76	9.65	65.39	0.140	9.193E-06	-0.134
772	2.62	4.56	28.27	64.54	14.08	7.24	9.02	69.66	0.154	1.013E-05	-0.148
773	5.49	7.02	27.73	59.76	14.52	10.94	8.80	65.74	0.141	9.267E-06	-0.135
774	3.12	12.41	21.53	62.94	16.45	8.62	5.90	69.03	0.155	1.019E-05	-0.148
775	9.18	5.49	26.13	59.20	15.36	10.77	8.74	65.12	0.142	9.307E-06	-0.138
776	5.58	6.63	22.97	64.82	14.37	14.52	7.26	63.86	0.144	9.443E-06	-0.139
777	2.86	9.78	17.58	69.79	14.38	8.47	7.68	69.46	0.161	1.057E-05	-0.152
778	4.14	4.23	19.39	72.24	13.91	7.76	10.41	67.91	0.161	1.057E-05	-0.153
779	4.56	11.43	24.59	59.43	15.12	5.24	6.01	73.62	0.156	1.024E-05	-0.150
780	5.21	6.66	26.41	61.72	13.99	5.33	17.82	62.85	0.138	9.096E-06	-0.134
781	3.89	1.43	24.16	70.52	15.69	5.63	5.23	73.45	0.175	1.151E-05	-0.163
782	7.16	2.83	24.21	65.80	15.61	9.55	15.17	59.67	0.142	9.317E-06	-0.138
783	6.85	3.92	25.42	63.81	14.27	5.89	15.70	64.14	0.144	9.488E-06	-0.141
784	5.71	3.15	27.27	63.88	16.07	9.50	8.05	66.38	0.152	9.999E-06	-0.144
785	6.08	6.02	22.61	65.30	14.49	7.86	5.04	72.60	0.161	1.060E-05	-0.152
786	8.12	5.01	24.29	62.58	14.72	9.36	4.11	71.81	0.157	1.029E-05	-0.147
787	5.36	3.33	23.69	67.62	15.75	12.24	9.39	62.62	0.149	9.804E-06	-0.143
788	6.07	3.21	30.36	60.37	14.92	7.15	10.64	67.29	0.146	9.624E-06	-0.140
789	2.36	9.78	22.33	65.52	13.73	7.32	9.41	69.54	0.154	1.009E-05	-0.147
790	5.88	3.59	27.27	63.26	14.82	10.50	9.18	65.50	0.146	9.623E-06	-0.141
791	9.72	4.71	23.69	61.88	16.39	5.56	7.13	70.92	0.159	1.043E-05	-0.149
792	6.03	4.57	26.94	62.47	16.46	5.25	11.24	67.05	0.153	1.004E-05	-0.146
793	6.60	4.90	30.03	58.48	16.15	7.94	4.92	70.99	0.153	1.005E-05	-0.145
794	6.50	4.32	24.26	64.92	16.17	6.49	5.81	71.53	0.164	1.076E-05	-0.153
795	4.40	5.34	20.77	69.49	15.96	8.13	10.19	65.73	0.158	1.041E-05	-0.151
796	4.92	5.02	30.23	59.83	13.74	12.13	4.22	69.91	0.147	9.629E-06	-0.141
797	2.93	4.47	19.02	73.59	15.82	10.01	6.84	67.34	0.166	1.093E-05	-0.156
798	3.10	7.34	23.07	66.50	16.00	10.59	5.73	67.68	0.157	1.032E-05	-0.147
799	7.35	1.32	26.03	65.30	14.07	5.82	9.85	70.26	0.157	1.033E-05	-0.149
800	8.58	4.33	15.04	72.05	15.31	7.54	7.34	69.81	0.169	1.109E-05	-0.158
801	3.36	1.54	29.49	65.62	14.24	10.76	8.35	66.65	0.150	9.876E-06	-0.144
802	7.76	13.13	21.15	57.96	15.09	8.64	11.51	64.76	0.138	9.067E-06	-0.134
803	3.25	3.46	23.62	69.67	14.67	9.80	8.19	67.34	0.158	1.039E-05	-0.151
804	6.83	6.93	23.11	63.13	13.66	9.12	6.13	71.10	0.153	1.006E-05	-0.144
805	1.55	4.56	28.72	65.17	14.07	9.40	6.02	70.51	0.156	1.027E-05	-0.149
806	4.68	3.12	27.11	65.10	15.87	6.74	8.01	69.38	0.159	1.047E-05	-0.150
807	5.88	5.15	27.47	61.50	14.10	7.65	6.06	72.19	0.154	1.015E-05	-0.148
808	6.74	4.93	33.74	54.59	15.86	6.36	7.69	70.09	0.145	9.553E-06	-0.140
809	4.84	3.61	23.42	68.13	16.47	12.52	3.36	67.65	0.161	1.057E-05	-0.152
810	3.79	4.02	26.79	65.39	15.76	11.52	8.82	63.91	0.149	9.760E-06	-0.141
811	8.83	7.01	27.03	57.13	13.87	6.53	10.73	68.87	0.142	9.342E-06	-0.138
812	3.99	4.49	23.83	67.70	14.82	13.05	9.94	62.19	0.146	9.592E-06	-0.141
813	4.27	3.75	22.10	69.88	15.74	8.24	9.87	66.15	0.159	1.047E-05	-0.153
814	4.10	3.19	33.05	59.65	13.76	6.41	8.51	71.32	0.150	9.846E-06	-0.145
815	4.89	2.82	24.08	68.21	15.34	5.53	6.30	72.83	0.169	1.113E-05	-0.158
816	4.92	4.31	22.29	68.48	15.52	6.14	5.16	73.18	0.171	1.120E-05	-0.159
817	4.46	6.01	27.44	62.09	13.75	13.18	10.63	62.44	0.137	8.972E-06	-0.133
818	7.85	4.18	19.56	68.40	14.62	9.23	6.93	69.22	0.160	1.052E-05	-0.151
819	2.21	3.71	29.15	64.94	14.72	9.51	8.32	67.45	0.152	9.989E-06	-0.146
820	4.90	7.47	25.53	62.10	15.40	6.33	10.11	68.16	0.151	9.924E-06	-0.144
821	4.19	2.57	23.10	70.14	15.62	10.73	8.46	65.19	0.157	1.034E-05	-0.148
822	5.21	7.16	19.50	68.12	16.01	7.66	8.57	67.76	0.160	1.053E-05	-0.150
823	8.70	4.30	27.88	59.12	16.38	11.41	7.12	65.09	0.144	9.440E-06	-0.139
824	6.42	5.84	27.79	59.95	15.86	11.58	2.52	70.04	0.152	9.986E-06	-0.145

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	$\beta_1{}'$	SY (SIBERIA)
825	3.62	2.91	15.15	78.32	15.40	6.34	8.92	69.33	0.178	1.167E-05	-0.165
826	6.57	7.82	21.03	64.57	14.54	8.38	6.84	70.24	0.156	1.023E-05	-0.148
827	6.40	7.19	25.09	61.32	14.35	5.59	10.36	69.69	0.150	9.880E-06	-0.144
828	5.12	4.60	26.02	64.27	15.23	8.47	4.57	71.74	0.160	1.053E-05	-0.153
829	5.77	6.71	27.61	59.91	13.75	7.01	7.05	72.19	0.151	9.940E-06	-0.144
830	2.94	5.76	23.47	67.83	14.64	11.07	5.71	68.57	0.157	1.034E-05	-0.147
831	4.11	2.92	18.56	74.41	14.26	5.43	5.70	74.61	0.179	1.177E-05	-0.165
832	7.53	4.90	15.94	71.63	16.01	7.27	5.39	71.32	0.173	1.135E-05	-0.161
833	4.33	2.46	21.36	71.86	14.95	5.71	6.95	72.38	0.173	1.135E-05	-0.162
834	4.21	4.02	24.71	67.07	14.21	6.99	12.56	66.24	0.152	9.983E-06	-0.145
835	4.03	3.52	21.68	70.78	15.36	8.07	4.85	71.71	0.171	1.121E-05	-0.159
836	4.24	6.53	22.25	66.99	15.61	9.34	8.38	66.67	0.155	1.020E-05	-0.148
837	8.39	3.19	17.08	71.34	14.64	8.25	8.01	69.10	0.165	1.082E-05	-0.155
838	4.22	1.76	15.25	78.76	16.34	9.69	5.03	68.95	0.180	1.182E-05	-0.167
839	5.33	4.32	23.52	66.82	15.56	8.17	7.08	69.18	0.160	1.052E-05	-0.151
840	7.90	3.12	20.88	68.10	14.66	5.93	6.44	72.97	0.168	1.102E-05	-0.157
841	5.02	3.49	20.92	70.57	15.28	9.28	11.55	63.89	0.155	1.018E-05	-0.147
842	2.55	3.58	17.00	76.87	13.98	8.69	6.51	70.83	0.174	1.141E-05	-0.161
843	6.46	4.09	31.13	58.32	14.49	11.23	5.29	69.00	0.145	9.526E-06	-0.141
844	8.78	4.45	18.46	68.31	15.60	7.71	11.97	64.73	0.154	1.014E-05	-0.147
845	7.05	3.34	27.31	62.30	13.51	9.24	9.71	67.54	0.146	9.589E-06	-0.141
846	8.54	4.94	20.38	66.14	15.66	6.29	6.58	71.48	0.164	1.077E-05	-0.154
847	8.07	5.37	22.97	63.60	14.09	6.81	9.32	69.78	0.153	1.006E-05	-0.146
848	2.66	8.28	24.42	64.63	15.88	11.51	6.02	66.59	0.152	9.982E-06	-0.146
849	8.34	3.90	22.26	65.49	13.56	9.63	7.52	69.29	0.154	1.009E-05	-0.148
850	5.27	4.79	25.16	64.77	15.16	13.67	6.64	64.53	0.147	9.662E-06	-0.143
851	8.73	8.30	21.84	61.13	13.77	9.46	9.79	66.99	0.143	9.421E-06	-0.137
852	6.22	6.24	25.35	62.20	15.64	7.29	6.40	70.67	0.156	1.027E-05	-0.148
853	5.43	7.39	21.87	65.31	13.77	7.33	11.09	67.81	0.151	9.910E-06	-0.145
854	7.25	3.80	23.15	65.80	15.12	6.23	8.12	70.53	0.161	1.055E-05	-0.153
855	4.64	3.52	16.48	75.36	13.99	9.17	7.20	69.64	0.169	1.111E-05	-0.159
856	14.94	3.43	19.57	62.06	16.33	8.24	4.74	70.70	0.158	1.040E-05	-0.150
857	6.82	8.88	19.48	64.83	15.15	10.17	7.05	67.63	0.152	1.002E-05	-0.145
858	3.29	5.14	26.34	65.23	14.85	8.00	6.96	70.19	0.158	1.036E-05	-0.148
859	5.95	2.90	23.01	68.14	16.30	8.85	11.39	63.47	0.154	1.009E-05	-0.146
860	5.15	9.09	23.54	62.22	16.14	11.11	10.64	62.11	0.142	9.309E-06	-0.137
861	9.19	3.10	19.43	68.28	13.99	9.44	13.33	63.24	0.148	9.706E-06	-0.142
862	4.37	4.46	19.69	71.48	15.14	6.85	6.79	71.22	0.170	1.117E-05	-0.158
863	2.55	4.54	20.86	72.05	13.87	5.53	9.07	71.52	0.168	1.103E-05	-0.156
864	4.27	5.17	22.91	67.66	16.27	6.17	8.25	69.31	0.164	1.076E-05	-0.153
865	7.52	2.73	22.42	67.33	14.12	12.09	6.41	67.38	0.154	1.009E-05	-0.145
866	4.04	10.68	23.02	62.26	14.71	9.68	6.02	69.58	0.151	9.928E-06	-0.144
867	7.24	3.22	20.20	69.33	15.11	15.35	12.41	57.13	0.140	9.191E-06	-0.134
868	4.70	4.56	16.45	74.29	14.41	4.69	9.41	71.49	0.173	1.135E-05	-0.160
869	4.96	5.05	19.63	70.37	15.48	11.00	15.10	58.43	0.145	9.504E-06	-0.140
870	10.87	3.25	21.59	64.29	15.26	7.83	4.60	72.31	0.162	1.064E-05	-0.154
871	5.98	9.49	25.67	58.86	15.21	7.41	7.34	70.04	0.149	9.792E-06	-0.144
872	2.81	6.60	23.66	66.93	14.97	7.45	9.43	68.15	0.157	1.029E-05	-0.149
873	8.01	5.95	22.19	63.85	13.84	8.82	5.94	71.39	0.155	1.021E-05	-0.148
874	5.94	6.18	19.91	67.97	13.58	9.14	9.39	67.89	0.154	1.013E-05	-0.144
875	3.87	3.44	25.15	67.53	13.89	6.88	6.68	72.54	0.164	1.075E-05	-0.154
876	7.30	4.98	27.55	60.17	15.48	4.93	10.64	68.94	0.151	9.897E-06	-0.144
877	3.43	9.63	28.25	58.69	14.84	13.98	4.27	66.90	0.142	9.304E-06	-0.137
878	5.59	7.92	20.29	66.19	13.60	7.90	13.06	65.44	0.147	9.671E-06	-0.143
879	3.84	2.86	27.98	65.31	14.50	4.17	9.28	72.05	0.161	1.061E-05	-0.152
880	8.39	3.38	23.69	64.55	16.46	4.00	5.15	74.40	0.170	1.116E-05	-0.159
881	6.00	5.94	17.52	70.54	14.30	7.15	13.81	64.74	0.154	1.012E-05	-0.146
882	3.45	10.99	32.06	53.49	16.21	6.56	13.28	63.96	0.134	8.784E-06	-0.131
883	7.63	5.02	23.45	63.90	13.57	7.67	6.11	72.65	0.157	1.034E-05	-0.149
884	5.82	6.82	27.33	60.03	16.03	5.02	8.40	70.56	0.154	1.013E-05	-0.145
885	9.37	9.14	25.39	56.09	14.99	5.44	4.92	74.65	0.153	1.003E-05	-0.144
886	6.20	3.94	22.12	67.74	13.95	10.18	8.21	67.66	0.154	1.015E-05	-0.148
887	6.56	5.97	24.76	62.72	14.21	7.09	9.10	69.60	0.152	9.974E-06	-0.146
888	6.94	6.24	23.55	63.28	15.54	6.72	9.45	68.29	0.153	1.008E-05	-0.145
889	3.48	7.89	28.27	60.36	14.78	7.60	8.45	69.17	0.149	9.776E-06	-0.144
890	11.68	8.98	18.46	60.88	14.13	7.83	3.99	74.04	0.156	1.026E-05	-0.149
891	7.24	4.02	31.22	57.53	14.63	14.06	9.44	61.87	0.132	8.677E-06	-0.130
892	4.48	6.33	26.57	62.63	15.26	5.86	15.12	63.76	0.144	9.463E-06	-0.140
893	5.81	5.32	22.74	66.13	15.38	8.33	7.64	68.65	0.158	1.036E-05	-0.149
894	5.91	7.08	22.41	64.60	15.12	8.03	10.83	66.03	0.150	9.848E-06	-0.142
895	7.49	1.35	29.64	61.52	15.25	11.63	6.57	66.56	0.147	9.674E-06	-0.142
896	4.90	7.88	19.49	67.74	15.80	6.02	9.43	68.76	0.161	1.058E-05	-0.153
897	3.54	3.73	30.91	61.81	15.40	7.56	11.24	65.80	0.147	9.650E-06	-0.141
898	4.57	3.85	18.42	73.15	15.51	9.66	4.17	70.66	0.172	1.127E-05	-0.158
899	3.46	3.60	24.28	68.66	14.59	6.94	9.05	69.42	0.161	1.058E-05	-0.153

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
900	11.72	7.33	14.11	66.85	16.03	8.97	7.90	67.10	0.157	1.032E-05	-0.148
901	4.48	2.92	23.61	68.99	14.64	10.40	5.23	69.73	0.162	1.062E-05	-0.152
902	7.91	8.46	24.03	59.60	14.09	3.86	10.17	71.89	0.151	9.943E-06	-0.145
903	8.16	5.97	19.79	66.08	16.46	10.24	9.25	64.05	0.152	9.958E-06	-0.145
904	4.12	8.49	23.67	63.71	13.71	7.79	6.93	71.56	0.155	1.017E-05	-0.146
905	5.91	3.95	22.10	68.04	15.91	10.64	10.23	63.21	0.152	9.955E-06	-0.144
906	4.68	3.62	28.91	62.79	16.38	5.83	9.61	68.18	0.155	1.020E-05	-0.149
907	11.21	7.46	18.23	63.10	14.18	10.41	6.44	68.97	0.150	9.880E-06	-0.144
908	8.46	6.13	30.08	55.33	13.55	6.89	4.94	74.62	0.149	9.774E-06	-0.142
909	4.29	4.12	24.81	66.78	15.20	14.15	10.66	60.00	0.142	9.309E-06	-0.137
910	4.37	2.84	31.43	61.35	15.01	9.00	7.58	68.42	0.150	9.842E-06	-0.144
911	6.89	5.78	28.15	59.19	15.51	9.04	9.79	65.67	0.143	9.396E-06	-0.137
912	5.78	3.82	25.57	64.82	15.92	7.65	5.92	70.51	0.161	1.057E-05	-0.152
913	4.28	6.37	23.83	65.53	14.25	8.24	8.52	68.99	0.154	1.014E-05	-0.147
914	7.54	4.08	26.02	62.36	13.73	8.77	6.19	71.31	0.153	1.006E-05	-0.146
915	7.37	4.96	25.16	62.51	15.74	3.55	12.76	67.95	0.153	1.005E-05	-0.146
916	5.48	5.27	31.48	57.77	13.84	12.92	9.48	63.77	0.134	8.784E-06	-0.131
917	7.54	6.25	21.39	64.82	13.81	7.12	6.47	72.61	0.159	1.045E-05	-0.151
918	10.31	2.46	22.14	65.09	13.98	10.18	10.23	65.62	0.148	9.696E-06	-0.141
919	9.82	6.69	20.20	63.29	13.80	8.95	3.60	73.64	0.158	1.041E-05	-0.151
920	5.11	4.98	23.01	66.90	15.86	17.92	3.33	62.89	0.148	9.715E-06	-0.142
921	3.78	6.61	27.88	61.72	15.87	9.40	10.27	64.46	0.145	9.514E-06	-0.140
922	2.41	6.20	28.55	62.84	16.03	12.30	4.67	67.01	0.151	9.903E-06	-0.145
923	8.32	2.23	20.05	69.39	15.48	13.53	6.95	64.05	0.154	1.009E-05	-0.146
924	6.02	2.74	27.47	63.77	13.53	8.09	7.67	70.71	0.154	1.011E-05	-0.146
925	7.94	1.51	24.14	66.41	15.10	6.07	14.48	64.35	0.150	9.885E-06	-0.145
926	9.05	2.34	28.01	60.60	16.04	6.94	5.10	71.93	0.158	1.038E-05	-0.148
927	4.94	4.91	23.16	66.99	15.29	5.47	8.77	70.47	0.163	1.068E-05	-0.151
928	1.66	3.61	24.73	69.99	14.46	13.19	9.95	62.40	0.148	9.723E-06	-0.141
929	5.15	6.75	27.53	60.56	14.48	7.03	5.48	73.01	0.155	1.021E-05	-0.147
930	5.36	3.06	20.57	71.01	15.35	7.32	7.42	69.91	0.168	1.101E-05	-0.157
931	7.33	2.41	28.13	62.13	14.96	10.57	14.38	60.08	0.136	8.968E-06	-0.134
932	4.08	6.20	21.02	68.70	15.72	6.63	9.75	67.90	0.161	1.056E-05	-0.151
933	5.43	5.56	21.10	67.91	16.45	9.38	7.59	66.58	0.159	1.043E-05	-0.149
934	7.44	7.94	26.54	58.08	14.83	11.90	4.50	68.77	0.144	9.493E-06	-0.139
935	8.40	3.57	23.82	64.22	15.11	7.24	6.00	71.65	0.160	1.052E-05	-0.151
936	4.75	3.29	23.19	68.77	15.09	6.46	4.40	74.04	0.172	1.128E-05	-0.161
937	3.34	4.86	22.88	68.92	16.06	6.20	8.66	69.08	0.164	1.081E-05	-0.154
938	4.78	8.53	27.87	58.83	16.48	7.17	13.46	62.89	0.140	9.185E-06	-0.136
939	6.06	3.82	25.24	64.88	13.82	11.30	12.53	62.34	0.141	9.241E-06	-0.136
940	14.62	3.91	14.84	66.62	14.22	6.30	6.07	73.41	0.165	1.083E-05	-0.153
941	4.95	3.29	21.58	70.18	15.87	7.24	3.82	73.07	0.174	1.142E-05	-0.161
942	1.57	8.61	18.71	71.10	14.15	6.75	12.29	66.81	0.158	1.036E-05	-0.149
943	9.18	6.02	20.46	64.33	14.35	10.88	7.57	67.19	0.149	9.821E-06	-0.143
944	5.59	5.76	21.93	66.72	14.38	5.71	5.82	74.10	0.166	1.093E-05	-0.156
945	5.58	5.05	26.36	63.01	14.10	7.50	7.31	71.09	0.155	1.016E-05	-0.145
946	4.94	2.44	19.62	73.01	16.18	7.13	5.88	70.81	0.175	1.147E-05	-0.162
947	7.17	2.66	16.42	73.75	14.74	3.81	7.50	73.95	0.179	1.174E-05	-0.167
948	4.61	7.86	21.23	66.30	14.43	7.22	2.69	75.66	0.168	1.106E-05	-0.158
949	4.83	5.21	22.06	67.90	14.31	7.21	8.57	69.91	0.160	1.051E-05	-0.152
950	7.48	7.52	21.81	63.19	13.50	7.45	8.29	70.76	0.153	1.002E-05	-0.145
951	4.54	5.28	25.07	65.11	15.41	12.51	11.56	60.52	0.141	9.269E-06	-0.135
952	6.42	8.07	22.47	63.04	14.50	4.40	5.96	75.14	0.163	1.071E-05	-0.153
953	4.67	14.53	15.44	65.37	13.96	10.47	5.76	69.81	0.153	1.007E-05	-0.146
954	4.93	3.65	33.18	58.25	15.07	8.38	8.57	67.98	0.145	9.529E-06	-0.140
955	5.76	4.87	22.33	67.03	14.21	8.87	7.59	69.33	0.157	1.033E-05	-0.149
956	7.33	3.37	22.39	66.91	14.59	4.83	5.47	75.11	0.170	1.115E-05	-0.157
957	10.33	3.26	21.99	64.42	15.92	13.04	5.31	65.74	0.151	9.913E-06	-0.145
958	5.19	4.34	25.29	65.19	16.49	6.71	6.32	70.48	0.163	1.070E-05	-0.153
959	7.67	3.48	23.83	65.01	13.69	9.65	7.30	69.36	0.153	1.007E-05	-0.146
960	10.47	3.96	19.14	66.43	14.03	6.70	10.14	69.13	0.156	1.027E-05	-0.150
961	3.64	1.92	22.87	71.58	14.47	8.64	9.07	67.81	0.161	1.061E-05	-0.152
962	5.01	7.12	21.99	65.88	15.13	6.85	6.19	71.83	0.162	1.066E-05	-0.153
963	3.66	2.99	27.71	65.63	14.49	8.01	10.62	66.87	0.152	9.978E-06	-0.145
964	8.97	3.95	28.23	58.85	16.10	5.98	7.94	69.97	0.152	9.989E-06	-0.146
965	8.51	5.23	23.36	62.90	13.54	9.86	8.50	68.10	0.148	9.692E-06	-0.141
966	15.23	5.54	26.03	53.20	15.53	4.45	3.72	76.30	0.153	1.007E-05	-0.147
967	2.42	6.53	27.09	63.96	16.49	8.71	5.36	69.44	0.158	1.041E-05	-0.151
968	8.96	4.45	20.05	66.54	15.95	6.19	9.15	68.71	0.160	1.054E-05	-0.153
969	5.02	7.36	25.33	62.28	14.77	5.42	8.04	71.76	0.156	1.028E-05	-0.149
970	4.02	3.27	28.22	64.49	13.52	7.71	6.32	72.45	0.158	1.038E-05	-0.150
971	4.43	3.37	28.66	63.55	16.25	7.08	11.74	64.94	0.150	9.850E-06	-0.144
972	7.97	4.76	20.67	66.60	13.97	13.31	4.27	68.45	0.154	1.010E-05	-0.148
973	3.72	5.30	19.47	71.51	13.78	8.98	5.54	71.70	0.166	1.093E-05	-0.156
974	4.52	2.61	34.08	58.78	16.40	8.94	8.67	66.00	0.145	9.554E-06	-0.141

Draw	Bunch Grass	Forb	Shrub	Bare	Rock	Basal Stem	Litter	Biocrust	SY (RHEM)	β_1'	SY (SIBERIA)
975	2.10	3.48	24.02	70.40	15.05	11.63	8.92	64.41	0.154	1.012E-05	-0.147
976	6.11	4.46	27.29	62.14	14.45	10.29	6.43	68.84	0.150	9.849E-06	-0.144
977	4.76	6.27	17.40	71.57	16.44	7.63	9.98	65.95	0.163	1.070E-05	-0.154
978	4.65	3.67	26.54	65.14	14.67	12.72	5.55	67.06	0.151	9.928E-06	-0.146
979	5.00	3.49	23.62	67.89	14.30	8.34	13.05	64.32	0.150	9.832E-06	-0.144
980	4.54	7.26	22.13	66.07	14.31	6.60	5.71	73.37	0.163	1.074E-05	-0.155
981	6.16	10.46	19.34	64.05	14.21	7.92	11.19	66.68	0.148	9.699E-06	-0.141
982	4.31	5.33	29.00	61.36	14.19	10.67	10.22	64.93	0.141	9.287E-06	-0.136
983	1.25	4.59	19.69	74.46	14.33	11.71	5.45	68.51	0.166	1.088E-05	-0.156
984	3.73	6.52	19.42	70.33	14.28	9.71	8.48	67.53	0.158	1.039E-05	-0.149
985	4.56	5.67	24.38	65.39	13.76	12.85	5.09	68.29	0.151	9.930E-06	-0.143
986	8.14	5.12	19.16	67.58	15.80	13.03	8.41	62.76	0.149	9.812E-06	-0.144
987	6.64	2.42	24.81	66.13	16.34	7.62	10.04	65.99	0.156	1.024E-05	-0.150
988	5.35	3.66	17.94	73.05	13.98	8.48	10.04	67.49	0.162	1.062E-05	-0.152
989	8.38	6.57	24.31	60.74	14.49	8.54	13.29	63.67	0.139	9.156E-06	-0.137
990	5.52	3.43	23.31	67.74	15.20	6.47	8.15	70.19	0.163	1.071E-05	-0.152
991	5.87	3.42	21.60	69.12	14.76	13.77	8.96	62.51	0.148	9.745E-06	-0.142
992	5.63	8.12	24.19	62.06	16.25	13.83	9.45	60.47	0.139	9.101E-06	-0.133
993	3.06	4.35	22.84	69.75	15.73	6.29	11.53	66.45	0.160	1.051E-05	-0.151
994	8.51	4.04	21.56	65.90	16.28	9.08	10.17	64.47	0.152	9.996E-06	-0.145
995	3.19	10.38	17.97	68.47	15.79	12.23	9.36	62.62	0.149	9.807E-06	-0.143
996	8.12	6.34	22.02	63.52	13.64	12.23	8.77	65.36	0.143	9.415E-06	-0.139
997	7.24	5.10	20.16	67.50	16.17	7.86	4.97	71.00	0.166	1.092E-05	-0.155
998	3.10	7.56	31.77	57.57	15.78	7.83	8.25	68.14	0.146	9.563E-06	-0.140
999	3.67	0.78	37.18	58.38	15.68	8.52	8.62	67.18	0.145	9.552E-06	-0.140

Appendix C: Coverdraws Calibration Table

The file “table_for_Erosion_WP_Appendix_C_with_cover_draws_calibration_results.pdf” presents conditions specified for 18,000 RHEM simulations modeling runoff and erosion for 1000 realizations of cover conditions for six hillslope profile lengths and three gradients. The format is a simplified version of the spreadsheet template used to submit jobs to the RHEM batch engine with columns added to record calibration information.

Realizations which did not converge within 300 iterations of the calibration algorithm are marked in the file and are enumerated in Table 12 below.

The columns are:

Draw:	serial number in set of realizations
Length:	length of profile (m)
Slope:	slope of profile (percent)
Bunch Grass:	percent foliar cover, bunch grass (BG)
Forb:	percent foliar cover, forbes (F)
Shrub:	percent foliar cover, shrubs (S)
Sod:	percent foliar cover, sod grass (zero by default)
Basal Stem:	percent ground cover, plant basal stems (B)
Rock:	percent ground cover, rock cover (15 by default)
Litter:	percent ground cover, litter (L)
Biocrust:	percent ground cover, biological crust (BC)
SY (RHEM):	sediment yield predicted by RHEM for cover conditions in realization for profile of corresponding slope and length (T ha^{-1} y^{-1})
SY (SIBERIA):	sediment yield predicted by SIBERIA across the top slope for cover conditions in realization (T ha^{-1} y^{-1})
SqError:	squared difference between RHEM and SIBERIA SY

Table 12. Cover condition realizations which did not converge within 300 iterations.

Realization	Best Simplex	Best Iterations	Best Tol.	Best O	Best β_1	Best m_1	Best n_1	α
49	1	300	0.000388	2.84E-07	0.000633	1.20701	1.280093	0.161715
84	6	300	0.000451	3.93E-07	0.000874	1.194124	1.310621	0.148116
85	13	300	0.000523	3.27E-07	0.000869	1.182683	1.323389	0.138042
162	1	300	0.000864	3.72E-07	0.001325	1.153896	1.399334	0.109978
206	4	300	0.000383	2.95E-07	0.000858	1.18003	1.329226	0.13544
219	10	300	0.000609	3.25E-07	0.000697	1.205575	1.286139	0.159839
223	10	300	0.000569	2.95E-07	0.000757	1.193238	1.309974	0.147513
264	1	300	0.00038	3.31E-07	0.001016	1.171934	1.357408	0.126664
489	1	300	0.000218	2.98E-07	0.000813	1.187472	1.322386	0.141768
518	1	300	0.000235	2.98E-07	0.000884	1.180366	1.336196	0.134985
557	1	300	0.000667	3.41E-07	0.000964	1.177276	1.342135	0.132085
768	10	300	0.000749	3.77E-07	0.001158	1.167061	1.371267	0.12183
801	1	300	0.000302	3.66E-07	0.001259	1.156371	1.389638	0.112527
865	3	300	0.001405	3.78E-07	0.001234	1.16151	1.384912	0.116621
961	1	300	0.000957	4.35E-07	0.001515	1.150306	1.412135	0.106439

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
0	10	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.08557	0.076288986	8.61E-05
0	10	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.10045	0.097287941	1.00E-05
0	10	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.11588	0.130929565	0.00022649
0	25	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.09667	0.090126648	4.28E-05
0	25	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.11721	0.114953041	5.09E-06
0	25	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.14066	0.154716835	0.00019759
0	50	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.1073	0.102232437	2.57E-05
0	50	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.13473	0.130384026	1.89E-05
0	50	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.16861	0.175512295	4.76E-05
0	75	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.11237	0.110037409	5.44E-06
0	75	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.14458	0.14033652	1.80E-05
0	75	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.18643	0.188912659	6.16E-06
0	100	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.11457	0.115920725	1.82E-06
0	100	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.15066	0.147826147	8.03E-06
0	100	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.19912	0.199000816	1.42E-08
0	120	2	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.11493	0.119804088	2.38E-05
0	120	2.4	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.15402	0.152772808	1.56E-06
0	120	3	0.04410614	0.05501483	0.30023602	0	0.05456501	0.13757834	0.07415017	0.73370647	0.20622	0.205650846	3.24E-07
1	10	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.08884	0.078258991	0.00011196
1	10	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.10438	0.099734211	2.16E-05
1	10	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.12054	0.13413353	0.00018478
1	25	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.09996	0.092663841	5.32E-05
1	25	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.1212	0.118105049	9.58E-06
1	25	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.14554	0.158881989	0.00017801
1	50	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.11076	0.105302181	2.98E-05
1	50	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.13913	0.134207134	2.42E-05
1	50	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.17395	0.180547714	4.35E-05
1	75	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.11603	0.113454971	6.63E-06
1	75	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.14922	0.144605586	2.13E-05
1	75	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.19212	0.194529699	5.81E-06
1	100	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.11833	0.119603119	1.62E-06
1	100	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.15535	0.152437258	8.48E-06
1	100	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.20509	0.2050667	5.43E-10
1	120	2	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.11867	0.123668329	2.50E-05
1	120	2.4	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.15893	0.157607619	1.75E-06
1	120	3	0.05295472	0.06157083	0.24509355	0	0.04439085	0.1579088	0.09608527	0.70161508	0.2126	0.212019086	3.37E-07
2	10	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.09125	0.081852627	8.83E-05
2	10	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.10831	0.10518961	9.74E-06
2	10	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.1261	0.14296608	0.00028446
2	25	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.10174	0.095010529	4.53E-05
2	25	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.12466	0.122114334	6.48E-06
2	25	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.15103	0.165939369	0.00022229
2	50	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.11133	0.106332645	2.50E-05
2	50	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.14163	0.136666393	2.46E-05
2	50	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.17844	0.185734673	5.32E-05
2	75	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.11574	0.113550224	4.80E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
2	75	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.15072	0.145939128	2.29E-05
2	75	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.19579	0.198345591	6.53E-06
2	100	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.11731	0.118955832	2.71E-06
2	100	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.1561	0.15288105	1.04E-05
2	100	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.20787	0.207777081	8.63E-09
2	120	2	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.11708	0.122502923	2.94E-05
2	120	2.4	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.15869	0.157443452	1.55E-06
2	120	3	0.03447567	0.03624399	0.25198979	0	0.09592682	0.15447316	0.07057389	0.67902613	0.21441	0.213967443	1.96E-07
3	10	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.09774	0.087199783	0.0001111
3	10	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.11633	0.11224699	1.67E-05
3	10	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.13566	0.152816105	0.00029433
3	25	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.10857	0.10110672	5.57E-05
3	25	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.13335	0.130150223	1.02E-05
3	25	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.16196	0.1772052	0.00023242
3	50	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.11858	0.113073959	3.03E-05
3	50	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.15109	0.14554224	3.08E-05
3	50	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.19078	0.198160858	5.45E-05
3	75	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.12316	0.120688426	6.11E-06
3	75	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.16063	0.155346082	2.79E-05
3	75	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.20893	0.211507823	6.65E-06
3	100	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.12478	0.12638773	2.58E-06
3	100	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.16615	0.16267046	1.21E-05
3	100	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.22169	0.221487017	4.12E-08
3	120	2	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.12445	0.130130378	3.23E-05
3	120	2.4	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.16887	0.167475684	1.94E-06
3	120	3	0.06713792	0.03206159	0.17251933	0	0.03984702	0.14724627	0.11635459	0.69655212	0.22838	0.228029887	1.23E-07
4	10	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.0989	0.088238907	0.00011366
4	10	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.11773	0.113675785	1.64E-05
4	10	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.13729	0.154894352	0.00030991
4	25	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.10982	0.102301712	5.65E-05
4	25	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.13489	0.131778183	9.68E-06
4	25	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.16387	0.179577866	0.00024674
4	50	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.1199	0.114381523	3.05E-05
4	50	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.15284	0.147339058	3.03E-05
4	50	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.19299	0.200784645	6.08E-05
4	75	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.12462	0.122065264	6.53E-06
4	75	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.16249	0.157248255	2.75E-05
4	75	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.21141	0.214287478	8.28E-06
4	100	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.12626	0.127825184	2.45E-06
4	100	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.16817	0.164651289	1.24E-05
4	100	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.22426	0.224370584	1.22E-08
4	120	2	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.12595	0.131606078	3.20E-05
4	120	2.4	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.17088	0.169508831	1.88E-06
4	120	3	0.04046975	0.01967485	0.23070581	0	0.08183649	0.16374822	0.05195289	0.7024624	0.23119	0.230981286	4.36E-08
5	10	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.08676	0.077219868	9.10E-05
5	10	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.10214	0.098695087	1.19E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
5	10	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.11815	0.133181	0.00022593
5	25	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.09756	0.090810738	4.56E-05
5	25	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.11855	0.11606144	6.19E-06
5	25	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.14268	0.15668251	0.00019607
5	50	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.10773	0.102665405	2.57E-05
5	50	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.13584	0.131210995	2.14E-05
5	50	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.17018	0.177131596	4.83E-05
5	75	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.11281	0.110279872	6.40E-06
5	75	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.14544	0.140957108	2.01E-05
5	75	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.18773	0.190272179	6.46E-06
5	100	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.11462	0.116013813	1.94E-06
5	100	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.15131	0.148280764	9.18E-06
5	100	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.20024	0.200159006	6.56E-09
5	120	2	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.11484	0.119796872	2.46E-05
5	120	2.4	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.15425	0.15310475	1.31E-06
5	120	3	0.0602109	0.06186214	0.23636819	0	0.07081773	0.14831205	0.09002895	0.69084128	0.20727	0.206670125	3.60E-07
6	10	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.09635	0.085857582	0.00011009
6	10	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.1147	0.110645008	1.64E-05
6	10	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.13379	0.150954342	0.00029461
6	25	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.10706	0.099556694	5.63E-05
6	25	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.13158	0.128314438	1.07E-05
6	25	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.15994	0.175040359	0.00022802
6	50	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.11677	0.111333427	2.96E-05
6	50	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.14909	0.143494301	3.13E-05
6	50	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.18864	0.195740566	5.04E-05
6	75	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.12136	0.11882089	6.45E-06
6	75	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.15832	0.153166809	2.66E-05
6	75	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.20635	0.208938878	6.70E-06
6	100	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.12285	0.124430714	2.50E-06
6	100	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.16379	0.160393047	1.15E-05
6	100	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.2189	0.218798285	1.03E-08
6	120	2	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.12248	0.128115273	3.18E-05
6	120	2.4	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.16619	0.165139461	1.10E-06
6	120	3	0.04195844	0.04826044	0.19513632	0	0.076723	0.14372989	0.07434087	0.70520624	0.22573	0.225260695	2.20E-07
7	10	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.08615	0.077241516	7.94E-05
7	10	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.10209	0.099366188	7.42E-06
7	10	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.11878	0.135151005	0.00026801
7	25	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.09631	0.089762955	4.29E-05
7	25	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.11791	0.115481262	5.90E-06
7	25	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.14284	0.157106819	0.00020354
7	50	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.10564	0.100582829	2.56E-05
7	50	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.13419	0.129383869	2.31E-05
7	50	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.16912	0.176040516	4.79E-05
7	75	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.10979	0.107480011	5.34E-06
7	75	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.14282	0.138258273	2.08E-05
7	75	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.18576	0.18812177	5.58E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
7	100	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.11122	0.112647486	2.04E-06
7	100	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.14805	0.144901447	9.91E-06
7	100	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.19721	0.197152042	3.36E-09
7	120	2	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.11097	0.116044482	2.58E-05
7	120	2.4	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.15043	0.149263962	1.36E-06
7	120	3	0.02521442	0.05173247	0.27404658	0	0.11663642	0.13972893	0.0646604	0.67897424	0.2035	0.203083706	1.73E-07
8	10	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.09054	0.080705261	9.67E-05
8	10	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.10702	0.103371143	1.33E-05
8	10	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.12419	0.139913654	0.00024723
8	25	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.10134	0.094387054	4.83E-05
8	25	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.12352	0.120893364	6.90E-06
8	25	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.14908	0.163644638	0.00021213
8	50	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.1114	0.106237392	2.67E-05
8	50	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.14088	0.136081886	2.30E-05
8	50	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.17701	0.184188976	5.15E-05
8	75	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.11634	0.113821551	6.34E-06
8	75	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.1505	0.145797691	2.21E-05
8	75	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.19495	0.197341105	5.72E-06
8	100	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.11815	0.119520855	1.88E-06
8	100	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.15623	0.15309104	9.85E-06
8	100	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.20729	0.207209892	6.42E-09
8	120	2	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.11803	0.123271441	2.75E-05
8	120	2.4	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.15916	0.157890852	1.61E-06
8	120	3	0.0662071	0.03502378	0.22978621	0	0.08856627	0.16143336	0.07240344	0.67759693	0.21417	0.213691425	2.29E-07
9	10	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.08256	0.072716999	9.69E-05
9	10	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.09605	0.091940784	1.69E-05
9	10	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.11012	0.122486687	0.00015293
9	25	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.0939	0.087372971	4.26E-05
9	25	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.11311	0.110493469	6.85E-06
9	25	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.13448	0.147183189	0.00016137
9	50	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.10528	0.100370674	2.41E-05
9	50	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.13113	0.12692028	1.77E-05
9	50	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.16239	0.169091377	4.49E-05
9	75	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.11113	0.108836644	5.26E-06
9	75	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.14171	0.137629026	1.67E-05
9	75	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.18088	0.183350461	6.10E-06
9	100	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.11383	0.115260448	2.05E-06
9	100	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.14879	0.1457479	9.25E-06
9	100	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.19387	0.194162397	8.55E-08
9	120	2	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.11503	0.119522659	2.02E-05
9	120	2.4	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.15221	0.151125725	1.18E-06
9	120	3	0.14561715	0.07383616	0.17918184	0	0.05239296	0.15684071	0.09129795	0.69946838	0.20233	0.201328381	1.00E-06
10	10	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.08542	0.075942612	8.98E-05
10	10	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.10014	0.096681786	1.20E-05
10	10	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.11544	0.129933739	0.00021007
10	25	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.09659	0.090031395	4.30E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
10	25	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.11702	0.114667282	5.54E-06
10	25	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.14033	0.15410202	0.00018967
10	50	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.10748	0.102409954	2.57E-05
10	50	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.13477	0.130427322	1.89E-05
10	50	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.16831	0.175278492	4.86E-05
10	75	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.11278	0.110406876	5.63E-06
10	75	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.14484	0.14060496	1.79E-05
10	75	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.18646	0.188964615	6.27E-06
10	100	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.11506	0.116440287	1.91E-06
10	100	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.15103	0.148285093	7.53E-06
10	100	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.19922	0.199290905	5.03E-09
10	120	2	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.1155	0.12042648	2.43E-05
10	120	2.4	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.1545	0.153359119	1.30E-06
10	120	3	0.13484865	0.02311706	0.23249538	0	0.09510827	0.14652427	0.0408847	0.71748276	0.20664	0.206101855	2.90E-07
11	10	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.07701	0.068300724	7.59E-05
11	10	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.08994	0.086593628	1.12E-05
11	10	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.10345	0.115754032	0.00015139
11	25	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.08722	0.081285439	3.52E-05
11	25	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.10539	0.103063736	5.41E-06
11	25	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.12576	0.137770462	0.00014425
11	50	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.0972	0.092711468	2.01E-05
11	50	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.12136	0.11755518	1.45E-05
11	50	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.15104	0.157141457	3.72E-05
11	75	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.10214	0.100110893	4.12E-06
11	75	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.13091	0.126934713	1.58E-05
11	75	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.16759	0.169688873	4.41E-06
11	100	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.1044	0.105704842	1.70E-06
11	100	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.13679	0.134025288	7.64E-06
11	100	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.17893	0.179166546	5.60E-08
11	120	2	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.10503	0.109403833	1.91E-05
11	120	2.4	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.13974	0.138715776	1.05E-06
11	120	3	0.04877328	0.07705055	0.29602191	0	0.06557204	0.1579055	0.13222928	0.64429318	0.18619	0.185434842	5.70E-07
12	10	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.07937	0.070184135	8.44E-05
12	10	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.09262	0.089039898	1.28E-05
12	10	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.10646	0.119109535	0.00016001
12	25	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.09005	0.083779335	3.93E-05
12	25	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.1088	0.106293678	6.28E-06
12	25	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.12982	0.142221375	0.00015379
12	50	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.10052	0.095763893	2.26E-05
12	50	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.12551	0.121516838	1.59E-05
12	50	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.1562	0.162588196	4.08E-05
12	75	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.10568	0.103545774	4.55E-06
12	75	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.13546	0.131397171	1.65E-05
12	75	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.17362	0.175799497	4.75E-06
12	100	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.10816	0.109437027	1.63E-06
12	100	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.14158	0.138863707	7.38E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
12	100	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.18551	0.185799618	8.39E-08
12	120	2	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.10879	0.113334823	2.07E-05
12	120	2.4	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.14482	0.143808564	1.02E-06
12	120	3	0.04555141	0.05048322	0.34640239	0	0.07422452	0.15311031	0.07690764	0.69575754	0.1932	0.192412845	6.20E-07
13	10	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.09414	0.084190655	9.90E-05
13	10	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.11168	0.108285332	1.15E-05
13	10	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.12996	0.147274113	0.00029978
13	25	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.10503	0.097868118	5.13E-05
13	25	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.12867	0.125898476	7.68E-06
13	25	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.15595	0.171238899	0.00023375
13	50	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.11507	0.1096665	2.92E-05
13	50	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.1463	0.141078339	2.73E-05
13	50	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.18443	0.191891479	5.57E-05
13	75	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.11971	0.117195816	6.32E-06
13	75	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.1559	0.150759506	2.64E-05
13	75	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.20248	0.205068143	6.70E-06
13	100	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.12131	0.122839556	2.34E-06
13	100	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.16144	0.158000898	1.18E-05
13	100	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.21495	0.21492322	7.17E-10
13	120	2	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.1212	0.126547567	2.86E-05
13	120	2.4	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.16417	0.162756332	2.00E-06
13	120	3	0.06584976	0.05293089	0.17938229	0	0.08024107	0.14056388	0.07153983	0.70765521	0.22178	0.221382022	1.58E-07
14	10	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.09435	0.084601974	9.50E-05
14	10	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.11186	0.108545113	1.10E-05
14	10	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.13009	0.147209167	0.00029307
14	25	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.10529	0.098413658	4.73E-05
14	25	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.12884	0.126296806	6.47E-06
14	25	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.15587	0.171308174	0.00023834
14	50	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.1155	0.11034193	2.66E-05
14	50	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.14654	0.141580582	2.46E-05
14	50	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.18452	0.192043018	5.66E-05
14	75	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.12031	0.117934748	5.64E-06
14	75	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.15628	0.151336797	2.44E-05
14	75	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.2026	0.205273081	7.15E-06
14	100	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.12195	0.123636217	2.84E-06
14	100	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.16203	0.158643856	1.15E-05
14	100	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.21529	0.215178671	1.24E-08
14	120	2	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.12184	0.127379227	3.07E-05
14	120	2.4	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.16481	0.163436453	1.89E-06
14	120	3	0.03645605	0.01542119	0.27992276	0	0.07493737	0.15827042	0.05690457	0.70988763	0.22237	0.221683296	4.72E-07
15	10	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.07407	0.065876102	6.71E-05
15	10	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.08647	0.083606148	8.20E-06
15	10	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.09942	0.111857319	0.00015469
15	25	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.08393	0.07828064	3.19E-05
15	25	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.10141	0.09934021	4.28E-06
15	25	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.12105	0.132929878	0.00014113

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
15	50	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.09357	0.089178448	1.93E-05
15	50	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.11684	0.113173542	1.34E-05
15	50	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.14539	0.151460915	3.69E-05
15	75	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.09826	0.096237272	4.09E-06
15	75	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.12593	0.122131653	1.44E-05
15	75	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.16147	0.163451246	3.93E-06
15	100	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.10037	0.101574326	1.45E-06
15	100	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.13167	0.12889678	7.69E-06
15	100	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.17223	0.172503166	7.46E-08
15	120	2	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.10095	0.105097604	1.72E-05
15	120	2.4	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.1344	0.133375835	1.05E-06
15	120	3	0.09552165	0.0534538	0.28164176	0	0.09558351	0.15629151	0.12712256	0.62100242	0.17919	0.178482095	5.01E-07
16	10	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.0831	0.074535465	7.34E-05
16	10	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.09853	0.095859146	7.13E-06
16	10	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.11462	0.130258465	0.00024456
16	25	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.09281	0.086481056	4.01E-05
16	25	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.11357	0.111194878	5.64E-06
16	25	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.13756	0.151157837	0.0001849
16	50	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.10163	0.09676405	2.37E-05
16	50	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.12905	0.124413395	2.15E-05
16	50	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.1626	0.169117355	4.25E-05
16	75	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.10567	0.103323517	5.51E-06
16	75	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.1373	0.132837512	1.99E-05
16	75	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.17856	0.180576579	4.07E-06
16	100	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.10697	0.108229046	1.59E-06
16	100	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.14213	0.139136477	8.96E-06
16	100	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.18954	0.189144297	1.57E-07
16	120	2	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.10667	0.111453215	2.29E-05
16	120	2.4	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.1445	0.14327457	1.50E-06
16	120	3	0.04024567	0.05512635	0.24290216	0	0.0938651	0.14270441	0.13339245	0.63003804	0.19532	0.194765306	3.08E-07
17	10	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.08187	0.072587109	8.62E-05
17	10	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.09608	0.092611885	1.20E-05
17	10	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.11084	0.124673176	0.00019136
17	25	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.0925	0.085909538	4.34E-05
17	25	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.11215	0.109592896	6.54E-06
17	25	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.13459	0.147607498	0.00016946
17	50	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.1026	0.0975737	2.53E-05
17	50	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.1289	0.12448267	1.95E-05
17	50	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.16128	0.167658253	4.07E-05
17	75	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.10748	0.10508714	5.73E-06
17	75	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.13823	0.13408446	1.72E-05
17	75	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.17833	0.18059967	5.15E-06
17	100	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.10954	0.110766239	1.50E-06
17	100	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.144	0.141322966	7.17E-06
17	100	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.19029	0.190352278	3.88E-09
17	120	2	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.10989	0.114520073	2.14E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
17	120	2.4	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.14716	0.146103295	1.12E-06
17	120	3	0.05980198	0.10685882	0.21038484	0	0.09183781	0.13849778	0.08587423	0.68379018	0.19722	0.196787628	1.87E-07
18	10	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.08243	0.073950958	7.19E-05
18	10	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.09817	0.09540453	7.65E-06
18	10	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.11468	0.130236816	0.00024201
18	25	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.09145	0.085199471	3.91E-05
18	25	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.11257	0.109913292	7.06E-06
18	25	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.13696	0.150092735	0.00017247
18	50	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.09956	0.094807034	2.26E-05
18	50	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.12708	0.122330818	2.26E-05
18	50	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.16104	0.167030449	3.59E-05
18	75	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.10319	0.100904668	5.22E-06
18	75	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.13468	0.130207952	2.00E-05
18	75	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.17568	0.177788264	4.44E-06
18	100	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.10404	0.105466709	2.04E-06
18	100	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.139	0.136081886	8.52E-06
18	100	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.18594	0.185819101	1.46E-08
18	120	2	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.10347	0.108458519	2.49E-05
18	120	2.4	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.14111	0.139933499	1.38E-06
18	120	3	0.03451914	0.04432142	0.23828717	0	0.16974279	0.15797324	0.09165514	0.58062883	0.19116	0.19107786	6.75E-09
19	10	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.0772	0.068971825	6.77E-05
19	10	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.09076	0.088044071	7.38E-06
19	10	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.10488	0.118719864	0.00019154
19	25	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.08688	0.081025658	3.43E-05
19	25	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.10554	0.103462067	4.32E-06
19	25	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.12694	0.139493675	0.00015759
19	50	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.09598	0.091512146	2.00E-05
19	50	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.12084	0.116845112	1.60E-05
19	50	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.15136	0.157539787	3.82E-05
19	75	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.10041	0.09824913	4.67E-06
19	75	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.12929	0.125456848	1.47E-05
19	75	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.16717	0.169140447	3.88E-06
19	100	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.10215	0.103319187	1.37E-06
19	100	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.13453	0.131923227	6.80E-06
19	100	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.17786	0.177867641	5.84E-11
19	120	2	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.10228	0.106661701	1.92E-05
19	120	2.4	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.13726	0.136188324	1.15E-06
19	120	3	0.06153654	0.04171177	0.29829814	0	0.06462214	0.13968618	0.16040004	0.63529165	0.18405	0.183612768	1.91E-07
20	10	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.08545	0.076483822	8.04E-05
20	10	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.10108	0.098132229	8.69E-06
20	10	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.11739	0.133267593	0.0002521
20	25	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.0957	0.089156799	4.28E-05
20	25	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.11697	0.114476776	6.22E-06
20	25	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.14144	0.1554702	0.00019685
20	50	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.10508	0.100119553	2.46E-05
20	50	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.13338	0.128587208	2.30E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
20	50	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.16776	0.174637699	4.73E-05
20	75	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.10955	0.107145182	5.78E-06
20	75	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.14221	0.137605934	2.12E-05
20	75	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.18456	0.186871936	5.35E-06
20	100	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.11103	0.112407188	1.90E-06
20	100	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.14738	0.144364567	9.09E-06
20	100	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.19611	0.196050138	3.58E-09
20	120	2	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.11089	0.115867686	2.48E-05
20	120	2.4	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.14991	0.148803933	1.22E-06
20	120	3	0.05280453	0.03659326	0.27040507	0	0.11670999	0.14112117	0.06289567	0.67927317	0.20242	0.202080663	1.15E-07
21	10	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.07513	0.067434788	5.92E-05
21	10	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.08826	0.08616066	4.41E-06
21	10	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.10193	0.116251945	0.00020512
21	25	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.08486	0.079215851	3.19E-05
21	25	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.10304	0.101227951	3.28E-06
21	25	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.12388	0.136592789	0.00016161
21	50	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.09391	0.089464207	1.98E-05
21	50	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.11815	0.114338226	1.45E-05
21	50	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.14815	0.154257889	3.73E-05
21	75	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.09827	0.096069857	4.84E-06
21	75	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.12641	0.122755127	1.34E-05
21	75	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.1637	0.165618973	3.68E-06
21	100	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.09995	0.101022291	1.15E-06
21	100	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.13166	0.129082956	6.64E-06
21	100	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.17428	0.174159269	1.46E-08
21	120	2	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.10006	0.104291201	1.79E-05
21	120	2.4	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.13429	0.133247749	1.09E-06
21	120	3	0.06897286	0.05796597	0.29107244	0	0.13806039	0.13709292	0.08442534	0.64042135	0.18023	0.179782804	2.00E-07
22	10	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.08046	0.071851063	7.41E-05
22	10	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.09473	0.091897488	8.02E-06
22	10	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.10964	0.124218559	0.00021253
22	25	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.0905	0.084246941	3.91E-05
22	25	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.11004	0.107800407	5.02E-06
22	25	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.13257	0.145737076	0.00017337
22	50	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.09984	0.095040836	2.30E-05
22	50	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.12597	0.12162075	1.89E-05
22	50	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.15804	0.164406662	4.05E-05
22	75	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.10437	0.101972656	5.75E-06
22	75	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.13465	0.130485051	1.73E-05
22	75	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.17432	0.176396993	4.31E-06
22	100	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.10598	0.107183428	1.45E-06
22	100	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.13999	0.137146988	8.08E-06
22	100	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.18552	0.185403452	1.36E-08
22	120	2	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.10605	0.110612535	2.08E-05
22	120	2.4	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.14277	0.141526461	1.55E-06
22	120	3	0.04523896	0.094442	0.22743015	0	0.11034293	0.14267753	0.10160211	0.64537743	0.19174	0.191334033	1.65E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
23	10	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.0896	0.080510426	8.26E-05
23	10	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.10644	0.103522682	8.51E-06
23	10	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.12394	0.140757942	0.00028284
23	25	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.09985	0.093261337	4.34E-05
23	25	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.12235	0.119932175	5.85E-06
23	25	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.14832	0.163099098	0.00021842
23	50	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.10911	0.104224091	2.39E-05
23	50	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.13887	0.134025288	2.35E-05
23	50	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.17503	0.182257938	5.22E-05
23	75	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.1135	0.111212196	5.23E-06
23	75	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.1477	0.143003604	2.21E-05
23	75	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.19202	0.19446331	5.97E-06
23	100	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.11488	0.116438122	2.43E-06
23	100	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.15307	0.149709558	1.13E-05
23	100	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.20377	0.203579454	3.63E-08
23	120	2	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.11466	0.119869033	2.71E-05
23	120	2.4	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.15542	0.154116813	1.70E-06
23	120	3	0.05912369	0.03153323	0.22187268	0	0.11959476	0.16084019	0.07311369	0.64645136	0.21002	0.209560188	2.11E-07
24	10	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.09454	0.084212303	0.00010666
24	10	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.11166	0.107982254	1.35E-05
24	10	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.12947	0.146321583	0.00028398
24	25	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.10603	0.098742714	5.31E-05
24	25	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.1293	0.126591225	7.34E-06
24	25	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.15591	0.171541977	0.00024436
24	50	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.11681	0.111337757	2.99E-05
24	50	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.14776	0.142745266	2.51E-05
24	50	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.18563	0.193398209	6.03E-05
24	75	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.12212	0.119424159	7.27E-06
24	75	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.15806	0.153088875	2.47E-05
24	75	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.2046	0.20742349	7.97E-06
24	100	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.12399	0.125489321	2.25E-06
24	100	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.16421	0.160858488	1.12E-05
24	100	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.21801	0.217951832	3.38E-09
24	120	2	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.12412	0.12948273	2.88E-05
24	120	2.4	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.16718	0.165972924	1.46E-06
24	120	3	0.06756988	0.03321135	0.2380914	0	0.05805319	0.14396338	0.05034921	0.74763421	0.2253	0.22487824	1.78E-07
25	10	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.09458	0.084363842	0.00010437
25	10	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.11232	0.108328629	1.59E-05
25	10	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.13073	0.147057629	0.00026659
25	25	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.10533	0.098145218	5.16E-05
25	25	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.12901	0.125993729	9.10E-06
25	25	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.15624	0.171031075	0.00021878
25	50	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.11527	0.110004215	2.77E-05
25	50	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.1464	0.141229877	2.67E-05
25	50	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.18446	0.191700974	5.24E-05
25	75	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.12006	0.117565282	6.22E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
25	75	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.15609	0.150947126	2.64E-05
25	75	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.2024	0.20488341	6.17E-06
25	100	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.12162	0.123233557	2.60E-06
25	100	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.16175	0.158217382	1.25E-05
25	100	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.21487	0.214754362	1.34E-08
25	120	2	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.12154	0.126957083	2.93E-05
25	120	2.4	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.16438	0.162996268	1.91E-06
25	120	3	0.06952698	0.0214822	0.20616212	0	0.0679085	0.16253465	0.09549894	0.67405791	0.22185	0.221234091	3.79E-07
26	10	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.07617	0.06700182	8.41E-05
26	10	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.08866	0.084861755	1.44E-05
26	10	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.10171	0.113264465	0.00013351
26	25	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.08671	0.080419502	3.96E-05
26	25	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.10453	0.101851425	7.17E-06
26	25	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.12445	0.136003952	0.00013349
26	50	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.09712	0.092313137	2.31E-05
26	50	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.12096	0.116936035	1.62E-05
26	50	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.15009	0.156136971	3.66E-05
26	75	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.10227	0.100053164	4.91E-06
26	75	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.13062	0.126755753	1.49E-05
26	75	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.16706	0.169244359	4.77E-06
26	100	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.10468	0.10593215	1.57E-06
26	100	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.13696	0.13419198	7.66E-06
26	100	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.17884	0.179179535	1.15E-07
26	120	2	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.10551	0.109829585	1.87E-05
26	120	2.4	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.13996	0.139123487	7.00E-07
26	120	3	0.09001481	0.03648415	0.33232403	0	0.05082698	0.14607163	0.11677043	0.68633096	0.18641	0.18576498	4.16E-07
27	10	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.08936	0.080228996	8.34E-05
27	10	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.10623	0.103306198	8.55E-06
27	10	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.12379	0.140757942	0.00028791
27	25	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.09951	0.092837029	4.45E-05
27	25	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.12204	0.119551163	6.19E-06
27	25	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.14816	0.162865295	0.00021625
27	50	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.10869	0.103665562	2.52E-05
27	50	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.13842	0.133488407	2.43E-05
27	50	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.17471	0.181842289	5.09E-05
27	75	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.11289	0.110545425	5.50E-06
27	75	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.14703	0.142348378	2.19E-05
27	75	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.19144	0.193911997	6.11E-06
27	100	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.11435	0.115693417	1.80E-06
27	100	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.15218	0.148967018	1.03E-05
27	100	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.203	0.202932167	4.60E-09
27	120	2	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.11391	0.119071651	2.66E-05
27	120	2.4	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.15465	0.153312214	1.79E-06
27	120	3	0.08399197	0.03517732	0.17653036	0	0.11358315	0.15091137	0.09363042	0.64187505	0.20913	0.208834966	8.70E-08
28	10	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.08983	0.079449654	0.00010775
28	10	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.10575	0.101466084	1.84E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
28	10	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.12225	0.136752987	0.00021034
28	25	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.10098	0.093754921	5.22E-05
28	25	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.12264	0.119707031	8.60E-06
28	25	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.14744	0.161358566	0.00019373
28	50	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.11158	0.106228733	2.86E-05
28	50	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.1405	0.13562294	2.38E-05
28	50	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.17604	0.182825127	4.60E-05
28	75	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.1168	0.114257406	6.46E-06
28	75	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.15047	0.145869853	2.12E-05
28	75	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.19414	0.196648356	6.29E-06
28	100	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.11887	0.120300198	2.05E-06
28	100	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.15663	0.153586788	9.26E-06
28	100	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.20722	0.207054024	2.75E-08
28	120	2	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.11915	0.124290721	2.64E-05
28	120	2.4	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.15995	0.158673803	1.63E-06
28	120	3	0.05769861	0.0539612	0.24031589	0	0.07347046	0.15978597	0.06617151	0.70057206	0.21455	0.213906105	4.15E-07
29	10	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.08578	0.07596426	9.63E-05
29	10	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.10062	0.096725082	1.52E-05
29	10	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.11604	0.129738903	0.00018766
29	25	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.09678	0.090057373	4.52E-05
29	25	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.11719	0.114606667	6.67E-06
29	25	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.1405	0.153824921	0.00017755
29	50	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.10744	0.102401295	2.54E-05
29	50	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.13471	0.130301762	1.94E-05
29	50	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.1682	0.17489748	4.49E-05
29	75	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.11273	0.110375125	5.55E-06
29	75	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.14476	0.140440432	1.87E-05
29	75	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.18603	0.188502782	6.11E-06
29	100	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.11503	0.116394825	1.86E-06
29	100	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.15101	0.148085928	8.55E-06
29	100	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.19878	0.198767014	1.69E-10
29	120	2	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.11545	0.120370555	2.42E-05
29	120	2.4	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.15439	0.153135419	1.57E-06
29	120	3	0.07941014	0.04615986	0.25443738	0	0.07569641	0.16125981	0.07375369	0.68929009	0.20632	0.205546212	5.99E-07
30	10	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.08265	0.072868538	9.57E-05
30	10	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.09649	0.092417049	1.66E-05
30	10	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.11086	0.12352581	0.00016042
30	25	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.0937	0.08711319	4.34E-05
30	25	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.11317	0.110502129	7.12E-06
30	25	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.13504	0.147737389	0.00016122
30	50	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.10469	0.099708233	2.48E-05
30	50	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.13063	0.126469994	1.73E-05
30	50	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.16242	0.169100037	4.46E-05
30	75	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.11016	0.107889887	5.15E-06
30	75	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.14102	0.136838137	1.75E-05
30	75	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.18071	0.182972336	5.12E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
30	100	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.11263	0.11408061	2.10E-06
30	100	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.14748	0.144687128	7.80E-06
30	100	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.19309	0.193471813	1.46E-07
30	120	2	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.11344	0.118182262	2.25E-05
30	120	2.4	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.15095	0.149882746	1.14E-06
30	120	3	0.08851278	0.08298077	0.22623535	0	0.07765604	0.1588674	0.07268985	0.69078671	0.20111	0.200417344	4.80E-07
31	10	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.08229	0.073020077	8.59E-05
31	10	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.0966	0.093044853	1.26E-05
31	10	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.11146	0.125236034	0.00018978
31	25	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.09286	0.086342506	4.25E-05
31	25	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.11259	0.11006916	6.35E-06
31	25	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.13519	0.148135719	0.00016759
31	50	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.10292	0.098006668	2.41E-05
31	50	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.12929	0.124945946	1.89E-05
31	50	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.16188	0.168160496	3.94E-05
31	75	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.10787	0.105520109	5.52E-06
31	75	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.13872	0.134543406	1.74E-05
31	75	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.17888	0.181078822	4.83E-06
31	100	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.10987	0.111199207	1.77E-06
31	100	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.14441	0.141779747	6.92E-06
31	100	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.19086	0.190817719	1.79E-09
31	120	2	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.11021	0.114953041	2.25E-05
31	120	2.4	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.14765	0.146554303	1.20E-06
31	120	3	0.03123693	0.05957102	0.31390656	0	0.10422099	0.15207212	0.05671823	0.68698865	0.1979	0.197244048	4.30E-07
32	10	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.09089	0.080835152	0.0001011
32	10	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.10705	0.103392792	1.34E-05
32	10	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.12392	0.139653873	0.00024755
32	25	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.10223	0.095157738	5.00E-05
32	25	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.12434	0.121733322	6.79E-06
32	25	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.14975	0.164441299	0.00021583
32	50	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.11295	0.107653198	2.81E-05
32	50	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.14258	0.137714176	2.37E-05
32	50	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.17877	0.186055069	5.31E-05
32	75	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.11826	0.11569486	6.58E-06
32	75	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.15264	0.14798851	2.16E-05
32	75	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.19734	0.199944687	6.78E-06
32	100	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.12019	0.121744146	2.42E-06
32	100	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.15863	0.155716991	8.49E-06
32	100	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.21055	0.210392208	2.49E-08
32	120	2	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.12033	0.125733948	2.92E-05
32	120	2.4	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.16199	0.160811583	1.39E-06
32	120	3	0.06498115	0.04315656	0.25379219	0	0.058636	0.13866761	0.05688194	0.74581444	0.2179	0.217270629	3.96E-07
33	10	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.08949	0.07949295	9.99E-05
33	10	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.10551	0.101834106	1.35E-05
33	10	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.12224	0.13779211	0.00024187
33	25	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.10053	0.093373909	5.12E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
33	25	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.12234	0.119637756	7.30E-06
33	25	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.14743	0.161912766	0.00020975
33	50	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.11087	0.105475368	2.91E-05
33	50	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.14	0.135125027	2.38E-05
33	50	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.17571	0.182877083	5.14E-05
33	75	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.116	0.11324426	7.59E-06
33	75	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.14971	0.145070305	2.15E-05
33	75	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.1937	0.196339506	6.97E-06
33	100	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.11769	0.119092216	1.97E-06
33	100	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.15551	0.15254117	8.81E-06
33	100	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.20651	0.206454363	3.10E-09
33	120	2	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.11784	0.122939499	2.60E-05
33	120	2.4	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.15872	0.1574651	1.57E-06
33	120	3	0.09521492	0.03115823	0.22154393	0	0.08677444	0.14752579	0.05978911	0.70591067	0.21356	0.213117743	1.96E-07
34	10	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.08654	0.077587891	8.01E-05
34	10	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.10235	0.099582672	7.66E-06
34	10	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.11885	0.13508606	0.00026361
34	25	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.09703	0.090464363	4.31E-05
34	25	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.1186	0.116139374	6.05E-06
34	25	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.14329	0.157626381	0.00020553
34	50	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.10659	0.101617622	2.47E-05
34	50	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.13524	0.1304533	2.29E-05
34	50	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.17018	0.177057991	4.73E-05
34	75	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.11113	0.108744278	5.69E-06
34	75	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.14427	0.139600474	2.18E-05
34	75	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.18719	0.189478404	5.24E-06
34	100	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.11259	0.11408927	2.25E-06
34	100	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.14958	0.146457968	9.75E-06
34	100	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.199	0.198780003	4.84E-08
34	120	2	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.11255	0.117608579	2.56E-05
34	120	2.4	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.15216	0.150972382	1.41E-06
34	120	3	0.03676314	0.04225844	0.28605815	0	0.11573958	0.1396384	0.04610238	0.69851965	0.20543	0.204889544	2.92E-07
35	10	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.08985	0.081008339	7.82E-05
35	10	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.10721	0.104734993	6.13E-06
35	10	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.12536	0.143355751	0.00032385
35	25	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.09968	0.093036194	4.41E-05
35	25	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.12276	0.12026989	6.20E-06
35	25	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.14964	0.164649124	0.00022527
35	50	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.10836	0.10328022	2.58E-05
35	50	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.1385	0.133536034	2.46E-05
35	50	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.17601	0.182803478	4.62E-05
35	75	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.11219	0.109766083	5.88E-06
35	75	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.14678	0.141929843	2.35E-05
35	75	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.19189	0.194304555	5.83E-06
35	100	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.11305	0.114610996	2.44E-06
35	100	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.15155	0.14818984	1.13E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
35	100	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.20308	0.202862892	4.71E-08
35	120	2	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.11261	0.117785374	2.68E-05
35	120	2.4	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.15331	0.152283915	1.05E-06
35	120	3	0.01252511	0.04349246	0.25133267	0	0.12737607	0.14493105	0.06940444	0.65828844	0.20896	0.208461531	2.48E-07
36	10	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.09068	0.080878448	9.61E-05
36	10	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.10759	0.10382576	1.42E-05
36	10	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.12514	0.140909481	0.00024868
36	25	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.10109	0.094109955	4.87E-05
36	25	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.1237	0.120824089	8.27E-06
36	25	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.14973	0.164008331	0.00020387
36	50	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.1107	0.105522995	2.68E-05
36	50	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.14057	0.135497379	2.57E-05
36	50	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.17675	0.183929195	5.15E-05
36	75	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.11524	0.112822838	5.84E-06
36	75	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.14973	0.144859594	2.37E-05
36	75	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.1943	0.196648356	5.51E-06
36	100	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.11689	0.118291225	1.96E-06
36	100	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.15505	0.151874399	1.01E-05
36	100	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.20632	0.206170769	2.23E-08
36	120	2	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.1167	0.121887747	2.69E-05
36	120	2.4	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.15779	0.156489118	1.69E-06
36	120	3	0.04366803	0.03612357	0.23546034	0	0.08196963	0.16311985	0.09946659	0.65544393	0.21286	0.212419581	1.94E-07
37	10	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.08756	0.078085804	8.98E-05
37	10	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.10322	0.099929047	1.08E-05
37	10	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.11955	0.13508606	0.00024137
37	25	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.09831	0.091538124	4.59E-05
37	25	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.11959	0.117169838	5.86E-06
37	25	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.14413	0.158431702	0.00020454
37	50	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.10836	0.103249912	2.61E-05
37	50	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.13686	0.132159195	2.21E-05
37	50	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.17159	0.178677292	5.02E-05
37	75	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.11337	0.11075325	6.85E-06
37	75	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.14631	0.141762428	2.07E-05
37	75	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.18922	0.191666336	5.98E-06
37	100	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.11507	0.116405649	1.78E-06
37	100	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.15207	0.148980007	9.55E-06
37	100	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.20166	0.201423273	5.60E-08
37	120	2	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.11517	0.120125206	2.46E-05
37	120	2.4	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.15506	0.153727142	1.78E-06
37	120	3	0.09600299	0.01176517	0.252024	0	0.05213071	0.14413251	0.10848765	0.69524914	0.20845	0.207844551	3.67E-07
38	10	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.09343	0.083432961	9.99E-05
38	10	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.11073	0.107051373	1.35E-05
38	10	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.12874	0.145304108	0.00027437
38	25	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.10437	0.097227325	5.10E-05
38	25	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.12768	0.124798737	8.30E-06
38	25	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.15442	0.169377136	0.00022372

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
38	50	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.11451	0.109146938	2.88E-05
38	50	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.14529	0.140121479	2.67E-05
38	50	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.18292	0.190189915	5.29E-05
38	75	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.11932	0.116765734	6.52E-06
38	75	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.15503	0.149919548	2.61E-05
38	75	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.201	0.203486366	6.18E-06
38	100	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.12097	0.122486687	2.30E-06
38	100	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.1607	0.157249699	1.19E-05
38	100	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.21359	0.213438139	2.31E-08
38	120	2	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.12092	0.126248097	2.84E-05
38	120	2.4	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.16347	0.162070799	1.96E-06
38	120	3	0.02802555	0.04678108	0.25071859	0	0.08502668	0.15429104	0.05355591	0.70712638	0.22051	0.219974875	2.86E-07
39	10	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.08686	0.076895142	9.93E-05
39	10	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.10174	0.097829151	1.53E-05
39	10	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.11714	0.131319237	0.00020105
39	25	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.09837	0.091477509	4.75E-05
39	25	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.11899	0.116399155	6.71E-06
39	25	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.14254	0.156266861	0.00018843
39	50	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.10952	0.104310684	2.71E-05
39	50	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.13714	0.132726383	1.95E-05
39	50	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.1712	0.178192368	4.89E-05
39	75	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.11505	0.112615013	5.93E-06
39	75	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.14778	0.14328359	2.02E-05
39	75	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.18977	0.192376404	6.79E-06
39	100	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.1175	0.118882227	1.91E-06
39	100	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.15423	0.151266079	8.78E-06
39	100	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.20306	0.203096695	1.35E-09
39	120	2	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.11798	0.123035113	2.56E-05
39	120	2.4	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.15769	0.156541435	1.32E-06
39	120	3	0.09096407	0.08648524	0.19694225	0	0.07355614	0.14371457	0.05189247	0.73083683	0.21082	0.210180775	4.09E-07
40	10	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.08075	0.071980953	7.69E-05
40	10	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.0947	0.091702652	8.98E-06
40	10	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.10914	0.123201084	0.00019771
40	25	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.09126	0.085104218	3.79E-05
40	25	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.11049	0.108415222	4.30E-06
40	25	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.13253	0.145693779	0.00017329
40	50	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.10135	0.096586533	2.27E-05
40	50	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.12714	0.123040886	1.68E-05
40	50	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.15877	0.165359192	4.34E-05
40	75	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.10625	0.103996061	5.08E-06
40	75	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.13648	0.132468046	1.61E-05
40	75	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.17564	0.178030726	5.72E-06
40	100	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.10838	0.109586401	1.46E-06
40	100	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.14228	0.139573774	7.32E-06
40	100	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.18757	0.187585611	2.44E-10
40	120	2	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.10875	0.113271681	2.04E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
40	120	2.4	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.14547	0.144261376	1.46E-06
40	120	3	0.06354763	0.07804557	0.25272095	0	0.10439338	0.15292908	0.07632158	0.66635596	0.19453	0.193892153	4.07E-07
41	10	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.08399	0.074578762	8.86E-05
41	10	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.09845	0.094884968	1.27E-05
41	10	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.11348	0.127379227	0.00019319
41	25	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.0949	0.088403435	4.22E-05
41	25	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.11486	0.112493782	5.60E-06
41	25	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.13764	0.151045265	0.0001797
41	50	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.10543	0.100543861	2.39E-05
41	50	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.13214	0.127946415	1.76E-05
41	50	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.165	0.171788769	4.61E-05
41	75	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.11059	0.108383471	4.87E-06
41	75	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.14206	0.137923444	1.71E-05
41	75	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.18263	0.18518336	6.52E-06
41	100	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.113	0.114299259	1.69E-06
41	100	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.14824	0.145449152	7.79E-06
41	100	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.19505	0.195290279	5.77E-08
41	120	2	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.11326	0.118209322	2.45E-05
41	120	2.4	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.15154	0.150418544	1.26E-06
41	120	3	0.0328493	0.03223816	0.35150286	0	0.07280744	0.15809809	0.0630296	0.70606488	0.20263	0.201967009	4.40E-07
42	10	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.0874	0.077544594	9.71E-05
42	10	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.10258	0.098911572	1.35E-05
42	10	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.11837	0.133159351	0.00021872
42	25	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.09871	0.091806564	4.77E-05
42	25	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.11975	0.117126541	6.88E-06
42	25	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.14366	0.157695656	0.000197
42	50	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.10964	0.104306355	2.84E-05
42	50	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.13765	0.133064098	2.10E-05
42	50	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.17224	0.179192524	4.83E-05
42	75	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.11494	0.112378324	6.56E-06
42	75	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.14777	0.143355751	1.95E-05
42	75	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.19054	0.193048948	6.29E-06
42	100	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.11713	0.118464413	1.78E-06
42	100	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.15397	0.151116705	8.14E-06
42	100	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.20348	0.20349719	2.96E-10
42	120	2	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.11741	0.122488491	2.58E-05
42	120	2.4	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.15745	0.156238357	1.47E-06
42	120	3	0.08404938	0.04599886	0.25575717	0	0.08097705	0.14246375	0.03966417	0.73689503	0.21097	0.210388239	3.38E-07
43	10	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.08752	0.078323936	8.46E-05
43	10	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.10349	0.100600147	8.35E-06
43	10	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.12024	0.136601448	0.0002677
43	25	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.09813	0.091390915	4.54E-05
43	25	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.12002	0.117420959	6.76E-06
43	25	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.14501	0.159479485	0.00020937
43	50	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.10791	0.102717361	2.70E-05
43	50	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.13683	0.13195137	2.38E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
43	50	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.17232	0.179209843	4.75E-05
43	75	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.11243	0.109956589	6.12E-06
43	75	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.14604	0.141242867	2.30E-05
43	75	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.18955	0.19184241	5.26E-06
43	100	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.1139	0.115383844	2.20E-06
43	100	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.15145	0.148209324	1.05E-05
43	100	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.20131	0.201306372	1.32E-11
43	120	2	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.11376	0.11895078	2.69E-05
43	120	2.4	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.15399	0.152794456	1.43E-06
43	120	3	0.05831453	0.02823683	0.27855257	0	0.12124363	0.13563065	0.029899	0.71322671	0.20796	0.207528845	1.86E-07
44	10	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.09758	0.087286377	0.00010596
44	10	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.11637	0.112571716	1.44E-05
44	10	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.13596	0.153595448	0.00031101
44	25	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.10811	0.100760345	5.40E-05
44	25	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.13301	0.129959717	9.30E-06
44	25	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.16191	0.177352409	0.00023847
44	50	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.11768	0.112311935	2.88E-05
44	50	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.1504	0.144849491	3.08E-05
44	50	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.19035	0.197680264	5.37E-05
44	75	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.1223	0.119655075	7.00E-06
44	75	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.15956	0.154306959	2.76E-05
44	75	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.20797	0.210587044	6.85E-06
44	100	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.12357	0.125134287	2.45E-06
44	100	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.16481	0.161362896	1.19E-05
44	100	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.22033	0.220209761	1.45E-08
44	120	2	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.12325	0.128728644	3.00E-05
44	120	2.4	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.16734	0.165990965	1.82E-06
44	120	3	0.05141795	0.03743585	0.17212614	0	0.08271185	0.16023151	0.08837958	0.66867706	0.22705	0.226505478	2.97E-07
45	10	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.08351	0.073864365	9.30E-05
45	10	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.09779	0.093845844	1.56E-05
45	10	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.11261	0.125712299	0.00017167
45	25	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.09439	0.087823257	4.31E-05
45	25	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.11417	0.11156723	6.77E-06
45	25	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.13662	0.14948658	0.00016555
45	50	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.10507	0.100093575	2.48E-05
45	50	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.13143	0.127167072	1.82E-05
45	50	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.16381	0.170377293	4.31E-05
45	75	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.11031	0.108039983	5.15E-06
45	75	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.14154	0.137253787	1.84E-05
45	75	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.18167	0.183904661	4.99E-06
45	100	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.11259	0.114048138	2.13E-06
45	100	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.14784	0.144877634	8.78E-06
45	100	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.19399	0.194121265	1.72E-08
45	120	2	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.11325	0.118018095	2.27E-05
45	120	2.4	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.15115	0.149913414	1.53E-06
45	120	3	0.08868085	0.05423999	0.24707598	0	0.06850031	0.15915548	0.09062781	0.6817164	0.20157	0.20087196	4.87E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
46	10	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.08084	0.071916008	7.96E-05
46	10	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.09459	0.091399574	1.02E-05
46	10	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.10885	0.122465038	0.00018537
46	25	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.09152	0.085407295	3.74E-05
46	25	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.11072	0.108553772	4.69E-06
46	25	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.13243	0.145477295	0.00017023
46	50	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.10196	0.097266293	2.20E-05
46	50	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.12751	0.123612404	1.52E-05
46	50	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.159	0.165679588	4.46E-05
46	75	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.10706	0.104931272	4.53E-06
46	75	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.1374	0.13335996	1.63E-05
46	75	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.17636	0.178737907	5.65E-06
46	100	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.10937	0.110727272	1.84E-06
46	100	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.14351	0.140718975	7.79E-06
46	100	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.1884	0.188607416	4.30E-08
46	120	2	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.10995	0.114557958	2.12E-05
46	120	2.4	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.14664	0.145583733	1.12E-06
46	120	3	0.07311592	0.07661095	0.25385082	0	0.0976383	0.15591576	0.07054218	0.67590375	0.19569	0.195117092	3.28E-07
47	10	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.08804	0.078800201	8.54E-05
47	10	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.10426	0.101076412	1.01E-05
47	10	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.12114	0.137034416	0.00025263
47	25	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.09834	0.091702652	4.41E-05
47	25	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.12018	0.117672081	6.29E-06
47	25	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.14531	0.159574738	0.00020348
47	50	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.10777	0.102860241	2.41E-05
47	50	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.13672	0.131977348	2.25E-05
47	50	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.17203	0.17897604	4.82E-05
47	75	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.11238	0.109985453	5.73E-06
47	75	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.14581	0.14111009	2.21E-05
47	75	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.18915	0.191371918	4.94E-06
47	100	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.11397	0.115327559	1.84E-06
47	100	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.1511	0.147951708	9.91E-06
47	100	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.20091	0.200654755	6.52E-08
47	120	2	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.11385	0.118837126	2.49E-05
47	120	2.4	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.15377	0.15244267	1.76E-06
47	120	3	0.09693334	0.02804469	0.19161517	0	0.1129104	0.1592006	0.08687199	0.641017	0.20722	0.206753111	2.18E-07
48	10	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.0931	0.082740211	0.00010733
48	10	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.10967	0.105622578	1.64E-05
48	10	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.12687	0.142446518	0.00024263
48	25	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.1046	0.097426491	5.15E-05
48	25	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.1271	0.124400406	7.29E-06
48	25	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.15292	0.167766495	0.00022042
48	50	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.11559	0.110229359	2.87E-05
48	50	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.14574	0.140757942	2.48E-05
48	50	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.18235	0.189808903	5.56E-05
48	75	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.121	0.118468742	6.41E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
48	75	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.1561	0.151279068	2.32E-05
48	75	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.20129	0.204003042	7.36E-06
48	100	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.12312	0.124666681	2.39E-06
48	100	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.16238	0.159193726	1.02E-05
48	100	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.21485	0.214674263	3.09E-08
48	120	2	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.12334	0.128753901	2.93E-05
48	120	2.4	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.16569	0.164410631	1.64E-06
48	120	3	0.04668425	0.05264472	0.24736003	0	0.04225031	0.15409126	0.07122387	0.73243455	0.22229	0.221704944	3.42E-07
49	10	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.07732	0.06821413	8.29E-05
49	10	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.08962	0.086117363	1.23E-05
49	10	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.10238	0.114541721	0.00014791
49	25	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.08866	0.082411156	3.90E-05
49	25	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.10637	0.1040942	5.18E-06
49	25	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.12625	0.138463211	0.00014916
49	50	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.09977	0.095088463	2.19E-05
49	50	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.12403	0.120114021	1.53E-05
49	50	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.15318	0.159778233	4.35E-05
49	75	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.10554	0.103389905	4.62E-06
49	75	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.13447	0.130580304	1.51E-05
49	75	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.17123	0.173715477	6.18E-06
49	100	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.10839	0.109692478	1.70E-06
49	100	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.14135	0.138541145	7.89E-06
49	100	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.18434	0.184303713	1.32E-09
49	120	2	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.10952	0.113885053	1.91E-05
49	120	2.4	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.14457	0.143826604	5.53E-07
49	120	3	0.14856827	0.02921909	0.30284218	0	0.05513441	0.13636404	0.06289128	0.74561027	0.19207	0.191335837	5.39E-07
50	10	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.08892	0.078973389	9.89E-05
50	10	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.10476	0.101119709	1.33E-05
50	10	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.12136	0.136926174	0.00024231
50	25	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.09999	0.092863007	5.08E-05
50	25	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.12172	0.118945007	7.70E-06
50	25	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.14669	0.161055489	0.00020637
50	50	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.11036	0.104947147	2.93E-05
50	50	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.13926	0.134449596	2.31E-05
50	50	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.17494	0.182041454	5.04E-05
50	75	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.11546	0.112713153	7.55E-06
50	75	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.14916	0.144412193	2.25E-05
50	75	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.193	0.195525525	6.38E-06
50	100	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.11725	0.118559666	1.72E-06
50	100	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.1549	0.151898212	9.01E-06
50	100	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.2057	0.205662031	1.44E-09
50	120	2	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.11729	0.122414525	2.63E-05
50	120	2.4	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.15806	0.156826472	1.52E-06
50	120	3	0.0619958	0.0752992	0.2103564	0	0.0925269	0.13936423	0.049845	0.71826387	0.21267	0.2123384	1.10E-07
51	10	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.07784	0.069188309	7.49E-05
51	10	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.09126	0.087935829	1.11E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
51	10	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.10518	0.117983818	0.00016394
51	25	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.08787	0.081882935	3.58E-05
51	25	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.10646	0.104128838	5.43E-06
51	25	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.12747	0.139675522	0.00014897
51	50	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.09756	0.093005886	2.07E-05
51	50	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.12224	0.118282566	1.57E-05
51	50	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.15255	0.158669834	3.75E-05
51	75	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.10233	0.100188828	4.58E-06
51	75	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.1313	0.127416751	1.51E-05
51	75	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.16875	0.170938708	4.79E-06
51	100	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.10426	0.105613918	1.83E-06
51	100	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.13701	0.134308882	7.30E-06
51	100	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.1799	0.180188351	8.31E-08
51	120	2	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.10468	0.109198173	2.04E-05
51	120	2.4	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.13987	0.138861903	1.02E-06
51	120	3	0.0576668	0.08683815	0.24720509	0	0.1094706	0.16313205	0.10825049	0.61914686	0.18699	0.186293562	4.85E-07
52	10	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.09836	0.088173962	0.00010376
52	10	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.11765	0.114065456	1.28E-05
52	10	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.13784	0.15627985	0.00034003
52	25	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.10872	0.101314545	5.48E-05
52	25	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.13417	0.131094093	9.46E-06
52	25	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.16377	0.179638481	0.00025181
52	50	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.11824	0.11252409	3.27E-05
52	50	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.15127	0.145602856	3.21E-05
52	50	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.19217	0.199542027	5.43E-05
52	75	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.12242	0.119623324	7.82E-06
52	75	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.16026	0.154791883	2.99E-05
52	75	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.20944	0.212122637	7.20E-06
52	100	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.12332	0.124919968	2.56E-06
52	100	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.16531	0.161633501	1.35E-05
52	100	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.22165	0.221493511	2.45E-08
52	120	2	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.12282	0.128385878	3.10E-05
52	120	2.4	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.16726	0.166115443	1.31E-06
52	120	3	0.02764525	0.02802189	0.21372517	0	0.06436446	0.14739601	0.09613796	0.69210157	0.22806	0.227623979	1.90E-07
53	10	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.08165	0.07215414	9.02E-05
53	10	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.09524	0.091551113	1.36E-05
53	10	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.10946	0.12244339	0.00016857
53	25	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.0927	0.08629055	4.11E-05
53	25	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.11203	0.109454346	6.63E-06
53	25	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.13365	0.146412506	0.00016288
53	50	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.1037	0.098760033	2.44E-05
53	50	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.12945	0.125275002	1.74E-05
53	50	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.16102	0.167550011	4.26E-05
53	75	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.10904	0.10685365	4.78E-06
53	75	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.13981	0.135550779	1.81E-05
53	75	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.17919	0.18128376	4.38E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
53	100	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.11165	0.112980871	1.77E-06
53	100	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.14615	0.143323278	7.99E-06
53	100	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.19146	0.19168582	5.10E-08
53	120	2	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.11228	0.11704572	2.27E-05
53	120	2.4	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.1496	0.148468383	1.28E-06
53	120	3	0.07557669	0.05114227	0.30791339	0	0.06091298	0.14317674	0.06688107	0.7290292	0.19934	0.198564601	6.01E-07
54	10	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.08479	0.075509644	8.61E-05
54	10	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.10004	0.09661684	1.17E-05
54	10	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.11592	0.130604839	0.00021564
54	25	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.09508	0.088446732	4.40E-05
54	25	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.11571	0.11320385	6.28E-06
54	25	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.13947	0.153054237	0.00018453
54	50	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.10462	0.099690914	2.43E-05
54	50	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.13225	0.127591381	2.17E-05
54	50	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.16581	0.172516155	4.50E-05
54	75	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.10935	0.106905607	5.98E-06
54	75	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.14112	0.136820819	1.85E-05
54	75	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.18271	0.1850044	5.26E-06
54	100	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.11099	0.112327089	1.79E-06
54	100	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.14667	0.143751917	8.52E-06
54	100	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.19446	0.194374552	7.30E-09
54	120	2	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.11095	0.115896551	2.45E-05
54	120	2.4	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.14959	0.148318648	1.62E-06
54	120	3	0.09764448	0.03582951	0.20937741	0	0.09336179	0.15471247	0.10960374	0.642322	0.20087	0.200534606	1.12E-07
55	10	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.09001	0.080661964	8.74E-05
55	10	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.10693	0.103609276	1.10E-05
55	10	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.12449	0.140822887	0.00026676
55	25	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.10029	0.093555756	4.54E-05
55	25	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.12287	0.120243912	6.90E-06
55	25	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.14891	0.163445473	0.00021128
55	50	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.10965	0.104678707	2.47E-05
55	50	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.13948	0.13453619	2.44E-05
55	50	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.17573	0.182864094	5.09E-05
55	75	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.11411	0.111766396	5.49E-06
55	75	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.14834	0.14364151	2.21E-05
55	75	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.19281	0.19523688	5.89E-06
55	100	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.1155	0.117063761	2.45E-06
55	100	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.15367	0.150449934	1.04E-05
55	100	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.20465	0.204497347	2.33E-08
55	120	2	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.11528	0.120541938	2.77E-05
55	120	2.4	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.15621	0.154921412	1.66E-06
55	120	3	0.0449601	0.04058151	0.22442201	0	0.07409524	0.15445776	0.11726764	0.65417936	0.21093	0.210574055	1.27E-07
56	10	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.08207	0.07297678	8.27E-05
56	10	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.09661	0.09321804	1.15E-05
56	10	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.11174	0.125798893	0.00019765
56	25	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.0921	0.085675735	4.13E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
56	25	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.11192	0.109488983	5.91E-06
56	25	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.13469	0.147737389	0.00017023
56	50	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.10152	0.096738071	2.29E-05
56	50	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.12791	0.123616734	1.84E-05
56	50	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.16028	0.166800976	4.25E-05
56	75	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.10616	0.103837306	5.39E-06
56	75	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.13678	0.13268453	1.68E-05
56	75	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.1768	0.179043872	5.03E-06
56	100	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.10791	0.109179411	1.61E-06
56	100	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.14233	0.139502335	8.00E-06
56	100	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.18817	0.188245888	5.76E-09
56	120	2	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.10815	0.112696195	2.07E-05
56	120	2.4	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.14517	0.143992575	1.39E-06
56	120	3	0.03764519	0.05987491	0.27115552	0	0.05743032	0.15405115	0.15002659	0.63849194	0.19469	0.194301669	1.51E-07
57	10	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.08298	0.073453045	9.08E-05
57	10	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.09704	0.093261337	1.43E-05
57	10	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.1116	0.124803066	0.00017432
57	25	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.09386	0.087476883	4.07E-05
57	25	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.11348	0.111039009	5.96E-06
57	25	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.13547	0.148594666	0.00017226
57	50	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.10461	0.099799156	2.31E-05
57	50	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.13076	0.126673489	1.67E-05
57	50	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.16265	0.169507027	4.70E-05
57	75	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.10996	0.107780202	4.75E-06
57	75	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.14096	0.136791954	1.74E-05
57	75	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.18068	0.18305027	5.62E-06
57	100	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.1124	0.113814335	2.00E-06
57	100	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.14724	0.144440336	7.84E-06
57	100	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.19292	0.193287802	1.35E-07
57	120	2	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.11318	0.117805219	2.14E-05
57	120	2.4	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.15065	0.149496682	1.33E-06
57	120	3	0.10782584	0.05005113	0.2323807	0	0.06383285	0.16316992	0.09989899	0.67309825	0.20081	0.200049321	5.79E-07
58	10	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.08571	0.077025032	7.54E-05
58	10	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.10201	0.099387836	6.88E-06
58	10	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.11902	0.135670567	0.00027724
58	25	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.09532	0.088819084	4.23E-05
58	25	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.11718	0.114641304	6.44E-06
58	25	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.1424	0.156543961	0.00020005
58	50	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.10394	0.098954868	2.49E-05
58	50	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.13257	0.127703953	2.37E-05
58	50	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.16781	0.174386578	4.33E-05
58	75	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.10778	0.105375786	5.78E-06
58	75	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.14066	0.135986633	2.18E-05
58	75	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.1833	0.18572024	5.86E-06
58	100	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.10884	0.110177402	1.79E-06
58	100	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.14528	0.142171583	9.66E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
58	100	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.19411	0.194158068	2.31E-09
58	120	2	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.10835	0.113323998	2.47E-05
58	120	2.4	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.14751	0.146225969	1.65E-06
58	120	3	0.03604451	0.04594071	0.23629679	0	0.11527371	0.142586	0.10845332	0.63368697	0.1999	0.199693926	4.25E-08
59	10	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.09511	0.085056591	0.00010107
59	10	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.1132	0.109649181	1.26E-05
59	10	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.13203	0.149590492	0.00030837
59	25	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.1058	0.098482933	5.35E-05
59	25	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.12994	0.126980896	8.76E-06
59	25	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.15803	0.173230553	0.00023106
59	50	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.11536	0.110017204	2.85E-05
59	50	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.14729	0.141844692	2.97E-05
59	50	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.18636	0.193493462	5.09E-05
59	75	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.11987	0.117360344	6.30E-06
59	75	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.15638	0.151296387	2.58E-05
59	75	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.20383	0.206398799	6.60E-06
59	100	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.12134	0.12284605	2.27E-06
59	100	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.16185	0.158362427	1.22E-05
59	100	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.21622	0.216040277	3.23E-08
59	120	2	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.12094	0.126446541	3.03E-05
59	120	2.4	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.16418	0.16299266	1.41E-06
59	120	3	0.05243855	0.02935146	0.21800281	0	0.09641019	0.14578757	0.05510974	0.70269249	0.22297	0.222359808	3.72E-07
60	10	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.09232	0.081484604	0.00011741
60	10	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.10825	0.103739166	2.03E-05
60	10	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.12479	0.139242554	0.00020888
60	25	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.10414	0.096811676	5.37E-05
60	25	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.12608	0.123222733	8.16E-06
60	25	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.15112	0.165480423	0.00020622
60	50	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.1158	0.110289974	3.04E-05
60	50	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.14509	0.140372601	2.23E-05
60	50	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.18108	0.188514328	5.53E-05
60	75	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.12153	0.119005623	6.37E-06
60	75	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.1562	0.151466688	2.24E-05
60	75	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.2004	0.203411318	9.07E-06
60	100	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.12418	0.125584574	1.97E-06
60	100	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.16291	0.159830189	9.49E-06
60	100	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.21449	0.214643955	2.37E-08
60	120	2	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.12478	0.129937347	2.66E-05
60	120	2.4	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.16673	0.165359553	1.88E-06
60	120	3	0.08864083	0.07782723	0.17595434	0	0.05543765	0.15830046	0.05395919	0.73230271	0.2228	0.222067555	5.36E-07
61	10	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.08586	0.076397228	8.95E-05
61	10	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.10087	0.09743948	1.18E-05
61	10	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.11643	0.131189346	0.00021784
61	25	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.0969	0.090187263	4.51E-05
61	25	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.11755	0.115048294	6.26E-06
61	25	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.14112	0.154950638	0.00019129

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
61	50	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.10739	0.102258415	2.63E-05
61	50	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.13492	0.13045763	1.99E-05
61	50	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.16894	0.175698471	4.57E-05
61	75	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.11247	0.110048955	5.86E-06
61	75	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.1447	0.140391363	1.86E-05
61	75	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.18669	0.189068527	5.66E-06
61	100	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.11455	0.11591423	1.86E-06
61	100	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.15072	0.147865114	8.15E-06
61	100	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.19929	0.199135036	2.40E-08
61	120	2	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.11491	0.11978244	2.37E-05
61	120	2.4	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.15398	0.152796261	1.40E-06
61	120	3	0.08070141	0.04629338	0.25397565	0	0.07694935	0.14507837	0.06788699	0.71008529	0.20644	0.2057645	4.56E-07
62	10	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.08982	0.079319763	0.00011025
62	10	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.10565	0.101249599	1.94E-05
62	10	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.12206	0.136363316	0.00020458
62	25	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.101	0.093720284	5.30E-05
62	25	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.12259	0.119620438	8.82E-06
62	25	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.14724	0.161159401	0.00019375
62	50	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.11175	0.106328316	2.94E-05
62	50	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.14057	0.135692215	2.38E-05
62	50	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.17594	0.182803478	4.71E-05
62	75	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.11706	0.114442139	6.85E-06
62	75	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.1507	0.14604304	2.17E-05
62	75	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.19424	0.196758041	6.34E-06
62	100	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.11924	0.120557814	1.74E-06
62	100	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.15678	0.153840075	8.64E-06
62	100	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.20728	0.207270508	9.01E-11
62	120	2	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.11958	0.124593798	2.51E-05
62	120	2.4	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.1603	0.158985901	1.73E-06
62	120	3	0.08352604	0.05132624	0.21060393	0	0.08873823	0.16481061	0.05523253	0.69121863	0.21474	0.214201967	2.89E-07
63	10	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.08339	0.074080849	8.67E-05
63	10	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.09812	0.094495296	1.31E-05
63	10	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.11341	0.127379227	0.00019514
63	25	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.09368	0.087173805	4.23E-05
63	25	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.11379	0.111246834	6.47E-06
63	25	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.13677	0.149962845	0.00017405
63	50	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.10351	0.098591175	2.42E-05
63	50	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.13018	0.125850849	1.87E-05
63	50	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.1631	0.169628258	4.26E-05
63	75	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.10827	0.105932872	5.46E-06
63	75	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.13938	0.135230382	1.72E-05
63	75	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.17995	0.1822767	5.41E-06
63	100	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.11013	0.111463318	1.78E-06
63	100	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.14511	0.14228632	7.97E-06
63	100	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.19166	0.191785402	1.57E-08
63	120	2	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.1104	0.115108188	2.22E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
63	120	2.4	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.1481	0.146940366	1.34E-06
63	120	3	0.06716772	0.04617888	0.25385945	0	0.05496455	0.15402692	0.13870823	0.6523003	0.19852	0.198052255	2.19E-07
64	10	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.08214	0.073366451	7.70E-05
64	10	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.09685	0.093932438	8.51E-06
64	10	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.11223	0.127032852	0.00021912
64	25	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.09223	0.085952835	3.94E-05
64	25	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.11234	0.110017204	5.40E-06
64	25	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.13552	0.148793831	0.00017619
64	50	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.10161	0.096854973	2.26E-05
64	50	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.12846	0.123976097	2.01E-05
64	50	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.16129	0.167671242	4.07E-05
64	75	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.10619	0.103848852	5.48E-06
64	75	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.13717	0.132929878	1.80E-05
64	75	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.17777	0.179774144	4.02E-06
64	100	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.10775	0.109099312	1.82E-06
64	100	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.14249	0.139647379	8.08E-06
64	100	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.1891	0.188862867	5.62E-08
64	120	2	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.10775	0.112559088	2.31E-05
64	120	2.4	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.14522	0.144077365	1.31E-06
64	120	3	0.10095679	0.07086026	0.16940121	0	0.13135718	0.14515753	0.08777625	0.63570904	0.19526	0.194844683	1.72E-07
65	10	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.08743	0.078150749	8.61E-05
65	10	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.10357	0.100383663	1.02E-05
65	10	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.12038	0.136211777	0.00025065
65	25	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.09767	0.091027222	4.41E-05
65	25	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.11945	0.116884079	6.58E-06
65	25	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.14454	0.158656845	0.00019929
65	50	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.10713	0.102128525	2.50E-05
65	50	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.13597	0.13113739	2.34E-05
65	50	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.17107	0.177993202	4.79E-05
65	75	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.11157	0.109223429	5.51E-06
65	75	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.14491	0.140235494	2.19E-05
65	75	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.18806	0.190341454	5.21E-06
65	100	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.11307	0.114539557	2.16E-06
65	100	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.15014	0.147051134	9.54E-06
65	100	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.1998	0.199591818	4.33E-08
65	120	2	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.11293	0.118036135	2.61E-05
65	120	2.4	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.15277	0.151529829	1.54E-06
65	120	3	0.07960274	0.04775782	0.19081545	0	0.1246492	0.15341669	0.07462092	0.64731319	0.20616	0.205665278	2.45E-07
66	10	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.08745	0.077955914	9.01E-05
66	10	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.10349	0.100167179	1.10E-05
66	10	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.12022	0.136038589	0.00025023
66	25	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.09791	0.091027222	4.74E-05
66	25	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.11974	0.116979332	7.62E-06
66	25	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.14475	0.158881989	0.00019971
66	50	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.10749	0.102349339	2.64E-05
66	50	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.13639	0.131518402	2.37E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
66	50	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.1717	0.178659973	4.84E-05
66	75	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.11204	0.109592896	5.99E-06
66	75	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.14557	0.140821444	2.25E-05
66	75	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.18892	0.191302643	5.68E-06
66	100	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.11359	0.115030975	2.08E-06
66	100	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.15087	0.147798004	9.44E-06
66	100	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.20068	0.200784645	1.10E-08
66	120	2	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.11349	0.118611622	2.62E-05
66	120	2.4	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.15341	0.152383137	1.05E-06
66	120	3	0.02208475	0.1132979	0.18365699	0	0.11365504	0.13824894	0.06936313	0.67873289	0.20722	0.207023716	3.85E-08
67	10	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.09321	0.083800983	8.85E-05
67	10	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.11115	0.108220387	8.58E-06
67	10	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.12988	0.148010159	0.0003287
67	25	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.10335	0.096430664	4.79E-05
67	25	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.12728	0.124564934	7.37E-06
67	25	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.15494	0.170364304	0.00023791
67	50	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.11244	0.107241879	2.70E-05
67	50	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.14377	0.138510838	2.77E-05
67	50	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.18226	0.18943222	5.14E-05
67	75	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.11662	0.114081332	6.44E-06
67	75	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.15242	0.14735349	2.57E-05
67	75	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.19898	0.201523577	6.47E-06
67	100	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.11772	0.119185305	2.15E-06
67	100	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.15733	0.153946152	1.15E-05
67	100	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.21058	0.210530758	2.42E-09
67	120	2	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.11719	0.122529984	2.85E-05
67	120	2.4	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.1594	0.158258875	1.30E-06
67	120	3	0.04223662	0.03541679	0.20994815	0	0.12215461	0.15424558	0.06242187	0.66117794	0.21703	0.216424537	3.67E-07
68	10	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.09258	0.083129883	8.93E-05
68	10	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.10982	0.106964779	8.15E-06
68	10	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.12783	0.145563889	0.00031449
68	25	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.10334	0.096534576	4.63E-05
68	25	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.12666	0.124218559	5.96E-06
68	25	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.15359	0.16905674	0.00023922
68	50	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.11328	0.108081837	2.70E-05
68	50	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.14414	0.139065037	2.58E-05
68	50	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.18178	0.189241714	5.57E-05
68	75	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.11782	0.115435079	5.69E-06
68	75	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.15339	0.148525391	2.37E-05
68	75	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.19947	0.202118187	7.01E-06
68	100	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.11944	0.12094099	2.25E-06
68	100	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.15898	0.155602255	1.14E-05
68	100	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.21174	0.211747398	5.47E-11
68	120	2	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.11915	0.124555914	2.92E-05
68	120	2.4	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.16149	0.160252333	1.53E-06
68	120	3	0.0387631	0.03038419	0.26701821	0	0.09144901	0.1382677	0.0443316	0.7259517	0.21852	0.218073424	1.99E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
69	10	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.07709	0.068040943	8.19E-05
69	10	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.08976	0.086203957	1.26E-05
69	10	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.103	0.115126228	0.00014705
69	25	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.08768	0.081467285	3.86E-05
69	25	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.10572	0.103236923	6.17E-06
69	25	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.12588	0.137883034	0.00014407
69	50	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.09815	0.093352261	2.30E-05
69	50	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.12229	0.118286896	1.60E-05
69	50	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.15175	0.158020382	3.93E-05
69	75	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.10335	0.101080742	5.15E-06
69	75	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.13199	0.128095067	1.52E-05
69	75	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.16885	0.171097463	5.05E-06
69	100	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.10575	0.106940966	1.42E-06
69	100	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.13837	0.135512533	8.17E-06
69	100	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.18076	0.18101532	6.52E-08
69	120	2	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.10654	0.110825411	1.84E-05
69	120	2.4	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.14143	0.140426	1.01E-06
69	120	3	0.09752309	0.08426258	0.24539178	0	0.10111991	0.15858007	0.07907044	0.66122958	0.18837	0.187581642	6.22E-07
70	10	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.08776	0.078778553	8.07E-05
70	10	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.10391	0.101206303	7.31E-06
70	10	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.12081	0.137467384	0.00027747
70	25	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.09814	0.091633377	4.23E-05
70	25	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.12008	0.117758675	5.39E-06
70	25	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.14527	0.159990387	0.00021669
70	50	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.10773	0.102747669	2.48E-05
70	50	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.13679	0.132029305	2.27E-05
70	50	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.17224	0.17938736	5.11E-05
70	75	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.11219	0.109844017	5.50E-06
70	75	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.14587	0.141138954	2.24E-05
70	75	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.18938	0.191764476	5.69E-06
70	100	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.11369	0.115160866	2.16E-06
70	100	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.15113	0.147960367	1.00E-05
70	100	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.2011	0.201029272	5.00E-09
70	120	2	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.1134	0.118651311	2.76E-05
70	120	2.4	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.15367	0.152448082	1.49E-06
70	120	3	0.08875836	0.02861216	0.21903271	0	0.10444038	0.13794109	0.07386666	0.68375187	0.2076	0.207112114	2.38E-07
71	10	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.08023	0.071288204	8.00E-05
71	10	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.09397	0.090706825	1.06E-05
71	10	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1082	0.121858883	0.00018657
71	25	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.09081	0.08452404	3.95E-05
71	25	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1099	0.107592583	5.32E-06
71	25	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1317	0.144550743	0.00016514
71	50	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.101	0.096140575	2.36E-05
71	50	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.12659	0.122391434	1.76E-05
71	50	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.15803	0.16442831	4.09E-05
71	75	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.10591	0.103643913	5.14E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
71	75	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.13609	0.131957143	1.71E-05
71	75	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.17506	0.177286021	4.96E-06
71	100	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1082	0.109313631	1.24E-06
71	100	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.14204	0.139173279	8.22E-06
71	100	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1869	0.186983786	7.02E-09
71	120	2	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.10851	0.113058805	2.07E-05
71	120	2.4	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.1452	0.143942062	1.58E-06
71	120	3	0.10915948	0.07902748	0.20054098	0	0.12531474	0.14954593	0.05914629	0.66599304	0.19409	0.193390632	4.89E-07
72	10	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.08483	0.075293159	9.10E-05
72	10	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.09967	0.096140575	1.25E-05
72	10	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.11509	0.129587364	0.00021017
72	25	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.09565	0.088914337	4.54E-05
72	25	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.11608	0.113515587	6.58E-06
72	25	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.13941	0.153010941	0.00018499
72	50	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.10593	0.100807972	2.62E-05
72	50	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.13319	0.12869112	2.02E-05
72	50	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.16682	0.173468685	4.42E-05
72	75	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.11093	0.108455633	6.12E-06
72	75	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.14282	0.13847187	1.89E-05
72	75	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.1843	0.186652565	5.53E-06
72	100	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.11293	0.114227819	1.68E-06
72	100	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.14877	0.145830164	8.64E-06
72	100	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.19663	0.19657836	2.67E-09
72	120	2	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.11336	0.118036135	2.19E-05
72	120	2.4	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.15195	0.150685541	1.60E-06
72	120	3	0.04985161	0.056315	0.28197897	0	0.07642202	0.1444548	0.07342812	0.70569506	0.20367	0.203127003	2.95E-07
73	10	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.08669	0.07732811	8.76E-05
73	10	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.10238	0.099106407	1.07E-05
73	10	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.11872	0.134068584	0.00023558
73	25	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.0972	0.090516319	4.47E-05
73	25	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.11843	0.115948868	6.16E-06
73	25	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.1429	0.156907654	0.00019621
73	50	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.107	0.101933689	2.57E-05
73	50	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.13524	0.130565872	2.18E-05
73	50	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.16992	0.176698627	4.59E-05
73	75	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.11173	0.109243635	6.18E-06
73	75	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.14453	0.13992953	2.12E-05
73	75	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.18715	0.189380264	4.97E-06
73	100	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.11348	0.114734392	1.57E-06
73	100	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.14993	0.146955881	8.85E-06
73	100	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.19915	0.198892574	6.63E-08
73	120	2	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.11335	0.118351841	2.50E-05
73	120	2.4	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.15285	0.151573126	1.63E-06
73	120	3	0.02907824	0.07045747	0.2492978	0	0.09083816	0.15067451	0.08348708	0.67500024	0.20554	0.205152933	1.50E-07
74	10	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.09255	0.08330307	8.55E-05
74	10	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.11024	0.10735445	8.33E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
74	10	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.12868	0.146451473	0.00031583
74	25	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.10275	0.096040993	4.50E-05
74	25	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.12637	0.123811569	6.55E-06
74	25	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.15373	0.168935509	0.00023121
74	50	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.1119	0.10695179	2.45E-05
74	50	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.14302	0.137883034	2.64E-05
74	50	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.18099	0.188133316	5.10E-05
74	75	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.11631	0.113882167	5.89E-06
74	75	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.15176	0.14681661	2.44E-05
74	75	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.19781	0.200322812	6.31E-06
74	100	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.11754	0.119055414	2.30E-06
74	100	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.15676	0.153480711	1.08E-05
74	100	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.20952	0.209420195	9.96E-09
74	120	2	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.11704	0.122445194	2.92E-05
74	120	2.4	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.15903	0.157843947	1.41E-06
74	120	3	0.0679403	0.02687327	0.19527133	0	0.13349839	0.15581801	0.05330466	0.65737894	0.21587	0.215374589	2.45E-07
75	10	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.09181	0.081917572	9.79E-05
75	10	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.10861	0.105081367	1.25E-05
75	10	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.12606	0.142511463	0.00027065
75	25	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.10285	0.095746574	5.05E-05
75	25	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.12558	0.122841721	7.50E-06
75	25	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.15162	0.16660614	0.00022458
75	50	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.11304	0.107722473	2.83E-05
75	50	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.14331	0.138220749	2.59E-05
75	50	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.18021	0.187470875	5.27E-05
75	75	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.11794	0.115383123	6.54E-06
75	75	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.15307	0.148072217	2.50E-05
75	75	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.19845	0.200827942	5.65E-06
75	100	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.11976	0.121148815	1.93E-06
75	100	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.1588	0.155455046	1.12E-05
75	100	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.21095	0.21084466	1.11E-08
75	120	2	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.11976	0.124941977	2.69E-05
75	120	2.4	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.16157	0.160306454	1.60E-06
75	120	3	0.04080137	0.06192132	0.22981688	0	0.08230972	0.14431449	0.05607471	0.71730107	0.21786	0.217432992	1.82E-07
76	10	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.09498	0.084883404	0.00010194
76	10	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.11312	0.109367752	1.41E-05
76	10	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.13199	0.149157524	0.00029472
76	25	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.10542	0.098205833	5.20E-05
76	25	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.1296	0.126539268	9.37E-06
76	25	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.15761	0.172563782	0.00022362
76	50	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.11502	0.109627533	2.91E-05
76	50	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.14675	0.141277504	2.99E-05
76	50	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.18554	0.192644844	5.05E-05
76	75	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.11948	0.116898511	6.66E-06
76	75	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.1557	0.150641162	2.56E-05
76	75	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.20283	0.205414518	6.68E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
76	100	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.12087	0.122332983	2.14E-06
76	100	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.16115	0.15763504	1.24E-05
76	100	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.2152	0.214947033	6.40E-08
76	120	2	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.12045	0.125894507	2.96E-05
76	120	2.4	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.16356	0.162220534	1.79E-06
76	120	3	0.04816634	0.02542361	0.21825154	0	0.07038875	0.15133152	0.09585847	0.68242126	0.22164	0.221199814	1.94E-07
77	10	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.08869	0.078670311	0.00010039
77	10	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.10412	0.100167179	1.56E-05
77	10	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.12012	0.134544849	0.00020808
77	25	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.09992	0.09308815	4.67E-05
77	25	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.12113	0.118538017	6.72E-06
77	25	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.14534	0.159263	0.00019385
77	50	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.11093	0.10573082	2.70E-05
77	50	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.1392	0.134622784	2.10E-05
77	50	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.17391	0.18087244	4.85E-05
77	75	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.11634	0.113890826	6.00E-06
77	75	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.14952	0.145006803	2.04E-05
77	75	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.19229	0.19482989	6.45E-06
77	100	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.1187	0.120042582	1.80E-06
77	100	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.15579	0.152839918	8.70E-06
77	100	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.20538	0.205345964	1.16E-09
77	120	2	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.11909	0.124106709	2.52E-05
77	120	2.4	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.15935	0.15800631	1.81E-06
77	120	3	0.05085458	0.07506711	0.23829929	0	0.07209943	0.16035452	0.05944544	0.70810061	0.21313	0.212284279	7.15E-07
78	10	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.08844	0.079579544	7.85E-05
78	10	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.10556	0.102829933	7.45E-06
78	10	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.12349	0.140692997	0.00029594
78	25	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.09792	0.091364937	4.30E-05
78	25	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.12067	0.118079071	6.71E-06
78	25	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.14718	0.161566391	0.00020697
78	50	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.10637	0.101409798	2.46E-05
78	50	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.13603	0.131068115	2.46E-05
78	50	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.17279	0.179348392	4.30E-05
78	75	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.11021	0.107780202	5.90E-06
78	75	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.14403	0.139291623	2.25E-05
78	75	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.18834	0.190604121	5.13E-06
78	100	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.11088	0.112526255	2.71E-06
78	100	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.14877	0.145418844	1.12E-05
78	100	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.19911	0.198992157	1.39E-08
78	120	2	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.1104	0.115633162	2.74E-05
78	120	2.4	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.15055	0.149431737	1.25E-06
78	120	3	0.02896811	0.04613475	0.21559947	0	0.11093457	0.14667484	0.11646115	0.62592944	0.20488	0.204471008	1.67E-07
79	10	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.0932	0.083411312	9.58E-05
79	10	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.11034	0.10681324	1.24E-05
79	10	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.12812	0.144481468	0.0002677
79	25	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.10411	0.097261963	4.69E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
79	25	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.12699	0.124573593	5.84E-06
79	25	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.15333	0.168528519	0.00023099
79	50	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.11434	0.109246521	2.59E-05
79	50	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.14465	0.139904995	2.25E-05
79	50	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.18179	0.189293671	5.63E-05
79	75	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.11939	0.116904284	6.18E-06
79	75	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.15449	0.149711723	2.28E-05
79	75	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.20012	0.202559814	5.95E-06
79	100	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.12113	0.122646885	2.30E-06
79	100	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.1603	0.157057028	1.05E-05
79	100	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.21269	0.212502928	3.50E-08
79	120	2	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.12116	0.126426697	2.77E-05
79	120	2.4	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.16329	0.161886787	1.97E-06
79	120	3	0.02972167	0.04980014	0.23727865	0	0.03819143	0.16226249	0.11479391	0.68475217	0.21963	0.219034974	3.54E-07
80	10	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.09475	0.084342194	0.00010832
80	10	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.11242	0.108242035	1.75E-05
80	10	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.13074	0.146776199	0.00025716
80	25	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.1056	0.098353043	5.25E-05
80	25	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.12925	0.126218872	9.19E-06
80	25	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.15636	0.171186943	0.00021984
80	50	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.11577	0.110445843	2.83E-05
80	50	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.14691	0.141732121	2.68E-05
80	50	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.18486	0.192242184	5.45E-05
80	75	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.12065	0.118188756	6.06E-06
80	75	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.15669	0.151651421	2.54E-05
80	75	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.20323	0.205703163	6.12E-06
80	100	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.12233	0.123984756	2.74E-06
80	100	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.16236	0.159083319	1.07E-05
80	100	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.21588	0.215778332	1.03E-08
80	120	2	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.12227	0.127794154	3.05E-05
80	120	2.4	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.16518	0.163968643	1.47E-06
80	120	3	0.03338546	0.0598188	0.20227693	0	0.06338589	0.16159094	0.092773	0.68225016	0.22278	0.222404909	1.41E-07
81	10	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.0913	0.08193922	8.76E-05
81	10	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.1091	0.106098843	9.01E-06
81	10	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.12781	0.145455647	0.00031137
81	25	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.10102	0.094049339	4.86E-05
81	25	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.12457	0.1217593	7.90E-06
81	25	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.15212	0.166926537	0.00021923
81	50	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.10967	0.104358311	2.82E-05
81	50	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.14033	0.135099049	2.74E-05
81	50	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.17848	0.185210781	4.53E-05
81	75	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.11352	0.110888913	6.92E-06
81	75	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.1485	0.143537598	2.46E-05
81	75	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.19432	0.196784019	6.07E-06
81	100	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.11421	0.115745373	2.36E-06
81	100	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.15345	0.14982213	1.32E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
81	100	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.20546	0.20540225	3.34E-09
81	120	2	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.11366	0.118927328	2.77E-05
81	120	2.4	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.15517	0.153932802	1.53E-06
81	120	3	0.02768976	0.02029128	0.24810745	0	0.10168146	0.1459759	0.09921749	0.65312515	0.21161	0.211032279	3.34E-07
82	10	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.0891	0.078908443	0.00010387
82	10	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.10468	0.100578499	1.68E-05
82	10	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.12084	0.13521595	0.00020667
82	25	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.10035	0.093339272	4.92E-05
82	25	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.12167	0.118962326	7.33E-06
82	25	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.14608	0.159973068	0.00019302
82	50	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.11127	0.105964622	2.81E-05
82	50	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.13973	0.135051422	2.19E-05
82	50	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.17471	0.181621475	4.78E-05
82	75	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.11664	0.11410731	6.41E-06
82	75	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.14988	0.145410906	2.00E-05
82	75	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.19307	0.195565936	6.23E-06
82	100	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.11887	0.120248241	1.90E-06
82	100	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.1561	0.153229589	8.24E-06
82	100	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.20609	0.20608201	6.38E-11
82	120	2	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.11926	0.124299741	2.54E-05
82	120	2.4	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.15968	0.158388766	1.67E-06
82	120	3	0.02181524	0.08929409	0.25135154	0	0.04757535	0.15389314	0.08194724	0.71658428	0.21369	0.213014913	4.56E-07
83	10	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.0968	0.086463737	0.00010684
83	10	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.11497	0.111121273	1.48E-05
83	10	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.13384	0.150911045	0.00029142
83	25	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.10787	0.100552521	5.35E-05
83	25	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.13212	0.129197693	8.54E-06
83	25	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.15997	0.175490646	0.00024089
83	50	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.1181	0.112692947	2.92E-05
83	50	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.15001	0.144775887	2.74E-05
83	50	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.18902	0.196658459	5.83E-05
83	75	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.12285	0.120425758	5.88E-06
83	75	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.15986	0.154713949	2.65E-05
83	75	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.20744	0.210174281	7.48E-06
83	100	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.12457	0.126221037	2.73E-06
83	100	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.16581	0.162148733	1.34E-05
83	100	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.22035	0.220274706	5.67E-09
83	120	2	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.1245	0.130032961	3.06E-05
83	120	2.4	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.16846	0.167033696	2.03E-06
83	120	3	0.04341534	0.02233546	0.24111631	0	0.07202913	0.16273172	0.06201915	0.70322	0.22732	0.226907778	1.70E-07
84	10	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.09214	0.081116581	0.00012152
84	10	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.1078	0.103024769	2.28E-05
84	10	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.12402	0.137943649	0.00019387
84	25	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.10428	0.096872292	5.49E-05
84	25	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.12597	0.123040886	8.58E-06
84	25	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.15062	0.164761696	0.00019999

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
84	50	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.11628	0.110779228	3.03E-05
84	50	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.14532	0.140688667	2.14E-05
84	50	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.1809	0.188427734	5.67E-05
84	75	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.12237	0.119796511	6.62E-06
84	75	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.15674	0.152139231	2.12E-05
84	75	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.20104	0.203780785	7.51E-06
84	100	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.12513	0.126621532	2.22E-06
84	100	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.16403	0.160804367	1.04E-05
84	100	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.21501	0.215386496	1.42E-07
84	120	2	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.12598	0.131140637	2.66E-05
84	120	2.4	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.16797	0.166535783	2.06E-06
84	120	3	0.06631893	0.04562723	0.27622829	0	0.03481192	0.16132497	0.03724496	0.76661816	0.2237	0.223061577	4.08E-07
85	10	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.08404	0.074665356	8.79E-05
85	10	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.09863	0.095079803	1.26E-05
85	10	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.11377	0.127682304	0.00019355
85	25	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.09469	0.088264885	4.13E-05
85	25	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.11474	0.112372551	5.60E-06
85	25	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.13768	0.150924034	0.0001754
85	50	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.10505	0.100141201	2.41E-05
85	50	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.13187	0.127478809	1.93E-05
85	50	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.16466	0.17123457	4.32E-05
85	75	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.11011	0.107794635	5.36E-06
85	75	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.14149	0.137230695	1.81E-05
85	75	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.1819	0.18432031	5.86E-06
85	100	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.1123	0.113571873	1.62E-06
85	100	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.14751	0.144572392	8.63E-06
85	100	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.19419	0.194188375	2.64E-12
85	120	2	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.11262	0.117381271	2.27E-05
85	120	2.4	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.15073	0.149419109	1.72E-06
85	120	3	0.05885259	0.07981463	0.23085906	0	0.0968562	0.16434608	0.07712691	0.66167082	0.20145	0.200702381	5.59E-07
86	10	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.08959	0.079449654	0.00010283
86	10	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.10495	0.101119709	1.47E-05
86	10	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.12091	0.135670567	0.00021787
86	25	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.10142	0.09444767	4.86E-05
86	25	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.12269	0.120174637	6.33E-06
86	25	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.14697	0.161289291	0.00020504
86	50	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.11289	0.10762722	2.77E-05
86	50	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.14139	0.136917515	2.00E-05
86	50	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.17646	0.183786316	5.37E-05
86	75	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.11863	0.116148033	6.16E-06
86	75	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.15235	0.147757594	2.11E-05
86	75	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.19565	0.198334045	7.20E-06
86	100	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.12116	0.122568951	1.99E-06
86	100	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.15893	0.15593564	8.97E-06
86	100	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.20931	0.209314117	1.70E-11
86	120	2	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.12176	0.12682178	2.56E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
86	120	2.4	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.16273	0.161340165	1.93E-06
86	120	3	0.05151601	0.12626799	0.17882292	0	0.0618018	0.14486804	0.04730961	0.74602055	0.21744	0.216565251	7.65E-07
87	10	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.09474	0.08479681	9.89E-05
87	10	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.11244	0.109021378	1.17E-05
87	10	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.13092	0.148291588	0.00030177
87	25	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.10562	0.098500252	5.07E-05
87	25	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.12947	0.126669159	7.84E-06
87	25	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.15707	0.172295341	0.00023181
87	50	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.11562	0.110328941	2.80E-05
87	50	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.14723	0.14187933	2.86E-05
87	50	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.18565	0.192960911	5.34E-05
87	75	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.12026	0.117865473	5.73E-06
87	75	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.15659	0.151579259	2.51E-05
87	75	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.2038	0.20615345	5.54E-06
87	100	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.12187	0.123512821	2.70E-06
87	100	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.16215	0.158832197	1.10E-05
87	100	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.21611	0.216016464	8.75E-09
87	120	2	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.12168	0.12722408	3.07E-05
87	120	2.4	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.16492	0.163591599	1.76E-06
87	120	3	0.04912225	0.02724141	0.24361285	0	0.06962413	0.13887878	0.0636701	0.72782699	0.22302	0.222489699	2.81E-07
88	10	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.1015	0.091204739	0.00010599
88	10	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.12125	0.117918873	1.11E-05
88	10	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.14185	0.161280632	0.00037755
88	25	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.11247	0.105012093	5.56E-05
88	25	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.13855	0.135718193	8.02E-06
88	25	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.16894	0.185656738	0.00027945
88	50	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.12247	0.116797485	3.22E-05
88	50	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.15652	0.150937023	3.12E-05
88	50	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.19857	0.206482506	6.26E-05
88	75	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.12694	0.124267629	7.14E-06
88	75	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.16605	0.160584997	2.99E-05
88	75	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.21682	0.219688034	8.23E-06
88	100	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.12818	0.129840651	2.76E-06
88	100	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.17149	0.167770824	1.38E-05
88	100	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.22971	0.229520741	3.58E-08
88	120	2	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.12766	0.133487686	3.40E-05
88	120	2.4	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.17372	0.172481879	1.53E-06
88	120	3	0.04988168	0.02345139	0.1932819	0	0.06080433	0.1433976	0.06977253	0.72602555	0.23669	0.235956812	5.38E-07
89	10	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.10141	0.090966606	0.00010906
89	10	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.12108	0.117637444	1.19E-05
89	10	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.14162	0.161085796	0.00037892
89	25	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.11256	0.104882202	5.89E-05
89	25	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.13857	0.135640259	8.58E-06
89	25	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.16898	0.185734673	0.00028072
89	50	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.12259	0.116793156	3.36E-05
89	50	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.15672	0.151027946	3.24E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
89	50	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.19882	0.206789913	6.35E-05
89	75	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.12702	0.124336904	7.20E-06
89	75	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.16625	0.160787048	2.98E-05
89	75	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.21722	0.220144094	8.55E-06
89	100	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.12827	0.129974871	2.91E-06
89	100	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.17167	0.168063078	1.30E-05
89	100	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.23025	0.230100918	2.22E-08
89	120	2	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.12778	0.133669893	3.47E-05
89	120	2.4	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.17392	0.172831861	1.18E-06
89	120	3	0.06862828	0.0179812	0.18392117	0	0.07876388	0.13773953	0.04466296	0.73883363	0.23718	0.236620696	3.13E-07
90	10	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.08255	0.074124146	7.10E-05
90	10	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.0975	0.095079803	5.86E-06
90	10	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.11313	0.128894615	0.00024852
90	25	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.09255	0.086385803	3.80E-05
90	25	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.11298	0.110831184	4.62E-06
90	25	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.1365	0.150274582	0.00018974
90	50	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.10174	0.097015171	2.23E-05
90	50	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.12887	0.124456692	1.95E-05
90	50	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.16204	0.168757992	4.51E-05
90	75	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.10617	0.103802668	5.60E-06
90	75	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.13751	0.133160795	1.89E-05
90	75	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.1785	0.180579465	4.32E-06
90	100	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.10758	0.108897982	1.74E-06
90	100	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.14255	0.139690676	8.18E-06
90	100	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.18961	0.18943655	3.01E-08
90	120	2	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.10745	0.112248794	2.30E-05
90	120	2.4	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.14512	0.143988967	1.28E-06
90	120	3	0.05655863	0.04000942	0.27418746	0	0.10885746	0.13759678	0.08890241	0.66464336	0.19572	0.195254199	2.17E-07
91	10	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.08592	0.076657009	8.58E-05
91	10	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.10135	0.097915745	1.18E-05
91	10	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.1173	0.132163525	0.00022092
91	25	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.09633	0.089806252	4.26E-05
91	25	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.11712	0.114753876	5.60E-06
91	25	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.14103	0.154872704	0.00019162
91	50	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.10612	0.101223621	2.40E-05
91	50	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.13373	0.129349232	1.92E-05
91	50	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.1677	0.174585743	4.74E-05
91	75	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.11098	0.108545113	5.93E-06
91	75	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.143	0.13870856	1.84E-05
91	75	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.18479	0.18721831	5.90E-06
91	100	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.11277	0.114048138	1.63E-06
91	100	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.1488	0.145739241	9.37E-06
91	100	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.19679	0.196706085	7.04E-09
91	120	2	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.11285	0.117675328	2.33E-05
91	120	2.4	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.15172	0.150369835	1.82E-06
91	120	3	0.04784401	0.03566485	0.27362603	0	0.06009058	0.16334051	0.12431931	0.6522496	0.20349	0.202946599	2.95E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
92	10	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.09182	0.082545376	8.60E-05
92	10	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.10939	0.106445217	8.67E-06
92	10	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.12771	0.145174217	0.000305
92	25	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.10182	0.095149078	4.45E-05
92	25	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.12526	0.122677193	6.67E-06
92	25	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.15223	0.167342186	0.00022838
92	50	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.11097	0.105925655	2.54E-05
92	50	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.14162	0.136553822	2.57E-05
92	50	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.17907	0.186280212	5.20E-05
92	75	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.11519	0.112770882	5.85E-06
92	75	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.15029	0.145376269	2.41E-05
92	75	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.19579	0.198293635	6.27E-06
92	100	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.11649	0.117877741	1.93E-06
92	100	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.15519	0.151945839	1.05E-05
92	100	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.20737	0.207264013	1.12E-08
92	120	2	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.11601	0.121223863	2.72E-05
92	120	2.4	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.15768	0.156258202	2.02E-06
92	120	3	0.06249964	0.03154824	0.18646633	0	0.11411625	0.16219796	0.09180489	0.6318809	0.21346	0.213133979	1.06E-07
93	10	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.08195	0.073020077	7.97E-05
93	10	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.09612	0.093044853	9.46E-06
93	10	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.11081	0.125214386	0.00020749
93	25	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.09269	0.086351166	4.02E-05
93	25	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.11225	0.11006916	4.76E-06
93	25	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.13474	0.14812706	0.00017921
93	50	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.10297	0.098015327	2.45E-05
93	50	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.1292	0.124950275	1.81E-05
93	50	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.16152	0.168156166	4.40E-05
93	75	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.10782	0.105528768	5.25E-06
93	75	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.13862	0.134549179	1.66E-05
93	75	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.17867	0.181081708	5.82E-06
93	100	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.11004	0.111205702	1.36E-06
93	100	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.14439	0.141784077	6.79E-06
93	100	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.19077	0.190822048	2.71E-09
93	120	2	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.11036	0.114958453	2.11E-05
93	120	2.4	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.14769	0.146559715	1.28E-06
93	120	3	0.04751265	0.09394409	0.25291512	0	0.09379813	0.14171302	0.06944994	0.6950389	0.1978	0.197247656	3.05E-07
94	10	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.0894	0.079731083	9.35E-05
94	10	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.10601	0.10233202	1.35E-05
94	10	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.12324	0.138701344	0.00023905
94	25	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.09972	0.092845688	4.73E-05
94	25	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.12187	0.119144173	7.43E-06
94	25	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.14745	0.161505775	0.00019756
94	50	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.10919	0.104163475	2.53E-05
94	50	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.13847	0.133644276	2.33E-05
94	50	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.17424	0.181192837	4.83E-05
94	75	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.11383	0.111396929	5.92E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
94	75	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.14751	0.142905464	2.12E-05
94	75	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.19149	0.193767675	5.19E-06
94	100	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.11533	0.116814804	2.20E-06
94	100	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.15294	0.149850273	9.55E-06
94	100	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.20329	0.203178959	1.23E-08
94	120	2	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.11524	0.120375967	2.64E-05
94	120	2.4	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.1557	0.154414479	1.65E-06
94	120	3	0.05324118	0.06334362	0.17888914	0	0.08477895	0.16357419	0.12077864	0.63086823	0.2097	0.20935994	1.16E-07
95	10	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.10035	0.089126492	0.00012597
95	10	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.11898	0.114238644	2.25E-05
95	10	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.13827	0.15478611	0.00027278
95	25	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.11196	0.104189453	6.04E-05
95	25	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.13686	0.13358799	1.07E-05
95	25	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.16532	0.180989342	0.00024553
95	50	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.12289	0.117265091	3.16E-05
95	50	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.15576	0.150330868	2.95E-05
95	50	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.1958	0.203663883	6.18E-05
95	75	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.12833	0.125630035	7.29E-06
95	75	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.16639	0.161052602	2.85E-05
95	75	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.21536	0.218192851	8.03E-06
95	100	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.13017	0.131910238	3.03E-06
95	100	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.17268	0.169089212	1.29E-05
95	100	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.22907	0.229081278	1.27E-10
95	120	2	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.13024	0.136038589	3.36E-05
95	120	2.4	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.17575	0.17437431	1.89E-06
95	120	3	0.06909842	0.04298216	0.16768434	0	0.05902892	0.1641692	0.05920587	0.71759601	0.23674	0.236240045	2.50E-07
96	10	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.09977	0.089732647	0.00010075
96	10	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.11951	0.116143703	1.13E-05
96	10	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.14021	0.159245682	0.00036236
96	25	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.11005	0.102769318	5.30E-05
96	25	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.13599	0.133051109	8.64E-06
96	25	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.16613	0.182435455	0.00026587
96	50	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.11945	0.113861961	3.12E-05
96	50	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.153	0.147416992	3.12E-05
96	50	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.1946	0.202135506	5.68E-05
96	75	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.12363	0.120876045	7.58E-06
96	75	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.16196	0.156489118	2.99E-05
96	75	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.21185	0.214581896	7.46E-06
96	100	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.12441	0.126101971	2.86E-06
96	100	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.1669	0.163241978	1.34E-05
96	100	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.22395	0.223840199	1.21E-08
96	120	2	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.12388	0.129520615	3.18E-05
96	120	2.4	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.16884	0.167663304	1.38E-06
96	120	3	0.01618449	0.0432038	0.18647899	0	0.0762573	0.15724358	0.09452723	0.67197189	0.23042	0.229889846	2.81E-07
97	10	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.09686	0.087156487	9.42E-05
97	10	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.11593	0.112896442	9.20E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
97	10	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.13592	0.154872704	0.0003592
97	25	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.10707	0.099868431	5.19E-05
97	25	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.1322	0.129379539	7.95E-06
97	25	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.16159	0.177516937	0.00025367
97	50	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.11629	0.110709953	3.11E-05
97	50	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.14891	0.143399048	3.04E-05
97	50	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.18945	0.196762371	5.35E-05
97	75	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.12028	0.117547963	7.46E-06
97	75	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.15766	0.152257576	2.92E-05
97	75	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.20629	0.208930219	6.97E-06
97	100	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.12102	0.122646885	2.65E-06
97	100	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.16268	0.158849516	1.47E-05
97	100	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.21806	0.217966986	8.65E-09
97	120	2	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.12043	0.1259811	3.08E-05
97	120	2.4	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.16434	0.163167651	1.37E-06
97	120	3	0.0369112	0.03176947	0.19620036	0	0.10567353	0.1482804	0.06948099	0.67656509	0.22451	0.223878805	3.98E-07
98	10	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.09483	0.084688568	0.00010285
98	10	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.11264	0.10912962	1.23E-05
98	10	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.13127	0.148767853	0.00030617
98	25	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.10566	0.098318405	5.39E-05
98	25	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.12965	0.126703796	8.68E-06
98	25	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.15743	0.172745628	0.00023457
98	50	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.11552	0.11006916	2.97E-05
98	50	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.14724	0.141831703	2.92E-05
98	50	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.18599	0.19338522	5.47E-05
98	75	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.12009	0.117545077	6.48E-06
98	75	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.15653	0.151478233	2.55E-05
98	75	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.2039	0.206525803	6.89E-06
98	100	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.12164	0.123149128	2.28E-06
98	100	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.162	0.158693647	1.09E-05
98	100	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.21633	0.216360674	9.41E-10
98	120	2	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.12129	0.1268308	3.07E-05
98	120	2.4	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.16467	0.163432844	1.53E-06
98	120	3	0.02074251	0.03510699	0.26832149	0	0.07223778	0.13757282	0.05692736	0.73326205	0.22307	0.222814425	6.53E-08
99	10	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.0925	0.082047462	0.00010926
99	10	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.10907	0.104886532	1.75E-05
99	10	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.12623	0.14160223	0.00023631
99	25	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.10383	0.096525917	5.33E-05
99	25	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.12621	0.123413239	7.82E-06
99	25	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.15197	0.16660614	0.00021422
99	50	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.11459	0.109155598	2.95E-05
99	50	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.14455	0.139549961	2.50E-05
99	50	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.18105	0.188410416	5.42E-05
99	75	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.11989	0.117270864	6.86E-06
99	75	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.15466	0.149916662	2.25E-05
99	75	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.19964	0.202403946	7.64E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
99	100	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.12202	0.123376436	1.84E-06
99	100	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.161	0.157712975	1.08E-05
99	100	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.21298	0.212933731	2.14E-09
99	120	2	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.1222	0.127400875	2.70E-05
99	120	2.4	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.16421	0.162848337	1.85E-06
99	120	3	0.03739584	0.05950107	0.24382531	0	0.07332261	0.16465755	0.05314111	0.70887872	0.22044	0.219868437	3.27E-07
100	10	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.08559	0.07637558	8.49E-05
100	10	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.10081	0.097612667	1.02E-05
100	10	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.11667	0.131730556	0.00022682
100	25	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.09622	0.08968502	4.27E-05
100	25	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.11699	0.114649963	5.48E-06
100	25	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.14091	0.154734154	0.00019111
100	50	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.1062	0.101284237	2.42E-05
100	50	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.134	0.129444485	2.08E-05
100	50	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.16797	0.174719963	4.56E-05
100	75	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.11114	0.108721186	5.85E-06
100	75	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.14323	0.138956795	1.83E-05
100	75	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.18526	0.187573344	5.35E-06
100	100	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.11283	0.114320908	2.22E-06
100	100	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.14906	0.146107264	8.72E-06
100	100	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.19743	0.197225647	4.18E-08
100	120	2	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.11292	0.118010879	2.59E-05
100	120	2.4	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.15195	0.150817235	1.28E-06
100	120	3	0.06809729	0.03491392	0.26899901	0	0.0493386	0.13973395	0.11519528	0.69573217	0.20407	0.203579815	2.40E-07
101	10	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.08602	0.076224041	9.60E-05
101	10	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.10093	0.097158051	1.42E-05
101	10	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.11643	0.130583191	0.00020031
101	25	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.09706	0.090273857	4.61E-05
101	25	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.11762	0.115030975	6.70E-06
101	25	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.14114	0.154682198	0.00018339
101	50	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.1078	0.102591801	2.71E-05
101	50	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.13529	0.130713081	2.09E-05
101	50	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.169	0.175763416	4.57E-05
101	75	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.11304	0.11053388	6.28E-06
101	75	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.14521	0.140830104	1.92E-05
101	75	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.18699	0.189374491	5.69E-06
101	100	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.11524	0.11652688	1.66E-06
101	100	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.15124	0.14846261	7.71E-06
101	100	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.19966	0.19963728	5.16E-10
101	120	2	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.11563	0.120484209	2.36E-05
101	120	2.4	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.15474	0.153501638	1.53E-06
101	120	3	0.05203304	0.08441197	0.23813404	0	0.05291426	0.14481638	0.09126186	0.7110075	0.20708	0.206415757	4.41E-07
102	10	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.09535	0.085013294	0.00010685
102	10	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.11308	0.109324455	1.41E-05
102	10	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.13161	0.148573017	0.00028774
102	25	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.10638	0.099011154	5.43E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
102	25	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.13028	0.127301292	8.87E-06
102	25	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.15769	0.173048706	0.00023589
102	50	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.11662	0.111086636	3.06E-05
102	50	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.14815	0.142810211	2.85E-05
102	50	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.18656	0.194138584	5.74E-05
102	75	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.12135	0.118794912	6.53E-06
102	75	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.15783	0.152725182	2.61E-05
102	75	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.20488	0.207613996	7.47E-06
102	100	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.12302	0.124573593	2.41E-06
102	100	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.16372	0.160139761	1.28E-05
102	100	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.21771	0.217698545	1.31E-10
102	120	2	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.12292	0.128373249	2.97E-05
102	120	2.4	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.16649	0.165014982	2.18E-06
102	120	3	0.06899186	0.01525239	0.23127876	0	0.10498141	0.15899248	0.02959655	0.70642957	0.22459	0.224324401	7.05E-08
103	10	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.08245	0.073431396	8.13E-05
103	10	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.09696	0.093824196	9.83E-06
103	10	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.1121	0.126621532	0.00021087
103	25	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.09285	0.086403122	4.16E-05
103	25	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.11276	0.110424194	5.46E-06
103	25	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.13564	0.149044952	0.00017969
103	50	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.10262	0.097716579	2.40E-05
103	50	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.12922	0.12488533	1.88E-05
103	50	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.16189	0.168571815	4.46E-05
103	75	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.1074	0.104983228	5.84E-06
103	75	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.13833	0.134171054	1.73E-05
103	75	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.17869	0.181116346	5.89E-06
103	100	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.10912	0.110456667	1.79E-06
103	100	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.14397	0.141160603	7.89E-06
103	100	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.19056	0.190560102	1.05E-14
103	120	2	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.10929	0.11406726	2.28E-05
103	120	2.4	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.14686	0.145767744	1.19E-06
103	120	3	0.07810414	0.03146751	0.27901543	0	0.0730413	0.14010461	0.10625137	0.68060271	0.19713	0.196778607	1.23E-07
104	10	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.0965	0.086507034	9.99E-05
104	10	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.1151	0.111792374	1.09E-05
104	10	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.1345	0.152924347	0.00033946
104	25	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.10708	0.099729881	5.40E-05
104	25	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.13173	0.128877296	8.14E-06
104	25	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.16045	0.176304626	0.00025137
104	50	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.11652	0.111034679	3.01E-05
104	50	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.14891	0.143468323	2.96E-05
104	50	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.18892	0.196277447	5.41E-05
104	75	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.12081	0.118211848	6.75E-06
104	75	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.158	0.152736727	2.77E-05
104	75	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.20619	0.208953311	7.64E-06
104	100	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.12207	0.123569107	2.25E-06
104	100	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.16311	0.159648342	1.20E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
104	100	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.21854	0.218408613	1.73E-08
104	120	2	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.12157	0.127079757	3.04E-05
104	120	2.4	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.1653	0.164174302	1.27E-06
104	120	3	0.02045731	0.0483505	0.21575139	0	0.08316541	0.14422457	0.07116554	0.70144447	0.22521	0.22459681	3.76E-07
105	10	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.07343	0.064945221	7.20E-05
105	10	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.08543	0.082372189	9.35E-06
105	10	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.09801	0.110147095	0.00014731
105	25	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.08374	0.077778397	3.55E-05
105	25	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.10097	0.09865612	5.35E-06
105	25	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.12021	0.131916733	0.00013705
105	50	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.09379	0.089130821	2.17E-05
105	50	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.11686	0.1130653	1.44E-05
105	50	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.14508	0.151175156	3.72E-05
105	75	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.09872	0.096505712	4.90E-06
105	75	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.12624	0.122420298	1.46E-05
105	75	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.16161	0.163693708	4.34E-06
105	100	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.10099	0.102109041	1.25E-06
105	100	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.13228	0.129511595	7.66E-06
105	100	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.17296	0.173176432	4.68E-08
105	120	2	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.10178	0.105819217	1.63E-05
105	120	2.4	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.13516	0.134207495	9.07E-07
105	120	3	0.06966123	0.08929188	0.30285785	0	0.11479127	0.14605053	0.07110024	0.66805796	0.18013	0.179449058	4.64E-07
106	10	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.07832	0.070249081	6.51E-05
106	10	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.09201	0.089624405	5.69E-06
106	10	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.10625	0.120841408	0.00021291
106	25	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.08845	0.082593002	3.43E-05
106	25	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.10736	0.105436401	3.70E-06
106	25	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.12903	0.142108803	0.00017106
106	50	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.09791	0.093352261	2.08E-05
106	50	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.12314	0.11918314	1.57E-05
106	50	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.15426	0.160639839	4.07E-05
106	75	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.10249	0.100272535	4.92E-06
106	75	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.13184	0.128014247	1.46E-05
106	75	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.17056	0.172549349	3.96E-06
106	100	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.10426	0.105484028	1.50E-06
106	100	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.13732	0.134659586	7.08E-06
106	100	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.18163	0.181506739	1.52E-08
106	120	2	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.10449	0.108922156	1.96E-05
106	120	2.4	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.14012	0.139038698	1.17E-06
106	120	3	0.07365133	0.04795649	0.28707189	0	0.11662367	0.13989813	0.08118347	0.66229472	0.18799	0.187408455	3.38E-07
107	10	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.08839	0.078540421	9.70E-05
107	10	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.10422	0.10055685	1.34E-05
107	10	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.12074	0.136038589	0.00023405
107	25	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.09931	0.092282829	4.94E-05
107	25	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.12091	0.118174324	7.48E-06
107	25	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.1457	0.159886475	0.00020126

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
107	50	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.10952	0.104245739	2.78E-05
107	50	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.13831	0.133488407	2.32E-05
107	50	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.17365	0.180612659	4.85E-05
107	75	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.11458	0.111930923	7.02E-06
107	75	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.14792	0.143335546	2.10E-05
107	75	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.19142	0.193932203	6.31E-06
107	100	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.11627	0.117713213	2.08E-06
107	100	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.15365	0.150731363	8.52E-06
107	100	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.20401	0.203940983	4.76E-09
107	120	2	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.11638	0.121521529	2.64E-05
107	120	2.4	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.15679	0.155603337	1.41E-06
107	120	3	0.05593399	0.05787859	0.24005511	0	0.05205953	0.13677315	0.09695322	0.71421411	0.21098	0.210528954	2.03E-07
108	10	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.08903	0.079947567	8.25E-05
108	10	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.10563	0.102894878	7.48E-06
108	10	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.123	0.140021896	0.00028974
108	25	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.09931	0.092689819	4.38E-05
108	25	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.12167	0.119300041	5.62E-06
108	25	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.14758	0.162363052	0.00021854
108	50	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.10867	0.103656902	2.51E-05
108	50	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.13823	0.133384495	2.35E-05
108	50	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.17436	0.18155653	5.18E-05
108	75	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.1129	0.110634905	5.13E-06
108	75	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.14707	0.142359924	2.22E-05
108	75	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.1913	0.193776334	6.13E-06
108	100	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.11442	0.115853615	2.06E-06
108	100	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.15234	0.14907093	1.07E-05
108	100	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.20297	0.202908354	3.80E-09
108	120	2	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.11416	0.11927731	2.62E-05
108	120	2.4	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.1547	0.153478185	1.49E-06
108	120	3	0.04914357	0.0473659	0.22514777	0	0.09676158	0.14169614	0.08620142	0.67534086	0.20913	0.208896303	5.46E-08
109	10	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.08987	0.080488777	8.80E-05
109	10	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.10663	0.103674221	8.74E-06
109	10	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.12415	0.141169262	0.00028966
109	25	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.10026	0.093417206	4.68E-05
109	25	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.12284	0.120287209	6.52E-06
109	25	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.14899	0.163817825	0.00021986
109	50	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.10971	0.104518509	2.70E-05
109	50	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.1396	0.134570827	2.53E-05
109	50	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.17605	0.183266754	5.21E-05
109	75	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.11399	0.111598981	5.72E-06
109	75	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.14845	0.143679034	2.28E-05
109	75	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.19312	0.195664075	6.47E-06
109	100	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.11558	0.116894903	1.73E-06
109	100	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.15379	0.150486736	1.09E-05
109	100	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.20503	0.204938974	8.29E-09
109	120	2	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.11525	0.120375967	2.63E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
109	120	2.4	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.1563	0.154952081	1.82E-06
109	120	3	0.04167261	0.05649147	0.21947388	0	0.10906178	0.14456709	0.06767828	0.67869285	0.21124	0.211023259	4.70E-08
110	10	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.08533	0.075531292	9.60E-05
110	10	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.10021	0.096313763	1.52E-05
110	10	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.11573	0.129695606	0.00019504
110	25	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.09611	0.089295349	4.64E-05
110	25	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.1166	0.113870621	7.45E-06
110	25	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.14003	0.153331337	0.00017693
110	50	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.10647	0.101318874	2.65E-05
110	50	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.13382	0.129219341	2.12E-05
110	50	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.1675	0.173988247	4.21E-05
110	75	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.11155	0.109070447	6.15E-06
110	75	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.14341	0.139118436	1.84E-05
110	75	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.18495	0.187313563	5.59E-06
110	100	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.11361	0.114920568	1.72E-06
110	100	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.14933	0.146574869	7.59E-06
110	100	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.19738	0.197355537	5.98E-10
110	120	2	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.11398	0.118784809	2.31E-05
110	120	2.4	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.15272	0.151493748	1.50E-06
110	120	3	0.04665867	0.05181863	0.28668886	0	0.07478357	0.15369613	0.07651713	0.69500316	0.20461	0.203982115	3.94E-07
111	10	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.08601	0.076418877	9.20E-05
111	10	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.10122	0.097677612	1.25E-05
111	10	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.1171	0.131925392	0.00021979
111	25	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.09677	0.08996212	4.63E-05
111	25	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.11759	0.115039635	6.50E-06
111	25	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.14159	0.155366287	0.00018979
111	50	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.10696	0.101799469	2.66E-05
111	50	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.13489	0.130154552	2.24E-05
111	50	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.16901	0.175789394	4.60E-05
111	75	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.1119	0.109405276	6.22E-06
111	75	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.14435	0.13988046	2.00E-05
111	75	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.18648	0.188921318	5.96E-06
111	100	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.11376	0.115130558	1.88E-06
111	100	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.15025	0.147196178	9.33E-06
111	100	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.19889	0.198797321	8.59E-09
111	120	2	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.11384	0.118902071	2.56E-05
111	120	2.4	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.15315	0.15201331	1.29E-06
111	120	3	0.07587471	0.04328484	0.25139612	0	0.08235711	0.14434344	0.07483357	0.69846588	0.20572	0.205304472	1.73E-07
112	10	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.08107	0.072284031	7.72E-05
112	10	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.09543	0.09254694	8.31E-06
112	10	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.11046	0.125106144	0.00021451
112	25	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.09135	0.084965668	4.08E-05
112	25	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.1111	0.108735619	5.59E-06
112	25	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.13386	0.14704464	0.00017383
112	50	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.10084	0.095971718	2.37E-05
112	50	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.12732	0.122833061	2.01E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
112	50	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.1597	0.166108227	4.11E-05
112	75	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.10552	0.10305219	6.09E-06
112	75	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.13608	0.131890755	1.75E-05
112	75	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.17633	0.178354009	4.10E-06
112	100	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.10714	0.10837409	1.52E-06
112	100	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.14162	0.138701344	8.52E-06
112	100	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.18776	0.187563963	3.84E-08
112	120	2	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.10702	0.111880771	2.36E-05
112	120	2.4	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.14433	0.143182564	1.32E-06
112	120	3	0.04311011	0.1057954	0.22269338	0	0.14884226	0.14134482	0.0458148	0.66399812	0.19404	0.19362696	1.71E-07
113	10	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.0896	0.08044548	8.38E-05
113	10	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.10663	0.103804111	7.99E-06
113	10	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.12441	0.141732121	0.00030006
113	25	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.09961	0.09281971	4.61E-05
113	25	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.12241	0.119776306	6.94E-06
113	25	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.14883	0.163558044	0.00021692
113	50	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.10864	0.103436089	2.71E-05
113	50	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.13861	0.133462429	2.65E-05
113	50	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.17527	0.182227631	4.84E-05
113	75	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.11278	0.110173073	6.80E-06
113	75	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.14704	0.142154986	2.39E-05
113	75	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.19165	0.194096731	5.99E-06
113	100	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.11395	0.115210657	1.59E-06
113	100	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.15196	0.148637962	1.10E-05
113	100	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.20311	0.202947321	2.65E-08
113	120	2	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.11352	0.118510596	2.49E-05
113	120	2.4	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.15423	0.152891874	1.79E-06
113	120	3	0.02480419	0.03837531	0.25347601	0	0.10351441	0.14716899	0.08652476	0.66279185	0.20908	0.208744764	1.12E-07
114	10	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.09304	0.083497906	9.11E-05
114	10	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.11019	0.107202911	8.92E-06
114	10	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.12814	0.145628834	0.00030586
114	25	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.10405	0.097184029	4.71E-05
114	25	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.12736	0.124816055	6.47E-06
114	25	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.1541	0.169541664	0.00023844
114	50	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.11426	0.108995399	2.77E-05
114	50	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.14502	0.140008907	2.51E-05
114	50	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.18267	0.190172596	5.63E-05
114	75	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.11896	0.116531932	5.90E-06
114	75	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.15468	0.149703064	2.48E-05
114	75	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.20089	0.203342044	6.01E-06
114	100	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.12064	0.122187939	2.40E-06
114	100	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.16042	0.15696394	1.19E-05
114	100	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.21346	0.213204336	6.54E-08
114	120	2	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.12045	0.125903527	2.97E-05
114	120	2.4	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.16317	0.161735249	2.06E-06
114	120	3	0.04047107	0.08322047	0.18608461	0	0.08847872	0.13519432	0.05360099	0.72272598	0.22012	0.21967721	1.96E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
115	10	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.07256	0.064490604	6.51E-05
115	10	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.08467	0.081722736	8.69E-06
115	10	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09729	0.10912962	0.00014018
115	25	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.08215	0.076661339	3.01E-05
115	25	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09911	0.097158051	3.81E-06
115	25	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.11822	0.129743233	0.00013278
115	50	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09148	0.087359982	1.70E-05
115	50	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.11431	0.110709953	1.30E-05
115	50	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.14184	0.147862949	3.63E-05
115	75	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09628	0.094288915	3.96E-06
115	75	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.12299	0.119481888	1.23E-05
115	75	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.15728	0.159592056	5.35E-06
115	100	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09837	0.099526386	1.34E-06
115	100	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.12867	0.12611063	6.55E-06
115	100	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.16803	0.16844409	1.71E-07
115	120	2	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.09893	0.102988688	1.65E-05
115	120	2.4	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.13139	0.130489381	8.11E-07
115	120	3	0.04845174	0.0860568	0.29092443	0	0.06190434	0.16493393	0.18566173	0.5875	0.17505	0.174294933	5.70E-07
116	10	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.0961	0.086139011	9.92E-05
116	10	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.11435	0.110926437	1.17E-05
116	10	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.13332	0.151105881	0.00031634
116	25	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.10677	0.099677925	5.03E-05
116	25	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.13112	0.128331757	7.77E-06
116	25	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.15925	0.174832535	0.00024282
116	50	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.11659	0.111285801	2.81E-05
116	50	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.14861	0.143277817	2.84E-05
116	50	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.1876	0.19515173	5.70E-05
116	75	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.12107	0.118662135	5.80E-06
116	75	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.15788	0.152771365	2.61E-05
116	75	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.20551	0.208087374	6.64E-06
116	100	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.12268	0.124177427	2.24E-06
116	100	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.16337	0.159864826	1.23E-05
116	100	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.21801	0.217739677	7.31E-08
116	120	2	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.12239	0.127794154	2.92E-05
116	120	2.4	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.16598	0.164520677	2.13E-06
116	120	3	0.0321955	0.03690402	0.2235965	0	0.09972502	0.16378154	0.05385389	0.68263956	0.22449	0.224073641	1.73E-07
117	10	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.08468	0.075055027	9.26E-05
117	10	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.09932	0.09553442	1.43E-05
117	10	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.11456	0.12828846	0.00018847
117	25	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.09553	0.088888359	4.41E-05
117	25	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.11563	0.113151894	6.14E-06
117	25	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.13868	0.151971817	0.00017667
117	50	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.10602	0.101020126	2.50E-05
117	50	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.13295	0.128600197	1.89E-05
117	50	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.16602	0.172715321	4.48E-05
117	75	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.11121	0.10885685	5.54E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
117	75	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.14281	0.138572896	1.80E-05
117	75	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.18361	0.186115685	6.28E-06
117	100	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.1135	0.114771194	1.62E-06
117	100	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.14899	0.14609211	8.40E-06
117	100	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.19606	0.196216831	2.46E-08
117	120	2	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.11387	0.118678371	2.31E-05
117	120	2.4	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.15222	0.151055368	1.36E-06
117	120	3	0.05652846	0.06102889	0.26602587	0	0.07277922	0.16043057	0.08394038	0.68284982	0.20362	0.202885262	5.40E-07
118	10	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.08736	0.078020859	8.72E-05
118	10	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.10324	0.099907398	1.11E-05
118	10	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.11974	0.135151005	0.0002375
118	25	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.09785	0.09119175	4.43E-05
118	25	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.11925	0.116788826	6.06E-06
118	25	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.14393	0.157998734	0.00019793
118	50	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.10759	0.102613449	2.48E-05
118	50	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.13609	0.131418819	2.18E-05
118	50	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.17095	0.177789707	4.68E-05
118	75	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.11239	0.109930611	6.05E-06
118	75	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.14538	0.140778147	2.12E-05
118	75	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.18821	0.190465571	5.09E-06
118	100	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.11407	0.115422812	1.83E-06
118	100	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.15078	0.147802334	8.87E-06
118	100	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.20023	0.19997283	6.61E-08
118	120	2	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.11399	0.11903557	2.55E-05
118	120	2.4	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.15376	0.152421021	1.79E-06
118	120	3	0.08302854	0.06965945	0.15958253	0	0.0964014	0.15371987	0.1025446	0.64733412	0.20675	0.206213705	2.88E-07
119	10	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.08581	0.076635361	8.42E-05
119	10	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.10105	0.098045635	9.03E-06
119	10	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.11695	0.132466602	0.00024076
119	25	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.09649	0.08996212	4.26E-05
119	25	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.11733	0.115082932	5.05E-06
119	25	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.1413	0.155522156	0.00020227
119	50	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.10651	0.101552677	2.46E-05
119	50	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.13447	0.129903431	2.09E-05
119	50	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.16849	0.175538273	4.97E-05
119	75	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.11148	0.10898674	6.22E-06
119	75	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.14375	0.139418627	1.88E-05
119	75	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.18589	0.188401756	6.31E-06
119	100	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.11326	0.114580688	1.74E-06
119	100	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.1496	0.146568375	9.19E-06
119	100	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.19817	0.198065605	1.09E-08
119	120	2	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.11327	0.118265247	2.50E-05
119	120	2.4	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.15244	0.151279068	1.35E-06
119	120	3	0.05986104	0.08864899	0.19877297	0	0.08825259	0.14294441	0.08538687	0.68341613	0.20478	0.204425907	1.25E-07
120	10	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.08737	0.078172398	8.46E-05
120	10	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.10305	0.100145531	8.44E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
120	10	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.11945	0.135519028	0.00025821
120	25	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.0981	0.091529465	4.32E-05
120	25	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.11952	0.117230453	5.24E-06
120	25	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.14416	0.158674164	0.00021066
120	50	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.10811	0.103115692	2.49E-05
120	50	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.13668	0.132072601	2.12E-05
120	50	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.17164	0.178742237	5.04E-05
120	75	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.11302	0.11053388	6.18E-06
120	75	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.14614	0.141583468	2.08E-05
120	75	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.18929	0.191625926	5.46E-06
120	100	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.11476	0.116117725	1.84E-06
120	100	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.15168	0.148722391	8.75E-06
120	100	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.20139	0.201289053	1.02E-08
120	120	2	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.11469	0.119793264	2.60E-05
120	120	2.4	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.15455	0.153424064	1.27E-06
120	120	3	0.04008457	0.06651883	0.25098645	0	0.08027764	0.13980063	0.07486869	0.70505303	0.20812	0.207638892	2.31E-07
121	10	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.08416	0.075531292	7.45E-05
121	10	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.10011	0.097244644	8.21E-06
121	10	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.11676	0.132401657	0.00024466
121	25	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.09358	0.087277718	3.97E-05
121	25	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.11485	0.112337914	6.31E-06
121	25	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.13942	0.152976303	0.00018377
121	50	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.10199	0.097322578	2.18E-05
121	50	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.12994	0.125275002	2.18E-05
121	50	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.16418	0.170589447	4.11E-05
121	75	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.10591	0.103704529	4.86E-06
121	75	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.13802	0.13349851	2.04E-05
121	75	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.17955	0.181794662	5.04E-06
121	100	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.10699	0.108482332	2.23E-06
121	100	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.14272	0.139643049	9.47E-06
121	100	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.19018	0.190157442	5.09E-10
121	120	2	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.10656	0.111613774	2.55E-05
121	120	2.4	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.14483	0.143669653	1.35E-06
121	120	3	0.04648069	0.03879446	0.22936972	0	0.12262408	0.1583651	0.12461119	0.59439963	0.19605	0.19563485	1.72E-07
122	10	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.08033	0.071396446	7.98E-05
122	10	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.09408	0.090750122	1.11E-05
122	10	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.10836	0.12162075	0.00017585
122	25	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.09077	0.08466259	3.73E-05
122	25	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.10985	0.107609901	5.02E-06
122	25	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.13149	0.144264984	0.0001632
122	50	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.10096	0.096283455	2.19E-05
122	50	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.12636	0.122395763	1.57E-05
122	50	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.15764	0.164077606	4.14E-05
122	75	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.10592	0.103788236	4.54E-06
122	75	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.13595	0.131936938	1.61E-05
122	75	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.17455	0.176884804	5.45E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
122	100	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.1081	0.10946517	1.86E-06
122	100	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.14198	0.139145136	8.04E-06
122	100	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.18626	0.186555147	8.71E-08
122	120	2	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.10861	0.113219364	2.12E-05
122	120	2.4	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.14497	0.143902373	1.14E-06
122	120	3	0.04005268	0.03297733	0.35140251	0	0.08915908	0.16429697	0.07871491	0.66782905	0.19362	0.192939623	4.63E-07
123	10	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.08536	0.075596237	9.53E-05
123	10	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.10015	0.096357059	1.44E-05
123	10	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.1155	0.129522419	0.00019663
123	25	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.09645	0.089633064	4.65E-05
123	25	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.11684	0.114234314	6.79E-06
123	25	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.14018	0.153608437	0.00018032
123	50	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.10712	0.101946678	2.68E-05
123	50	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.13444	0.129907761	2.05E-05
123	50	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.16807	0.174685326	4.38E-05
123	75	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.11224	0.109893087	5.51E-06
123	75	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.14431	0.140030556	1.83E-05
123	75	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.18585	0.18830073	6.01E-06
123	100	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.11451	0.115888252	1.90E-06
123	100	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.15038	0.147665949	7.37E-06
123	100	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.19854	0.198572178	1.04E-09
123	120	2	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.1149	0.119852797	2.45E-05
123	120	2.4	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.1538	0.152706059	1.20E-06
123	120	3	0.05446377	0.11594314	0.19238949	0	0.07751813	0.14150499	0.07491461	0.70606227	0.20596	0.205351377	3.70E-07
124	10	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.10424	0.093282986	0.00012006
124	10	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.12461	0.120603275	1.61E-05
124	10	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.14588	0.1651124	0.00036989
124	25	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.11536	0.107531967	6.13E-05
124	25	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.14224	0.139034729	1.03E-05
124	25	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.17349	0.190341454	0.00028397
124	50	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.12557	0.119702702	3.44E-05
124	50	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.16066	0.154777451	3.46E-05
124	50	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.20386	0.211903267	6.47E-05
124	75	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.13008	0.127419637	7.08E-06
124	75	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.17037	0.164761696	3.15E-05
124	75	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.22246	0.225582174	9.75E-06
124	100	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.13145	0.133187494	3.02E-06
124	100	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.17588	0.172206583	1.35E-05
124	100	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.2358	0.235770636	8.62E-10
124	120	2	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.13088	0.136962255	3.70E-05
124	120	2.4	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.17823	0.177078557	1.33E-06
124	120	3	0.03121998	0.02685879	0.20378217	0	0.06230096	0.15005642	0.05139697	0.73624565	0.24287	0.242433294	1.91E-07
125	10	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.08508	0.076202393	7.88E-05
125	10	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.10035	0.097591019	7.61E-06
125	10	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.11635	0.132098579	0.00024802
125	25	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.09551	0.089130821	4.07E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
125	25	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.11645	0.114208336	5.03E-06
125	25	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.14046	0.154621582	0.00020055
125	50	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.10519	0.100357685	2.34E-05
125	50	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.13302	0.128587208	1.96E-05
125	50	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.16724	0.174105148	4.71E-05
125	75	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.10996	0.107555059	5.78E-06
125	75	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.14224	0.137802213	1.97E-05
125	75	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.1843	0.186589063	5.24E-06
125	100	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.1116	0.112957058	1.84E-06
125	100	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.14753	0.14472393	7.87E-06
125	100	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.196	0.195954885	2.04E-09
125	120	2	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.11144	0.116511726	2.57E-05
125	120	2.4	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.15041	0.149278394	1.28E-06
125	120	3	0.05957459	0.05934045	0.2410155	0	0.08526863	0.13556321	0.09083655	0.68833161	0.2024	0.202116744	8.02E-08
126	10	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.08672	0.077393055	8.70E-05
126	10	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.10192	0.098889923	9.18E-06
126	10	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.11779	0.133527374	0.00024766
126	25	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.09782	0.091217728	4.36E-05
126	25	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.11885	0.116581001	5.15E-06
126	25	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.14291	0.157392578	0.00020975
126	50	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.10845	0.10328455	2.67E-05
126	50	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.13659	0.131986008	2.12E-05
126	50	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.17095	0.178192368	5.25E-05
126	75	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.1135	0.111036123	6.07E-06
126	75	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.1463	0.14191541	1.92E-05
126	75	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.18906	0.191588402	6.39E-06
126	100	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.1155	0.116881914	1.91E-06
126	100	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.15244	0.149380503	9.36E-06
126	100	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.20186	0.2016679	3.69E-08
126	120	2	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.11563	0.120733166	2.60E-05
126	120	2.4	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.15555	0.154302629	1.56E-06
126	120	3	0.10054078	0.03936381	0.24045118	0	0.09217617	0.13506322	0.04051308	0.73224753	0.20895	0.208306384	4.14E-07
127	10	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.0866	0.077522945	8.24E-05
127	10	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.10242	0.099409485	9.06E-06
127	10	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.1189	0.13467474	0.00024884
127	25	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.09693	0.090421066	4.24E-05
127	25	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.11834	0.115940208	5.76E-06
127	25	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.14292	0.157063522	0.00020004
127	50	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.10646	0.101578655	2.38E-05
127	50	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.13488	0.130219498	2.17E-05
127	50	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.16955	0.176408539	4.70E-05
127	75	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.11113	0.108709641	5.86E-06
127	75	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.144	0.139349353	2.16E-05
127	75	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.18674	0.188774109	4.14E-06
127	100	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.11261	0.114054632	2.09E-06
127	100	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.14916	0.146193857	8.80E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
127	100	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.19832	0.198041792	7.74E-08
127	120	2	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.11249	0.11756889	2.58E-05
127	120	2.4	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.15194	0.150689149	1.56E-06
127	120	3	0.036202	0.05107725	0.25992789	0	0.09663426	0.1516791	0.08552371	0.66616294	0.20464	0.204128242	2.62E-07
128	10	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.08424	0.075033379	8.48E-05
128	10	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.09925	0.096010685	1.05E-05
128	10	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.11493	0.1297822	0.00022059
128	25	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.09468	0.088083038	4.35E-05
128	25	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.11514	0.112718925	5.86E-06
128	25	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.13878	0.152361488	0.00018446
128	50	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.10443	0.099422474	2.51E-05
128	50	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.13181	0.127219028	2.11E-05
128	50	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.16535	0.171961956	4.37E-05
128	75	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.10918	0.106694895	6.18E-06
128	75	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.14081	0.136520627	1.84E-05
128	75	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.18226	0.18454834	5.24E-06
128	100	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.11088	0.112162561	1.64E-06
128	100	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.14644	0.143513784	8.56E-06
128	100	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.19412	0.194002199	1.39E-08
128	120	2	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.1109	0.115763052	2.36E-05
128	120	2.4	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.14933	0.148122009	1.46E-06
128	120	3	0.0658409	0.09547127	0.176124	0	0.12880675	0.1533415	0.06976535	0.6480864	0.20066	0.200224312	1.90E-07
129	10	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.09422	0.084493732	9.46E-05
129	10	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.11221	0.108804893	1.16E-05
129	10	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.13094	0.148248291	0.00029958
129	25	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.10456	0.097625656	4.81E-05
129	25	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.12853	0.125751266	7.72E-06
129	25	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.15624	0.171299515	0.00022679
129	50	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.11406	0.108900146	2.66E-05
129	50	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.14551	0.140255699	2.76E-05
129	50	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.18383	0.19106884	5.24E-05
129	75	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.11845	0.116064326	5.69E-06
129	75	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.15441	0.149466375	2.44E-05
129	75	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.20125	0.203639348	5.71E-06
129	100	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.11987	0.121417255	2.39E-06
129	100	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.15968	0.15635129	1.11E-05
129	100	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.21324	0.213020325	4.83E-08
129	120	2	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.11946	0.124927545	2.99E-05
129	120	2.4	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.16215	0.1608639	1.65E-06
129	120	3	0.02819347	0.03957896	0.22341769	0	0.0717279	0.15546815	0.10185747	0.67094648	0.21954	0.219164864	1.41E-07
130	10	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.09481	0.084710217	0.00010201
130	10	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.11279	0.109216213	1.28E-05
130	10	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.13151	0.148876095	0.00030158
130	25	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.1055	0.098171196	5.37E-05
130	25	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.12952	0.126556587	8.78E-06
130	25	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.15747	0.172555122	0.00022756

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
130	50	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.11511	0.109740105	2.88E-05
130	50	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.14695	0.141442032	3.03E-05
130	50	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.18581	0.192882977	5.00E-05
130	75	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.11973	0.117109222	6.87E-06
130	75	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.15604	0.150926921	2.61E-05
130	75	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.20334	0.205818621	6.14E-06
130	100	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.12115	0.122616577	2.15E-06
130	100	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.16148	0.158018217	1.20E-05
130	100	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.2156	0.215483913	1.35E-08
130	120	2	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.12075	0.126235469	3.01E-05
130	120	2.4	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.1639	0.16266613	1.52E-06
130	120	3	0.03750511	0.05524857	0.20028363	0	0.07785906	0.13989083	0.07733896	0.70491115	0.22238	0.221822206	3.11E-07
131	10	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.07959	0.070682049	7.94E-05
131	10	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.09309	0.089819241	1.07E-05
131	10	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.1071	0.120343494	0.00017539
131	25	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.09028	0.084091072	3.83E-05
131	25	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.10915	0.106856537	5.26E-06
131	25	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.13056	0.143208542	0.00015999
131	50	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.10055	0.095880795	2.18E-05
131	50	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.12583	0.121832905	1.60E-05
131	50	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.15688	0.163280945	4.10E-05
131	75	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.10565	0.10350825	4.59E-06
131	75	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.13556	0.131535721	1.62E-05
131	75	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.17411	0.176275762	4.69E-06
131	100	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.10792	0.109278994	1.85E-06
131	100	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.14158	0.138863707	7.38E-06
131	100	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.18607	0.186100531	9.32E-10
131	120	2	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.10833	0.11309669	2.27E-05
131	120	2.4	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.14471	0.143705734	1.01E-06
131	120	3	0.11582515	0.05130182	0.24663546	0	0.0739327	0.13902015	0.0965096	0.69053755	0.19327	0.192593249	4.58E-07
132	10	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.09867	0.087979126	0.00011429
132	10	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.11716	0.113047981	1.69E-05
132	10	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.13639	0.153617096	0.00029677
132	25	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.10987	0.102396965	5.58E-05
132	25	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.13473	0.131596336	9.82E-06
132	25	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.16318	0.178815842	0.00024448
132	50	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.12038	0.11483614	3.07E-05
132	50	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.15303	0.14757719	2.97E-05
132	50	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.19281	0.200546513	5.99E-05
132	75	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.12524	0.122783991	6.03E-06
132	75	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.16307	0.157788022	2.79E-05
132	75	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.21159	0.214414482	7.98E-06
132	100	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.12702	0.128734417	2.94E-06
132	100	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.16895	0.165424137	1.24E-05
132	100	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.22491	0.224794893	1.32E-08
132	120	2	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.12694	0.132647006	3.26E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
132	120	2.4	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.17176	0.170441516	1.74E-06
132	120	3	0.0268627	0.05440739	0.21189095	0	0.0666458	0.15621971	0.05549139	0.7216431	0.23199	0.231610894	1.44E-07
133	10	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.08739	0.077587891	9.61E-05
133	10	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.10275	0.099106407	1.33E-05
133	10	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.11875	0.133613968	0.00022094
133	25	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.09842	0.091529465	4.75E-05
133	25	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.11948	0.11687542	6.78E-06
133	25	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.14365	0.157626381	0.00019534
133	50	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.10892	0.10368288	2.74E-05
133	50	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.13707	0.132410316	2.17E-05
133	50	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.17171	0.17856905	4.70E-05
133	75	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.11405	0.111506615	6.47E-06
133	75	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.14689	0.14241188	2.01E-05
133	75	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.18951	0.192050234	6.45E-06
133	100	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.11602	0.117399311	1.90E-06
133	100	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.15291	0.149934702	8.85E-06
133	100	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.20229	0.202196121	8.81E-09
133	120	2	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.11626	0.121288808	2.53E-05
133	120	2.4	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.15615	0.154894352	1.58E-06
133	120	3	0.05236568	0.05663396	0.26445414	0	0.05971915	0.14373743	0.07922367	0.71731974	0.20954	0.208883675	4.31E-07
134	10	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.08549	0.076137447	8.75E-05
134	10	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.10043	0.097179699	1.06E-05
134	10	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.11594	0.130907917	0.00022404
134	25	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.09638	0.089806252	4.32E-05
134	25	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.11696	0.114632645	5.42E-06
134	25	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.14046	0.154448395	0.00019568
134	50	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.1068	0.101756172	2.54E-05
134	50	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.1342	0.129868793	1.88E-05
134	50	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.16805	0.174997063	4.83E-05
134	75	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.11186	0.109445686	5.83E-06
134	75	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.14393	0.139689954	1.80E-05
134	75	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.18567	0.188231455	6.56E-06
134	100	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.11392	0.11524313	1.75E-06
134	100	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.14985	0.147081442	7.66E-06
134	100	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.19815	0.198193331	1.88E-09
134	120	2	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.11429	0.119064434	2.28E-05
134	120	2.4	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.15316	0.151951973	1.46E-06
134	120	3	0.03164757	0.06326738	0.2934236	0	0.06946341	0.14792671	0.07414068	0.70846919	0.20529	0.204761457	2.79E-07
135	10	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.09886	0.087892532	0.00012029
135	10	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.11724	0.112939739	1.85E-05
135	10	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.13637	0.153400612	0.00029004
135	25	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.11027	0.102578812	5.92E-05
135	25	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.13509	0.131795502	1.09E-05
135	25	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.16347	0.179023666	0.00024192
135	50	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.12107	0.115264778	3.37E-05
135	50	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.15372	0.148088093	3.17E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
135	50	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.19365	0.201169987	5.66E-05
135	75	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.126	0.123378601	6.87E-06
135	75	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.16396	0.158503863	2.98E-05
135	75	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.21257	0.215326602	7.60E-06
135	100	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.12779	0.129461803	2.79E-06
135	100	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.16994	0.166311722	1.32E-05
135	100	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.22616	0.225935764	5.03E-08
135	120	2	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.12782	0.133464233	3.19E-05
135	120	2.4	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.1728	0.171446363	1.83E-06
135	120	3	0.02416453	0.08573296	0.17514727	0	0.04078167	0.13935248	0.07480314	0.74506271	0.23336	0.232902582	2.09E-07
136	10	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.09056	0.081441307	8.32E-05
136	10	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.10779	0.104994774	7.81E-06
136	10	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.12579	0.143117619	0.00030025
136	25	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.10053	0.093962746	4.31E-05
136	25	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.1236	0.121101189	6.24E-06
136	25	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.15026	0.165099411	0.00022021
136	50	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.10967	0.104665718	2.50E-05
136	50	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.13989	0.134886894	2.50E-05
136	50	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.17691	0.183907547	4.90E-05
136	75	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.11382	0.111474864	5.50E-06
136	75	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.14843	0.14364151	2.29E-05
136	75	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.19341	0.195837262	5.89E-06
136	100	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.11508	0.116550694	2.16E-06
136	100	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.1534	0.150172834	1.04E-05
136	100	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.20492	0.204739809	3.25E-08
136	120	2	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.11456	0.119879858	2.83E-05
136	120	2.4	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.15567	0.15445958	1.47E-06
136	120	3	0.05577387	0.05291507	0.17325004	0	0.15548387	0.16255657	0.05342407	0.62853549	0.21096	0.210570447	1.52E-07
137	10	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.08274	0.07310667	9.28E-05
137	10	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.09696	0.093044853	1.53E-05
137	10	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.11177	0.124976254	0.00017441
137	25	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.09348	0.086784134	4.48E-05
137	25	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.11315	0.110493469	7.06E-06
137	25	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.13556	0.1483955	0.00016475
137	50	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.10385	0.098820648	2.53E-05
137	50	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.13011	0.125798893	1.86E-05
137	50	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.16248	0.168926849	4.16E-05
137	75	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.10897	0.106602529	5.60E-06
137	75	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.13995	0.135695101	1.81E-05
137	75	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.17986	0.182216085	5.55E-06
137	100	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.1113	0.112476463	1.38E-06
137	100	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.14611	0.143158751	8.71E-06
137	100	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.19207	0.192244349	3.04E-08
137	120	2	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.11171	0.116358383	2.16E-05
137	120	2.4	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.14925	0.148093144	1.34E-06
137	120	3	0.09538015	0.03682004	0.26396078	0	0.06118871	0.15143834	0.10294498	0.68442797	0.19952	0.198865875	4.28E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
138	10	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.0899	0.079666138	0.00010473
138	10	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.10546	0.101531029	1.54E-05
138	10	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.12163	0.136644745	0.00022544
138	25	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.10158	0.094473648	5.05E-05
138	25	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.12312	0.120434418	7.21E-06
138	25	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.14765	0.162068634	0.0002079
138	50	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.11299	0.107467022	3.05E-05
138	50	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.14173	0.136995449	2.24E-05
138	50	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.17719	0.184349174	5.13E-05
138	75	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.11848	0.115862274	6.85E-06
138	75	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.15236	0.147691205	2.18E-05
138	75	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.19613	0.198746808	6.85E-06
138	100	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.12084	0.122187939	1.82E-06
138	100	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.15875	0.155762453	8.93E-06
138	100	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.20971	0.209599876	1.21E-08
138	120	2	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.12139	0.12637438	2.48E-05
138	120	2.4	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.16246	0.161089404	1.88E-06
138	120	3	0.06923763	0.06253965	0.24763293	0	0.06133061	0.14178491	0.03688429	0.76000019	0.21743	0.216763695	4.44E-07
139	10	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.08872	0.079514599	8.47E-05
139	10	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.10493	0.1019207	9.06E-06
139	10	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.12178	0.138160133	0.00026831
139	25	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.09936	0.092724457	4.40E-05
139	25	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.12125	0.118893051	5.56E-06
139	25	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.14642	0.161150742	0.00021699
139	50	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.10909	0.104137497	2.45E-05
139	50	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.13823	0.133549023	2.19E-05
139	50	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.17382	0.181002331	5.16E-05
139	75	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.11391	0.11143734	6.11E-06
139	75	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.1476	0.142905464	2.20E-05
139	75	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.19142	0.193701286	5.20E-06
139	100	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.11559	0.116914387	1.75E-06
139	100	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.15305	0.149921713	9.79E-06
139	100	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.20334	0.203211432	1.65E-08
139	120	2	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.1155	0.120514878	2.51E-05
139	120	2.4	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.15586	0.154540761	1.74E-06
139	120	3	0.07915942	0.01789473	0.24747042	0	0.07933416	0.14742811	0.08672004	0.6865177	0.20989	0.209451946	1.92E-07
140	10	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.08649	0.077284813	8.47E-05
140	10	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.10229	0.099106407	1.01E-05
140	10	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.11875	0.134285069	0.00024134
140	25	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.09683	0.090213242	4.38E-05
140	25	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.11824	0.115697746	6.46E-06
140	25	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.14281	0.156795082	0.00019558
140	50	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.10635	0.101409798	2.44E-05
140	50	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.13473	0.13004631	2.19E-05
140	50	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.16943	0.176239681	4.64E-05
140	75	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.111	0.108576864	5.87E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
140	75	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.14379	0.139228121	2.08E-05
140	75	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.18664	0.188673083	4.13E-06
140	100	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.11253	0.113952885	2.02E-06
140	100	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.14909	0.146111593	8.87E-06
140	100	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.19822	0.198002825	4.72E-08
140	120	2	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.1124	0.117485905	2.59E-05
140	120	2.4	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.15186	0.150642244	1.48E-06
140	120	3	0.02871722	0.06866642	0.24543947	0	0.11248936	0.15232023	0.07105992	0.66413049	0.20456	0.20413185	1.83E-07
141	10	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.08408	0.074795246	8.62E-05
141	10	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.09886	0.095512772	1.12E-05
141	10	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.11421	0.128764725	0.00021184
141	25	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.09464	0.088117676	4.25E-05
141	25	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.11492	0.112511101	5.80E-06
141	25	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.13809	0.151712036	0.00018556
141	50	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.10467	0.099703903	2.47E-05
141	50	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.13166	0.1273316	1.87E-05
141	50	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.16496	0.171684856	4.52E-05
141	75	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.10957	0.107162501	5.80E-06
141	75	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.14103	0.136855456	1.74E-05
141	75	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.18204	0.184545453	6.28E-06
141	100	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.11146	0.112790365	1.77E-06
141	100	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.14686	0.144029016	8.01E-06
141	100	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.19419	0.194223013	1.09E-09
141	120	2	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.11177	0.116499098	2.24E-05
141	120	2.4	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.14998	0.148760637	1.49E-06
141	120	3	0.05187658	0.09797269	0.20485129	0	0.14305563	0.16460541	0.04115875	0.65118021	0.20101	0.200595943	1.71E-07
142	10	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.08173	0.073366451	6.99E-05
142	10	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.09661	0.094105625	6.27E-06
142	10	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.11213	0.127487469	0.00023585
142	25	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.09152	0.085441933	3.69E-05
142	25	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.11167	0.109566917	4.42E-06
142	25	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.135	0.148490753	0.000182
142	50	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.1005	0.095854816	2.16E-05
142	50	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.12729	0.122923985	1.91E-05
142	50	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.15998	0.166593151	4.37E-05
142	75	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.10483	0.102512423	5.37E-06
142	75	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.13582	0.131457787	1.90E-05
142	75	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.17606	0.178166389	4.44E-06
142	100	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.10617	0.107503824	1.78E-06
142	100	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.14058	0.137852726	7.44E-06
142	100	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.18698	0.186836576	2.06E-08
142	120	2	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.10606	0.110787527	2.23E-05
142	120	2.4	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.14305	0.142062259	9.76E-07
142	120	3	0.08037695	0.053967	0.2068915	0	0.13301092	0.15204299	0.10061767	0.61432842	0.19289	0.192530107	1.30E-07
143	10	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.08962	0.079622841	9.99E-05
143	10	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.10573	0.101855755	1.50E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
143	10	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.12251	0.13766222	0.00022959
143	25	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.10054	0.093469162	5.00E-05
143	25	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.12233	0.11959446	7.48E-06
143	25	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.14736	0.161670303	0.00020478
143	50	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.11077	0.105518665	2.76E-05
143	50	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.1399	0.135012455	2.39E-05
143	50	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.17544	0.182548027	5.05E-05
143	75	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.11582	0.11325292	6.59E-06
143	75	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.1495	0.144925982	2.09E-05
143	75	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.19334	0.195944061	6.78E-06
143	100	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.11761	0.119074898	2.15E-06
143	100	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.15536	0.152370148	8.94E-06
143	100	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.20607	0.206008406	3.79E-09
143	120	2	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.11781	0.122908831	2.60E-05
143	120	2.4	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.15852	0.157270265	1.56E-06
143	120	3	0.02513433	0.0628761	0.26028338	0	0.04908171	0.15187014	0.09915214	0.69989601	0.21308	0.212636065	1.97E-07
144	10	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.08604	0.076678658	8.76E-05
144	10	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.10148	0.098240471	1.05E-05
144	10	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.11759	0.132877922	0.00023372
144	25	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.09653	0.089858208	4.45E-05
144	25	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.11749	0.115074272	5.84E-06
144	25	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.14167	0.155652046	0.0001955
144	50	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.10637	0.101279907	2.59E-05
144	50	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.13435	0.129691277	2.17E-05
144	50	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.16853	0.175434361	4.77E-05
144	75	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.11113	0.108599955	6.40E-06
144	75	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.14354	0.139057821	2.01E-05
144	75	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.18577	0.188115997	5.50E-06
144	100	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.11282	0.114102259	1.64E-06
144	100	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.14901	0.146089945	8.53E-06
144	100	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.19785	0.197636967	4.54E-08
144	120	2	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.11284	0.117720429	2.38E-05
144	120	2.4	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.15199	0.15072523	1.60E-06
144	120	3	0.04753697	0.06231537	0.2421037	0	0.04984666	0.14135691	0.12811514	0.68068129	0.20442	0.203900933	2.69E-07
145	10	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.0973	0.087394619	9.81E-05
145	10	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.11626	0.113112926	9.90E-06
145	10	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.13614	0.155045891	0.00035743
145	25	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.10783	0.100491905	5.38E-05
145	25	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.13296	0.130072289	8.34E-06
145	25	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.16222	0.178287621	0.00025817
145	50	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.11735	0.111684132	3.21E-05
145	50	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.15003	0.144550743	3.00E-05
145	50	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.19061	0.198126221	5.65E-05
145	75	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.12151	0.118768934	7.51E-06
145	75	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.15908	0.153721008	2.87E-05
145	75	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.20794	0.210690956	7.57E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
145	100	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.12247	0.124051867	2.50E-06
145	100	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.1641	0.160542421	1.27E-05
145	100	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.22022	0.220051727	2.83E-08
145	120	2	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.12185	0.127510921	3.20E-05
145	120	2.4	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.16607	0.165014982	1.11E-06
145	120	3	0.03462336	0.03737881	0.20513232	0	0.09655109	0.14062044	0.05792195	0.70490653	0.22661	0.22617534	1.89E-07
146	10	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.09926	0.088520336	0.00011534
146	10	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.11792	0.113805676	1.69E-05
146	10	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.13729	0.154612923	0.00030008
146	25	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.11054	0.102994461	5.69E-05
146	25	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.13548	0.132375679	9.64E-06
146	25	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.16408	0.179863625	0.00024912
146	50	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.12106	0.115463943	3.13E-05
146	50	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.15384	0.1483955	2.96E-05
146	50	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.19383	0.201654911	6.12E-05
146	75	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.12596	0.123424784	6.43E-06
146	75	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.16396	0.158625094	2.85E-05
146	75	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.21283	0.215548859	7.39E-06
146	100	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.12778	0.129390364	2.59E-06
146	100	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.16993	0.166277084	1.33E-05
146	100	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.22601	0.225942259	4.59E-09
146	120	2	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.1277	0.133305478	3.14E-05
146	120	2.4	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.17272	0.171300236	2.02E-06
146	120	3	0.04864947	0.02498656	0.22275416	0	0.05630642	0.15950461	0.06402968	0.7201593	0.23306	0.232756456	9.21E-08
147	10	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.08423	0.075119972	8.30E-05
147	10	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.09929	0.096227169	9.38E-06
147	10	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.11507	0.130301762	0.00023201
147	25	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.09461	0.088031082	4.33E-05
147	25	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.11524	0.1127882	6.01E-06
147	25	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.13894	0.152733841	0.00019027
147	50	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.10428	0.099249287	2.53E-05
147	50	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.13176	0.127167072	2.11E-05
147	50	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.16552	0.17218277	4.44E-05
147	75	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.10903	0.106449547	6.66E-06
147	75	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.14083	0.136384964	1.98E-05
147	75	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.18241	0.184663798	5.08E-06
147	100	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.1106	0.111857319	1.58E-06
147	100	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.14621	0.143308125	8.42E-06
147	100	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.19417	0.194041166	1.66E-08
147	120	2	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.11065	0.115416678	2.27E-05
147	120	2.4	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.14917	0.147873052	1.68E-06
147	120	3	0.07360256	0.041178	0.25374774	0	0.09160914	0.13980159	0.08777626	0.68081301	0.20067	0.200211684	2.10E-07
148	10	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.09492	0.084926701	9.99E-05
148	10	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.11327	0.109605885	1.34E-05
148	10	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.13247	0.149655437	0.00029534
148	25	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.10507	0.097859459	5.20E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
148	25	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.12931	0.126296806	9.08E-06
148	25	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.15746	0.172494507	0.00022604
148	50	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.11419	0.108930454	2.77E-05
148	50	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.14598	0.140576096	2.92E-05
148	50	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.18492	0.192004051	5.02E-05
148	75	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.11856	0.115960414	6.76E-06
148	75	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.15488	0.149633789	2.75E-05
148	75	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.20185	0.204366735	6.33E-06
148	100	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.11973	0.121200771	2.16E-06
148	100	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.15971	0.156388092	1.10E-05
148	100	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.21351	0.213589678	6.35E-09
148	120	2	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.11933	0.124633487	2.81E-05
148	120	2.4	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.16215	0.160807975	1.80E-06
148	120	3	0.02999297	0.02083823	0.23225495	0	0.07232366	0.16211079	0.11094902	0.65461653	0.22002	0.219626697	1.55E-07
149	10	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.08909	0.078930092	0.00010322
149	10	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.10485	0.100751686	1.68E-05
149	10	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.12118	0.135713863	0.00021123
149	25	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.1001	0.093070831	4.94E-05
149	25	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.12157	0.118789139	7.73E-06
149	25	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.14609	0.160068321	0.00019539
149	50	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.11062	0.105414753	2.71E-05
149	50	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.1392	0.134549179	2.16E-05
149	50	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.17435	0.181296749	4.83E-05
149	75	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.1158	0.113368378	5.91E-06
149	75	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.14911	0.14468352	1.96E-05
149	75	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.19236	0.194956894	6.74E-06
149	100	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.11792	0.119354162	2.06E-06
149	100	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.15516	0.152320356	8.06E-06
149	100	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.20514	0.205244217	1.09E-08
149	120	2	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.11814	0.123305718	2.67E-05
149	120	2.4	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.15856	0.157355054	1.45E-06
149	120	3	0.06194245	0.04794891	0.24286353	0	0.0669583	0.16204366	0.08176278	0.68923526	0.21254	0.212026302	2.64E-07
150	10	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.08922	0.079666138	9.13E-05
150	10	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.10574	0.10246191	1.07E-05
150	10	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.123	0.139307499	0.00026593
150	25	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.09969	0.092776413	4.78E-05
150	25	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.12203	0.119334679	7.26E-06
150	25	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.14774	0.162250481	0.00021055
150	50	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.10935	0.1040942	2.76E-05
150	50	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.1389	0.133886738	2.51E-05
150	50	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.17493	0.182071762	5.10E-05
150	75	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.11375	0.111330541	5.85E-06
150	75	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.14791	0.143179677	2.24E-05
150	75	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.19222	0.194720205	6.25E-06
150	100	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.11525	0.116752024	2.26E-06
150	100	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.15345	0.150140362	1.10E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
150	100	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.2041	0.204192104	8.48E-09
150	120	2	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.11507	0.120320042	2.76E-05
150	120	2.4	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.15598	0.154722969	1.58E-06
150	120	3	0.04312065	0.04410232	0.24907018	0	0.09866124	0.14236457	0.06737644	0.69159775	0.2107	0.210409888	8.42E-08
151	10	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.08089	0.071591282	8.65E-05
151	10	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.09453	0.091009903	1.24E-05
151	10	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.10874	0.12190218	0.00017324
151	25	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.0917	0.085312042	4.08E-05
151	25	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.11089	0.108423882	6.08E-06
151	25	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.13242	0.14526947	0.00016511
151	50	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.10231	0.097396183	2.41E-05
151	50	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.12782	0.123763943	1.65E-05
151	50	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.15915	0.165839787	4.48E-05
151	75	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.10746	0.105231463	4.97E-06
151	75	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.13786	0.133703448	1.73E-05
151	75	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.17683	0.179162216	5.44E-06
151	100	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.10987	0.111151581	1.64E-06
151	100	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.14403	0.141219053	7.90E-06
151	100	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.18877	0.18923522	2.16E-07
151	120	2	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.11056	0.115066695	2.03E-05
151	120	2.4	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.14726	0.146184476	1.16E-06
151	120	3	0.07842467	0.05228172	0.28942425	0	0.09330693	0.15732432	0.06105712	0.68831163	0.19661	0.195887415	5.22E-07
152	10	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.08295	0.073409748	9.10E-05
152	10	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.09735	0.093607712	1.40E-05
152	10	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.11227	0.125950432	0.00018715
152	25	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.0937	0.086948662	4.56E-05
152	25	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.11353	0.110883141	7.01E-06
152	25	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.13633	0.14920948	0.00016588
152	50	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.10401	0.098820648	2.69E-05
152	50	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.1306	0.126011047	2.11E-05
152	50	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.16327	0.16959362	4.00E-05
152	75	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.10892	0.106478411	5.96E-06
152	75	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.14005	0.135778809	1.82E-05
152	75	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.18055	0.182752965	4.85E-06
152	100	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.11114	0.112264309	1.26E-06
152	100	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.14585	0.143150091	7.29E-06
152	100	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.1927	0.192672987	7.30E-10
152	120	2	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.11142	0.116087778	2.18E-05
152	120	2.4	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.1492	0.148015571	1.40E-06
152	120	3	0.07588957	0.06496361	0.2472318	0	0.05440871	0.13676581	0.10963968	0.6991858	0.19983	0.199223073	3.68E-07
153	10	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.08227	0.073258209	8.12E-05
153	10	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.0967	0.093326283	1.14E-05
153	10	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.11166	0.125517464	0.00019203
153	25	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.09252	0.08629055	3.88E-05
153	25	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.11224	0.109956589	5.21E-06
153	25	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.13482	0.147884598	0.00017068

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
153	50	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.10234	0.097647305	2.20E-05
153	50	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.12863	0.124435043	1.76E-05
153	50	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.16078	0.167350845	4.32E-05
153	75	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.10716	0.104954364	4.86E-06
153	75	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.13779	0.133749631	1.63E-05
153	75	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.17743	0.179889603	6.05E-06
153	100	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.10919	0.110458832	1.61E-06
153	100	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.14355	0.140760107	7.78E-06
153	100	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.18912	0.189323978	4.16E-08
153	120	2	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.10945	0.114090713	2.15E-05
153	120	2.4	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.14661	0.145388897	1.49E-06
153	120	3	0.04134071	0.07067208	0.25903726	0	0.06694942	0.16273159	0.13201405	0.63830494	0.19608	0.195535628	2.96E-07
154	10	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.09	0.080185699	9.63E-05
154	10	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.10634	0.102764988	1.28E-05
154	10	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.12335	0.13915596	0.00024983
154	25	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.1008	0.093841515	4.84E-05
154	25	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.12284	0.12026123	6.65E-06
154	25	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.14823	0.162847977	0.00021369
154	50	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.11088	0.105670204	2.71E-05
154	50	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.14016	0.135393467	2.27E-05
154	50	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.17613	0.183362007	5.23E-05
154	75	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.11584	0.113232714	6.80E-06
154	75	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.14981	0.145107829	2.21E-05
154	75	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.19401	0.196501147	6.21E-06
154	100	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.11763	0.118925524	1.68E-06
154	100	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.1555	0.152387466	9.69E-06
154	100	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.20638	0.206356945	5.32E-10
154	120	2	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.11752	0.122672502	2.65E-05
154	120	2.4	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.15846	0.157174651	1.65E-06
154	120	3	0.05271852	0.03691956	0.25249266	0	0.07914134	0.15684261	0.07580369	0.68821237	0.21319	0.212836313	1.25E-07
155	10	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.0798	0.070768642	8.16E-05
155	10	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.09333	0.089992428	1.11E-05
155	10	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10737	0.120733166	0.00017857
155	25	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.09055	0.084203644	4.03E-05
155	25	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10945	0.10708168	5.61E-06
155	25	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.13089	0.143676147	0.00016349
155	50	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10083	0.096019344	2.31E-05
155	50	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.1262	0.122118664	1.67E-05
155	50	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.15737	0.163848133	4.20E-05
155	75	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10599	0.103672778	5.37E-06
155	75	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.136	0.131859004	1.71E-05
155	75	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.17465	0.176913668	5.12E-06
155	100	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10826	0.109458675	1.44E-06
155	100	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.14204	0.139214411	7.98E-06
155	100	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.18668	0.186780291	1.01E-08
155	120	2	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.10874	0.11328431	2.07E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
155	120	2.4	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.14518	0.144075561	1.22E-06
155	120	3	0.08441	0.05748794	0.28072505	0	0.10929569	0.14960481	0.0511342	0.6899653	0.1938	0.193302234	2.48E-07
156	10	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.08248	0.074124146	6.98E-05
156	10	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.0975	0.095209694	5.25E-06
156	10	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.11324	0.12937088	0.00026021
156	25	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.09245	0.086281891	3.80E-05
156	25	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.11302	0.110874481	4.60E-06
156	25	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.13665	0.150629616	0.00019543
156	50	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.10159	0.096790028	2.30E-05
156	50	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.12889	0.124370098	2.04E-05
156	50	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.16211	0.168961487	4.69E-05
156	75	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.10588	0.103499591	5.67E-06
156	75	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.13741	0.132996267	1.95E-05
156	75	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.17844	0.180671832	4.98E-06
156	100	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.1072	0.108534288	1.78E-06
156	100	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.1424	0.139456873	8.66E-06
156	100	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.18968	0.189453869	5.11E-08
156	120	2	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.10696	0.111846495	2.39E-05
156	120	2.4	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.14478	0.143696713	1.17E-06
156	120	3	0.07221332	0.04618932	0.24396356	0	0.15041697	0.13806636	0.05194095	0.65957572	0.19562	0.195216314	1.63E-07
157	10	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.08265	0.074124146	7.27E-05
157	10	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.0975	0.09499321	6.28E-06
157	10	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.11308	0.128656483	0.00024263
157	25	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.09274	0.08655899	3.82E-05
157	25	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.1131	0.110952415	4.61E-06
157	25	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.13655	0.150274582	0.00018836
157	50	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.10208	0.097331238	2.26E-05
157	50	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.12915	0.12475111	1.94E-05
157	50	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.16239	0.168961487	4.32E-05
157	75	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.10659	0.104224091	5.60E-06
157	75	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.138	0.133582217	1.95E-05
157	75	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.17891	0.180934499	4.10E-06
157	100	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.10813	0.10939806	1.61E-06
157	100	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.14311	0.140203743	8.45E-06
157	100	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.19007	0.18991065	2.54E-08
157	120	2	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.108	0.112800829	2.30E-05
157	120	2.4	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.1457	0.144566258	1.29E-06
157	120	3	0.05960525	0.04401288	0.26922306	0	0.12707978	0.14378047	0.06580204	0.66333771	0.19623	0.195811645	1.75E-07
158	10	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.08589	0.076159096	9.47E-05
158	10	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.10074	0.096941566	1.44E-05
158	10	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.11617	0.130280113	0.0001991
158	25	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.09696	0.090247879	4.51E-05
158	25	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.1174	0.114901085	6.24E-06
158	25	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.14082	0.154396439	0.00018432
158	50	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.10771	0.10260046	2.61E-05
158	50	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.13504	0.130643806	1.93E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
158	50	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.16867	0.175529613	4.71E-05
158	75	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.11291	0.110585836	5.40E-06
158	75	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.14516	0.140807012	1.89E-05
158	75	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.18666	0.189192645	6.41E-06
158	100	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.11531	0.116613474	1.70E-06
158	100	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.15136	0.148475599	8.32E-06
158	100	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.19934	0.1994944	2.38E-08
158	120	2	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.11567	0.120594255	2.42E-05
158	120	2.4	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.1547	0.153539522	1.35E-06
158	120	3	0.11878633	0.03075259	0.22907515	0	0.07060828	0.15108156	0.07649984	0.70181033	0.20683	0.20629669	2.84E-07
159	10	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.0839	0.074297333	9.22E-05
159	10	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.09826	0.09458189	1.35E-05
159	10	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.11314	0.127076149	0.00019422
159	25	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.09497	0.088282204	4.47E-05
159	25	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.11489	0.112372551	6.34E-06
159	25	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.13758	0.15097599	0.00017945
159	50	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.10565	0.100543861	2.61E-05
159	50	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.13237	0.128002701	1.91E-05
159	50	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.16518	0.171966286	4.61E-05
159	75	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.11093	0.108481611	5.99E-06
159	75	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.14239	0.138111064	1.83E-05
159	75	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.18314	0.185538394	5.75E-06
159	100	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.11336	0.114481106	1.26E-06
159	100	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.14865	0.145741405	8.46E-06
159	100	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.19565	0.195786028	1.85E-08
159	120	2	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.11373	0.118445651	2.22E-05
159	120	2.4	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.15206	0.150782959	1.63E-06
159	120	3	0.08824642	0.02781627	0.29527775	0	0.08798477	0.15271495	0.04703632	0.71226396	0.20316	0.202558732	3.62E-07
160	10	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.08162	0.073323154	6.88E-05
160	10	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.09654	0.094148922	5.72E-06
160	10	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.11214	0.127812195	0.00024562
160	25	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.09133	0.085242767	3.71E-05
160	25	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.11155	0.109471664	4.32E-06
160	25	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.13493	0.148620644	0.00018743
160	50	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.10017	0.095525761	2.16E-05
160	50	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.12692	0.122677193	1.80E-05
160	50	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.15971	0.166536865	4.66E-05
160	75	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.10444	0.102082342	5.56E-06
160	75	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.13538	0.131102753	1.83E-05
160	75	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.17565	0.177970111	5.38E-06
160	100	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.10576	0.106999416	1.54E-06
160	100	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.14018	0.137406769	7.69E-06
160	100	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.18655	0.186531334	3.48E-10
160	120	2	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.10553	0.110233688	2.21E-05
160	120	2.4	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.14262	0.141548109	1.15E-06
160	120	3	0.06535666	0.05307394	0.22602282	0	0.13423881	0.15210469	0.09962685	0.61402965	0.19246	0.192149456	9.64E-08

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
161	10	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.08899	0.079168224	9.65E-05
161	10	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.10494	0.101292896	1.33E-05
161	10	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.12159	0.137012768	0.00023786
161	25	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.09993	0.0929496	4.87E-05
161	25	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.12167	0.118979645	7.24E-06
161	25	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.14665	0.160916939	0.00020355
161	50	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.11018	0.104942818	2.74E-05
161	50	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.1392	0.134337025	2.36E-05
161	50	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.17474	0.181682091	4.82E-05
161	75	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.11527	0.112652537	6.85E-06
161	75	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.14883	0.144207255	2.14E-05
161	75	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.19262	0.195026169	5.79E-06
161	100	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.11698	0.118451424	2.17E-06
161	100	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.15456	0.151618948	8.65E-06
161	100	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.2053	0.205060205	5.75E-08
161	120	2	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.11706	0.122272007	2.72E-05
161	120	2.4	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.15778	0.156501746	1.63E-06
161	120	3	0.05403651	0.0510105	0.24960556	0	0.10878781	0.15396729	0.03583182	0.70141308	0.21216	0.211667299	2.43E-07
162	10	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.08793	0.079211521	7.60E-05
162	10	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.10475	0.102245426	6.27E-06
162	10	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.12236	0.139632225	0.00029833
162	25	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.09766	0.091165771	4.22E-05
162	25	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.12019	0.117646103	6.47E-06
162	25	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.14619	0.160735092	0.00021156
162	50	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.10626	0.10137949	2.38E-05
162	50	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.13575	0.130842972	2.41E-05
162	50	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.17215	0.178763885	4.37E-05
162	75	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.1102	0.107849477	5.52E-06
162	75	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.14406	0.13920503	2.36E-05
162	75	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.18789	0.190182699	5.26E-06
162	100	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.11123	0.112686453	2.12E-06
162	100	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.14867	0.145444822	1.04E-05
162	100	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.19885	0.198693409	2.45E-08
162	120	2	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.11072	0.115856862	2.64E-05
162	120	2.4	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.15065	0.149529155	1.26E-06
162	120	3	0.04492414	0.04035358	0.21965621	0	0.09666687	0.1379594	0.11895734	0.64641639	0.2048	0.20427076	2.80E-07
163	10	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.09029	0.080488777	9.61E-05
163	10	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.1067	0.103024769	1.35E-05
163	10	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.12376	0.139394093	0.00024442
163	25	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.10113	0.094196548	4.81E-05
163	25	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.12322	0.120607605	6.82E-06
163	25	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.14867	0.163177032	0.00021045
163	50	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.11124	0.106107502	2.63E-05
163	50	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.14065	0.135852413	2.30E-05
163	50	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.17665	0.183799305	5.11E-05
163	75	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.11622	0.113729184	6.20E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
163	75	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.15025	0.145627391	2.14E-05
163	75	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.19463	0.197012049	5.67E-06
163	100	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.11802	0.119464569	2.09E-06
163	100	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.15604	0.152958984	9.49E-06
163	100	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.207	0.206930628	4.81E-09
163	120	2	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.11791	0.123235361	2.84E-05
163	120	2.4	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.1591	0.157784414	1.73E-06
163	120	3	0.0937551	0.02810628	0.20569349	0	0.08854329	0.15801982	0.07607302	0.67736388	0.21384	0.213453293	1.50E-07
164	10	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.09557	0.085792637	9.56E-05
164	10	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.11373	0.110493469	1.05E-05
164	10	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.13262	0.150499725	0.00031968
164	25	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.10622	0.099253616	4.85E-05
164	25	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.1305	0.127838173	7.09E-06
164	25	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.15856	0.174148445	0.000243
164	50	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.11596	0.110800877	2.66E-05
164	50	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.14793	0.142701969	2.73E-05
164	50	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.18692	0.194385376	5.57E-05
164	75	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.1205	0.118151232	5.52E-06
164	75	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.15711	0.152153664	2.46E-05
164	75	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.20467	0.207261848	6.72E-06
164	100	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.12204	0.123640547	2.56E-06
164	100	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.16266	0.159211044	1.19E-05
164	100	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.21705	0.216880236	2.88E-08
164	120	2	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.12166	0.12724212	3.12E-05
164	120	2.4	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.16512	0.163840556	1.64E-06
164	120	3	0.03711899	0.05224	0.1970137	0	0.10454444	0.15465405	0.05308864	0.68771288	0.22368	0.223184252	2.46E-07
165	10	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.09036	0.079557896	0.00011669
165	10	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.10586	0.101249599	2.13E-05
165	10	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.12201	0.135951996	0.00019438
165	25	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.10211	0.094690132	5.51E-05
165	25	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.12351	0.12053833	8.83E-06
165	25	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.14798	0.161869469	0.00019292
165	50	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.11353	0.108029881	3.03E-05
165	50	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.14221	0.137502022	2.22E-05
165	50	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.17744	0.184665241	5.22E-05
165	75	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.11929	0.116664708	6.89E-06
165	75	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.15318	0.148490753	2.20E-05
165	75	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.19656	0.199410693	8.13E-06
165	100	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.1219	0.123183765	1.65E-06
165	100	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.1599	0.156784258	9.71E-06
165	100	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.2103	0.210554571	6.48E-08
165	120	2	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.12247	0.127498293	2.53E-05
165	120	2.4	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.16363	0.162269243	1.85E-06
165	120	3	0.11502168	0.0243801	0.236854	0	0.0627411	0.15839608	0.04119584	0.73766697	0.21852	0.217920081	3.60E-07
166	10	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.08364	0.074297333	8.73E-05
166	10	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.0984	0.094841671	1.27E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
166	10	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.11372	0.127790546	0.00019798
166	25	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.09402	0.087433586	4.34E-05
166	25	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.1142	0.111645164	6.53E-06
166	25	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.13727	0.150491066	0.0001748
166	50	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.10389	0.098911572	2.48E-05
166	50	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.13071	0.126283817	1.96E-05
166	50	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.16375	0.170243073	4.22E-05
166	75	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.1087	0.106282132	5.85E-06
166	75	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.13994	0.135703761	1.79E-05
166	75	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.1807	0.182943471	5.03E-06
166	100	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.1106	0.11184	1.54E-06
166	100	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.14568	0.142790728	8.35E-06
166	100	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.19246	0.192501965	1.76E-09
166	120	2	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.11085	0.115506879	2.17E-05
166	120	2.4	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.14869	0.14746534	1.50E-06
166	120	3	0.06787345	0.03973469	0.26581424	0	0.08661852	0.15886406	0.09833777	0.65617964	0.19937	0.198797321	3.28E-07
167	10	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.09409	0.084515381	9.17E-05
167	10	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.11234	0.109194565	9.89E-06
167	10	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.13141	0.149287415	0.0003196
167	25	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.10417	0.097210007	4.84E-05
167	25	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.12838	0.12556942	7.90E-06
167	25	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.15635	0.171706505	0.00023582
167	50	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.11323	0.108021221	2.71E-05
167	50	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.14482	0.139549961	2.78E-05
167	50	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.18377	0.190826378	4.98E-05
167	75	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.11736	0.114886653	6.12E-06
167	75	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.15354	0.148409932	2.63E-05
167	75	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.20035	0.202946599	6.74E-06
167	100	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.11831	0.120005779	2.88E-06
167	100	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.15839	0.155011253	1.14E-05
167	100	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.21212	0.211963882	2.44E-08
167	120	2	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.11784	0.123358035	3.04E-05
167	120	2.4	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.16047	0.159328667	1.30E-06
167	120	3	0.01245273	0.03757921	0.23804959	0	0.05282607	0.14398837	0.12778212	0.67540344	0.21851	0.217867764	4.12E-07
168	10	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.08015	0.071179962	8.05E-05
168	10	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.09417	0.090858364	1.10E-05
168	10	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.10875	0.122378445	0.00018573
168	25	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.09021	0.083917885	3.96E-05
168	25	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.10949	0.107116318	5.63E-06
168	25	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.13157	0.144264984	0.00016116
168	50	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.0998	0.095036507	2.27E-05
168	50	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.12549	0.121283035	1.77E-05
168	50	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.15698	0.163358879	4.07E-05
168	75	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.10445	0.10218914	5.11E-06
168	75	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.1344	0.130395571	1.60E-05
168	75	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.17336	0.175652288	5.25E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
168	100	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.10639	0.107579594	1.42E-06
168	100	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.14001	0.137261724	7.55E-06
168	100	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.18467	0.184901209	5.35E-08
168	120	2	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.10663	0.111130293	2.03E-05
168	120	2.4	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.1429	0.141793458	1.22E-06
168	120	3	0.06465024	0.07690633	0.23205135	0	0.09840711	0.15518943	0.11448504	0.63191842	0.19154	0.191003895	2.87E-07
169	10	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.07892	0.070054245	7.86E-05
169	10	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.09229	0.089083195	1.03E-05
169	10	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.10617	0.11945591	0.00017652
169	25	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.08944	0.083268433	3.81E-05
169	25	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.10818	0.105912666	5.14E-06
169	25	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.12934	0.14200489	0.0001604
169	50	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.09972	0.094910946	2.31E-05
169	50	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.12464	0.120694199	1.56E-05
169	50	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.15539	0.16184782	4.17E-05
169	75	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.1047	0.102440262	5.11E-06
169	75	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.13433	0.130262794	1.65E-05
169	75	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.17237	0.174679553	5.33E-06
169	100	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.10693	0.108135958	1.45E-06
169	100	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.14025	0.137493362	7.60E-06
169	100	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.1842	0.184381647	3.30E-08
169	120	2	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.1075	0.111898812	1.93E-05
169	120	2.4	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.14333	0.142267919	1.13E-06
169	120	3	0.08952074	0.10841931	0.19384668	0	0.09549762	0.14639917	0.09548536	0.66261785	0.19142	0.190794627	3.91E-07
170	10	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.08889	0.079839325	8.19E-05
170	10	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.10534	0.102635098	7.32E-06
170	10	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.12255	0.139523983	0.00028812
170	25	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.0994	0.092767754	4.40E-05
170	25	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.12167	0.119274063	5.74E-06
170	25	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.14741	0.162189865	0.00021844
170	50	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.10904	0.103934002	2.61E-05
170	50	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.13855	0.133631287	2.42E-05
170	50	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.17458	0.18168642	5.05E-05
170	75	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.11342	0.111059214	5.57E-06
170	75	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.14755	0.14278712	2.27E-05
170	75	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.1918	0.194137141	5.46E-06
170	100	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.11497	0.116390495	2.02E-06
170	100	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.15291	0.149635954	1.07E-05
170	100	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.20369	0.203449564	5.78E-08
170	120	2	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.11469	0.119892486	2.71E-05
170	120	2.4	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.15548	0.154134854	1.81E-06
170	120	3	0.07472764	0.05142088	0.19733189	0	0.11667194	0.13673453	0.05802018	0.68857335	0.21001	0.209561992	2.01E-07
171	10	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.0939	0.084060764	9.68E-05
171	10	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.11129	0.107874012	1.17E-05
171	10	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.12941	0.146343231	0.00028673
171	25	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.10482	0.097894096	4.80E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
171	25	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.12827	0.125638695	6.92E-06
171	25	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.15516	0.170442238	0.00023355
171	50	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.11501	0.109831028	2.68E-05
171	50	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.14596	0.140952778	2.51E-05
171	50	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.18375	0.191246357	5.62E-05
171	75	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.11984	0.117444051	5.74E-06
171	75	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.1557	0.150724869	2.48E-05
171	75	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.20187	0.20451683	7.01E-06
171	100	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.1215	0.123157787	2.75E-06
171	100	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.16138	0.158057184	1.10E-05
171	100	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.2145	0.214462109	1.44E-09
171	120	2	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.12142	0.126908374	3.01E-05
171	120	2.4	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.16419	0.162869986	1.74E-06
171	120	3	0.03100633	0.05673992	0.22686096	0	0.08671908	0.15569128	0.05604207	0.70154756	0.22147	0.220992351	2.28E-07
172	10	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.08796	0.078756905	8.47E-05
172	10	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.104	0.100946522	9.32E-06
172	10	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.12069	0.136774635	0.00025872
172	25	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.09856	0.091919136	4.41E-05
172	25	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.12034	0.117853928	6.18E-06
172	25	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.14532	0.15967865	0.00020617
172	50	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.10829	0.103336506	2.45E-05
172	50	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.13722	0.132488251	2.24E-05
172	50	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.17255	0.179491272	4.82E-05
172	75	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.11297	0.110634905	5.45E-06
172	75	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.14658	0.141837476	2.25E-05
172	75	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.19008	0.192174352	4.39E-06
172	100	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.11472	0.116111231	1.94E-06
172	100	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.15195	0.148850117	9.61E-06
172	100	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.20196	0.201678724	7.91E-08
172	120	2	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.1147	0.119715691	2.52E-05
172	120	2.4	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.15471	0.153467361	1.54E-06
172	120	3	0.04088111	0.07182484	0.22464214	0	0.09702173	0.14453655	0.07299608	0.68544564	0.2084	0.207920321	2.30E-07
173	10	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.09016	0.080575371	9.19E-05
173	10	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.10658	0.103306198	1.07E-05
173	10	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.12369	0.140043545	0.00026744
173	25	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.10106	0.09417923	4.73E-05
173	25	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.1234	0.120763474	6.95E-06
173	25	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.14895	0.16375721	0.00021925
173	50	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.11109	0.105964622	2.63E-05
173	50	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.14079	0.135908699	2.38E-05
173	50	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.17709	0.184262581	5.14E-05
173	75	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.11594	0.113504041	5.93E-06
173	75	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.15041	0.145598526	2.32E-05
173	75	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.19515	0.197398834	5.06E-06
173	100	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.11771	0.119176645	2.15E-06
173	100	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.15605	0.152863731	1.02E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
173	100	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.20739	0.207251024	1.93E-08
173	120	2	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.11768	0.122905223	2.73E-05
173	120	2.4	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.15886	0.157640092	1.49E-06
173	120	3	0.05226345	0.02204561	0.28506171	0	0.09948191	0.14596421	0.03540208	0.71915181	0.21414	0.213725702	1.72E-07
174	10	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.09108	0.081029987	0.000101
174	10	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.10745	0.103674221	1.43E-05
174	10	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.1245	0.140151787	0.00024498
174	25	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.10223	0.09513176	5.04E-05
174	25	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.12441	0.121750641	7.07E-06
174	25	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.14988	0.16457119	0.00021583
174	50	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.11271	0.107410736	2.81E-05
174	50	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.1423	0.137450066	2.35E-05
174	50	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.17848	0.185790958	5.35E-05
174	75	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.11788	0.11528787	6.72E-06
174	75	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.15222	0.147520905	2.21E-05
174	75	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.19677	0.199422239	7.03E-06
174	100	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.11972	0.121211596	2.22E-06
174	100	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.15808	0.155097847	8.89E-06
174	100	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.20981	0.209660492	2.24E-08
174	120	2	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.11993	0.125115164	2.69E-05
174	120	2.4	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.16129	0.160086362	1.45E-06
174	120	3	0.03285163	0.07638642	0.22776133	0	0.0592567	0.15027371	0.07988789	0.7105817	0.217	0.216401084	3.59E-07
175	10	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.07841	0.070162487	6.80E-05
175	10	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.09212	0.089581108	6.45E-06
175	10	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.10639	0.120689869	0.00020449
175	25	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.08843	0.08248909	3.53E-05
175	25	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.10733	0.105297852	4.13E-06
175	25	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.12902	0.141926956	0.00016659
175	50	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.0978	0.093209381	2.11E-05
175	50	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.12305	0.119001293	1.64E-05
175	50	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.15413	0.160414696	3.95E-05
175	75	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.10238	0.10010512	5.18E-06
175	75	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.13172	0.127803535	1.53E-05
175	75	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.1703	0.172295341	3.98E-06
175	100	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.10419	0.105295687	1.22E-06
175	100	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.13714	0.134430113	7.34E-06
175	100	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.18135	0.181218815	1.72E-08
175	120	2	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.10436	0.108714692	1.90E-05
175	120	2.4	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.13993	0.138793349	1.29E-06
175	120	3	0.03985408	0.0599322	0.30738671	0	0.11149358	0.14702394	0.0898355	0.65164697	0.18758	0.187099965	2.30E-07
176	10	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.09982	0.089451218	0.00010751
176	10	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.1192	0.115602493	1.29E-05
176	10	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.13941	0.15818491	0.0003525
176	25	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.11073	0.103115692	5.80E-05
176	25	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.13634	0.133302231	9.23E-06
176	25	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.16627	0.182426796	0.00026104

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
176	50	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.12053	0.11482748	3.25E-05
176	50	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.15411	0.148438797	3.22E-05
176	50	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.19551	0.203114014	5.78E-05
176	75	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.12491	0.12226443	7.00E-06
176	75	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.16346	0.158030485	2.95E-05
176	75	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.21357	0.216250267	7.18E-06
176	100	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.12613	0.12781003	2.82E-06
176	100	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.16875	0.165186005	1.27E-05
176	100	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.2262	0.226041842	2.50E-08
176	120	2	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.12564	0.131447323	3.37E-05
176	120	2.4	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.1709	0.169867833	1.07E-06
176	120	3	0.05307779	0.03254302	0.18289186	0	0.08822131	0.14213276	0.05051562	0.71913032	0.23307	0.232446162	3.89E-07
177	10	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.07712	0.068322372	7.74E-05
177	10	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.09029	0.086875057	1.17E-05
177	10	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.10397	0.116641617	0.00016057
177	25	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.08722	0.081094933	3.75E-05
177	25	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.10559	0.103158989	5.91E-06
177	25	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.12637	0.138497849	0.00014708
177	50	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.09705	0.092308807	2.25E-05
177	50	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.12142	0.117459927	1.57E-05
177	50	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.15151	0.157682667	3.81E-05
177	75	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.10176	0.099571126	4.79E-06
177	75	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.13062	0.126698023	1.54E-05
177	75	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.16775	0.170092977	5.49E-06
177	100	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.10379	0.105061884	1.62E-06
177	100	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.13633	0.133676748	7.04E-06
177	100	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.17902	0.179467459	2.00E-07
177	120	2	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.10425	0.108691239	1.97E-05
177	120	2.4	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.13923	0.138293632	8.77E-07
177	120	3	0.05332038	0.06601859	0.29985961	0	0.04598457	0.14224607	0.1544473	0.65732206	0.18616	0.185658542	2.51E-07
178	10	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.08265	0.072890186	9.53E-05
178	10	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.09622	0.092265511	1.56E-05
178	10	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.11038	0.123114491	0.00016217
178	25	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.0939	0.087390289	4.24E-05
178	25	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.11317	0.110657997	6.31E-06
178	25	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.13467	0.147659454	0.00016873
178	50	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.10522	0.100245113	2.47E-05
178	50	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.13104	0.12692461	1.69E-05
178	50	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.16249	0.169377136	4.74E-05
178	75	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.11092	0.108599955	5.38E-06
178	75	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.14159	0.137504908	1.67E-05
178	75	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.18093	0.18350633	6.64E-06
178	100	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.1136	0.114944382	1.81E-06
178	100	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.14857	0.145527086	9.26E-06
178	100	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.19377	0.194214354	1.97E-07
178	120	2	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.11462	0.119142008	2.04E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
178	120	2.4	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.15187	0.150838884	1.06E-06
178	120	3	0.06406457	0.06795235	0.29526371	0	0.06034108	0.16418555	0.06420087	0.71127251	0.20214	0.201303124	7.00E-07
179	10	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.08434	0.075661182	7.53E-05
179	10	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.09953	0.097071457	6.04E-06
179	10	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.11542	0.131514072	0.00025902
179	25	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.09468	0.088403435	3.94E-05
179	25	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.11551	0.113368378	4.59E-06
179	25	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.13944	0.153634415	0.00020148
179	50	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.10424	0.099409485	2.33E-05
179	50	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.13194	0.127483139	1.99E-05
179	50	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.16591	0.172780266	4.72E-05
179	75	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.10893	0.106461093	6.10E-06
179	75	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.14103	0.136520627	2.03E-05
179	75	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.18284	0.18504481	4.86E-06
179	100	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.11038	0.111751242	1.88E-06
179	100	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.14628	0.143299465	8.88E-06
179	100	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.19427	0.194229507	1.64E-09
179	120	2	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.11033	0.115232666	2.40E-05
179	120	2.4	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.149	0.14776481	1.53E-06
179	120	3	0.0328181	0.02407263	0.33396871	0	0.09361411	0.13609735	0.06815282	0.70213572	0.20066	0.200264001	1.57E-07
180	10	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.09173	0.081852627	9.76E-05
180	10	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.10872	0.105124664	1.29E-05
180	10	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.12641	0.142749596	0.00026698
180	25	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.10248	0.095382881	5.04E-05
180	25	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.12539	0.122529984	8.18E-06
180	25	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.15169	0.166380997	0.00021583
180	50	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.11239	0.10709034	2.81E-05
180	50	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.14269	0.137549648	2.64E-05
180	50	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.1797	0.186760807	4.99E-05
180	75	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.1171	0.114566256	6.42E-06
180	75	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.1522	0.14713412	2.57E-05
180	75	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.19738	0.199783045	5.77E-06
180	100	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.11865	0.120170307	2.31E-06
180	100	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.15777	0.154322834	1.19E-05
180	100	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.20971	0.209539261	2.92E-08
180	120	2	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.1186	0.123855948	2.76E-05
180	120	2.4	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.16046	0.159041826	2.01E-06
180	120	3	0.03759707	0.06203167	0.21822639	0	0.07673051	0.14533606	0.08025391	0.69767953	0.2165	0.215950076	3.02E-07
181	10	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.07777	0.069101715	7.51E-05
181	10	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.09124	0.088000774	1.05E-05
181	10	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.10524	0.118286896	0.00017022
181	25	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.0878	0.081666451	3.76E-05
181	25	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.10641	0.104050903	5.57E-06
181	25	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.12772	0.139874687	0.00014774
181	50	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.09733	0.092694149	2.15E-05
181	50	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.12226	0.11809206	1.74E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
181	50	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.15278	0.158743439	3.56E-05
181	75	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.10193	0.099804929	4.52E-06
181	75	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.13107	0.127145424	1.54E-05
181	75	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.16889	0.170918503	4.11E-06
181	100	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.10392	0.105172291	1.57E-06
181	100	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.13668	0.133971167	7.34E-06
181	100	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.18009	0.180093098	9.60E-12
181	120	2	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.10423	0.10870928	2.01E-05
181	120	2.4	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.13957	0.138477643	1.19E-06
181	120	3	0.06721124	0.04392591	0.30186044	0	0.11256266	0.15304866	0.09066537	0.64372331	0.18677	0.186142023	3.94E-07
182	10	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.08874	0.078865147	9.75E-05
182	10	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.10425	0.10055685	1.36E-05
182	10	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.12038	0.135259247	0.00022139
182	25	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.09988	0.093062172	4.65E-05
182	25	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.1211	0.118659248	5.96E-06
182	25	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.1454	0.159669991	0.00020363
182	50	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.11068	0.105484028	2.70E-05
182	50	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.13911	0.134479904	2.14E-05
182	50	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.17385	0.180972023	5.07E-05
182	75	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.11598	0.11347229	6.29E-06
182	75	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.14913	0.144669088	1.99E-05
182	75	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.19208	0.194685567	6.79E-06
182	100	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.11824	0.119492712	1.57E-06
182	100	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.15523	0.15233984	8.35E-06
182	100	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.20501	0.205012579	6.65E-12
182	120	2	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.1186	0.123468081	2.37E-05
182	120	2.4	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.15877	0.157398351	1.88E-06
182	120	3	0.06139638	0.07622056	0.21281209	0	0.06082109	0.15712226	0.08431287	0.69774379	0.21258	0.211817034	5.82E-07
183	10	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.08614	0.077219868	7.96E-05
183	10	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.10189	0.099084759	7.87E-06
183	10	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.11831	0.134566498	0.00026427
183	25	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.09657	0.090031395	4.28E-05
183	25	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.11803	0.115585175	5.98E-06
183	25	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.14261	0.15695961	0.00020591
183	50	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.10608	0.10110239	2.48E-05
183	50	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.13455	0.129838486	2.22E-05
183	50	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.16931	0.176300297	4.89E-05
183	75	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.11067	0.108195852	6.12E-06
183	75	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.14359	0.138942362	2.16E-05
183	75	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.18633	0.18866731	5.46E-06
183	100	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.11214	0.113515587	1.89E-06
183	100	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.14888	0.145767384	9.69E-06
183	100	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.19801	0.197935715	5.52E-09
183	120	2	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.11206	0.117011444	2.45E-05
183	120	2.4	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.15141	0.150259789	1.32E-06
183	120	3	0.03330687	0.02061874	0.32289118	0	0.10032897	0.13853036	0.05894055	0.70220012	0.20441	0.204027216	1.47E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
184	10	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.08894	0.07936306	9.17E-05
184	10	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.10506	0.101725864	1.11E-05
184	10	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.12185	0.13779211	0.00025415
184	25	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.0997	0.092845688	4.70E-05
184	25	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.12157	0.119031601	6.44E-06
184	25	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.14669	0.161263313	0.00021238
184	50	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.10978	0.104574795	2.71E-05
184	50	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.13894	0.134064255	2.38E-05
184	50	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.17451	0.181604156	5.03E-05
184	75	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.11469	0.112081019	6.81E-06
184	75	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.14841	0.14368192	2.24E-05
184	75	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.19233	0.194645157	5.36E-06
184	100	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.11626	0.117726202	2.15E-06
184	100	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.154	0.150906715	9.57E-06
184	100	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.20447	0.204430237	1.58E-09
184	120	2	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.11635	0.121442151	2.59E-05
184	120	2.4	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.15689	0.15565385	1.53E-06
184	120	3	0.0644514	0.07047243	0.1937349	0	0.10462359	0.14858005	0.06132864	0.68546771	0.21121	0.210866308	1.18E-07
185	10	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.08219	0.073063374	8.33E-05
185	10	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.09684	0.093564415	1.07E-05
185	10	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.11218	0.126643181	0.00020918
185	25	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.09238	0.085770988	4.37E-05
185	25	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.11247	0.109878654	6.72E-06
185	25	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.13564	0.148741875	0.00017166
185	50	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.10187	0.096828995	2.54E-05
185	50	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.12864	0.124049702	2.11E-05
185	50	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.16157	0.167935352	4.05E-05
185	75	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.10647	0.103935445	6.42E-06
185	75	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.13752	0.133152135	1.91E-05
185	75	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.17812	0.180270615	4.63E-06
185	100	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.10801	0.109281158	1.62E-06
185	100	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.14284	0.139995918	8.09E-06
185	100	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.18958	0.189540462	1.56E-09
185	120	2	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.10805	0.112799025	2.26E-05
185	120	2.4	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.14566	0.144508529	1.33E-06
185	120	3	0.0586271	0.04928128	0.27206601	0	0.11668628	0.1429341	0.07189386	0.66848577	0.19592	0.195638458	7.93E-08
186	10	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.079	0.0699893	8.12E-05
186	10	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.09255	0.089104843	1.19E-05
186	10	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.10668	0.119629097	0.00016768
186	25	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.08923	0.082991333	3.89E-05
186	25	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.10806	0.105635567	5.88E-06
186	25	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.12948	0.141849022	0.00015299
186	50	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.09922	0.094395714	2.33E-05
186	50	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.12422	0.120139999	1.66E-05
186	50	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.15511	0.16131094	3.85E-05
186	75	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.10395	0.101747513	4.85E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
186	75	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.13348	0.129500771	1.58E-05
186	75	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.17169	0.173885778	4.82E-06
186	100	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.10615	0.107308989	1.34E-06
186	100	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.1393	0.136564646	7.48E-06
186	100	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.18309	0.183381491	8.50E-08
186	120	2	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.10649	0.110978754	2.01E-05
186	120	2.4	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.14239	0.141236011	1.33E-06
186	120	3	0.03979656	0.07728115	0.29043327	0	0.10590097	0.15984035	0.08489858	0.6493601	0.19019	0.189647261	2.95E-07
187	10	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.09144	0.081138229	0.00010613
187	10	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.1077	0.103739166	1.57E-05
187	10	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.12464	0.140151787	0.00024062
187	25	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.10279	0.095582047	5.20E-05
187	25	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.12496	0.122192268	7.66E-06
187	25	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.15042	0.165099411	0.00021549
187	50	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.11363	0.108142452	3.01E-05
187	50	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.14326	0.138285694	2.47E-05
187	50	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.17949	0.186821423	5.37E-05
187	75	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.11891	0.116234627	7.16E-06
187	75	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.15339	0.148635076	2.26E-05
187	75	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.19817	0.200801964	6.93E-06
187	100	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.12091	0.122324324	2.00E-06
187	100	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.15961	0.156420565	1.02E-05
187	100	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.21144	0.21131443	1.58E-08
187	120	2	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.12113	0.126340103	2.71E-05
187	120	2.4	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.16284	0.161551237	1.66E-06
187	120	3	0.0472479	0.03105479	0.29058794	0	0.06355146	0.15021525	0.04606554	0.74016775	0.21891	0.218237591	4.52E-07
188	10	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.08628	0.076224041	0.00010112
188	10	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.10079	0.096681786	1.69E-05
188	10	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.11585	0.129197693	0.00017816
188	25	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.09772	0.090983925	4.54E-05
188	25	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.11809	0.115403328	7.22E-06
188	25	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.14089	0.154309845	0.00018009
188	50	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.10915	0.104055233	2.60E-05
188	50	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.13624	0.131968689	1.82E-05
188	50	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.1694	0.176451836	4.97E-05
188	75	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.11482	0.112537079	5.21E-06
188	75	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.14705	0.142709185	1.88E-05
188	75	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.18834	0.190811946	6.11E-06
188	100	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.1174	0.118940678	2.37E-06
188	100	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.15388	0.15083744	9.26E-06
188	100	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.20126	0.201678724	1.75E-07
188	120	2	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.11835	0.123188456	2.34E-05
188	120	2.4	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.1575	0.156213101	1.66E-06
188	120	3	0.05431207	0.08615264	0.25215007	0	0.06405911	0.16474226	0.05638465	0.71481399	0.20979	0.208865635	8.54E-07
189	10	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.08549	0.075617886	9.75E-05
189	10	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.10015	0.096183872	1.57E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
189	10	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.11539	0.129089451	0.00018767
189	25	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.0967	0.089866867	4.67E-05
189	25	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.11697	0.114346886	6.88E-06
189	25	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.14013	0.153478546	0.00017818
189	50	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.10753	0.102409954	2.62E-05
189	50	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.13471	0.130275784	1.97E-05
189	50	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.16805	0.174880161	4.67E-05
189	75	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.11291	0.110519447	5.71E-06
189	75	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.14495	0.140602074	1.89E-05
189	75	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.18632	0.188733699	5.83E-06
189	100	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.1154	0.116643782	1.55E-06
189	100	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.15136	0.148397665	8.78E-06
189	100	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.19903	0.199195652	2.74E-08
189	120	2	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.11585	0.120697085	2.35E-05
189	120	2.4	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.15479	0.153546739	1.55E-06
189	120	3	0.0893783	0.03241708	0.27740931	0	0.06383431	0.15305247	0.06715576	0.71595745	0.20679	0.206103659	4.71E-07
190	10	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.08955	0.079687786	9.73E-05
190	10	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.10536	0.101834106	1.24E-05
190	10	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.12183	0.137445736	0.00024385
190	25	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.10086	0.093919449	4.82E-05
190	25	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.12255	0.120036087	6.32E-06
190	25	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.14745	0.162025337	0.00021244
190	50	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.11165	0.106354294	2.80E-05
190	50	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.14072	0.135908699	2.31E-05
190	50	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.1761	0.18345293	5.41E-05
190	75	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.11681	0.114346886	6.07E-06
190	75	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.1507	0.146123861	2.09E-05
190	75	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.19459	0.197234306	6.99E-06
190	100	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.1189	0.120362978	2.14E-06
190	100	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.15703	0.153809767	1.04E-05
190	100	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.20771	0.207606058	1.08E-08
190	120	2	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.11906	0.124330409	2.78E-05
190	120	2.4	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.16017	0.158875855	1.67E-06
190	120	3	0.03620909	0.08887093	0.23411735	0	0.05845853	0.13724457	0.06442121	0.73987569	0.21505	0.214434687	3.79E-07
191	10	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.09139	0.081181526	0.00010421
191	10	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.10741	0.103674221	1.40E-05
191	10	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.12407	0.139805412	0.0002476
191	25	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.10315	0.095963058	5.17E-05
191	25	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.12522	0.122590599	6.91E-06
191	25	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.15049	0.165298576	0.00021929
191	50	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.11445	0.108895817	3.08E-05
191	50	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.14397	0.139095345	2.38E-05
191	50	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.18014	0.187587776	5.55E-05
191	75	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.11988	0.117241999	6.96E-06
191	75	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.15441	0.149740588	2.18E-05
191	75	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.19925	0.201956546	7.33E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
191	100	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.12211	0.12353014	2.02E-06
191	100	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.16114	0.157767096	1.14E-05
191	100	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.21291	0.212780027	1.69E-08
191	120	2	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.12241	0.1276805	2.78E-05
191	120	2.4	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.16436	0.163061213	1.69E-06
191	120	3	0.09413408	0.06092795	0.20348717	0	0.06916189	0.1355039	0.03229003	0.76304417	0.22052	0.219913538	3.68E-07
192	10	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.09432	0.08438549	9.87E-05
192	10	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.11182	0.108436871	1.14E-05
192	10	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.13005	0.147339058	0.00029891
192	25	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.10534	0.09825779	5.02E-05
192	25	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.12902	0.12625351	7.65E-06
192	25	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.15624	0.171524658	0.00023362
192	50	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.11558	0.11021204	2.88E-05
192	50	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.14678	0.141610889	2.67E-05
192	50	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.18499	0.192385063	5.47E-05
192	75	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.12027	0.117839495	5.91E-06
192	75	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.15651	0.151417618	2.59E-05
192	75	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.20334	0.20570605	5.60E-06
192	100	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.12193	0.123562613	2.67E-06
192	100	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.16219	0.158756428	1.18E-05
192	100	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.21601	0.215678749	1.10E-07
192	120	2	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.12179	0.12731789	3.06E-05
192	120	2.4	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.1649	0.163580775	1.74E-06
192	120	3	0.04834349	0.03739278	0.2388569	0	0.08843074	0.14267477	0.03991905	0.72897544	0.22274	0.222224506	2.66E-07
193	10	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.08447	0.07501173	8.95E-05
193	10	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.09915	0.095621014	1.25E-05
193	10	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.11439	0.128656483	0.00020353
193	25	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.09529	0.088680534	4.37E-05
193	25	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.11551	0.1130653	5.98E-06
193	25	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.13869	0.152145004	0.00018104
193	50	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.10569	0.100634785	2.56E-05
193	50	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.13271	0.128301449	1.94E-05
193	50	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.16609	0.172680683	4.34E-05
193	75	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.11075	0.10835172	5.75E-06
193	75	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.14236	0.138139928	1.78E-05
193	75	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.1835	0.185916519	5.84E-06
193	100	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.11292	0.114167204	1.56E-06
193	100	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.14826	0.1455509	7.34E-06
193	100	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.19587	0.19588994	3.98E-10
193	120	2	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.11323	0.118005466	2.28E-05
193	120	2.4	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.1516	0.150441996	1.34E-06
193	120	3	0.10676946	0.01881046	0.26419681	0	0.09478574	0.15289984	0.06013358	0.69218084	0.2031	0.202473942	3.92E-07
194	10	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.08428	0.07488184	8.83E-05
194	10	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.09891	0.095296288	1.31E-05
194	10	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.11408	0.12800703	0.00019396
194	25	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.095	0.088541985	4.17E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
194	25	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.1151	0.112710266	5.71E-06
194	25	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.13814	0.15138298	0.00017538
194	50	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.10542	0.100513554	2.41E-05
194	50	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.13227	0.127929096	1.88E-05
194	50	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.16524	0.171827736	4.34E-05
194	75	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.11045	0.108233376	4.91E-06
194	75	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.14199	0.13775603	1.79E-05
194	75	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.18257	0.185021718	6.01E-06
194	100	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.11271	0.114052467	1.80E-06
194	100	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.14797	0.145154734	7.93E-06
194	100	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.19492	0.194959059	1.53E-09
194	120	2	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.11304	0.117890008	2.35E-05
194	120	2.4	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.15122	0.150039697	1.39E-06
194	120	3	0.07050679	0.02967759	0.29240275	0	0.08300893	0.16166304	0.07460188	0.68072615	0.20219	0.201521413	4.47E-07
195	10	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.08664	0.076851845	9.58E-05
195	10	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.10184	0.098218822	1.31E-05
195	10	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.11772	0.132574844	0.00022067
195	25	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.09764	0.090741463	4.76E-05
195	25	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.11866	0.115983505	7.16E-06
195	25	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.14273	0.156543961	0.00019083
195	50	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.10813	0.10287323	2.76E-05
195	50	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.13626	0.131483765	2.28E-05
195	50	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.1706	0.177464981	4.71E-05
195	75	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.1132	0.110686862	6.32E-06
195	75	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.14597	0.141456464	2.04E-05
195	75	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.1885	0.190944722	5.98E-06
195	100	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.11521	0.116574507	1.86E-06
195	100	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.15208	0.148975677	9.64E-06
195	100	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.20134	0.201092052	6.15E-08
195	120	2	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.11532	0.120457149	2.64E-05
195	120	2.4	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.1551	0.153934606	1.36E-06
195	120	3	0.06413757	0.03448717	0.29295711	0	0.08922702	0.14057087	0.03926462	0.73093749	0.20829	0.207783214	2.57E-07
196	10	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.09339	0.083779335	9.24E-05
196	10	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.11126	0.108133793	9.77E-06
196	10	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.1299	0.147750378	0.00031864
196	25	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.10374	0.096664467	5.01E-05
196	25	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.1276	0.124798737	7.85E-06
196	25	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.15525	0.17055481	0.00023424
196	50	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.113	0.107722473	2.79E-05
196	50	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.14436	0.139073696	2.79E-05
196	50	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.18294	0.190064354	5.08E-05
196	75	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.11728	0.114748103	6.41E-06
196	75	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.15319	0.148132833	2.56E-05
196	75	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.19985	0.202438583	6.70E-06
196	100	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.11845	0.119988461	2.37E-06
196	100	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.15828	0.154892187	1.15E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
196	100	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.2117	0.211665134	1.22E-09
196	120	2	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.118	0.123424784	2.94E-05
196	120	2.4	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.16036	0.159321451	1.08E-06
196	120	3	0.02618001	0.03010395	0.25265924	0	0.10728107	0.14796473	0.05517275	0.68958145	0.21816	0.217709009	2.03E-07
197	10	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.0859	0.07650547	8.83E-05
197	10	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.10093	0.097591019	1.11E-05
197	10	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.11654	0.131492424	0.00022357
197	25	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.0969	0.09023056	4.45E-05
197	25	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.11757	0.115169525	5.76E-06
197	25	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.14117	0.155175781	0.00019616
197	50	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.10736	0.102258415	2.60E-05
197	50	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.13496	0.130505257	1.98E-05
197	50	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.16901	0.175858669	4.69E-05
197	75	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.1124	0.109991226	5.80E-06
197	75	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.14469	0.140371157	1.87E-05
197	75	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.18674	0.18917244	5.92E-06
197	100	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.11448	0.115821142	1.80E-06
197	100	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.15067	0.147813158	8.16E-06
197	100	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.19928	0.199191322	7.86E-09
197	120	2	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.11477	0.119668786	2.40E-05
197	120	2.4	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.15398	0.152716883	1.60E-06
197	120	3	0.07915837	0.04857949	0.25132154	0	0.05055678	0.1371547	0.09559267	0.71669585	0.20639	0.205802385	3.45E-07
198	10	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.09236	0.082718563	9.30E-05
198	10	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.10952	0.106207085	1.10E-05
198	10	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.12738	0.1440485	0.00027784
198	25	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.10306	0.096240158	4.65E-05
198	25	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.12614	0.12353447	6.79E-06
198	25	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.15264	0.167619286	0.00022438
198	50	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.113	0.107891331	2.61E-05
198	50	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.14338	0.138484859	2.40E-05
198	50	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.1806	0.187908173	5.34E-05
198	75	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.1177	0.115334053	5.60E-06
198	75	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.15295	0.148026034	2.42E-05
198	75	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.19843	0.200859693	5.90E-06
198	100	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.11928	0.120906353	2.65E-06
198	100	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.15852	0.155175781	1.12E-05
198	100	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.21064	0.210554571	7.30E-09
198	120	2	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.11917	0.124564934	2.91E-05
198	120	2.4	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.16124	0.159864465	1.89E-06
198	120	3	0.01753638	0.05219926	0.25302837	0	0.10391791	0.16258066	0.04946445	0.68403697	0.21756	0.216915234	4.16E-07
199	10	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.08153	0.071764469	9.54E-05
199	10	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.09481	0.090728474	1.67E-05
199	10	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.10867	0.120819759	0.00014762
199	25	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.09284	0.086325188	4.24E-05
199	25	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.11175	0.109107971	6.98E-06
199	25	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.13282	0.145330086	0.0001565

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
199	50	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.10415	0.099236298	2.41E-05
199	50	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.12968	0.125439529	1.80E-05
199	50	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.16057	0.167091064	4.25E-05
199	75	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.10994	0.107650312	5.24E-06
199	75	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.14022	0.136081886	1.71E-05
199	75	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.17884	0.181266441	5.89E-06
199	100	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.11267	0.114032984	1.86E-06
199	100	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.14723	0.144158907	9.43E-06
199	100	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.19176	0.192030029	7.29E-08
199	120	2	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.11385	0.118274268	1.96E-05
199	120	2.4	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.15061	0.149516527	1.20E-06
199	120	3	0.11201295	0.042305	0.28194191	0	0.06524217	0.16158345	0.06077765	0.71239674	0.20012	0.199165344	9.11E-07
200	10	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.09119	0.082025814	8.40E-05
200	10	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.10857	0.105600929	8.82E-06
200	10	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.12665	0.143767071	0.00029299
200	25	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.10122	0.094655495	4.31E-05
200	25	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.12437	0.121837234	6.41E-06
200	25	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.15106	0.165870094	0.00021934
200	50	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.1104	0.105445061	2.46E-05
200	50	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.14071	0.135739841	2.47E-05
200	50	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.1778	0.184829769	4.94E-05
200	75	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.11458	0.112303276	5.18E-06
200	75	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.14942	0.144570948	2.35E-05
200	75	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.1945	0.196861954	5.58E-06
200	100	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.11595	0.117431784	2.20E-06
200	100	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.15443	0.151157837	1.07E-05
200	100	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.20614	0.205828724	9.69E-08
200	120	2	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.11555	0.120794503	2.75E-05
200	120	2.4	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.1568	0.155471643	1.76E-06
200	120	3	0.03925736	0.03486731	0.22053368	0	0.05214675	0.15121156	0.14792852	0.64871317	0.21221	0.211705184	2.55E-07
201	10	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.07628	0.068127537	6.65E-05
201	10	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.08947	0.086810112	7.08E-06
201	10	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.10318	0.116619968	0.00018063
201	25	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.08614	0.080376205	3.32E-05
201	25	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.1044	0.102405624	3.98E-06
201	25	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.12526	0.137631912	0.00015306
201	50	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.09555	0.091079178	2.00E-05
201	50	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.11992	0.116039791	1.51E-05
201	50	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.14977	0.155976772	3.85E-05
201	75	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.10011	0.097983576	4.52E-06
201	75	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.12871	0.124818942	1.51E-05
201	75	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.16575	0.167783813	4.14E-06
201	100	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.10203	0.103184967	1.33E-06
201	100	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.13419	0.131436138	7.58E-06
201	100	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.17666	0.176683474	5.51E-10
201	120	2	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.10227	0.106614796	1.89E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
201	120	2.4	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.13698	0.135793241	1.41E-06
201	120	3	0.03899851	0.09265698	0.27329797	0	0.11372938	0.15271958	0.10720874	0.6263423	0.18326	0.1825538	4.99E-07
202	10	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.10427	0.093023205	0.00012649
202	10	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.12467	0.120191956	2.01E-05
202	10	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.14592	0.164333057	0.00033904
202	25	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.11523	0.107272186	6.33E-05
202	25	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.14202	0.138584442	1.18E-05
202	25	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.17308	0.189501495	0.00026967
202	50	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.12531	0.11944725	3.44E-05
202	50	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.16028	0.154309845	3.56E-05
202	50	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.20318	0.211037331	6.17E-05
202	75	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.12996	0.127171402	7.78E-06
202	75	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.16998	0.164296977	3.23E-05
202	75	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.2216	0.224687373	9.53E-06
202	100	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.13122	0.132945032	2.98E-06
202	100	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.17548	0.171738977	1.40E-05
202	100	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.23493	0.234867897	3.86E-09
202	120	2	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.13102	0.136724122	3.25E-05
202	120	2.4	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.17773	0.176613116	1.25E-06
202	120	3	0.02864548	0.04177398	0.16637973	0	0.04587679	0.16208332	0.09310065	0.69893924	0.24207	0.241531277	2.90E-07
203	10	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.08515	0.076007557	8.36E-05
203	10	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.10086	0.09756937	1.08E-05
203	10	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.11725	0.132401657	0.00022957
203	25	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.0951	0.088481369	4.38E-05
203	25	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.11614	0.113576202	6.57E-06
203	25	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.1405	0.15411068	0.00018525
203	50	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.10416	0.099223309	2.44E-05
203	50	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.13207	0.127387886	2.19E-05
203	50	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.16614	0.172836552	4.48E-05
203	75	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.10856	0.106103172	6.04E-06
203	75	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.14074	0.136200231	2.06E-05
203	75	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.18262	0.184805234	4.78E-06
203	100	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.10999	0.111257658	1.61E-06
203	100	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.14565	0.142805882	8.09E-06
203	100	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.19388	0.193770561	1.20E-08
203	120	2	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.10981	0.114644551	2.34E-05
203	120	2.4	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.14829	0.147144222	1.31E-06
203	120	3	0.03162543	0.05782037	0.23991057	0	0.10819507	0.16366062	0.10980044	0.61834387	0.20002	0.199654237	1.34E-07
204	10	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.08292	0.073907661	8.12E-05
204	10	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.09773	0.094625187	9.64E-06
204	10	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.1132	0.127985382	0.00021861
204	25	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.09314	0.086662903	4.20E-05
204	25	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.11332	0.110961075	5.56E-06
204	25	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.13657	0.150092735	0.00018286
204	50	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.10268	0.097733898	2.45E-05
204	50	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.12966	0.125127792	2.05E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
204	50	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.16266	0.169264565	4.36E-05
204	75	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.10728	0.104836019	5.97E-06
204	75	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.13841	0.134220123	1.76E-05
204	75	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.17928	0.181563746	5.22E-06
204	100	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.1089	0.110173073	1.62E-06
204	100	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.14385	0.141050196	7.84E-06
204	100	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.19083	0.190809059	4.39E-10
204	120	2	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.10891	0.113686609	2.28E-05
204	120	2.4	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.14676	0.145536828	1.50E-06
204	120	3	0.03169579	0.04122478	0.31056248	0	0.07277222	0.14493333	0.11143907	0.67085537	0.19721	0.19689587	9.87E-08
205	10	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.08941	0.079428005	9.96E-05
205	10	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.10535	0.101682568	1.35E-05
205	10	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.12202	0.137510681	0.00023996
205	25	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.10052	0.093434525	5.02E-05
205	25	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.12226	0.1195858	7.15E-06
205	25	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.14736	0.161730919	0.00020652
205	50	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.11097	0.105609589	2.87E-05
205	50	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.14005	0.135172653	2.38E-05
205	50	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.17573	0.182799149	5.00E-05
205	75	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.11606	0.113437653	6.88E-06
205	75	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.14986	0.145191536	2.18E-05
205	75	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.19385	0.196333733	6.17E-06
205	100	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.11788	0.119323854	2.08E-06
205	100	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.15572	0.152716522	9.02E-06
205	100	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.20671	0.206517143	3.72E-08
205	120	2	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.11803	0.123201084	2.67E-05
205	120	2.4	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.15888	0.157677976	1.44E-06
205	120	3	0.0371417	0.03548674	0.30277046	0	0.0806069	0.14632554	0.04202781	0.73103975	0.21386	0.21321516	4.16E-07
206	10	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.08024	0.07161293	7.44E-05
206	10	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.09421	0.091269684	8.65E-06
206	10	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10867	0.122768116	0.00019876
206	25	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.09045	0.084428787	3.63E-05
206	25	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10969	0.107618561	4.29E-06
206	25	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.13172	0.144758568	0.00017
206	50	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10026	0.095625343	2.15E-05
206	50	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.12593	0.121884861	1.64E-05
206	50	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.15744	0.163934727	4.22E-05
206	75	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10497	0.102835706	4.56E-06
206	75	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.13499	0.131062342	1.54E-05
206	75	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.17398	0.176275762	5.27E-06
206	100	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10705	0.108268013	1.48E-06
206	100	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.14069	0.137976122	7.37E-06
206	100	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.18552	0.18556798	2.30E-09
206	120	2	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.10731	0.111848299	2.06E-05
206	120	2.4	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.14365	0.142534916	1.24E-06
206	120	3	0.10869313	0.03235077	0.24802785	0	0.1030477	0.15536312	0.09707086	0.64451833	0.19234	0.191700252	4.09E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
207	10	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.0931	0.082588673	0.00011049
207	10	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.10943	0.105427742	1.60E-05
207	10	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.12641	0.142078495	0.0002455
207	25	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.1049	0.097651634	5.25E-05
207	25	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.12731	0.124642868	7.11E-06
207	25	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.15298	0.167982979	0.00022509
207	50	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.11635	0.110805206	3.07E-05
207	50	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.14631	0.141437702	2.37E-05
207	50	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.18297	0.190627213	5.86E-05
207	75	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.12202	0.119300041	7.40E-06
207	75	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.15697	0.152269122	2.21E-05
207	75	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.2024	0.205218239	7.94E-06
207	100	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.1242	0.125686321	2.21E-06
207	100	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.16368	0.160423355	1.06E-05
207	100	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.21626	0.216213465	2.17E-09
207	120	2	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.12456	0.129908482	2.86E-05
207	120	2.4	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.16705	0.165806953	1.55E-06
207	120	3	0.09680084	0.04106061	0.21637377	0	0.04318737	0.14209046	0.05392045	0.76080171	0.22401	0.223458465	3.04E-07
208	10	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.08679	0.077847672	8.00E-05
208	10	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.10288	0.100058937	7.96E-06
208	10	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.11969	0.135930347	0.00026375
208	25	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.09696	0.090464363	4.22E-05
208	25	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.11863	0.116243286	5.70E-06
208	25	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.14369	0.157929459	0.00020276
208	50	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.10622	0.101318874	2.40E-05
208	50	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.13501	0.13018919	2.32E-05
208	50	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.16992	0.176889133	4.86E-05
208	75	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.1106	0.108253581	5.51E-06
208	75	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.14367	0.139089572	2.10E-05
208	75	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.18672	0.18898482	5.13E-06
208	100	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.11193	0.113441982	2.29E-06
208	100	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.14883	0.145754395	9.46E-06
208	100	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.19825	0.198039627	4.43E-08
208	120	2	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.11177	0.116854493	2.59E-05
208	120	2.4	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.15138	0.150133506	1.55E-06
208	120	3	0.03141493	0.06050147	0.23965515	0	0.07571491	0.1409485	0.11882463	0.66451197	0.20448	0.203978507	2.51E-07
209	10	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.09268	0.083043289	9.29E-05
209	10	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.10999	0.106834888	9.95E-06
209	10	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.12804	0.145390701	0.00030105
209	25	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.10335	0.096396027	4.84E-05
209	25	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.12668	0.124028053	7.03E-06
209	25	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.15368	0.168805618	0.00022878
209	50	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.11316	0.10789566	2.77E-05
209	50	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.144	0.138818245	2.69E-05
209	50	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.18162	0.188916988	5.32E-05
209	75	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.11761	0.115227254	5.68E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
209	75	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.15321	0.148239632	2.47E-05
209	75	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.19924	0.201737175	6.24E-06
209	100	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.11917	0.120709352	2.37E-06
209	100	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.15869	0.155286188	1.16E-05
209	100	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.21153	0.211327419	4.10E-08
209	120	2	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.11899	0.124306957	2.83E-05
209	120	2.4	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.16124	0.159916782	1.75E-06
209	120	3	0.02506143	0.02316073	0.28929286	0	0.07766791	0.14163719	0.06123293	0.71946197	0.21803	0.217618807	1.69E-07
210	10	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.0862	0.076548767	9.31E-05
210	10	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.10117	0.097591019	1.28E-05
210	10	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.11674	0.13127594	0.00021129
210	25	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.09723	0.090516319	4.51E-05
210	25	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.11784	0.115403328	5.94E-06
210	25	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.14144	0.155297012	0.00019202
210	50	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.1079	0.102747669	2.65E-05
210	50	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.13549	0.131011829	2.01E-05
210	50	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.16941	0.176291637	4.74E-05
210	75	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.11312	0.110646451	6.12E-06
210	75	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.14535	0.141066793	1.83E-05
210	75	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.18726	0.189821892	6.56E-06
210	100	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.11529	0.11659832	1.71E-06
210	100	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.1514	0.148648787	7.57E-06
210	100	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.20001	0.200024786	2.19E-10
210	120	2	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.11565	0.120527506	2.38E-05
210	120	2.4	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.15482	0.153647765	1.37E-06
210	120	3	0.05338438	0.05964897	0.27159443	0	0.04318584	0.14304298	0.09489185	0.71887934	0.20734	0.206753111	3.44E-07
211	10	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.0895	0.079666138	9.67E-05
211	10	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.10616	0.102288723	1.50E-05
211	10	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.12347	0.138787937	0.00023464
211	25	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.09984	0.092785072	4.98E-05
211	25	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.12206	0.119135513	8.55E-06
211	25	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.14775	0.161652985	0.00019329
211	50	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.10924	0.104102859	2.64E-05
211	50	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.1387	0.133661594	2.54E-05
211	50	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.17438	0.181387672	4.91E-05
211	75	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.11376	0.111336314	5.87E-06
211	75	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.14773	0.142940102	2.29E-05
211	75	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.19168	0.193989932	5.34E-06
211	100	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.11536	0.116760683	1.96E-06
211	100	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.1531	0.149891405	1.03E-05
211	100	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.20358	0.203432245	2.18E-08
211	120	2	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.11517	0.120327258	2.66E-05
211	120	2.4	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.15569	0.154455972	1.52E-06
211	120	3	0.03001505	0.04477696	0.24429079	0	0.08522995	0.16466511	0.1036165	0.64648844	0.20997	0.209632349	1.14E-07
212	10	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.07816	0.069361496	7.74E-05
212	10	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.09102	0.087892532	9.78E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
212	10	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.10446	0.117399311	0.00016743
212	25	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.08892	0.082913399	3.61E-05
212	25	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.10729	0.105090027	4.84E-06
212	25	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.12783	0.140394249	0.00015786
212	50	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.09963	0.094893627	2.24E-05
212	50	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.12401	0.12027422	1.40E-05
212	50	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.15405	0.160683136	4.40E-05
212	75	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.10482	0.102671178	4.62E-06
212	75	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.13405	0.130135791	1.53E-05
212	75	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.17166	0.1738598	4.84E-06
212	100	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.10727	0.108562431	1.67E-06
212	100	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.1405	0.137592945	8.45E-06
212	100	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.18367	0.183829613	2.55E-08
212	120	2	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.10812	0.112463474	1.89E-05
212	120	2.4	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.14355	0.142531308	1.04E-06
212	120	3	0.13016502	0.05751639	0.24204956	0	0.10400261	0.15325184	0.0619399	0.68080565	0.19113	0.190432016	4.87E-07
213	10	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.09262	0.081787682	0.00011734
213	10	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.10897	0.10436697	2.12E-05
213	10	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.12589	0.140584755	0.00021594
213	25	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.10411	0.096655807	5.56E-05
213	25	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.12636	0.123352623	9.04E-06
213	25	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.15177	0.166216469	0.0002087
213	50	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.11529	0.109657841	3.17E-05
213	50	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.14487	0.139956951	2.41E-05
213	50	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.18127	0.188587933	5.36E-05
213	75	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.12081	0.118050207	7.62E-06
213	75	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.15543	0.150661367	2.27E-05
213	75	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.20027	0.203012988	7.52E-06
213	100	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.12308	0.124365768	1.65E-06
213	100	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.16176	0.15872612	9.20E-06
213	100	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.21369	0.213873272	3.36E-08
213	120	2	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.12345	0.128542829	2.59E-05
213	120	2.4	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.16546	0.164044412	2.00E-06
213	120	3	0.07399308	0.02489349	0.25644067	0	0.04024458	0.16163032	0.0738317	0.7242934	0.2215	0.221033843	2.17E-07
214	10	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.09438	0.084558678	9.65E-05
214	10	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.11231	0.108956432	1.12E-05
214	10	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.13095	0.14852972	0.00030905
214	25	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.10495	0.097859459	5.03E-05
214	25	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.12892	0.12611496	7.87E-06
214	25	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.1567	0.171940308	0.00023227
214	50	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.11458	0.109289818	2.80E-05
214	50	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.14617	0.140840206	2.84E-05
214	50	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.1848	0.19202137	5.21E-05
214	75	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.11904	0.116560796	6.15E-06
214	75	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.15518	0.150199534	2.48E-05
214	75	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.2021	0.20479393	7.26E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
214	100	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.12051	0.121997433	2.21E-06
214	100	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.16061	0.157195578	1.17E-05
214	100	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.21446	0.214334383	1.58E-08
214	120	2	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.12013	0.12556076	2.95E-05
214	120	2.4	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.16313	0.161782153	1.82E-06
214	120	3	0.05544724	0.03202473	0.20965393	0	0.10676833	0.15101962	0.0540921	0.68811994	0.22105	0.220588247	2.13E-07
215	10	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.0812	0.071851063	8.74E-05
215	10	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.09456	0.090966606	1.29E-05
215	10	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.10855	0.121469212	0.00016691
215	25	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.09237	0.086065407	3.97E-05
215	25	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.11139	0.109021378	5.61E-06
215	25	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.13268	0.14553791	0.00016533
215	50	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.10355	0.098651791	2.40E-05
215	50	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.1289	0.124963264	1.55E-05
215	50	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.16007	0.166839943	4.58E-05
215	75	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.10897	0.106833445	4.56E-06
215	75	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.13949	0.135328522	1.73E-05
215	75	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.17824	0.180674718	5.93E-06
215	100	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.11159	0.113030663	2.08E-06
215	100	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.14603	0.143176069	8.14E-06
215	100	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.19089	0.191155434	7.05E-08
215	120	2	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.11248	0.117143138	2.17E-05
215	120	2.4	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.14947	0.148376377	1.20E-06
215	120	3	0.06921728	0.11443709	0.23151967	0	0.07261526	0.14795107	0.06642045	0.71301322	0.19882	0.198095552	5.25E-07
216	10	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.08192	0.073756123	6.66E-05
216	10	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.09706	0.094863319	4.83E-06
216	10	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.11294	0.129111099	0.0002615
216	25	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.09162	0.085511208	3.73E-05
216	25	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.11213	0.109999886	4.54E-06
216	25	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.13584	0.149720383	0.00019267
216	50	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.10039	0.095608025	2.29E-05
216	50	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.12755	0.123014908	2.06E-05
216	50	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.16082	0.16742445	4.36E-05
216	75	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.10434	0.102047704	5.25E-06
216	75	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.13568	0.131304804	1.91E-05
216	75	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.1766	0.17870327	4.42E-06
216	100	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.10553	0.106871691	1.80E-06
216	100	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.14049	0.137508516	8.89E-06
216	100	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.18742	0.187141819	7.74E-08
216	120	2	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.10523	0.110038853	2.31E-05
216	120	2.4	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.14278	0.141578778	1.44E-06
216	120	3	0.08471156	0.02841631	0.23815899	0	0.15034146	0.14111394	0.07447596	0.63406864	0.19315	0.192676234	2.24E-07
217	10	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.08918	0.080055809	8.33E-05
217	10	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.10548	0.102721691	7.61E-06
217	10	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.12247	0.139329147	0.00028423
217	25	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.09995	0.09335659	4.35E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
217	25	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.12212	0.119793625	5.41E-06
217	25	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.1475	0.162518921	0.00022557
217	50	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.10983	0.104856224	2.47E-05
217	50	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.13928	0.134566498	2.22E-05
217	50	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.17525	0.182552357	5.33E-05
217	75	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.11452	0.11221091	5.33E-06
217	75	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.14866	0.144002317	2.17E-05
217	75	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.19297	0.195358111	5.70E-06
217	100	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.11617	0.117728367	2.43E-06
217	100	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.15416	0.151073408	9.53E-06
217	100	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.20502	0.204949799	4.93E-09
217	120	2	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.11609	0.121355557	2.77E-05
217	120	2.4	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.15684	0.155722404	1.25E-06
217	120	3	0.04694388	0.05567085	0.24157325	0	0.08036284	0.13527211	0.0722151	0.71214995	0.21161	0.211257784	1.24E-07
218	10	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.09586	0.086268902	9.20E-05
218	10	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.11475	0.111532593	1.04E-05
218	10	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.13453	0.152686214	0.00032965
218	25	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.10581	0.098872604	4.81E-05
218	25	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.13063	0.127829514	7.84E-06
218	25	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.15954	0.175023041	0.00023972
218	50	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.11484	0.109592896	2.75E-05
218	50	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.14695	0.141706142	2.75E-05
218	50	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.18687	0.194026012	5.12E-05
218	75	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.11885	0.116373177	6.13E-06
218	75	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.15556	0.150476634	2.58E-05
218	75	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.2034	0.206035105	6.94E-06
218	100	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.11962	0.12142375	3.25E-06
218	100	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.16049	0.157002907	1.22E-05
218	100	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.21513	0.214970846	2.53E-08
218	120	2	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.11926	0.124730905	2.99E-05
218	120	2.4	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.16244	0.161271612	1.37E-06
218	120	3	0.02273839	0.02883476	0.21301448	0	0.0777514	0.15807629	0.1141167	0.6500556	0.22141	0.220804731	3.66E-07
219	10	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.08346	0.073063374	0.00010809
219	10	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.09699	0.092373753	2.13E-05
219	10	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.11114	0.123006248	0.00014081
219	25	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.09511	0.088186951	4.79E-05
219	25	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.11447	0.111497955	8.83E-06
219	25	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.13605	0.148508072	0.0001552
219	50	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.10683	0.10164793	2.69E-05
219	50	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.1329	0.128517933	1.92E-05
219	50	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.1645	0.171199932	4.49E-05
219	75	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.11286	0.110447286	5.82E-06
219	75	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.14393	0.139640884	1.84E-05
219	75	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.18345	0.186014659	6.58E-06
219	100	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.1157	0.117133036	2.05E-06
219	100	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.15113	0.148088093	9.25E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
219	100	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.19688	0.197273273	1.55E-07
219	120	2	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.11697	0.121568433	2.11E-05
219	120	2.4	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.15473	0.153694669	1.07E-06
219	120	3	0.072022	0.09923778	0.25407949	0	0.05544755	0.15668376	0.04977973	0.73808896	0.20557	0.204738005	6.92E-07
220	10	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.09297	0.082090759	0.00011836
220	10	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.10917	0.104496861	2.18E-05
220	10	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.12598	0.140433216	0.0002089
220	25	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.10464	0.097322578	5.35E-05
220	25	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.12684	0.123915482	8.55E-06
220	25	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.1522	0.166528206	0.0002053
220	50	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.11613	0.110688305	2.96E-05
220	50	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.14566	0.14092247	2.24E-05
220	50	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.18203	0.189380264	5.40E-05
220	75	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.12192	0.119314473	6.79E-06
220	75	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.15661	0.151908315	2.21E-05
220	75	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.20132	0.204132932	7.91E-06
220	100	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.12435	0.125814047	2.14E-06
220	100	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.1633	0.160193882	9.65E-06
220	100	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.21515	0.2152631	1.28E-08
220	120	2	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.12479	0.130114142	2.83E-05
220	120	2.4	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.16696	0.165664434	1.68E-06
220	120	3	0.06556452	0.07459489	0.19925879	0	0.05049028	0.16343488	0.06264811	0.72342673	0.22326	0.222608765	4.24E-07
221	10	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.08483	0.074990082	9.68E-05
221	10	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.09951	0.095599365	1.53E-05
221	10	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.11473	0.128678131	0.00019455
221	25	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.09587	0.088957634	4.78E-05
221	25	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.11616	0.113428993	7.46E-06
221	25	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.13934	0.152673225	0.00017777
221	50	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.10657	0.101232281	2.85E-05
221	50	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.13371	0.129067802	2.15E-05
221	50	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.16705	0.173706818	4.43E-05
221	75	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.11171	0.109157041	6.52E-06
221	75	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.14356	0.139164619	1.93E-05
221	75	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.1849	0.187296244	5.74E-06
221	100	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.11397	0.115137053	1.36E-06
221	100	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.14959	0.146784859	7.87E-06
221	100	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.19747	0.197552538	6.81E-09
221	120	2	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.11435	0.119087887	2.24E-05
221	120	2.4	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.15303	0.151818474	1.47E-06
221	120	3	0.0720334	0.05036645	0.27499791	0	0.08068832	0.1449658	0.05593629	0.7184096	0.20486	0.204323077	2.88E-07
222	10	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.08571	0.07650547	8.47E-05
222	10	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.10086	0.097915745	8.67E-06
222	10	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.11677	0.132444954	0.0002457
222	25	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.09655	0.089892845	4.43E-05
222	25	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.11745	0.115082932	5.60E-06
222	25	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.14149	0.155686684	0.00020155

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
222	50	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.10671	0.101569996	2.64E-05
222	50	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.13461	0.130037651	2.09E-05
222	50	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.16896	0.175893307	4.81E-05
222	75	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.11166	0.109064674	6.74E-06
222	75	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.14408	0.139640884	1.97E-05
222	75	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.18645	0.188878021	5.90E-06
222	100	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.11339	0.114710579	1.74E-06
222	100	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.14972	0.146856298	8.20E-06
222	100	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.19885	0.198641453	4.35E-08
222	120	2	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.11352	0.118429414	2.41E-05
222	120	2.4	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.1528	0.151612814	1.41E-06
222	120	3	0.07261938	0.05366324	0.25073434	0	0.10762148	0.13547844	0.04015284	0.71674724	0.20573	0.205069947	4.36E-07
223	10	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.07955	0.070292377	8.57E-05
223	10	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.09292	0.089256382	1.34E-05
223	10	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.10683	0.119520855	0.00016106
223	25	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.09025	0.083865929	4.08E-05
223	25	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.1091	0.106527481	6.62E-06
223	25	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.13027	0.142645683	0.00015316
223	50	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.10074	0.095854816	2.39E-05
223	50	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.12588	0.121750641	1.71E-05
223	50	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.1567	0.163034153	4.01E-05
223	75	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.10582	0.10363814	4.76E-06
223	75	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.13573	0.131625201	1.68E-05
223	75	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.17412	0.176267103	4.61E-06
223	100	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.10822	0.109525785	1.71E-06
223	100	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.14183	0.13908885	7.51E-06
223	100	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.18597	0.186271553	9.09E-08
223	120	2	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.10887	0.11342322	2.07E-05
223	120	2.4	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.145	0.144028656	9.44E-07
223	120	3	0.09970921	0.05204273	0.27080031	0	0.08500732	0.14867211	0.07867944	0.68764112	0.19349	0.19288009	3.72E-07
224	10	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.082	0.073366451	7.45E-05
224	10	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.09645	0.093802547	7.01E-06
224	10	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.11153	0.126621532	0.00022775
224	25	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.09231	0.086108704	3.85E-05
224	25	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.11215	0.110112457	4.15E-06
224	25	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.13494	0.14866394	0.00018835
224	50	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.102	0.097197018	2.31E-05
224	50	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.12846	0.124283504	1.74E-05
224	50	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.16096	0.167792473	4.67E-05
224	75	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.10676	0.104325116	5.93E-06
224	75	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.1375	0.133380165	1.70E-05
224	75	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.17767	0.180077222	5.79E-06
224	100	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.1084	0.109681654	1.64E-06
224	100	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.14311	0.140218897	8.36E-06
224	100	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.1894	0.189315319	7.17E-09
224	120	2	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.1085	0.113213952	2.22E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
224	120	2.4	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.14593	0.144728621	1.44E-06
224	120	3	0.06527842	0.04038252	0.28298093	0	0.096089	0.14603587	0.08761268	0.67026246	0.19585	0.195398521	2.04E-07
225	10	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.08296	0.073041725	9.84E-05
225	10	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.09704	0.092850018	1.76E-05
225	10	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.11166	0.124435043	0.0001632
225	25	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.09405	0.087173805	4.73E-05
225	25	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.11375	0.110822525	8.57E-06
225	25	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.13603	0.148551369	0.00015678
225	50	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.10474	0.099643288	2.60E-05
225	50	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.13108	0.126664829	1.95E-05
225	50	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.16338	0.169810104	4.13E-05
225	75	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.11013	0.107728246	5.77E-06
225	75	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.14123	0.13693339	1.85E-05
225	75	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.1815	0.18359581	4.39E-06
225	100	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.11248	0.113846807	1.87E-06
225	100	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.14765	0.144706612	8.66E-06
225	100	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.19383	0.194028177	3.93E-08
225	120	2	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.1131	0.117899028	2.30E-05
225	120	2.4	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.15103	0.149852077	1.39E-06
225	120	3	0.12962399	0.04876832	0.21809179	0	0.06083771	0.14124746	0.08941514	0.7084997	0.20144	0.200926081	2.64E-07
226	10	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.09233	0.08235054	9.96E-05
226	10	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.10927	0.10573082	1.25E-05
226	10	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.12696	0.143528938	0.00027453
226	25	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.10329	0.096179543	5.06E-05
226	25	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.12631	0.123499832	7.90E-06
226	25	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.15264	0.167653923	0.00022542
226	50	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.1135	0.108159771	2.85E-05
226	50	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.14395	0.13887886	2.57E-05
226	50	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.18121	0.188514328	5.34E-05
226	75	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.11825	0.115818977	5.91E-06
226	75	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.15365	0.148718783	2.43E-05
226	75	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.19934	0.201875725	6.43E-06
226	100	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.12003	0.121573124	2.38E-06
226	100	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.15941	0.156098003	1.10E-05
226	100	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.21182	0.211888113	4.64E-09
226	120	2	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.11993	0.125353297	2.94E-05
226	120	2.4	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.16222	0.160945082	1.63E-06
226	120	3	0.03243393	0.05124555	0.25417581	0	0.06271081	0.13769519	0.06897271	0.73062128	0.21878	0.218472115	9.48E-08
227	10	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.08485	0.075271511	9.17E-05
227	10	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.09968	0.096118927	1.27E-05
227	10	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.11508	0.129544067	0.00020921
227	25	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.09573	0.088940315	4.61E-05
227	25	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.11613	0.113558884	6.61E-06
227	25	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.13947	0.153071556	0.000185
227	50	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.10602	0.100881577	2.64E-05
227	50	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.13329	0.128799362	2.02E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
227	50	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.16694	0.173615894	4.46E-05
227	75	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.11103	0.108573977	6.03E-06
227	75	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.14295	0.138627739	1.87E-05
227	75	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.18447	0.186866163	5.74E-06
227	100	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.11303	0.114379358	1.82E-06
227	100	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.1489	0.146027164	8.25E-06
227	100	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.19685	0.196844635	2.88E-11
227	120	2	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.11341	0.11821293	2.31E-05
227	120	2.4	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.1521	0.150911045	1.41E-06
227	120	3	0.07221103	0.05899078	0.24897463	0	0.08082174	0.14302472	0.07348284	0.70267069	0.20393	0.20342106	2.59E-07
228	10	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.09719	0.087372971	9.64E-05
228	10	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.11602	0.113026333	8.96E-06
228	10	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.13573	0.154764462	0.00036231
228	25	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.10773	0.100500565	5.23E-05
228	25	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.13266	0.130020332	6.97E-06
228	25	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.16181	0.178053818	0.00026386
228	50	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.11726	0.111727428	3.06E-05
228	50	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.1499	0.144520435	2.89E-05
228	50	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.19033	0.197922726	5.76E-05
228	75	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.12151	0.118841095	7.12E-06
228	75	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.15904	0.153709462	2.84E-05
228	75	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.20765	0.210520655	8.24E-06
228	100	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.12263	0.12413846	2.28E-06
228	100	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.16418	0.16055541	1.31E-05
228	100	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.21989	0.219902353	1.53E-10
228	120	2	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.12214	0.127608339	2.99E-05
228	120	2.4	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.16622	0.165038435	1.40E-06
228	120	3	0.08275654	0.03171014	0.14004441	0	0.07752583	0.13590126	0.09603893	0.69053397	0.2266	0.226040037	3.14E-07
229	10	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.09168	0.081246471	0.00010886
229	10	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.10796	0.103847408	1.69E-05
229	10	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.12488	0.140173435	0.00023389
229	25	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.103	0.095720596	5.30E-05
229	25	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.12513	0.122348137	7.74E-06
229	25	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.15052	0.165125389	0.00021332
229	50	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.1138	0.108324299	3.00E-05
229	50	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.14343	0.138458881	2.47E-05
229	50	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.17956	0.186886368	5.37E-05
229	75	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.11914	0.116433792	7.32E-06
229	75	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.15357	0.148814036	2.26E-05
229	75	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.19813	0.200871239	7.51E-06
229	100	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.12115	0.122534313	1.92E-06
229	100	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.15981	0.156608906	1.02E-05
229	100	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.21155	0.211388035	2.62E-08
229	120	2	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.12145	0.126561999	2.61E-05
229	120	2.4	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.16306	0.161746073	1.73E-06
229	120	3	0.07567549	0.05914093	0.19861403	0	0.07890935	0.15973619	0.05725874	0.70409572	0.21893	0.218318772	3.74E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
230	10	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.09448	0.084840107	9.29E-05
230	10	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.11242	0.109302807	9.72E-06
230	10	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.13109	0.148962688	0.00031943
230	25	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.1051	0.09811058	4.89E-05
230	25	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.12908	0.126409378	7.13E-06
230	25	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.15686	0.172329979	0.00023932
230	50	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.11464	0.109514961	2.63E-05
230	50	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.14633	0.141104317	2.73E-05
230	50	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.18502	0.192341766	5.36E-05
230	75	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.11916	0.116771507	5.70E-06
230	75	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.15534	0.150441996	2.40E-05
230	75	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.20235	0.205073916	7.42E-06
230	100	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.12062	0.122187939	2.46E-06
230	100	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.16079	0.157416391	1.14E-05
230	100	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.21476	0.21457468	3.43E-08
230	120	2	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.12028	0.125746576	2.99E-05
230	120	2.4	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.16332	0.161987813	1.77E-06
230	120	3	0.05385718	0.02121397	0.22997952	0	0.057403	0.13900116	0.09751565	0.70608019	0.22128	0.220795711	2.35E-07
231	10	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.08595	0.076224041	9.46E-05
231	10	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.10084	0.097158051	1.36E-05
231	10	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.11632	0.130583191	0.00020344
231	25	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.09702	0.090273857	4.55E-05
231	25	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.11757	0.115039635	6.40E-06
231	25	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.14105	0.154699516	0.00018631
231	50	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.10778	0.102587471	2.70E-05
231	50	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.13521	0.130721741	2.01E-05
231	50	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.16898	0.175798054	4.65E-05
231	75	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.11295	0.110530993	5.85E-06
231	75	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.14519	0.140838763	1.89E-05
231	75	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.18693	0.189412015	6.16E-06
231	100	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.11522	0.116524715	1.70E-06
231	100	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.15119	0.148473434	7.38E-06
231	100	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.19965	0.199680576	9.35E-10
231	120	2	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.11561	0.120482405	2.37E-05
231	120	2.4	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.15471	0.153514266	1.43E-06
231	120	3	0.07330269	0.03420531	0.28751809	0	0.05372719	0.14484187	0.07890014	0.7225308	0.20703	0.206457249	3.28E-07
232	10	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.08968	0.079817677	9.73E-05
232	10	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.10591	0.102137184	1.42E-05
232	10	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.12277	0.138116837	0.00023553
232	25	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.10048	0.093538437	4.82E-05
232	25	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.12237	0.119707031	7.09E-06
232	25	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.1475	0.161886787	0.00020698
232	50	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.11064	0.105440731	2.70E-05
232	50	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.13975	0.134956169	2.30E-05
232	50	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.17544	0.182517719	5.01E-05
232	75	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.11561	0.113068186	6.46E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
232	75	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.14926	0.144738363	2.04E-05
232	75	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.19325	0.195736237	6.18E-06
232	100	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.1173	0.118808622	2.28E-06
232	100	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.15508	0.152080059	9.00E-06
232	100	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.20585	0.205664196	3.45E-08
232	120	2	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.11747	0.122593125	2.62E-05
232	120	2.4	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.15824	0.156911262	1.77E-06
232	120	3	0.02761427	0.09022525	0.20478536	0	0.05217471	0.15178373	0.11493193	0.68110964	0.21271	0.212192273	2.68E-07
233	10	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.08494	0.075661182	8.61E-05
233	10	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.10004	0.096919918	9.73E-06
233	10	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.11584	0.131081104	0.00023229
233	25	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.0955	0.088845062	4.43E-05
233	25	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.11618	0.113775368	5.78E-06
233	25	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.14	0.153894196	0.00019305
233	50	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.1054	0.10029274	2.61E-05
233	50	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.13307	0.128431339	2.15E-05
233	50	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.16692	0.173719807	4.62E-05
233	75	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.11024	0.10763588	6.78E-06
233	75	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.14227	0.137833964	1.97E-05
233	75	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.18412	0.186450513	5.43E-06
233	100	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.11191	0.113171377	1.59E-06
233	100	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.14801	0.144901447	9.66E-06
233	100	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.19615	0.196017666	1.75E-08
233	120	2	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.11196	0.116816608	2.36E-05
233	120	2.4	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.15078	0.149561628	1.48E-06
233	120	3	0.0694433	0.08078781	0.20009615	0	0.07484251	0.13515508	0.10548945	0.68451295	0.20278	0.202306167	2.25E-07
234	10	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.09672	0.086745167	9.95E-05
234	10	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.11529	0.111814022	1.21E-05
234	10	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.13465	0.152577972	0.00032141
234	25	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.10721	0.100119553	5.03E-05
234	25	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.13186	0.129067802	7.80E-06
234	25	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.16046	0.17611412	0.00024505
234	50	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.11682	0.11156723	2.76E-05
234	50	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.14911	0.143836346	2.78E-05
234	50	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.18876	0.19623415	5.59E-05
234	75	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.12132	0.118841095	6.14E-06
234	75	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.15825	0.153210106	2.54E-05
234	75	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.20628	0.209022586	7.52E-06
234	100	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.12265	0.12427268	2.63E-06
234	100	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.16362	0.160202541	1.17E-05
234	100	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.21852	0.218562317	1.79E-09
234	120	2	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.12233	0.127832039	3.03E-05
234	120	2.4	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.16596	0.164780458	1.39E-06
234	120	3	0.02754774	0.04872523	0.1957703	0	0.05557133	0.15313368	0.11183831	0.67945669	0.22525	0.224804274	1.99E-07
235	10	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.09243	0.082480431	9.90E-05
235	10	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.10988	0.106098843	1.43E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
235	10	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.12798	0.144286633	0.00026591
235	25	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.10291	0.095789871	5.07E-05
235	25	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.12617	0.123196754	8.84E-06
235	25	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.15298	0.16755867	0.00021254
235	50	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.11245	0.107237549	2.72E-05
235	50	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.14319	0.137909012	2.79E-05
235	50	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.18039	0.187574787	5.16E-05
235	75	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.11691	0.114540278	5.62E-06
235	75	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.15222	0.147295761	2.42E-05
235	75	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.19779	0.200331472	6.46E-06
235	100	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.11845	0.120005779	2.42E-06
235	100	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.15764	0.154318504	1.10E-05
235	100	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.20996	0.209872646	7.63E-09
235	120	2	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.11824	0.123594364	2.87E-05
235	120	2.4	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.16023	0.158929976	1.69E-06
235	120	3	0.02730748	0.0399355	0.24153701	0	0.03913162	0.14859848	0.13240218	0.67986773	0.21645	0.216137695	9.75E-08
236	10	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.09405	0.0842556	9.59E-05
236	10	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.11184	0.108458519	1.14E-05
236	10	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.13035	0.147685432	0.00030052
236	25	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.10464	0.097608337	4.94E-05
236	25	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.12847	0.125647354	7.97E-06
236	25	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.15601	0.171100349	0.00022772
236	50	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.11433	0.109064674	2.77E-05
236	50	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.14577	0.140398579	2.89E-05
236	50	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.18398	0.191185741	5.19E-05
236	75	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.11882	0.116361631	6.04E-06
236	75	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.15473	0.149780998	2.45E-05
236	75	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.20166	0.203965518	5.32E-06
236	100	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.12036	0.121813421	2.11E-06
236	100	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.1602	0.156795082	1.16E-05
236	100	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.21377	0.213516073	6.45E-08
236	120	2	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.12	0.125389377	2.90E-05
236	120	2.4	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.16279	0.16139609	1.94E-06
236	120	3	0.08379169	0.03432537	0.16601585	0	0.08590763	0.14402867	0.08642231	0.68364139	0.22027	0.21977102	2.49E-07
237	10	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.08077	0.071721172	8.19E-05
237	10	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.0945	0.09118309	1.10E-05
237	10	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.10875	0.122248554	0.00018221
237	25	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.09141	0.085216789	3.84E-05
237	25	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.1106	0.108328629	5.16E-06
237	25	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.13229	0.145243492	0.00016779
237	50	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.10185	0.097062798	2.29E-05
237	50	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.12735	0.12339159	1.57E-05
237	50	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.15879	0.165454445	4.44E-05
237	75	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.10692	0.104726334	4.81E-06
237	75	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.13721	0.133140589	1.66E-05
237	75	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.17615	0.17851565	5.60E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
237	100	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.10924	0.110519447	1.64E-06
237	100	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.14329	0.140500326	7.78E-06
237	100	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.18811	0.188388767	7.77E-08
237	120	2	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.10975	0.11434869	2.11E-05
237	120	2.4	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.14643	0.145365445	1.13E-06
237	120	3	0.04979913	0.06017028	0.30896992	0	0.08232392	0.15545986	0.07719678	0.68501944	0.19542	0.194900608	2.70E-07
238	10	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.08301	0.073431396	9.17E-05
238	10	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.09722	0.093282986	1.55E-05
238	10	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.11194	0.12488966	0.00016769
238	25	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.09372	0.087269058	4.16E-05
238	25	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.11341	0.110813866	6.74E-06
238	25	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.13556	0.1483955	0.00016475
238	50	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.10428	0.099413815	2.37E-05
238	50	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.13042	0.12624052	1.75E-05
238	50	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.16239	0.169043751	4.43E-05
238	75	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.10943	0.1072693	4.67E-06
238	75	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.14048	0.136211777	1.82E-05
238	75	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.18018	0.182397931	4.92E-06
238	100	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.11174	0.113201685	2.14E-06
238	100	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.14667	0.143734598	8.62E-06
238	100	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.19218	0.192480316	9.02E-08
238	120	2	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.11249	0.117123294	2.15E-05
238	120	2.4	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.14983	0.14870832	1.26E-06
238	120	3	0.05528775	0.06463562	0.27057799	0	0.03200376	0.16020879	0.13592263	0.67186482	0.19981	0.199134676	4.56E-07
239	10	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.08833	0.078930092	8.84E-05
239	10	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.10474	0.101444435	1.09E-05
239	10	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.12189	0.137878704	0.00025564
239	25	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.09855	0.091754608	4.62E-05
239	25	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.12066	0.11795784	7.30E-06
239	25	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.14612	0.16036274	0.00020286
239	50	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.10796	0.102816944	2.65E-05
239	50	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.13719	0.132189503	2.50E-05
239	50	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.17271	0.179712086	4.90E-05
239	75	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.11232	0.109887314	5.92E-06
239	75	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.14595	0.141260185	2.20E-05
239	75	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.18966	0.192053121	5.73E-06
239	100	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.11373	0.115178185	2.10E-06
239	100	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.15127	0.148057785	1.03E-05
239	100	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.20146	0.201297712	2.63E-08
239	120	2	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.11352	0.118656723	2.64E-05
239	120	2.4	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.15383	0.152529263	1.69E-06
239	120	3	0.0490167	0.06151278	0.20142382	0	0.07304775	0.14388277	0.12449932	0.65857016	0.2077	0.207366482	1.11E-07
240	10	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.08672	0.077631187	8.26E-05
240	10	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.10259	0.099604321	8.91E-06
240	10	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.11914	0.13508606	0.00025428
240	25	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.09715	0.090533638	4.38E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
240	25	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.11874	0.116174011	6.58E-06
240	25	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.14349	0.157574425	0.00019837
240	50	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.10669	0.101678238	2.51E-05
240	50	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.13533	0.130496597	2.34E-05
240	50	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.17028	0.176997375	4.51E-05
240	75	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.11121	0.108825099	5.69E-06
240	75	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.1444	0.139643771	2.26E-05
240	75	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.18741	0.189429334	4.08E-06
240	100	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.11277	0.114180193	1.99E-06
240	100	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.14966	0.146507759	9.94E-06
240	100	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.19907	0.198738871	1.10E-07
240	120	2	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.1127	0.117702389	2.50E-05
240	120	2.4	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.15221	0.151021091	1.41E-06
240	120	3	0.10149009	0.02785935	0.21134777	0	0.09886023	0.13562866	0.08384393	0.68166718	0.20549	0.204853463	4.05E-07
241	10	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.08379	0.074383926	8.85E-05
241	10	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.09866	0.095058155	1.30E-05
241	10	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.11412	0.128223515	0.00019891
241	25	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.09413	0.087459564	4.45E-05
241	25	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.1144	0.111775055	6.89E-06
241	25	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.13765	0.150828781	0.00017368
241	50	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.10384	0.098859615	2.48E-05
241	50	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.13084	0.126335773	2.03E-05
241	50	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.16398	0.170494194	4.24E-05
241	75	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.10861	0.106175334	5.93E-06
241	75	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.13996	0.135692215	1.82E-05
241	75	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.18089	0.183119545	4.97E-06
241	100	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.11037	0.111690626	1.74E-06
241	100	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.14565	0.142730112	8.53E-06
241	100	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.19267	0.192618866	2.61E-09
241	120	2	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.1105	0.115326476	2.33E-05
241	120	2.4	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.14858	0.14736251	1.48E-06
241	120	3	0.06403604	0.0617299	0.23221707	0	0.10516336	0.15929659	0.08935077	0.64618928	0.19931	0.198876699	1.88E-07
242	10	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.08392	0.075076675	7.82E-05
242	10	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.09941	0.096422005	8.93E-06
242	10	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.11556	0.130929565	0.00023622
242	25	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.09375	0.087303696	4.16E-05
242	25	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.11457	0.112138748	5.91E-06
242	25	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.13859	0.152248917	0.00018657
242	50	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.1027	0.09784214	2.36E-05
242	50	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.13023	0.125664673	2.08E-05
242	50	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.16393	0.170606766	4.46E-05
242	75	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.10696	0.104561806	5.75E-06
242	75	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.13874	0.134295171	1.98E-05
242	75	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.18017	0.18232577	4.65E-06
242	100	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.10827	0.109601555	1.77E-06
242	100	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.14362	0.140755777	8.20E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
242	100	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.19126	0.191094818	2.73E-08
242	120	2	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.10818	0.112916287	2.24E-05
242	120	2.4	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.14631	0.144995618	1.73E-06
242	120	3	0.03763842	0.07266337	0.21411296	0	0.11314796	0.15689221	0.1167484	0.61321143	0.19718	0.196857985	1.04E-07
243	10	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.07924	0.070075893	8.40E-05
243	10	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.09293	0.089126492	1.45E-05
243	10	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.10712	0.119629097	0.00015648
243	25	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.0894	0.083069267	4.01E-05
243	25	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.1083	0.105678864	6.87E-06
243	25	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.1297	0.141840363	0.00014739
243	50	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.0993	0.094460659	2.34E-05
243	50	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.12434	0.120165977	1.74E-05
243	50	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.15516	0.161297951	3.77E-05
243	75	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.10411	0.101816788	5.26E-06
243	75	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.13355	0.129529635	1.62E-05
243	75	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.17163	0.173874232	5.04E-06
243	100	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.10609	0.107376099	1.65E-06
243	100	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.13937	0.136599283	7.68E-06
243	100	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.18302	0.183359842	1.15E-07
243	120	2	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.10651	0.111049112	2.06E-05
243	120	2.4	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.14233	0.141270288	1.12E-06
243	120	3	0.09208013	0.04389695	0.25690717	0	0.08347874	0.1622147	0.12450865	0.62979792	0.19024	0.189625613	3.77E-07
244	10	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.08716	0.077479649	9.37E-05
244	10	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.10261	0.099084759	1.24E-05
244	10	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.11873	0.133895397	0.00022999
244	25	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.09798	0.091113815	4.71E-05
244	25	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.11912	0.116563683	6.53E-06
244	25	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.14347	0.157531128	0.00019772
244	50	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.10828	0.10300745	2.78E-05
244	50	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.13657	0.131778183	2.30E-05
244	50	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.17108	0.178084126	4.91E-05
244	75	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.11335	0.110649338	7.29E-06
244	75	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.14609	0.14155749	2.05E-05
244	75	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.18884	0.191302643	6.06E-06
244	100	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.11515	0.116409979	1.59E-06
244	100	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.15214	0.148915062	1.04E-05
244	100	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.20142	0.201234932	3.43E-08
244	120	2	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.11526	0.120200976	2.44E-05
244	120	2.4	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.15505	0.153761419	1.66E-06
244	120	3	0.08573639	0.0241337	0.26056823	0	0.06481127	0.14323796	0.0846327	0.70731807	0.20831	0.207770586	2.91E-07
245	10	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.09873	0.088433743	0.00010601
245	10	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.11771	0.114087105	1.31E-05
245	10	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.13753	0.155760288	0.00033234
245	25	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.10945	0.10205925	5.46E-05
245	25	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.13467	0.131700249	8.82E-06
245	25	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.16388	0.179828987	0.00025437

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
245	50	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.11918	0.113758049	2.94E-05
245	50	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.15224	0.14677187	2.99E-05
245	50	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.19281	0.200412292	5.78E-05
245	75	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.12376	0.121182009	6.65E-06
245	75	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.16163	0.156341909	2.80E-05
245	75	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.21069	0.213482157	7.80E-06
245	100	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.12511	0.12672328	2.60E-06
245	100	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.16696	0.163482275	1.21E-05
245	100	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.22332	0.223229713	8.15E-09
245	120	2	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.12478	0.130359491	3.11E-05
245	120	2.4	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.1693	0.168157609	1.31E-06
245	120	3	0.05038346	0.04714469	0.1578283	0	0.07876691	0.15441319	0.08272442	0.68409548	0.23019	0.229606613	3.40E-07
246	10	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.0978	0.08711319	0.00011421
246	10	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.11584	0.111727428	1.69E-05
246	10	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.13461	0.1515172	0.00028585
246	25	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.1092	0.101747513	5.55E-05
246	25	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.13349	0.130531235	8.75E-06
246	25	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.16126	0.177014694	0.00024821
246	50	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.11998	0.114411831	3.10E-05
246	50	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.15208	0.146789188	2.80E-05
246	50	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.19134	0.199074421	5.98E-05
246	75	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.12522	0.122521324	7.28E-06
246	75	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.16244	0.157190526	2.76E-05
246	75	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.21045	0.213181966	7.46E-06
246	100	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.12707	0.128602362	2.35E-06
246	100	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.16863	0.164989004	1.33E-05
246	100	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.22374	0.223757935	3.22E-10
246	120	2	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.12703	0.132603709	3.11E-05
246	120	2.4	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.17147	0.17011679	1.83E-06
246	120	3	0.05094157	0.04552076	0.20881579	0	0.06671935	0.1566146	0.0488114	0.72785465	0.23128	0.230705269	3.30E-07
247	10	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.08965	0.080618668	8.16E-05
247	10	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.10655	0.103912354	6.96E-06
247	10	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.12418	0.141688824	0.00030656
247	25	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.09985	0.093192062	4.43E-05
247	25	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.12257	0.120114021	6.03E-06
247	25	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.14889	0.163783188	0.00022181
247	50	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.10908	0.103977299	2.60E-05
247	50	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.13898	0.134012299	2.47E-05
247	50	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.17571	0.182725544	4.92E-05
247	75	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.11328	0.11084273	5.94E-06
247	75	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.14755	0.142844849	2.21E-05
247	75	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.19244	0.194763501	5.40E-06
247	100	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.11465	0.115966187	1.73E-06
247	100	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.15263	0.149438953	1.02E-05
247	100	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.20385	0.203756971	8.65E-09
247	120	2	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.11422	0.119327823	2.61E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
247	120	2.4	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.15514	0.153766831	1.89E-06
247	120	3	0.09332171	0.02597632	0.1847843	0	0.09328934	0.13538013	0.1018845	0.66944604	0.21008	0.209652193	1.83E-07
248	10	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.08948	0.080120754	8.76E-05
248	10	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.10627	0.103046417	1.04E-05
248	10	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.12374	0.140043545	0.00026581
248	25	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.09971	0.0929496	4.57E-05
248	25	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.12216	0.119525185	6.94E-06
248	25	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.14808	0.162501602	0.00020798
248	50	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.10897	0.103994617	2.48E-05
248	50	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.13868	0.133704891	2.48E-05
248	50	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.17478	0.181781673	4.90E-05
248	75	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.11333	0.11103035	5.29E-06
248	75	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.14756	0.142740936	2.32E-05
248	75	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.19171	0.19406498	5.55E-06
248	100	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.11475	0.116293077	2.38E-06
248	100	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.15283	0.149493074	1.11E-05
248	100	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.20341	0.203248234	2.62E-08
248	120	2	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.11453	0.119748163	2.72E-05
248	120	2.4	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.15522	0.153930998	1.66E-06
248	120	3	0.07479504	0.03924112	0.18587692	0	0.12661139	0.16081385	0.07594484	0.63662992	0.20978	0.209273346	2.57E-07
249	10	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.08585	0.076483822	8.77E-05
249	10	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.10119	0.097915745	1.07E-05
249	10	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.11724	0.132466602	0.00023185
249	25	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.09645	0.089728317	4.52E-05
249	25	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.11742	0.114892426	6.39E-06
249	25	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.14153	0.155444221	0.00019361
249	50	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.10631	0.101249599	2.56E-05
249	50	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.13436	0.12964798	2.22E-05
249	50	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.16861	0.175399723	4.61E-05
249	75	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.11116	0.108634593	6.38E-06
249	75	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.14357	0.139109777	1.99E-05
249	75	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.18591	0.188214137	5.31E-06
249	100	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.1128	0.114197512	1.95E-06
249	100	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.14914	0.146224165	8.50E-06
249	100	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.19802	0.197836132	3.38E-08
249	120	2	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.11287	0.117861144	2.49E-05
249	120	2.4	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.15215	0.150912849	1.53E-06
249	120	3	0.03058929	0.04883196	0.29660299	0	0.07001462	0.14015076	0.08759426	0.70224035	0.20465	0.204171538	2.29E-07
250	10	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.09001	0.080835152	8.42E-05
250	10	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.10702	0.10423708	7.74E-06
250	10	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.12477	0.142186737	0.00030334
250	25	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.10026	0.093460503	4.62E-05
250	25	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.12312	0.120503693	6.85E-06
250	25	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.14962	0.164415321	0.0002189
250	50	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.10942	0.104297695	2.62E-05
250	50	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.13958	0.134462585	2.62E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
250	50	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.17652	0.18346159	4.82E-05
250	75	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.11365	0.111183332	6.08E-06
250	75	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.14809	0.143338432	2.26E-05
250	75	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.19311	0.195557276	5.99E-06
250	100	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.11491	0.11632988	2.02E-06
250	100	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.15316	0.14996501	1.02E-05
250	100	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.2048	0.204601259	3.95E-08
250	120	2	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.11443	0.119704866	2.78E-05
250	120	2.4	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.15555	0.154313453	1.53E-06
250	120	3	0.05379354	0.05311799	0.19782059	0	0.12326843	0.14031482	0.06428143	0.67213532	0.21093	0.210525346	1.64E-07
251	10	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.08363	0.07434063	8.63E-05
251	10	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.09826	0.094884968	1.14E-05
251	10	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.11349	0.127942085	0.00020886
251	25	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.09431	0.087693367	4.38E-05
251	25	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.11448	0.11197422	6.28E-06
251	25	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.13751	0.150967331	0.0001811
251	50	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.10437	0.099357529	2.51E-05
251	50	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.13132	0.126872654	1.98E-05
251	50	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.16449	0.171061382	4.32E-05
251	75	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.10928	0.106859423	5.86E-06
251	75	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.1407	0.136468671	1.79E-05
251	75	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.18168	0.183994141	5.36E-06
251	100	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.11124	0.112526255	1.65E-06
251	100	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.14658	0.143689137	8.36E-06
251	100	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.19379	0.193735924	2.92E-09
251	120	2	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.11154	0.11626277	2.23E-05
251	120	2.4	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.14973	0.148452147	1.63E-06
251	120	3	0.03503466	0.0450003	0.32223157	0	0.12210886	0.15512663	0.02983566	0.69292885	0.20077	0.200153955	3.80E-07
252	10	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.08865	0.079103279	9.11E-05
252	10	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.10462	0.101054764	1.27E-05
252	10	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.12116	0.136276722	0.00022852
252	25	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.09933	0.092724457	4.36E-05
252	25	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.12082	0.118434105	5.69E-06
252	25	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.14554	0.159739265	0.00020162
252	50	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.10942	0.104557476	2.36E-05
252	50	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.13803	0.133544693	2.01E-05
252	50	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.17306	0.180114746	4.98E-05
252	75	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.1145	0.112138748	5.58E-06
252	75	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.14768	0.143231634	1.98E-05
252	75	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.19068	0.193187497	6.29E-06
252	100	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.11624	0.117840939	2.56E-06
252	100	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.15353	0.150504055	9.16E-06
252	100	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.20317	0.202992783	3.14E-08
252	120	2	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.1164	0.12159369	2.70E-05
252	120	2.4	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.15654	0.155294847	1.55E-06
252	120	3	0.05597442	0.01141822	0.28949535	0	0.04218923	0.16286258	0.11947121	0.67547698	0.21	0.209450142	3.02E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
253	10	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.08564	0.076202393	8.91E-05
253	10	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.10087	0.09743948	1.18E-05
253	10	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.11674	0.131579018	0.0002202
253	25	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.09622	0.089529152	4.48E-05
253	25	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.11696	0.114459457	6.25E-06
253	25	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.1409	0.154586945	0.00018733
253	50	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.10616	0.101119709	2.54E-05
253	50	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.13391	0.129275627	2.15E-05
253	50	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.16787	0.174581413	4.50E-05
253	75	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.11107	0.108547999	6.36E-06
253	75	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.14322	0.138783607	1.97E-05
253	75	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.18513	0.187414589	5.22E-06
253	100	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.11278	0.114143391	1.86E-06
253	100	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.149	0.145929747	9.43E-06
253	100	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.19736	0.197061119	8.93E-08
253	120	2	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.11296	0.117828671	2.37E-05
253	120	2.4	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.15191	0.150638636	1.62E-06
253	120	3	0.04340774	0.09157004	0.21109315	0	0.0808317	0.14858591	0.09931667	0.67126571	0.20394	0.203415648	2.75E-07
254	10	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.08342	0.074102497	8.68E-05
254	10	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.09802	0.094560242	1.20E-05
254	10	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.11321	0.127379227	0.00020077
254	25	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.09394	0.087390289	4.29E-05
254	25	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.11403	0.111532593	6.24E-06
254	25	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.13697	0.150265923	0.00017678
254	50	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.10398	0.099011154	2.47E-05
254	50	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.13071	0.126353092	1.90E-05
254	50	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.1637	0.170234413	4.27E-05
254	75	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.10887	0.106484184	5.69E-06
254	75	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.14002	0.135897153	1.70E-05
254	75	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.18071	0.183084908	5.64E-06
254	100	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.11084	0.112123594	1.65E-06
254	100	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.14585	0.143087311	7.63E-06
254	100	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.19272	0.19276824	2.33E-09
254	120	2	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.11117	0.115844234	2.18E-05
254	120	2.4	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.1489	0.147827951	1.15E-06
254	120	3	0.03825165	0.02055972	0.3462717	0	0.0768338	0.15421117	0.08194406	0.68701098	0.19974	0.19915452	3.43E-07
255	10	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.0913	0.081224823	0.00010151
255	10	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.10794	0.104215431	1.39E-05
255	10	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.12523	0.141320801	0.00025891
255	25	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.1023	0.095097122	5.19E-05
255	25	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.12484	0.122010422	8.01E-06
255	25	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.15069	0.165471764	0.0002185
255	50	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.11255	0.107146626	2.92E-05
255	50	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.14253	0.137454395	2.58E-05
255	50	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.17914	0.186418762	5.30E-05
255	75	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.11739	0.114849129	6.46E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
255	75	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.15227	0.14735349	2.42E-05
255	75	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.19744	0.199832115	5.72E-06
255	100	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.11927	0.120644407	1.89E-06
255	100	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.158	0.15478178	1.04E-05
255	100	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.20992	0.209902954	2.91E-10
255	120	2	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.11925	0.124463908	2.72E-05
255	120	2.4	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.16077	0.159666022	1.22E-06
255	120	3	0.059769	0.04350073	0.23535952	0	0.09195986	0.14767377	0.04800099	0.71236538	0.21673	0.216530975	3.96E-08
256	10	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.07986	0.071439743	7.09E-05
256	10	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.09383	0.091096497	7.47E-06
256	10	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.10836	0.122724819	0.00020635
256	25	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.08995	0.084004478	3.53E-05
256	25	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.10919	0.107150955	4.16E-06
256	25	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.13127	0.144351578	0.00017113
256	50	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.09954	0.094941254	2.11E-05
256	50	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.12519	0.121135826	1.64E-05
256	50	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.1567	0.163181362	4.20E-05
256	75	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.1042	0.101981316	4.92E-06
256	75	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.1341	0.130121358	1.58E-05
256	75	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.17313	0.175297254	4.70E-06
256	100	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.10602	0.10728301	1.60E-06
256	100	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.13959	0.136878548	7.35E-06
256	100	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.18441	0.184403296	4.50E-11
256	120	2	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.10628	0.110773094	2.02E-05
256	120	2.4	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.14245	0.141337037	1.24E-06
256	120	3	0.02143224	0.08222831	0.29053791	0	0.08165953	0.14604852	0.11523483	0.65705712	0.19105	0.190404956	4.16E-07
257	10	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.0847	0.074925137	9.55E-05
257	10	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.09921	0.095231342	1.58E-05
257	10	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.11426	0.127595711	0.00017784
257	25	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.09576	0.089096184	4.44E-05
257	25	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.11584	0.11320385	6.95E-06
257	25	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.1386	0.151729355	0.00017238
257	50	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.10655	0.101535358	2.51E-05
257	50	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.13331	0.129020176	1.84E-05
257	50	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.16617	0.172914486	4.55E-05
257	75	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.11185	0.109587123	5.12E-06
257	75	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.14354	0.13924544	1.84E-05
257	75	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.18429	0.186629473	5.47E-06
257	100	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.11419	0.115671768	2.20E-06
257	100	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.1499	0.14697753	8.54E-06
257	100	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.19672	0.19698535	7.04E-08
257	120	2	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.11488	0.119695846	2.32E-05
257	120	2.4	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.15334	0.152083667	1.58E-06
257	120	3	0.04418668	0.04522076	0.31702123	0	0.064537	0.16292301	0.07122772	0.70131226	0.20447	0.203830576	4.09E-07
258	10	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.08217	0.072478867	9.39E-05
258	10	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.09612	0.092070675	1.64E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
258	10	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.11059	0.123309326	0.00016178
258	25	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.09303	0.086385803	4.41E-05
258	25	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.11251	0.109731445	7.72E-06
258	25	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.13445	0.146984024	0.0001571
258	50	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.10369	0.098617153	2.57E-05
258	50	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.12961	0.125279331	1.88E-05
258	50	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.16136	0.167822781	4.18E-05
258	75	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.10889	0.106553459	5.46E-06
258	75	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.13972	0.135360273	1.90E-05
258	75	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.17921	0.181335716	4.52E-06
258	100	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.11124	0.112558727	1.74E-06
258	100	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.14591	0.142976904	8.60E-06
258	100	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.19133	0.191549435	4.82E-08
258	120	2	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.11193	0.116531571	2.12E-05
258	120	2.4	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.14915	0.148015571	1.29E-06
258	120	3	0.03967685	0.10069046	0.25752275	0	0.09601043	0.16256232	0.06212667	0.67930057	0.19891	0.198303016	3.68E-07
259	10	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.09252	0.082480431	0.00010079
259	10	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.10944	0.10573082	1.38E-05
259	10	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.12701	0.143312454	0.00026577
259	25	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.10356	0.096439323	5.07E-05
259	25	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.12632	0.123655701	7.10E-06
259	25	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.15251	0.16755867	0.00022646
259	50	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.11378	0.108514805	2.77E-05
259	50	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.14412	0.139142971	2.48E-05
259	50	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.18106	0.188553295	5.61E-05
259	75	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.11879	0.116254832	6.43E-06
259	75	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.15391	0.149059385	2.35E-05
259	75	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.19947	0.201982524	6.31E-06
259	100	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.12065	0.122060213	1.99E-06
259	100	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.15979	0.156496334	1.08E-05
259	100	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.21218	0.212059135	1.46E-08
259	120	2	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.12061	0.125881879	2.78E-05
259	120	2.4	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.16256	0.161383462	1.38E-06
259	120	3	0.0414649	0.05219855	0.23455411	0	0.08258144	0.15593229	0.05868007	0.7028062	0.21914	0.218683187	2.09E-07
260	10	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.08464	0.075249863	8.82E-05
260	10	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.09952	0.096118927	1.16E-05
260	10	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.11506	0.1297822	0.00021674
260	25	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.09529	0.088585281	4.50E-05
260	25	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.11574	0.113247147	6.21E-06
260	25	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.13925	0.152872391	0.00018557
260	50	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.1054	0.100249443	2.65E-05
260	50	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.13276	0.12815424	2.12E-05
260	50	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.16633	0.173014069	4.47E-05
260	75	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.11031	0.107742678	6.59E-06
260	75	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.14218	0.137744484	1.97E-05
260	75	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.18357	0.185962702	5.73E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
260	100	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.11218	0.113394356	1.47E-06
260	100	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.14806	0.144959898	9.61E-06
260	100	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.19587	0.195703764	2.76E-08
260	120	2	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.11232	0.117125098	2.31E-05
260	120	2.4	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.15092	0.149716775	1.45E-06
260	120	3	0.07013581	0.07924987	0.21220817	0	0.11873531	0.14950465	0.05328204	0.678478	0.20273	0.202118548	3.74E-07
261	10	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.08296	0.073886013	8.23E-05
261	10	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.09751	0.094408703	9.62E-06
261	10	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.11269	0.127357578	0.00021514
261	25	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.09351	0.087009277	4.23E-05
261	25	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.11354	0.111194878	5.50E-06
261	25	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.13654	0.150058098	0.00018274
261	50	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.10344	0.098478603	2.46E-05
261	50	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.13023	0.12584219	1.93E-05
261	50	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.16314	0.169810104	4.45E-05
261	75	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.10828	0.105840505	5.95E-06
261	75	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.13946	0.135250587	1.77E-05
261	75	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.18019	0.18251339	5.40E-06
261	100	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.11009	0.111391878	1.69E-06
261	100	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.14527	0.142333946	8.62E-06
261	100	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.19212	0.192079821	1.61E-09
261	120	2	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.11026	0.115048655	2.29E-05
261	120	2.4	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.14816	0.1469999	1.35E-06
261	120	3	0.08672888	0.05800402	0.2319572	0	0.08886837	0.13854257	0.08839783	0.68419124	0.19889	0.198376981	2.63E-07
262	10	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.09067	0.080965042	9.42E-05
262	10	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.10716	0.103847408	1.10E-05
262	10	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.12432	0.140736294	0.00026949
262	25	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.10162	0.094707451	4.78E-05
262	25	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.12399	0.121456223	6.42E-06
262	25	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.14965	0.164605827	0.00022368
262	50	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.11181	0.106614075	2.70E-05
262	50	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.14158	0.13670536	2.38E-05
262	50	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.17795	0.185293045	5.39E-05
262	75	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.11664	0.114222768	5.84E-06
262	75	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.15128	0.146478895	2.31E-05
262	75	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.19609	0.198524551	5.93E-06
262	100	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.11846	0.119945164	2.21E-06
262	100	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.15697	0.153803272	1.00E-05
262	100	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.20856	0.208452511	1.16E-08
262	120	2	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.11849	0.123708018	2.72E-05
262	120	2.4	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.1597	0.158625094	1.16E-06
262	120	3	0.03416325	0.05470083	0.25775884	0	0.09033256	0.14692185	0.0475079	0.71523768	0.21535	0.214975897	1.40E-07
263	10	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.07659	0.067997646	7.38E-05
263	10	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.08958	0.086442089	9.85E-06
263	10	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.10305	0.115970516	0.00016694
263	25	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.08666	0.080687943	3.57E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
263	25	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.10482	0.102622108	4.83E-06
263	25	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.12535	0.137649231	0.00015127
263	50	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.09649	0.091845531	2.16E-05
263	50	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.12064	0.116788826	1.48E-05
263	50	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.1505	0.156656532	3.79E-05
263	75	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.10123	0.099051565	4.75E-06
263	75	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.12989	0.125950432	1.55E-05
263	75	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.16682	0.168955714	4.56E-06
263	100	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.10336	0.104496861	1.29E-06
263	100	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.13559	0.132869263	7.40E-06
263	100	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.178	0.178231335	5.35E-08
263	120	2	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.1039	0.108094104	1.76E-05
263	120	2.4	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.13851	0.137443932	1.14E-06
263	120	3	0.05591389	0.03964889	0.33948943	0	0.06599015	0.1517964	0.12929612	0.65291733	0.18503	0.184368658	4.37E-07
264	10	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.08354	0.07460041	7.99E-05
264	10	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.09854	0.095556068	8.90E-06
264	10	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.11423	0.129305935	0.00022728
264	25	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.09369	0.087286377	4.10E-05
264	25	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.11414	0.111818352	5.39E-06
264	25	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.1377	0.151331024	0.0001858
264	50	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.10312	0.098301086	2.32E-05
264	50	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.13041	0.125911465	2.02E-05
264	50	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.16379	0.17041193	4.38E-05
264	75	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.10774	0.105355581	5.69E-06
264	75	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.13925	0.13494751	1.85E-05
264	75	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.18042	0.182649053	4.97E-06
264	100	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.10937	0.110653667	1.65E-06
264	100	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.14459	0.141727791	8.19E-06
264	100	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.19195	0.191826534	1.52E-08
264	120	2	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.10926	0.114141226	2.38E-05
264	120	2.4	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.14737	0.146191692	1.39E-06
264	120	3	0.02852007	0.06539392	0.27164713	0	0.1110846	0.15118361	0.08022773	0.65750406	0.19818	0.197861028	1.02E-07
265	10	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.08251	0.073323154	8.44E-05
265	10	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.09658	0.093347931	1.04E-05
265	10	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.11115	0.12543087	0.00020394
265	25	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.09355	0.087095871	4.17E-05
265	25	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.11316	0.110883141	5.18E-06
265	25	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.13543	0.148992996	0.00018395
265	50	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.10418	0.099180012	2.50E-05
265	50	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.13043	0.126275158	1.73E-05
265	50	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.16283	0.169675884	4.69E-05
265	75	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.10937	0.106995087	5.64E-06
265	75	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.14036	0.136229095	1.71E-05
265	75	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.18053	0.183038724	6.29E-06
265	100	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.11174	0.112892113	1.33E-06
265	100	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.1466	0.143738928	8.19E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
265	100	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.19305	0.193136263	7.44E-09
265	120	2	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.11206	0.116789548	2.24E-05
265	120	2.4	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.14985	0.148702908	1.32E-06
265	120	3	0.05334331	0.07273584	0.28998624	0	0.08155486	0.14109272	0.0547713	0.72258112	0.2004	0.199809384	3.49E-07
266	10	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.09483	0.084601974	0.00010461
266	10	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.11229	0.108566761	1.39E-05
266	10	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.13043	0.147187519	0.00028081
266	25	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.10601	0.098811989	5.18E-05
266	25	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.12958	0.12679039	7.78E-06
266	25	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.15651	0.171922989	0.00023756
266	50	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.11647	0.111121273	2.86E-05
266	50	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.14768	0.142567749	2.61E-05
266	50	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.18576	0.193320274	5.72E-05
266	75	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.12155	0.118994077	6.53E-06
266	75	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.15764	0.152655907	2.48E-05
266	75	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.20441	0.207002068	6.72E-06
266	100	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.12338	0.124898319	2.31E-06
266	100	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.16367	0.16022419	1.19E-05
266	100	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.21719	0.217259083	4.77E-09
266	120	2	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.12336	0.128784569	2.94E-05
266	120	2.4	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.16651	0.16519719	1.72E-06
266	120	3	0.06255141	0.05913047	0.18246489	0	0.05918444	0.14564913	0.07844524	0.71672118	0.22455	0.223999675	3.03E-07
267	10	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.0933	0.082610321	0.00011427
267	10	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.10996	0.105687523	1.83E-05
267	10	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.12731	0.142836189	0.00024106
267	25	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.10481	0.09730526	5.63E-05
267	25	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.12745	0.124504318	8.68E-06
267	25	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.15344	0.168294716	0.00022066
267	50	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.11576	0.110125446	3.17E-05
267	50	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.14603	0.140913811	2.62E-05
267	50	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.18298	0.190471344	5.61E-05
267	75	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.12116	0.118382149	7.72E-06
267	75	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.15636	0.151463801	2.40E-05
267	75	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.20199	0.204733315	7.53E-06
267	100	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.12317	0.124595242	2.03E-06
267	100	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.16256	0.159403715	9.96E-06
267	100	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.21543	0.215462265	1.04E-09
267	120	2	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.1234	0.128688955	2.80E-05
267	120	2.4	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.16593	0.164636135	1.67E-06
267	120	3	0.06589229	0.05741692	0.2124142	0	0.06040092	0.15042009	0.05732022	0.73185877	0.22312	0.222525779	3.53E-07
268	10	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.07988	0.071331501	7.31E-05
268	10	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.09416	0.091269684	8.35E-06
268	10	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.10904	0.123439217	0.00020734
268	25	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.08971	0.083528214	3.82E-05
268	25	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.10919	0.10695179	5.01E-06
268	25	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.13171	0.144645996	0.00016734

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
268	50	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.09886	0.094118614	2.25E-05
268	50	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.12491	0.120508022	1.94E-05
268	50	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.15672	0.163021164	3.97E-05
268	75	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.10328	0.100921987	5.56E-06
268	75	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.13336	0.129212125	1.72E-05
268	75	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.1727	0.174806557	4.44E-06
268	100	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.10476	0.106027403	1.61E-06
268	100	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.13853	0.135746336	7.75E-06
268	100	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.18377	0.183649931	1.44E-08
268	120	2	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.10474	0.109391205	2.16E-05
268	120	2.4	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.14131	0.140052565	1.58E-06
268	120	3	0.0962353	0.04703906	0.22216219	0	0.143469	0.15195805	0.08385176	0.62072119	0.18981	0.189470466	1.15E-07
269	10	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.09677	0.085597801	0.00012482
269	10	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.11414	0.109475994	2.18E-05
269	10	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.13218	0.147880268	0.0002465
269	25	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.10864	0.100864258	6.05E-05
269	25	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.13216	0.129007187	9.94E-06
269	25	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.15909	0.174295654	0.00023121
269	50	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.11997	0.114195347	3.33E-05
269	50	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.15141	0.146044483	2.88E-05
269	50	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.18962	0.197329559	5.94E-05
269	75	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.12562	0.122769559	8.13E-06
269	75	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.162	0.15700868	2.49E-05
269	75	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.20937	0.21213707	7.66E-06
269	100	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.12767	0.129212847	2.38E-06
269	100	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.16841	0.16525528	9.95E-06
269	100	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.22342	0.22327301	2.16E-08
269	120	2	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.12791	0.133471449	3.09E-05
269	120	2.4	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.17208	0.170690473	1.93E-06
269	120	3	0.08542715	0.02626799	0.22029086	0	0.04078064	0.15248783	0.05381451	0.75291702	0.23118	0.230609655	3.25E-07
270	10	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.07994	0.07053051	8.85E-05
270	10	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.09336	0.089667702	1.36E-05
270	10	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10732	0.120148659	0.00016457
270	25	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.09082	0.084264259	4.30E-05
270	25	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10974	0.107098999	6.97E-06
270	25	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.13109	0.143546257	0.00015516
270	50	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10142	0.096365719	2.55E-05
270	50	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.1267	0.122478027	1.78E-05
270	50	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.1577	0.16416853	4.18E-05
270	75	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10656	0.104224091	5.46E-06
270	75	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.13668	0.132453613	1.79E-05
270	75	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.17548	0.177545802	4.27E-06
270	100	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10901	0.110170908	1.35E-06
270	100	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.14291	0.140006742	8.43E-06
270	100	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.18741	0.187672205	6.88E-08
270	120	2	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.10958	0.114108753	2.05E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
270	120	2.4	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.14608	0.145004638	1.16E-06
270	120	3	0.0371117	0.1151554	0.26837719	0	0.08945971	0.14376574	0.06193795	0.7048366	0.19506	0.19436481	4.83E-07
271	10	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.08285	0.0740592	7.73E-05
271	10	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.09752	0.094755077	7.64E-06
271	10	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.11287	0.128115273	0.00023242
271	25	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.09327	0.086940002	4.01E-05
271	25	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.11345	0.111238174	4.89E-06
271	25	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.13669	0.150395813	0.00018785
271	50	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.10304	0.09811924	2.42E-05
271	50	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.13	0.125547771	1.98E-05
271	50	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.16311	0.169749489	4.41E-05
271	75	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.10776	0.105300738	6.05E-06
271	75	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.13903	0.134739685	1.84E-05
271	75	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.17999	0.182169902	4.75E-06
271	100	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.1095	0.110701294	1.44E-06
271	100	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.14471	0.141645527	9.39E-06
271	100	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.19182	0.191499643	1.03E-07
271	120	2	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.10944	0.11425488	2.32E-05
271	120	2.4	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.14737	0.146200713	1.37E-06
271	120	3	0.0996337	0.02723952	0.25695413	0	0.10849879	0.13744199	0.06791288	0.68614635	0.19811	0.197644544	2.17E-07
272	10	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.09412	0.084645271	8.98E-05
272	10	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.11234	0.109194565	9.89E-06
272	10	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.13136	0.149027634	0.00031215
272	25	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.10416	0.097348557	4.64E-05
272	25	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.12822	0.12556942	7.03E-06
272	25	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.15612	0.171420746	0.00023411
272	50	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.11332	0.108194408	2.63E-05
272	50	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.14469	0.139554291	2.64E-05
272	50	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.18325	0.190497322	5.25E-05
272	75	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.11756	0.115068499	6.21E-06
272	75	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.1535	0.148415705	2.59E-05
272	75	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.20006	0.202591565	6.41E-06
272	100	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.11872	0.12019412	2.17E-06
272	100	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.15834	0.155015583	1.11E-05
272	100	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.21168	0.211593695	7.45E-09
272	120	2	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.11826	0.123551067	2.80E-05
272	120	2.4	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.16077	0.159334079	2.06E-06
272	120	3	0.05695436	0.02942428	0.17595846	0	0.06882115	0.15936951	0.137155	0.63465433	0.21797	0.217488917	2.31E-07
273	10	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.09218	0.082069111	0.00010223
273	10	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.10907	0.105167961	1.52E-05
273	10	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.12662	0.14242487	0.00024979
273	25	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.10311	0.095954399	5.12E-05
273	25	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.12579	0.122997589	7.80E-06
273	25	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.15185	0.166562843	0.00021647
273	50	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.11326	0.108012562	2.75E-05
273	50	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.14338	0.138419914	2.46E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
273	50	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.18024	0.187466545	5.22E-05
273	75	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.1182	0.115715065	6.17E-06
273	75	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.15314	0.148300247	2.34E-05
273	75	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.19848	0.200830828	5.53E-06
273	100	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.12003	0.121508179	2.19E-06
273	100	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.15895	0.155712662	1.05E-05
273	100	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.21102	0.210868473	2.30E-08
273	120	2	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.11994	0.125315412	2.89E-05
273	120	2.4	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.1617	0.160584275	1.24E-06
273	120	3	0.06023251	0.04435334	0.21539349	0	0.10430277	0.16440245	0.04988992	0.68140486	0.21782	0.217458248	1.31E-07
274	10	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.09419	0.084450436	9.49E-05
274	10	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.11191	0.108783245	9.78E-06
274	10	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.13041	0.148140049	0.00031435
274	25	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.10496	0.097902756	4.98E-05
274	25	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.12875	0.126071663	7.17E-06
274	25	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.15633	0.171741142	0.0002375
274	50	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.11479	0.109467335	2.83E-05
274	50	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.14622	0.140961437	2.77E-05
274	50	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.18458	0.191991062	5.49E-05
274	75	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.11924	0.116835009	5.78E-06
274	75	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.15533	0.150433337	2.40E-05
274	75	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.20236	0.204906502	6.48E-06
274	100	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.12088	0.122341642	2.14E-06
274	100	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.16085	0.157515974	1.11E-05
274	100	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.21461	0.214553032	3.25E-09
274	120	2	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.1205	0.125955844	2.98E-05
274	120	2.4	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.1635	0.162168217	1.77E-06
274	120	3	0.05297762	0.07270146	0.15460593	0	0.10445694	0.14228089	0.06027565	0.69298652	0.22123	0.220882305	1.21E-07
275	10	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.08151	0.071851063	9.33E-05
275	10	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.09463	0.090793419	1.47E-05
275	10	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.10827	0.120733166	0.00015533
275	25	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.09301	0.086602287	4.11E-05
275	25	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.11166	0.109385071	5.18E-06
275	25	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.13254	0.145511932	0.00016827
275	50	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.10451	0.099712563	2.30E-05
275	50	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.12993	0.125937443	1.59E-05
275	50	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.16043	0.167524033	5.03E-05
275	75	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.11066	0.108268013	5.72E-06
275	75	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.1407	0.136742884	1.57E-05
275	75	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.17905	0.181895688	8.10E-06
275	100	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.11356	0.114766865	1.46E-06
275	100	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.14793	0.144942579	8.92E-06
275	100	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.19262	0.192809372	3.59E-08
275	120	2	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.11475	0.119077063	1.87E-05
275	120	2.4	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.15137	0.150380659	9.79E-07
275	120	3	0.06454609	0.05033663	0.34306529	0	0.04185871	0.16435396	0.06304695	0.73074038	0.20073	0.200049321	4.63E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
276	10	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.0905	0.080293941	0.00010416
276	10	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.10675	0.102808285	1.55E-05
276	10	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.12372	0.139091015	0.00023627
276	25	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.10163	0.094352417	5.30E-05
276	25	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.12371	0.120841408	8.23E-06
276	25	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.14909	0.163497429	0.00020757
276	50	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.11207	0.106601086	2.99E-05
276	50	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.1415	0.136501865	2.50E-05
276	50	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.17766	0.184712868	4.97E-05
276	75	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.11727	0.114462344	7.88E-06
276	75	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.15138	0.14657992	2.30E-05
276	75	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.19579	0.198345591	6.53E-06
276	100	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.11899	0.120373802	1.91E-06
276	100	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.15717	0.154147482	9.14E-06
276	100	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.20868	0.208582401	9.53E-09
276	120	2	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.11904	0.12427268	2.74E-05
276	120	2.4	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.16042	0.159133832	1.65E-06
276	120	3	0.06412987	0.08647019	0.17028725	0	0.08171437	0.14558469	0.07061581	0.70208513	0.21581	0.215324076	2.36E-07
277	10	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.08796	0.078756905	8.47E-05
277	10	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.10418	0.101098061	9.50E-06
277	10	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.12109	0.137229252	0.00026048
277	25	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.09825	0.091642036	4.37E-05
277	25	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.12017	0.11768074	6.20E-06
277	25	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.14538	0.159730606	0.00020594
277	50	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.10774	0.102769318	2.47E-05
277	50	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.13677	0.131968689	2.31E-05
277	50	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.17203	0.179144897	5.06E-05
277	75	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.11223	0.109878654	5.53E-06
277	75	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.1458	0.141095657	2.21E-05
277	75	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.18916	0.191536446	5.65E-06
277	100	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.11376	0.115208492	2.10E-06
277	100	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.15106	0.147927895	9.81E-06
277	100	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.20098	0.200808458	2.94E-08
277	120	2	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.11363	0.118710844	2.58E-05
277	120	2.4	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.15362	0.152421021	1.44E-06
277	120	3	0.04368746	0.04868683	0.23982525	0	0.06873782	0.14400604	0.11563217	0.67162397	0.20736	0.206899238	2.12E-07
278	10	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.08426	0.075293159	8.04E-05
278	10	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.09935	0.096357059	8.96E-06
278	10	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.11513	0.130258465	0.00022887
278	25	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.09457	0.088134995	4.14E-05
278	25	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.1151	0.112814178	5.22E-06
278	25	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.13877	0.152551994	0.00018994
278	50	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.10417	0.099279594	2.39E-05
278	50	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.13161	0.127084808	2.05E-05
278	50	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.16515	0.171871033	4.52E-05
278	75	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.10884	0.106426455	5.83E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
278	75	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.14056	0.136229095	1.88E-05
278	75	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.182	0.184239489	5.02E-06
278	100	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.11048	0.111798868	1.74E-06
278	100	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.14596	0.1431003	8.18E-06
278	100	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.19368	0.193530264	2.24E-08
278	120	2	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.11047	0.115330084	2.36E-05
278	120	2.4	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.14894	0.147618683	1.75E-06
278	120	3	0.07846631	0.04939636	0.22521772	0	0.1059778	0.15101451	0.08885088	0.65415681	0.20011	0.199643413	2.18E-07
279	10	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.09162	0.082199001	8.88E-05
279	10	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.1091	0.105925655	1.01E-05
279	10	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.12734	0.144546413	0.00029606
279	25	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.10169	0.094863319	4.66E-05
279	25	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.12508	0.122313499	7.65E-06
279	25	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.15208	0.166900558	0.00021965
279	50	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.11087	0.105756798	2.61E-05
279	50	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.14152	0.136341667	2.68E-05
279	50	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.17898	0.186033421	4.98E-05
279	75	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.11514	0.112661196	6.14E-06
279	75	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.15014	0.145257924	2.38E-05
279	75	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.19561	0.198189723	6.65E-06
279	100	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.11639	0.11782362	2.06E-06
279	100	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.15515	0.151904707	1.05E-05
279	100	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.20743	0.207261848	2.83E-08
279	120	2	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.11589	0.121209431	2.83E-05
279	120	2.4	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.15755	0.156267222	1.65E-06
279	120	3	0.05088018	0.03728048	0.20438395	0	0.09822311	0.15034358	0.09511611	0.6563172	0.2135	0.213200728	8.96E-08
280	10	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.08748	0.077782726	9.40E-05
280	10	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.10307	0.099561024	1.23E-05
280	10	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.11939	0.134653091	0.00023296
280	25	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.09833	0.091390915	4.82E-05
280	25	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.11965	0.117013969	6.95E-06
280	25	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.14418	0.158284492	0.00019894
280	50	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.10853	0.103245583	2.79E-05
280	50	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.13704	0.132202492	2.34E-05
280	50	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.17193	0.178850479	4.79E-05
280	75	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.11351	0.110871595	6.96E-06
280	75	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.14653	0.141961594	2.09E-05
280	75	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.18957	0.192053121	6.17E-06
280	100	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.1152	0.116604815	1.97E-06
280	100	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.1522	0.149298239	8.42E-06
280	100	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.20212	0.201975307	2.09E-08
280	120	2	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.11538	0.120381379	2.50E-05
280	120	2.4	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.15527	0.154125834	1.31E-06
280	120	3	0.03826396	0.02703624	0.31772223	0	0.06718883	0.14231422	0.06954949	0.72094746	0.20905	0.208506632	2.95E-07
281	10	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.08769	0.078583717	8.29E-05
281	10	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.10356	0.100665092	8.38E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
281	10	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.12013	0.13629837	0.00026142
281	25	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.09831	0.091806564	4.23E-05
281	25	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.1199	0.117611465	5.24E-06
281	25	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.1447	0.159237022	0.00021133
281	50	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.10821	0.103254242	2.46E-05
281	50	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.13697	0.132280426	2.20E-05
281	50	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.1721	0.179071293	4.86E-05
281	75	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.11298	0.110582949	5.75E-06
281	75	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.14635	0.141664289	2.20E-05
281	75	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.1897	0.191776021	4.31E-06
281	100	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.11463	0.116085253	2.12E-06
281	100	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.15178	0.148698578	9.50E-06
281	100	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.20153	0.201306372	5.00E-08
281	120	2	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.11465	0.11969765	2.55E-05
281	120	2.4	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.15451	0.153326646	1.40E-06
281	120	3	0.08096907	0.0692412	0.17558238	0	0.08456618	0.13891261	0.09486502	0.68165619	0.20815	0.207570338	3.36E-07
282	10	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.09453	0.084537029	9.99E-05
282	10	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.1119	0.108566761	1.11E-05
282	10	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.13002	0.147382355	0.00030145
282	25	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.10574	0.098621483	5.07E-05
282	25	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.12925	0.126669159	6.66E-06
282	25	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.15624	0.171983604	0.00024786
282	50	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.11625	0.110805206	2.96E-05
282	50	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.14743	0.142316628	2.61E-05
282	50	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.1855	0.193229351	5.97E-05
282	75	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.12109	0.118598633	6.21E-06
282	75	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.15738	0.152321078	2.56E-05
282	75	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.20419	0.206811562	6.87E-06
282	100	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.12297	0.124445868	2.18E-06
282	100	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.16323	0.15981287	1.17E-05
282	100	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.21698	0.216984148	1.72E-11
282	120	2	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.12289	0.128286656	2.91E-05
282	120	2.4	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.16614	0.164740769	1.96E-06
282	120	3	0.05116325	0.01702049	0.27531632	0	0.04750531	0.1365612	0.06307206	0.75286143	0.22419	0.223667733	2.73E-07
283	10	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.08814	0.078237343	9.81E-05
283	10	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.10408	0.100232124	1.48E-05
283	10	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.12065	0.135670567	0.00022562
283	25	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.09881	0.09172863	5.01E-05
283	25	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.12035	0.117524872	7.98E-06
283	25	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.14514	0.159107132	0.00019508
283	50	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.10876	0.103453407	2.82E-05
283	50	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.13744	0.132548866	2.39E-05
283	50	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.17258	0.179434986	4.70E-05
283	75	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.11366	0.110963961	7.27E-06
283	75	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.14685	0.142178078	2.18E-05
283	75	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.19015	0.192462997	5.35E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
283	100	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.11539	0.116619968	1.51E-06
283	100	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.15247	0.149408646	9.37E-06
283	100	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.2025	0.202250242	6.24E-08
283	120	2	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.11535	0.12034169	2.49E-05
283	120	2.4	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.15554	0.154172738	1.87E-06
283	120	3	0.03296303	0.03517878	0.29255413	0	0.06280789	0.15144206	0.09351511	0.69223494	0.20904	0.208692447	1.21E-07
284	10	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.09638	0.086203957	0.00010355
284	10	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.11448	0.110839844	1.33E-05
284	10	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.1333	0.150824451	0.00030711
284	25	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.10737	0.100102234	5.28E-05
284	25	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.13172	0.128773384	8.68E-06
284	25	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.15972	0.175239525	0.00024086
284	50	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.11758	0.112099781	3.00E-05
284	50	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.14958	0.144217358	2.88E-05
284	50	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.18868	0.196260128	5.75E-05
284	75	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.12229	0.119744555	6.48E-06
284	75	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.15924	0.154050064	2.69E-05
284	75	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.20703	0.20964606	6.84E-06
284	100	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.12388	0.125478497	2.56E-06
284	100	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.16499	0.161419182	1.28E-05
284	100	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.21969	0.219662056	7.81E-10
284	120	2	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.12374	0.129239186	3.02E-05
284	120	2.4	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.16763	0.166252549	1.90E-06
284	120	3	0.02889721	0.06102921	0.20765	0	0.07401371	0.14598392	0.06092534	0.71907703	0.22662	0.226231265	1.51E-07
285	10	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.0843	0.074708652	9.20E-05
285	10	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.0989	0.095058155	1.48E-05
285	10	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.11408	0.127595711	0.00018267
285	25	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.09507	0.08846405	4.36E-05
285	25	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.11513	0.112589035	6.46E-06
285	25	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.13813	0.151157837	0.00016972
285	50	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.10548	0.100526543	2.45E-05
285	50	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.13239	0.127933426	1.99E-05
285	50	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.16528	0.171788769	4.24E-05
285	75	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.11059	0.108317083	5.17E-06
285	75	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.14212	0.137848396	1.82E-05
285	75	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.18273	0.185096766	5.60E-06
285	100	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.11294	0.114195347	1.58E-06
285	100	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.14813	0.145325756	7.86E-06
285	100	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.19513	0.195138741	7.64E-11
285	120	2	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.11323	0.118077628	2.35E-05
285	120	2.4	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.1515	0.150259789	1.54E-06
285	120	3	0.05780029	0.06235866	0.26246754	0	0.08603564	0.16175535	0.07518148	0.67702754	0.20248	0.201764957	5.11E-07
286	10	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.09243	0.082090759	0.0001069
286	10	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.10897	0.104886532	1.67E-05
286	10	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.12616	0.141580582	0.00023779
286	25	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.10376	0.096560555	5.18E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
286	25	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.12612	0.123413239	7.33E-06
286	25	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.15188	0.166580162	0.00021609
286	50	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.11447	0.109168587	2.81E-05
286	50	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.1444	0.139532642	2.37E-05
286	50	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.18089	0.188319492	5.52E-05
286	75	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.1198	0.117276637	6.37E-06
286	75	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.15454	0.149884911	2.17E-05
286	75	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.19953	0.202305806	7.71E-06
286	100	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.12179	0.123374271	2.51E-06
286	100	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.16084	0.157667513	1.01E-05
286	100	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.21282	0.212821159	1.34E-12
286	120	2	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.12204	0.127395463	2.87E-05
286	120	2.4	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.16408	0.162799629	1.64E-06
286	120	3	0.05808817	0.07458008	0.18904811	0	0.06057262	0.15695171	0.0786915	0.70378416	0.22024	0.219743959	2.46E-07
287	10	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.07529	0.067196655	6.55E-05
287	10	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.0885	0.085792637	7.33E-06
287	10	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.10227	0.115667439	0.00017949
287	25	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.0847	0.078895454	3.37E-05
287	25	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.10289	0.100760345	4.54E-06
287	25	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.12379	0.135848083	0.0001454
287	50	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.09354	0.089091854	1.98E-05
287	50	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.11775	0.113779697	1.58E-05
287	50	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.14755	0.153404942	3.43E-05
287	75	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.09782	0.095651321	4.70E-06
287	75	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.12594	0.122143199	1.44E-05
287	75	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.1629	0.164683762	3.18E-06
287	100	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.09951	0.100578499	1.14E-06
287	100	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.13103	0.128431339	6.75E-06
287	100	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.17316	0.173163443	1.19E-11
287	120	2	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.09958	0.103829368	1.81E-05
287	120	2.4	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.13373	0.132578452	1.33E-06
287	120	3	0.03145605	0.08946678	0.27180075	0	0.1356491	0.15633347	0.11342716	0.59459027	0.17936	0.178745484	3.78E-07
288	10	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.08499	0.075791073	8.46E-05
288	10	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.10006	0.097006512	9.32E-06
288	10	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.11579	0.131081104	0.00023382
288	25	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.09569	0.089061546	4.39E-05
288	25	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.11635	0.114009171	5.48E-06
288	25	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.14018	0.154084702	0.00019334
288	50	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.10571	0.100634785	2.58E-05
288	50	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.13336	0.128790703	2.09E-05
288	50	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.16724	0.1740835	4.68E-05
288	75	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.1106	0.108071734	6.39E-06
288	75	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.14267	0.13829291	1.92E-05
288	75	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.18459	0.186938324	5.51E-06
288	100	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.11238	0.113662796	1.65E-06
288	100	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.1485	0.145440493	9.36E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
288	100	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.19678	0.196602173	3.16E-08
288	120	2	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.11245	0.117350602	2.40E-05
288	120	2.4	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.15131	0.150151547	1.34E-06
288	120	3	0.04052469	0.03912613	0.31312402	0	0.07172272	0.13542663	0.0758707	0.71697995	0.2035	0.202966444	2.85E-07
289	10	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.08141	0.072998428	7.08E-05
289	10	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.09586	0.093391228	6.09E-06
289	10	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.11093	0.126296806	0.00023614
289	25	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.09163	0.085545845	3.70E-05
289	25	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.11142	0.109471664	3.80E-06
289	25	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.13425	0.148014488	0.00018946
289	50	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.10115	0.096430664	2.23E-05
289	50	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.12768	0.123404579	1.83E-05
289	50	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.16016	0.166848602	4.47E-05
289	75	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.10579	0.103412997	5.65E-06
289	75	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.13644	0.132346814	1.68E-05
289	75	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.17665	0.178937073	5.23E-06
289	100	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.10744	0.108664179	1.50E-06
289	100	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.14195	0.139060707	8.35E-06
289	100	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.18813	0.188018579	1.24E-08
289	120	2	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.10738	0.112118904	2.25E-05
289	120	2.4	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.1447	0.143482033	1.48E-06
289	120	3	0.05583499	0.05987848	0.26781379	0	0.11467077	0.14265466	0.07600313	0.66667143	0.19435	0.193993179	1.27E-07
290	10	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.08111	0.071807766	8.65E-05
290	10	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.09482	0.091226387	1.29E-05
290	10	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.10909	0.122161961	0.00017088
290	25	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.0919	0.085519867	4.07E-05
290	25	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.11115	0.108640366	6.30E-06
290	25	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.13275	0.145494614	0.00016243
290	50	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.10246	0.097595348	2.37E-05
290	50	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.12806	0.123958778	1.68E-05
290	50	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.15949	0.166034622	4.28E-05
290	75	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.10764	0.105416196	4.95E-06
290	75	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.1381	0.133891068	1.77E-05
290	75	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.1772	0.179332517	4.55E-06
290	100	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.11003	0.111326933	1.68E-06
290	100	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.14426	0.141394405	8.21E-06
290	100	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.18906	0.189382429	1.04E-07
290	120	2	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.11064	0.115241687	2.12E-05
290	120	2.4	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.14742	0.146354055	1.14E-06
290	120	3	0.04100561	0.11713109	0.23931105	0	0.07070886	0.15062411	0.09440119	0.68426583	0.19686	0.196028129	6.92E-07
291	10	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.08967	0.079254818	0.00010848
291	10	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.10556	0.101249599	1.86E-05
291	10	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.12204	0.136536503	0.00021015
291	25	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.1008	0.093529778	5.29E-05
291	25	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.12241	0.119473228	8.62E-06
291	25	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.1472	0.161142082	0.00019438

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
291	50	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.11137	0.105981941	2.90E-05
291	50	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.14026	0.135380478	2.38E-05
291	50	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.17572	0.182608643	4.75E-05
291	75	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.11658	0.114012057	6.59E-06
291	75	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.15019	0.145627391	2.08E-05
291	75	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.19377	0.196440531	7.13E-06
291	100	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.11865	0.120055571	1.98E-06
291	100	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.15634	0.153342161	8.99E-06
291	100	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.20684	0.206850529	1.11E-10
291	120	2	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.11891	0.124045372	2.64E-05
291	120	2.4	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.15969	0.158430258	1.59E-06
291	120	3	0.09032399	0.02521321	0.23921576	0	0.07004395	0.15851161	0.07186838	0.69957605	0.21413	0.21371127	1.75E-07
292	10	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.08729	0.078042507	8.55E-05
292	10	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.1029	0.099734211	1.00E-05
292	10	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.11916	0.134458256	0.00023404
292	25	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.09786	0.091408234	4.16E-05
292	25	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.11902	0.116797485	4.94E-06
292	25	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.14335	0.157548447	0.0002016
292	50	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.10783	0.103037758	2.30E-05
292	50	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.13601	0.131635303	1.91E-05
292	50	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.17061	0.177555904	4.82E-05
292	75	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.11279	0.110487696	5.30E-06
292	75	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.14552	0.141147614	1.91E-05
292	75	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.18797	0.19039341	5.87E-06
292	100	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.11459	0.116085253	2.24E-06
292	100	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.15136	0.148289423	9.43E-06
292	100	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.20026	0.200026951	5.43E-08
292	120	2	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.11466	0.119771616	2.61E-05
292	120	2.4	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.15432	0.152994704	1.76E-06
292	120	3	0.04583979	0.03032079	0.28434956	0	0.06627898	0.16250984	0.1010177	0.67019348	0.20694	0.206365244	3.30E-07
293	10	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.09568	0.085099888	0.00011194
293	10	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.11323	0.10912962	1.68E-05
293	10	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.13143	0.147836971	0.00026919
293	25	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.10695	0.099574013	5.44E-05
293	25	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.13058	0.127673645	8.45E-06
293	25	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.15764	0.172988091	0.00023556
293	50	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.11757	0.11211277	2.98E-05
293	50	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.14897	0.143736763	2.74E-05
293	50	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.18716	0.194757729	5.77E-05
293	75	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.12278	0.120139999	6.97E-06
293	75	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.15911	0.154024086	2.59E-05
293	75	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.20612	0.208696416	6.64E-06
293	100	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.12471	0.126164751	2.12E-06
293	100	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.1652	0.161741743	1.20E-05
293	100	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.21932	0.219151154	2.85E-08
293	120	2	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.12467	0.130133986	2.99E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
293	120	2.4	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.16816	0.166817212	1.80E-06
293	120	3	0.09385061	0.03643544	0.16956816	0	0.06464895	0.15351906	0.07305537	0.70877661	0.22651	0.226025605	2.35E-07
294	10	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.09124	0.081917572	8.69E-05
294	10	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.10857	0.105644226	8.56E-06
294	10	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.1266	0.144178391	0.000309
294	25	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.10153	0.094664154	4.71E-05
294	25	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.1247	0.122088356	6.82E-06
294	25	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.15163	0.166623459	0.0002248
294	50	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.11079	0.105583611	2.71E-05
294	50	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.14127	0.13616848	2.60E-05
294	50	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.17865	0.185847244	5.18E-05
294	75	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.11508	0.112531306	6.50E-06
294	75	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.14991	0.145116488	2.30E-05
294	75	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.19548	0.198062719	6.67E-06
294	100	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.11638	0.117721872	1.80E-06
294	100	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.1552	0.151802959	1.15E-05
294	100	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.20727	0.207186079	7.04E-09
294	120	2	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.11594	0.121124641	2.69E-05
294	120	2.4	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.1575	0.156187844	1.72E-06
294	120	3	0.04729021	0.03315506	0.22932155	0	0.09060563	0.14267867	0.08799934	0.67871636	0.21342	0.213162843	6.61E-08
295	10	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.09419	0.083692741	0.00011019
295	10	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.11113	0.107311153	1.46E-05
295	10	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.12883	0.145304108	0.0002714
295	25	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.10581	0.098335724	5.59E-05
295	25	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.12893	0.126063004	8.22E-06
295	25	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.15539	0.170727997	0.00023525
295	50	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.11667	0.111069317	3.14E-05
295	50	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.14758	0.142372913	2.71E-05
295	50	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.1853	0.19283968	5.68E-05
295	75	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.12201	0.119250971	7.61E-06
295	75	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.15792	0.152846413	2.57E-05
295	75	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.20436	0.207033819	7.15E-06
295	100	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.1239	0.125400562	2.25E-06
295	100	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.1641	0.160719938	1.14E-05
295	100	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.21782	0.217692051	1.64E-08
295	120	2	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.12409	0.129452062	2.88E-05
295	120	2.4	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.16722	0.165902567	1.74E-06
295	120	3	0.05500721	0.06313989	0.21964004	0	0.0666229	0.13884882	0.03704762	0.75748066	0.22525	0.224706856	2.95E-07
296	10	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.0906	0.081008339	9.20E-05
296	10	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.10734	0.104042244	1.09E-05
296	10	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.12473	0.141277504	0.00027382
296	25	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.10126	0.094395714	4.71E-05
296	25	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.12385	0.121239738	6.81E-06
296	25	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.14975	0.164614487	0.00022095
296	50	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.11109	0.105947304	2.64E-05
296	50	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.14101	0.136064568	2.45E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
296	50	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.17744	0.184743176	5.33E-05
296	75	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.11579	0.113336627	6.02E-06
296	75	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.15047	0.14553791	2.43E-05
296	75	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.19521	0.197609545	5.76E-06
296	100	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.11744	0.118864908	2.03E-06
296	100	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.15595	0.152632093	1.10E-05
296	100	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.20728	0.207242365	1.42E-09
296	120	2	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.11736	0.122501119	2.64E-05
296	120	2.4	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.15859	0.157300933	1.66E-06
296	120	3	0.10785285	0.01199814	0.20188049	0	0.09257108	0.14849483	0.07682982	0.68210427	0.21397	0.213568751	1.61E-07
297	10	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.09047	0.080921745	9.12E-05
297	10	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.10723	0.104020596	1.03E-05
297	10	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.12474	0.141407394	0.0002778
297	25	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.10107	0.094153252	4.78E-05
297	25	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.12372	0.121031914	7.23E-06
297	25	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.14981	0.164553871	0.00021738
297	50	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.11083	0.105553303	2.78E-05
297	50	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.14082	0.135709534	2.61E-05
297	50	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.17735	0.184505043	5.12E-05
297	75	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.11529	0.112843043	5.99E-06
297	75	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.14993	0.145073191	2.36E-05
297	75	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.19483	0.197248739	5.85E-06
297	100	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.11687	0.118306379	2.06E-06
297	100	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.15557	0.152084389	1.21E-05
297	100	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.20689	0.206783419	1.14E-08
297	120	2	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.11666	0.121891356	2.74E-05
297	120	2.4	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.15813	0.156689366	2.08E-06
297	120	3	0.04977609	0.03943603	0.2426362	0	0.06854735	0.13567115	0.09011509	0.70566641	0.21347	0.213040169	1.85E-07
298	10	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.08507	0.076050854	8.13E-05
298	10	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.10028	0.097461128	7.95E-06
298	10	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.11622	0.132033634	0.00025007
298	25	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.09562	0.089096184	4.26E-05
298	25	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.11651	0.114208336	5.30E-06
298	25	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.14047	0.154682198	0.00020199
298	50	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.10537	0.100413971	2.46E-05
298	50	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.13324	0.128725758	2.04E-05
298	50	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.16735	0.17435194	4.90E-05
298	75	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.11022	0.107679176	6.46E-06
298	75	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.1425	0.138027356	2.00E-05
298	75	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.18461	0.186964302	5.54E-06
298	100	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.11183	0.11313674	1.71E-06
298	100	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.14793	0.145014019	8.50E-06
298	100	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.19651	0.19643115	6.22E-09
298	120	2	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.11181	0.116731819	2.42E-05
298	120	2.4	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.15078	0.149619357	1.35E-06
298	120	3	0.09542194	0.03638741	0.23350995	0	0.09945293	0.13517636	0.07130501	0.6940657	0.203	0.202654346	1.19E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
299	10	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.0893	0.079731083	9.16E-05
299	10	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.10531	0.102093887	1.03E-05
299	10	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.12203	0.138160133	0.00026018
299	25	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.1003	0.093460503	4.68E-05
299	25	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.12218	0.119707031	6.12E-06
299	25	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.14728	0.161999359	0.00021666
299	50	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.11057	0.105401764	2.67E-05
299	50	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.13975	0.134982147	2.27E-05
299	50	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.17546	0.182673588	5.20E-05
299	75	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.11567	0.113042208	6.91E-06
299	75	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.14954	0.144781659	2.26E-05
299	75	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.19355	0.195941175	5.72E-06
299	100	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.11747	0.118797798	1.76E-06
299	100	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.1552	0.152145004	9.33E-06
299	100	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.20601	0.205900164	1.21E-08
299	120	2	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.11742	0.122585909	2.67E-05
299	120	2.4	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.15825	0.156990639	1.59E-06
299	120	3	0.08933529	0.02530809	0.24177011	0	0.06260608	0.13682334	0.07826282	0.72230776	0.21298	0.21245025	2.81E-07
300	10	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.07789	0.069274902	7.42E-05
300	10	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.09127	0.088152313	9.72E-06
300	10	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.10518	0.118286896	0.00017179
300	25	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.08795	0.082012825	3.53E-05
300	25	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.10657	0.104345322	4.95E-06
300	25	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.1276	0.140004578	0.00015387
300	50	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.09774	0.093157425	2.10E-05
300	50	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.12242	0.11850338	1.53E-05
300	50	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.15279	0.159016209	3.88E-05
300	75	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.10245	0.100350469	4.41E-06
300	75	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.13158	0.127639008	1.55E-05
300	75	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.16907	0.171276423	4.87E-06
300	100	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.1045	0.105771952	1.62E-06
300	100	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.13727	0.13453186	7.50E-06
300	100	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.18029	0.180534725	5.99E-08
300	120	2	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.10488	0.10935332	2.00E-05
300	120	2.4	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.14016	0.139085603	1.15E-06
300	120	3	0.06402236	0.07200773	0.26581537	0	0.08375096	0.15393239	0.12488847	0.63742818	0.18734	0.186645349	4.83E-07
301	10	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.09295	0.083324718	9.26E-05
301	10	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.11059	0.107462692	9.78E-06
301	10	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.12897	0.146559715	0.0003094
301	25	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.1034	0.096396027	4.91E-05
301	25	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.12702	0.124296494	7.42E-06
301	25	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.15441	0.169550323	0.00022923
301	50	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.11278	0.107614231	2.67E-05
301	50	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.14397	0.138740311	2.73E-05
301	50	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.18213	0.189250374	5.07E-05
301	75	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.1172	0.114748103	6.01E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
301	75	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.15275	0.147925008	2.33E-05
301	75	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.19916	0.201786245	6.90E-06
301	100	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.11857	0.120079384	2.28E-06
301	100	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.15814	0.15478611	1.12E-05
301	100	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.21124	0.211145573	8.92E-09
301	120	2	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.11819	0.123576323	2.90E-05
301	120	2.4	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.16057	0.159290783	1.64E-06
301	120	3	0.03309237	0.0539805	0.21201003	0	0.09499714	0.14359339	0.07349464	0.68791483	0.2177	0.217277845	1.78E-07
302	10	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.08084	0.072413921	7.10E-05
302	10	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.09532	0.092785072	6.43E-06
302	10	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.11044	0.125604057	0.00022995
302	25	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.09074	0.084636612	3.73E-05
302	25	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.11058	0.108467178	4.46E-06
302	25	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.13339	0.146871452	0.00018175
302	50	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.09993	0.095214024	2.22E-05
302	50	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.12637	0.122014751	1.90E-05
302	50	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.15868	0.165233631	4.30E-05
302	75	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.10441	0.101998634	5.81E-06
302	75	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.13493	0.130704422	1.79E-05
302	75	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.17481	0.176997375	4.78E-06
302	100	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.10591	0.107083845	1.38E-06
302	100	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.14011	0.137218428	8.36E-06
302	100	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.18599	0.185823431	2.77E-08
302	120	2	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.10585	0.110432132	2.10E-05
302	120	2.4	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.14279	0.141504812	1.65E-06
302	120	3	0.02644753	0.04769134	0.31397874	0	0.10039045	0.14403651	0.09988885	0.65568418	0.19199	0.191624482	1.34E-07
303	10	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.08667	0.077587891	8.25E-05
303	10	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.10244	0.099496078	8.67E-06
303	10	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.11889	0.134869576	0.00025535
303	25	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.09707	0.090533638	4.27E-05
303	25	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.11854	0.116113396	5.89E-06
303	25	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.14319	0.157427216	0.0002027
303	50	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.10664	0.101730194	2.41E-05
303	50	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.13511	0.130470619	2.15E-05
303	50	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.16998	0.176915112	4.81E-05
303	75	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.11126	0.108891487	5.61E-06
303	75	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.14432	0.139658203	2.17E-05
303	75	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.18722	0.189377378	4.65E-06
303	100	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.1129	0.114264622	1.86E-06
303	100	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.1496	0.146548891	9.31E-06
303	100	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.1989	0.198712893	3.50E-08
303	120	2	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.1128	0.117798003	2.50E-05
303	120	2.4	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.15235	0.151084232	1.60E-06
303	120	3	0.03735533	0.03908157	0.28453564	0	0.08617731	0.14274171	0.08192712	0.68915387	0.20528	0.204853463	1.82E-07
304	10	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.08304	0.073799419	8.54E-05
304	10	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.09772	0.094430351	1.08E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
304	10	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.11303	0.127595711	0.00021216
304	25	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.09349	0.08683609	4.43E-05
304	25	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.11361	0.111116943	6.22E-06
304	25	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.13681	0.150179329	0.00017874
304	50	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.10328	0.098205833	2.57E-05
304	50	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.13023	0.125673332	2.08E-05
304	50	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.16327	0.169857731	4.34E-05
304	75	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.10803	0.105522995	6.29E-06
304	75	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.13931	0.135022558	1.84E-05
304	75	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.18016	0.182510503	5.52E-06
304	100	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.10978	0.11103035	1.56E-06
304	100	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.14503	0.142063341	8.80E-06
304	100	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.19204	0.192023535	2.71E-10
304	120	2	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.10987	0.11465718	2.29E-05
304	120	2.4	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.14781	0.146698626	1.24E-06
304	120	3	0.0524605	0.05900239	0.27177173	0	0.07549738	0.13603994	0.09833341	0.69012927	0.19863	0.198288584	1.17E-07
305	10	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.08679	0.076743603	0.00010093
305	10	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.10169	0.097591019	1.68E-05
305	10	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.11717	0.130951214	0.00018992
305	25	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.09811	0.091226387	4.74E-05
305	25	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.11867	0.116018143	7.03E-06
305	25	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.14215	0.155704002	0.00018371
305	50	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.10903	0.103938332	2.59E-05
305	50	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.13661	0.132211151	1.93E-05
305	50	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.17043	0.177439003	4.91E-05
305	75	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.11451	0.112167613	5.49E-06
305	75	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.14702	0.142686094	1.88E-05
305	75	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.18891	0.191498922	6.70E-06
305	100	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.11697	0.118377819	1.98E-06
305	100	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.15345	0.150588484	8.19E-06
305	100	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.20187	0.202111692	5.84E-08
305	120	2	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.11747	0.122493903	2.52E-05
305	120	2.4	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.15699	0.155812605	1.39E-06
305	120	3	0.0549549	0.09730115	0.21805816	0	0.10476329	0.16452681	0.03139484	0.69931506	0.20973	0.209118199	3.74E-07
306	10	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.09022	0.080661964	9.14E-05
306	10	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.10663	0.103306198	1.10E-05
306	10	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.12368	0.139762115	0.00025863
306	25	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.10101	0.094257164	4.56E-05
306	25	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.12309	0.120720177	5.62E-06
306	25	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.14846	0.16334156	0.00022146
306	50	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.11108	0.106025238	2.56E-05
306	50	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.1404	0.135791798	2.12E-05
306	50	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.17636	0.1837257	5.43E-05
306	75	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.11603	0.113544451	6.18E-06
306	75	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.15	0.145433998	2.08E-05
306	75	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.19428	0.19677536	6.23E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
306	100	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.11779	0.119202623	2.00E-06
306	100	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.15574	0.152662401	9.47E-06
306	100	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.20678	0.20656477	4.63E-08
306	120	2	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.1178	0.122925067	2.63E-05
306	120	2.4	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.15885	0.157418195	2.05E-06
306	120	3	0.05902215	0.03752529	0.23713302	0	0.09094182	0.16464001	0.07097472	0.67344345	0.21348	0.21300048	2.30E-07
307	10	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.08472	0.076137447	7.37E-05
307	10	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.1001	0.097634315	6.08E-06
307	10	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.11613	0.132401657	0.00026477
307	25	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.09494	0.088697853	3.90E-05
307	25	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.1159	0.113792686	4.44E-06
307	25	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.13997	0.154309845	0.00020563
307	50	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.10442	0.099561024	2.36E-05
307	50	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.13221	0.127734261	2.00E-05
307	50	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.1663	0.173239212	4.82E-05
307	75	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.10898	0.106510162	6.10E-06
307	75	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.14119	0.136653404	2.06E-05
307	75	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.18316	0.185327682	4.70E-06
307	100	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.1105	0.111725264	1.50E-06
307	100	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.14632	0.143334103	8.92E-06
307	100	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.19451	0.194387541	1.50E-08
307	120	2	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.11041	0.115151485	2.25E-05
307	120	2.4	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.14899	0.147728729	1.59E-06
307	120	3	0.05479097	0.04825595	0.25468947	0	0.08186544	0.13703983	0.10520531	0.67588943	0.20076	0.200341574	1.75E-07
308	10	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.09174	0.081701088	0.00010078
308	10	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.1087	0.104756641	1.56E-05
308	10	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.12628	0.141948605	0.00024551
308	25	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.10248	0.095322266	5.12E-05
308	25	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.12511	0.122209587	8.41E-06
308	25	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.15122	0.165610313	0.00020708
308	50	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.11236	0.10709034	2.78E-05
308	50	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.14234	0.137302856	2.54E-05
308	50	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.17904	0.186055069	4.92E-05
308	75	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.11716	0.114612439	6.49E-06
308	75	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.1519	0.14695516	2.45E-05
308	75	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.19697	0.199139366	4.71E-06
308	100	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.11889	0.12026123	1.88E-06
308	100	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.1575	0.154190779	1.10E-05
308	100	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.2092	0.208937435	6.89E-08
308	120	2	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.11878	0.123975015	2.70E-05
308	120	2.4	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.16038	0.158948016	2.05E-06
308	120	3	0.04089383	0.0440134	0.23242124	0	0.06416204	0.16101427	0.10206746	0.67275623	0.21581	0.215378197	1.86E-07
309	10	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.08256	0.072825241	9.48E-05
309	10	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.09648	0.092460346	1.62E-05
309	10	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.11097	0.123720646	0.00016258
309	25	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.09356	0.086957321	4.36E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
309	25	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.11309	0.110363579	7.43E-06
309	25	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.13502	0.14772007	0.00016129
309	50	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.10439	0.099396496	2.49E-05
309	50	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.13044	0.126171246	1.82E-05
309	50	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.16226	0.168879223	4.38E-05
309	75	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.10971	0.107482897	4.96E-06
309	75	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.14073	0.136431147	1.85E-05
309	75	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.18038	0.182605756	4.95E-06
309	100	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.11215	0.113600016	2.10E-06
309	100	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.14698	0.144189215	7.79E-06
309	100	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.19259	0.192991219	1.61E-07
309	120	2	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.11294	0.117646464	2.22E-05
309	120	2.4	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.15037	0.149323495	1.10E-06
309	120	3	0.06156628	0.0668234	0.28406698	0	0.04899035	0.15065509	0.09395365	0.70640092	0.20062	0.199861701	5.75E-07
310	10	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.08535	0.076353931	8.09E-05
310	10	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.10044	0.097612667	7.99E-06
310	10	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.11619	0.131730556	0.00024151
310	25	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.09604	0.089676361	4.05E-05
310	25	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.11676	0.114649963	4.45E-06
310	25	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.1406	0.154803429	0.00020174
310	50	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.1062	0.101279907	2.42E-05
310	50	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.13391	0.129483452	1.96E-05
310	50	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.16785	0.174845524	4.89E-05
310	75	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.11108	0.108721186	5.56E-06
310	75	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.14325	0.139005864	1.80E-05
310	75	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.18528	0.187711894	5.91E-06
310	100	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.11298	0.114327402	1.82E-06
310	100	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.14921	0.146167879	9.25E-06
310	100	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.19751	0.197377186	1.76E-08
310	120	2	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.113	0.118025311	2.53E-05
310	120	2.4	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.15193	0.150880376	1.10E-06
310	120	3	0.06252877	0.06766644	0.23825953	0	0.07565518	0.1365582	0.08501699	0.70276962	0.20429	0.203740374	3.02E-07
311	10	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.09188	0.082069111	9.63E-05
311	10	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.10933	0.105622578	1.37E-05
311	10	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.12746	0.14391861	0.00027089
311	25	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.10208	0.095010529	5.00E-05
311	25	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.1253	0.122348137	8.71E-06
311	25	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.15213	0.166684074	0.00021182
311	50	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.11141	0.106150799	2.77E-05
311	50	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.14192	0.136683712	2.74E-05
311	50	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.17909	0.186206608	5.06E-05
311	75	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.11567	0.113235601	5.93E-06
311	75	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.15078	0.145806351	2.47E-05
311	75	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.19627	0.19863135	5.58E-06
311	100	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.11708	0.118529358	2.10E-06
311	100	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.15584	0.152619104	1.04E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
311	100	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.20802	0.207917795	1.04E-08
311	120	2	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.11678	0.12200501	2.73E-05
311	120	2.4	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.15848	0.157089861	1.93E-06
311	120	3	0.04032661	0.03125415	0.22806421	0	0.08583486	0.1612362	0.10295885	0.6499701	0.2143	0.214007131	8.58E-08
312	10	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.08547	0.075639534	9.66E-05
312	10	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.10016	0.096270466	1.51E-05
312	10	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.11542	0.129262638	0.00019162
312	25	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.09667	0.089875526	4.62E-05
312	25	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.11701	0.114381523	6.91E-06
312	25	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.14015	0.153582458	0.00018043
312	50	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.10752	0.102366657	2.66E-05
312	50	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.1347	0.130280113	1.95E-05
312	50	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.16818	0.174923458	4.55E-05
312	75	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.11287	0.110453059	5.84E-06
312	75	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.14495	0.140558777	1.93E-05
312	75	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.18635	0.188727926	5.65E-06
312	100	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.11533	0.116559353	1.51E-06
312	100	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.15129	0.148317566	8.84E-06
312	100	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.19913	0.199152355	5.00E-10
312	120	2	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.11576	0.120590647	2.33E-05
312	120	2.4	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.15473	0.153445713	1.65E-06
312	120	3	0.14059901	0.03758185	0.19885693	0	0.06309017	0.14556685	0.08356428	0.7077787	0.20671	0.206038713	4.51E-07
313	10	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.0789	0.070010948	7.90E-05
313	10	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.09218	0.088974953	1.03E-05
313	10	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10599	0.119239426	0.00017555
313	25	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.08965	0.083389664	3.92E-05
313	25	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10832	0.105990601	5.43E-06
313	25	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.12946	0.142065506	0.0001589
313	50	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10004	0.095183716	2.36E-05
313	50	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.125	0.120979958	1.62E-05
313	50	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.15579	0.162155228	4.05E-05
313	75	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10504	0.102827047	4.90E-06
313	75	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.13484	0.130684217	1.73E-05
313	75	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.1731	0.175164477	4.26E-06
313	100	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10735	0.108612223	1.59E-06
313	100	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.14089	0.138025913	8.20E-06
313	100	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.18492	0.185009451	8.00E-09
313	120	2	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.10791	0.112436414	2.05E-05
313	120	2.4	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.14396	0.142883094	1.16E-06
313	120	3	0.07103479	0.05164612	0.31852397	0	0.07222997	0.13690892	0.0797777	0.71108341	0.1921	0.19150722	3.51E-07
314	10	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.08308	0.073777771	8.65E-05
314	10	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.09741	0.094019032	1.15E-05
314	10	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.11226	0.126296806	0.00019703
314	25	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.0939	0.087442245	4.17E-05
314	25	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.11371	0.111402702	5.32E-06
314	25	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.13641	0.149694405	0.00017648

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
314	50	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.1044	0.099439793	2.46E-05
314	50	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.13095	0.126647511	1.85E-05
314	50	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.16345	0.170195446	4.55E-05
314	75	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.10948	0.10717982	5.29E-06
314	75	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.1407	0.136491763	1.77E-05
314	75	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.18095	0.183442828	6.21E-06
314	100	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.11178	0.113017673	1.53E-06
314	100	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.1467	0.143920774	7.72E-06
314	100	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.19335	0.193426352	5.83E-09
314	120	2	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.11212	0.116877945	2.26E-05
314	120	2.4	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.14995	0.14882919	1.26E-06
314	120	3	0.09363126	0.0416026	0.264034	0	0.08124469	0.14671798	0.07258782	0.69944951	0.20062	0.20002226	3.57E-07
315	10	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.08235	0.073582935	7.69E-05
315	10	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.09719	0.094148922	9.25E-06
315	10	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.11268	0.127249336	0.00021227
315	25	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.09229	0.086004791	3.95E-05
315	25	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.11233	0.11006916	5.11E-06
315	25	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.13557	0.14880249	0.0001751
315	50	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.10142	0.096785698	2.15E-05
315	50	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.12827	0.123872185	1.93E-05
315	50	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.16099	0.167463417	4.19E-05
315	75	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.106	0.103704529	5.27E-06
315	75	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.1369	0.132710508	1.76E-05
315	75	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.17728	0.179407565	4.53E-06
315	100	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.10748	0.108893652	2.00E-06
315	100	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.14213	0.139344301	7.76E-06
315	100	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.1885	0.188375778	1.54E-08
315	120	2	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.10749	0.112306523	2.32E-05
315	120	2.4	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.14501	0.14371295	1.68E-06
315	120	3	0.0483361	0.05420014	0.25249451	0	0.06386759	0.14992412	0.1546851	0.63152319	0.19463	0.194274608	1.26E-07
316	10	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.08703	0.077263165	9.54E-05
316	10	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.10247	0.098716736	1.41E-05
316	10	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.11856	0.133137703	0.00021251
316	25	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.09777	0.090957947	4.64E-05
316	25	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.11884	0.116199989	6.97E-06
316	25	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.14304	0.156760445	0.00018825
316	50	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.10794	0.102899208	2.54E-05
316	50	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.13611	0.131453457	2.17E-05
316	50	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.17052	0.17734808	4.66E-05
316	75	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.11302	0.110571404	6.00E-06
316	75	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.1457	0.141268845	1.96E-05
316	75	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.18808	0.190592575	6.31E-06
316	100	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.11474	0.116353693	2.60E-06
316	100	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.15157	0.148650951	8.52E-06
316	100	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.20056	0.200544348	2.45E-10
316	120	2	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.11501	0.120168503	2.66E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
316	120	2.4	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.15468	0.153512462	1.36E-06
316	120	3	0.03120649	0.08104883	0.24244884	0	0.10153695	0.15998978	0.05998228	0.67849099	0.20757	0.207108506	2.13E-07
317	10	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.08564	0.076245689	8.83E-05
317	10	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.10112	0.097655964	1.20E-05
317	10	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.11725	0.132163525	0.00022241
317	25	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.09604	0.089304008	4.54E-05
317	25	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.117	0.114407501	6.72E-06
317	25	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.14112	0.154855385	0.00018866
317	50	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.10563	0.100639114	2.49E-05
317	50	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.1336	0.128933582	2.18E-05
317	50	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.16777	0.174512138	4.55E-05
317	75	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.11038	0.107910093	6.10E-06
317	75	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.14272	0.138238068	2.01E-05
317	75	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.18474	0.187117284	5.65E-06
317	100	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.11202	0.113372707	1.83E-06
317	100	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.14803	0.145226173	7.86E-06
317	100	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.19667	0.196580524	8.01E-09
317	120	2	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.11193	0.116968147	2.54E-05
317	120	2.4	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.15102	0.149832233	1.41E-06
317	120	3	0.05404961	0.08218919	0.1957333	0	0.10462511	0.15177507	0.09176351	0.65183631	0.20308	0.202804081	7.61E-08
318	10	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.09663	0.087004948	9.26E-05
318	10	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.11558	0.112506771	9.44E-06
318	10	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.13545	0.154028416	0.00034516
318	25	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.10678	0.099799156	4.87E-05
318	25	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.13177	0.129050484	7.40E-06
318	25	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.16088	0.17665966	0.000249
318	50	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.11601	0.110683975	2.84E-05
318	50	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.14847	0.143108959	2.87E-05
318	50	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.18869	0.195918083	5.22E-05
318	75	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.12013	0.117573942	6.53E-06
318	75	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.15722	0.152003568	2.72E-05
318	75	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.20557	0.20809892	6.40E-06
318	100	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.12091	0.122694511	3.18E-06
318	100	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.16228	0.158624372	1.34E-05
318	100	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.21736	0.217157335	4.11E-08
318	120	2	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.12049	0.126049654	3.09E-05
318	120	2.4	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.16416	0.162951167	1.46E-06
318	120	3	0.03633473	0.05010152	0.16129348	0	0.10426897	0.15457421	0.08591995	0.65523687	0.22374	0.223077814	4.38E-07
319	10	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.08318	0.073734474	8.92E-05
319	10	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.09745	0.093889141	1.27E-05
319	10	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.11232	0.126058674	0.00018875
319	25	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.09405	0.087459564	4.34E-05
319	25	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.1138	0.111350746	6.00E-06
319	25	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.13628	0.149512558	0.0001751
319	50	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.1045	0.099500408	2.50E-05
319	50	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.13091	0.1266605	1.81E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
319	50	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.16344	0.170082874	4.41E-05
319	75	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.10977	0.107272186	6.24E-06
319	75	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.14083	0.136552378	1.83E-05
319	75	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.18103	0.183370667	5.48E-06
319	100	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.11201	0.113141069	1.28E-06
319	100	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.14699	0.144011698	8.87E-06
319	100	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.19328	0.193393879	1.30E-08
319	120	2	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.11238	0.11701866	2.15E-05
319	120	2.4	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.15022	0.14894104	1.64E-06
319	120	3	0.04291592	0.05677127	0.30715802	0	0.08826062	0.15997726	0.06017539	0.69158673	0.20078	0.200006024	5.99E-07
320	10	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.07995	0.071093369	7.84E-05
320	10	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.09382	0.090576935	1.05E-05
320	10	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.10822	0.121815586	0.00018484
320	25	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.0902	0.084013138	3.83E-05
320	25	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.10936	0.107047043	5.35E-06
320	25	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.1313	0.143970566	0.00016054
320	50	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.10004	0.095326595	2.22E-05
320	50	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.12565	0.121460552	1.76E-05
320	50	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.15709	0.163332901	3.90E-05
320	75	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.10479	0.102613449	4.74E-06
320	75	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.13473	0.130747719	1.59E-05
320	75	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.17364	0.175825475	4.78E-06
320	100	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.1069	0.108112144	1.47E-06
320	100	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.1404	0.137746649	7.04E-06
320	100	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.18521	0.185241089	9.67E-10
320	120	2	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.10705	0.111738253	2.20E-05
320	120	2.4	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.14349	0.142372553	1.25E-06
320	120	3	0.08633786	0.0678051	0.23247636	0	0.10934711	0.15097895	0.08912962	0.65054432	0.19202	0.191447687	3.28E-07
321	10	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.09414	0.08438549	9.52E-05
321	10	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.11187	0.108566761	1.09E-05
321	10	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.13025	0.147750378	0.00030626
321	25	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.10482	0.097824821	4.89E-05
321	25	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.12857	0.125863838	7.32E-06
321	25	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.15594	0.171316833	0.00023645
321	50	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.11467	0.109385071	2.79E-05
321	50	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.14597	0.140753613	2.72E-05
321	50	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.18411	0.191558094	5.55E-05
321	75	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.11921	0.116757075	6.02E-06
321	75	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.15531	0.150228399	2.58E-05
321	75	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.20182	0.204441783	6.87E-06
321	100	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.12081	0.122268038	2.13E-06
321	100	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.16085	0.157312479	1.25E-05
321	100	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.21432	0.214083261	5.60E-08
321	120	2	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.12053	0.125889095	2.87E-05
321	120	2.4	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.16337	0.161964361	1.98E-06
321	120	3	0.0682835	0.06340565	0.14082324	0	0.07354429	0.14382274	0.10209622	0.68053674	0.22092	0.22040604	2.64E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
322	10	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.08122	0.071829414	8.82E-05
322	10	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.09526	0.091507816	1.41E-05
322	10	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.10981	0.123027897	0.00017471
322	25	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.09167	0.085121536	4.29E-05
322	25	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.11101	0.1084412	6.60E-06
322	25	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.13316	0.145780373	0.00015927
322	50	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.10175	0.09676405	2.49E-05
322	50	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.12763	0.123266029	1.90E-05
322	50	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.1594	0.165714226	3.99E-05
322	75	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.1067	0.104267387	5.92E-06
322	75	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.13707	0.132837512	1.79E-05
322	75	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.17637	0.178590698	4.93E-06
322	100	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.10885	0.109937105	1.18E-06
322	100	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.14297	0.140052204	8.51E-06
322	100	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.18816	0.188302174	2.02E-08
322	120	2	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.10918	0.113686609	2.03E-05
322	120	2.4	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.14609	0.144822431	1.61E-06
322	120	3	0.04837001	0.09569699	0.23879834	0	0.10087166	0.15743459	0.08553712	0.65615663	0.19524	0.194712989	2.78E-07
323	10	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.08464	0.075704479	7.98E-05
323	10	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.10035	0.097222996	9.78E-06
323	10	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.11674	0.131968689	0.00023191
323	25	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.09446	0.087944489	4.25E-05
323	25	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.11551	0.112978706	6.41E-06
323	25	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.13981	0.153348656	0.0001833
323	50	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.10337	0.098500252	2.37E-05
323	50	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.13122	0.12651762	2.21E-05
323	50	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.16517	0.171745472	4.32E-05
323	75	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.10758	0.10523435	5.50E-06
323	75	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.13974	0.135152448	2.10E-05
323	75	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.18143	0.183477465	4.19E-06
323	100	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.10894	0.110276985	1.79E-06
323	100	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.14451	0.141615219	8.38E-06
323	100	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.1925	0.192261667	5.68E-08
323	120	2	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.10875	0.113590995	2.34E-05
323	120	2.4	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.14717	0.145857946	1.72E-06
323	120	3	0.05165661	0.02772857	0.25676949	0	0.07686356	0.15322554	0.14482555	0.62508534	0.19843	0.198021587	1.67E-07
324	10	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.08592	0.077089977	7.80E-05
324	10	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.10194	0.099149704	7.79E-06
324	10	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.11871	0.134934521	0.00026324
324	25	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.0959	0.089390602	4.24E-05
324	25	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.11754	0.115030975	6.30E-06
324	25	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.14255	0.156543961	0.00019583
324	50	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.10493	0.099972343	2.46E-05
324	50	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.13345	0.128643494	2.31E-05
324	50	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.16855	0.175087986	4.27E-05
324	75	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.10904	0.106720874	5.38E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
324	75	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.14195	0.137317289	2.15E-05
324	75	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.18474	0.186906573	4.69E-06
324	100	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.11041	0.111770725	1.85E-06
324	100	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.14703	0.143812532	1.04E-05
324	100	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.19583	0.195749226	6.52E-09
324	120	2	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.11003	0.115088344	2.56E-05
324	120	2.4	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.14927	0.148078712	1.42E-06
324	120	3	0.03037768	0.06408958	0.23720978	0	0.12630473	0.14268603	0.07496967	0.65603958	0.20185	0.201544865	9.31E-08
325	10	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.09552	0.084926701	0.00011222
325	10	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.1127	0.108869839	1.47E-05
325	10	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.13065	0.147490597	0.00028361
325	25	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.10727	0.099781837	5.61E-05
325	25	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.13069	0.127898788	7.79E-06
325	25	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.15753	0.173239212	0.00024678
325	50	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.1183	0.112684288	3.15E-05
325	50	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.14961	0.144433842	2.68E-05
325	50	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.18779	0.195623665	6.14E-05
325	75	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.12373	0.120968412	7.63E-06
325	75	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.1601	0.155034345	2.57E-05
325	75	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.20719	0.209980888	7.79E-06
325	100	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.12565	0.127190886	2.37E-06
325	100	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.16638	0.16300601	1.14E-05
325	100	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.2208	0.220776949	5.31E-10
325	120	2	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.12586	0.131292176	2.95E-05
325	120	2.4	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.16959	0.168253223	1.79E-06
325	120	3	0.02622175	0.09186873	0.20977979	0	0.05375331	0.13847854	0.04307426	0.76469389	0.22843	0.227880152	3.02E-07
326	10	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.08085	0.07189436	8.02E-05
326	10	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.09486	0.091507816	1.12E-05
326	10	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.10938	0.122941303	0.00018391
326	25	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.09122	0.085000305	3.87E-05
326	25	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.11052	0.108216057	5.31E-06
326	25	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.13254	0.145382042	0.00016492
326	50	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.10119	0.096473961	2.22E-05
326	50	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.12697	0.122833061	1.71E-05
326	50	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.15855	0.164995499	4.15E-05
326	75	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.10604	0.103871943	4.70E-06
326	75	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.1363	0.132251561	1.64E-05
326	75	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.17535	0.177649714	5.29E-06
326	100	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.10818	0.109458675	1.64E-06
326	100	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.14217	0.139352961	7.94E-06
326	100	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.18703	0.187193775	2.68E-08
326	120	2	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.10855	0.113145399	2.11E-05
326	120	2.4	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.14528	0.14403948	1.54E-06
326	120	3	0.08216401	0.05204028	0.25563491	0	0.10110476	0.16053329	0.08984472	0.64851723	0.19412	0.193491658	3.95E-07
327	10	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.10404	0.09362936	0.00010838
327	10	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.12481	0.121404266	1.16E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
327	10	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.14655	0.166714382	0.0004066
327	25	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.11471	0.107176933	5.67E-05
327	25	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.14195	0.138956795	8.96E-06
327	25	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.17372	0.190826378	0.00029263
327	50	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.12436	0.118689556	3.22E-05
327	50	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.15964	0.153868217	3.33E-05
327	50	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.20355	0.211297112	6.00E-05
327	75	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.12862	0.125956205	7.10E-06
327	75	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.16888	0.163272285	3.14E-05
327	75	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.22161	0.224228427	6.86E-06
327	100	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.12936	0.131362534	4.01E-06
327	100	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.17403	0.170269051	1.41E-05
327	100	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.234	0.233837433	2.64E-08
327	120	2	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.12894	0.134894832	3.55E-05
327	120	2.4	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.17599	0.174839751	1.32E-06
327	120	3	0.03541098	0.04188281	0.14774425	0	0.05415057	0.14004891	0.09350706	0.71229346	0.24073	0.24011511	3.78E-07
328	10	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.08118	0.072608757	7.35E-05
328	10	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.09547	0.092763424	7.33E-06
328	10	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.11039	0.125257683	0.00022105
328	25	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.0915	0.085268745	3.88E-05
328	25	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.11121	0.109047356	4.68E-06
328	25	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.13384	0.147235146	0.00017943
328	50	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.1012	0.096335411	2.37E-05
328	50	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.12751	0.123188095	1.87E-05
328	50	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.15983	0.16633337	4.23E-05
328	75	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.10588	0.103453407	5.89E-06
328	75	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.13648	0.132274653	1.77E-05
328	75	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.17652	0.178602244	4.34E-06
328	100	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.10756	0.108809223	1.56E-06
328	100	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.14203	0.139110498	8.52E-06
328	100	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.18815	0.187841063	9.54E-08
328	120	2	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.10762	0.112333584	2.22E-05
328	120	2.4	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.14477	0.143620944	1.32E-06
328	120	3	0.06036791	0.04081324	0.30073763	0	0.11934716	0.14202552	0.0569825	0.68164482	0.19458	0.193922822	4.32E-07
329	10	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.07594	0.066806984	8.34E-05
329	10	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.0881	0.084407139	1.36E-05
329	10	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.10079	0.112311935	0.00013275
329	25	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.08687	0.080661964	3.85E-05
329	25	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.10427	0.101912041	5.56E-06
329	25	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.12384	0.135648918	0.00013945
329	50	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.09767	0.092997227	2.18E-05
329	50	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.12147	0.117503223	1.57E-05
329	50	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.15006	0.15641407	4.04E-05
329	75	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.10331	0.101060537	5.06E-06
329	75	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.13152	0.127699623	1.46E-05
329	75	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.16752	0.169986178	6.08E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
329	100	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.10595	0.107196417	1.55E-06
329	100	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.13816	0.135445423	7.37E-06
329	100	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.18021	0.180298758	7.88E-09
329	120	2	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.10713	0.1112674	1.71E-05
329	120	2.4	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.1413	0.140586559	5.09E-07
329	120	3	0.07675621	0.05779626	0.34741252	0	0.07072465	0.15069193	0.06701563	0.7115678	0.18768	0.187145066	2.86E-07
330	10	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.08857	0.079428005	8.36E-05
330	10	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.10505	0.102007294	9.26E-06
330	10	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.12224	0.138549805	0.00026601
330	25	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.0988	0.092196236	4.36E-05
330	25	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.12096	0.118460083	6.25E-06
330	25	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.14644	0.160942917	0.00021033
330	50	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.10818	0.103228264	2.45E-05
330	50	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.13749	0.13263546	2.36E-05
330	50	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.173	0.180205669	5.19E-05
330	75	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.11261	0.110268326	5.48E-06
330	75	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.14639	0.141675835	2.22E-05
330	75	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.19004	0.192491862	6.01E-06
330	100	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.11404	0.115535383	2.24E-06
330	100	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.15159	0.148438797	9.93E-06
330	100	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.20188	0.201683054	3.88E-08
330	120	2	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.11381	0.118995881	2.69E-05
330	120	2.4	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.15415	0.152884658	1.60E-06
330	120	3	0.04292244	0.08586959	0.16401365	0	0.14722426	0.16445679	0.06087729	0.62744166	0.2082	0.207712857	2.37E-07
331	10	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.09389	0.084082413	9.62E-05
331	10	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.11185	0.108675003	1.01E-05
331	10	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.13057	0.148681259	0.00032802
331	25	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.10438	0.097071457	5.34E-05
331	25	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.12837	0.125465508	8.44E-06
331	25	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.15624	0.171697845	0.00023894
331	50	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.11374	0.108229046	3.04E-05
331	50	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.1453	0.139866028	2.95E-05
331	50	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.18416	0.191376247	5.21E-05
331	75	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.11799	0.115308075	7.19E-06
331	75	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.15417	0.149010315	2.66E-05
331	75	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.2012	0.203878924	7.18E-06
331	100	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.11914	0.120594616	2.12E-06
331	100	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.15929	0.155833893	1.19E-05
331	100	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.2132	0.213210831	1.17E-10
331	120	2	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.11876	0.124058	2.81E-05
331	120	2.4	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.16131	0.160310062	1.00E-06
331	120	3	0.08147137	0.04763673	0.14125209	0	0.11007117	0.13587046	0.0715582	0.68250017	0.21973	0.219321815	1.67E-07
332	10	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.09739	0.087091541	0.00010606
332	10	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.11584	0.1121171	1.39E-05
332	10	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.13503	0.152599621	0.00030869
332	25	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.10829	0.100924873	5.42E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
332	25	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.13294	0.129942398	8.99E-06
332	25	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.16146	0.176945419	0.0002398
332	50	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.11824	0.112831497	2.93E-05
332	50	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.15075	0.145260811	3.01E-05
332	50	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.19033	0.197805824	5.59E-05
332	75	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.12291	0.12040844	6.26E-06
332	75	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.16024	0.155011253	2.73E-05
332	75	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.20856	0.211083514	6.37E-06
332	100	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.12465	0.126080322	2.05E-06
332	100	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.1659	0.162298107	1.30E-05
332	100	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.22117	0.221002092	2.82E-08
332	120	2	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.12424	0.129796632	3.09E-05
332	120	2.4	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.16857	0.167080601	2.22E-06
332	120	3	0.03602336	0.04025873	0.21533268	0	0.06455354	0.15034576	0.07486758	0.71023312	0.22807	0.227503109	3.21E-07
333	10	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.08886	0.078042507	0.00011702
333	10	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.10381	0.099041462	2.27E-05
333	10	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.11931	0.132531548	0.00017481
333	25	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.10068	0.093417206	5.27E-05
333	25	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.12164	0.118572655	9.41E-06
333	25	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.14516	0.158665504	0.0001824
333	50	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.1125	0.107034054	2.99E-05
333	50	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.14043	0.135843754	2.10E-05
333	50	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.17462	0.181768684	5.11E-05
333	75	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.11842	0.115876706	6.47E-06
333	75	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.1517	0.147059072	2.15E-05
333	75	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.19422	0.196784019	6.57E-06
333	100	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.12112	0.122575445	2.12E-06
333	100	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.15865	0.155548134	9.62E-06
333	100	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.20769	0.208153763	2.15E-07
333	120	2	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.12208	0.127005792	2.43E-05
333	120	2.4	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.16255	0.161166978	1.91E-06
333	120	3	0.05293694	0.11646143	0.20308259	0	0.05812228	0.1603026	0.04626899	0.73530613	0.21633	0.215672255	4.33E-07
334	10	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.07939	0.0706604	7.62E-05
334	10	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.09332	0.090317154	9.02E-06
334	10	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.10782	0.12190218	0.00019831
334	25	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.08956	0.083259773	3.97E-05
334	25	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.10879	0.10640625	5.68E-06
334	25	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.13082	0.14364151	0.00016439
334	50	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.09909	0.094239845	2.35E-05
334	50	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.12472	0.120443077	1.83E-05
334	50	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.1563	0.162588196	3.95E-05
334	75	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.10366	0.101302999	5.56E-06
334	75	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.13347	0.12946902	1.60E-05
334	75	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.17262	0.174780579	4.67E-06
334	100	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.10541	0.106627064	1.48E-06
334	100	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.13901	0.136270227	7.51E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
334	100	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.18395	0.183959503	9.03E-11
334	120	2	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.1055	0.110136271	2.15E-05
334	120	2.4	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.14173	0.140756138	9.48E-07
334	120	3	0.06157236	0.05551473	0.28461723	0	0.10145463	0.13702395	0.09176703	0.66975439	0.19037	0.190008068	1.31E-07
335	10	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.08015	0.070617104	9.09E-05
335	10	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.0933	0.089451218	1.48E-05
335	10	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.10706	0.119369316	0.00015152
335	25	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.09126	0.084775162	4.21E-05
335	25	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.11003	0.107402077	6.91E-06
335	25	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.13105	0.14337307	0.00015186
335	50	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.10238	0.097348557	2.53E-05
335	50	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.1274	0.123322315	1.66E-05
335	50	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.15815	0.164640465	4.21E-05
335	75	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.10769	0.105531654	4.66E-06
335	75	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.13783	0.133683243	1.72E-05
335	75	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.17623	0.178486786	5.09E-06
335	100	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.11032	0.111731758	1.99E-06
335	100	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.14442	0.141537285	8.31E-06
335	100	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.18876	0.188984098	5.02E-08
335	120	2	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.11127	0.115849646	2.10E-05
335	120	2.4	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.14771	0.146747335	9.27E-07
335	120	3	0.07967132	0.10768032	0.23634671	0	0.09162574	0.14891877	0.04976161	0.70969388	0.19657	0.195937928	4.00E-07
336	10	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.09617	0.085554504	0.00011269
336	10	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.11361	0.109497643	1.69E-05
336	10	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.13173	0.148053455	0.00026646
336	25	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.10774	0.100301399	5.53E-05
336	25	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.13124	0.128392372	8.11E-06
336	25	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.15817	0.173628883	0.00023898
336	50	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.1186	0.113121586	3.00E-05
336	50	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.14994	0.144810524	2.63E-05
336	50	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.1882	0.195840149	5.84E-05
336	75	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.12401	0.121349424	7.08E-06
336	75	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.1603	0.15533165	2.47E-05
336	75	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.2074	0.210073255	7.15E-06
336	100	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.12592	0.127526436	2.58E-06
336	100	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.16659	0.163235483	1.13E-05
336	100	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.22091	0.22075963	2.26E-08
336	120	2	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.12613	0.131597058	2.99E-05
336	120	2.4	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.1699	0.168437235	2.14E-06
336	120	3	0.06018303	0.01115246	0.26799687	0	0.05508076	0.16055757	0.04766761	0.73669406	0.2285	0.227791754	5.02E-07
337	10	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.08825	0.079428005	7.78E-05
337	10	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.105	0.102180481	7.95E-06
337	10	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.12242	0.139199257	0.00028154
337	25	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.09815	0.09172863	4.12E-05
337	25	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.12049	0.118079071	5.81E-06
337	25	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.14628	0.16076973	0.00020995

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
337	50	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.10706	0.102280064	2.28E-05
337	50	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.13641	0.131648293	2.27E-05
337	50	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.1723	0.179261799	4.85E-05
337	75	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.11108	0.108980967	4.41E-06
337	75	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.14486	0.140278791	2.10E-05
337	75	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.18866	0.191005338	5.50E-06
337	100	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.11239	0.113985357	2.55E-06
337	100	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.14982	0.146717749	9.62E-06
337	100	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.19987	0.1997715	9.70E-09
337	120	2	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.11188	0.117271225	2.91E-05
337	120	2.4	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.15214	0.150936302	1.45E-06
337	120	3	0.03414291	0.04673333	0.22656253	0	0.13914481	0.1631535	0.07219904	0.62550265	0.20581	0.205517348	8.56E-08
338	10	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.08922	0.08031559	7.93E-05
338	10	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.10563	0.103154659	6.13E-06
338	10	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.12277	0.140065193	0.00029912
338	25	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.09984	0.093399887	4.15E-05
338	25	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.12216	0.11999279	4.70E-06
338	25	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.14772	0.16294323	0.00023175
338	50	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.10967	0.104700356	2.47E-05
338	50	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.13919	0.134505882	2.19E-05
338	50	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.17531	0.182669258	5.42E-05
338	75	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.11427	0.111922264	5.51E-06
338	75	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.14851	0.143768514	2.25E-05
338	75	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.19258	0.195265745	7.21E-06
338	100	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.11581	0.117327871	2.30E-06
338	100	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.15389	0.150705385	1.01E-05
338	100	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.20461	0.204696512	7.48E-09
338	120	2	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.11562	0.120881097	2.77E-05
338	120	2.4	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.15654	0.155269591	1.61E-06
338	120	3	0.06670716	0.03468018	0.24051535	0	0.11063518	0.14102838	0.04740549	0.70093095	0.21126	0.210889761	1.37E-07
339	10	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.09051	0.081224823	8.62E-05
339	10	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.10707	0.104172134	8.40E-06
339	10	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.12426	0.14119091	0.00028666
339	25	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.10138	0.094733429	4.42E-05
339	25	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.12377	0.12149086	5.19E-06
339	25	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.14945	0.164683762	0.00023207
339	50	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.1114	0.106423569	2.48E-05
339	50	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.14119	0.136475887	2.22E-05
339	50	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.17752	0.184972649	5.55E-05
339	75	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.11627	0.113885053	5.69E-06
339	75	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.15076	0.14604304	2.22E-05
339	75	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.19556	0.197938601	5.66E-06
339	100	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.11797	0.119484053	2.29E-06
339	100	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.15639	0.153210106	1.01E-05
339	100	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.20778	0.207655849	1.54E-08
339	120	2	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.11795	0.123163199	2.72E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
339	120	2.4	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.15917	0.157926933	1.55E-06
339	120	3	0.05900265	0.05908786	0.20911151	0	0.08122508	0.14373523	0.07483791	0.70020178	0.21456	0.2140378	2.73E-07
340	10	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.08348	0.074492168	8.08E-05
340	10	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.0984	0.095361233	9.23E-06
340	10	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.114	0.128937912	0.00022314
340	25	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.09375	0.087312355	4.14E-05
340	25	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.1141	0.111766396	5.45E-06
340	25	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.1375	0.151131859	0.00018583
340	50	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.10333	0.098443966	2.39E-05
340	50	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.13051	0.126019707	2.02E-05
340	50	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.16372	0.17041193	4.48E-05
340	75	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.10798	0.105589383	5.72E-06
340	75	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.13939	0.135158221	1.79E-05
340	75	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.1805	0.182761625	5.11E-06
340	100	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.10963	0.11095891	1.77E-06
340	100	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.14492	0.142022209	8.40E-06
340	100	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.19216	0.192043018	1.37E-08
340	120	2	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.10967	0.114498425	2.33E-05
340	120	2.4	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.14771	0.146539871	1.37E-06
340	120	3	0.07080506	0.05379066	0.23605657	0	0.10037095	0.14727077	0.09395471	0.65840357	0.19846	0.198151477	9.52E-08
341	10	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.08824	0.079059982	8.43E-05
341	10	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.1054	0.102223778	1.01E-05
341	10	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.1234	0.139956951	0.00027413
341	25	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.09761	0.090810738	4.62E-05
341	25	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.12037	0.117446938	8.54E-06
341	25	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.14685	0.160804367	0.00019472
341	50	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.10596	0.100842609	2.62E-05
341	50	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.13556	0.130422993	2.64E-05
341	50	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.17237	0.17857338	3.85E-05
341	75	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.1097	0.107188479	6.31E-06
341	75	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.14347	0.138627739	2.34E-05
341	75	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.18753	0.189819005	5.24E-06
341	100	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.1104	0.111933088	2.35E-06
341	100	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.14811	0.144752073	1.13E-05
341	100	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.19836	0.198199825	2.57E-08
341	120	2	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.10983	0.115039635	2.71E-05
341	120	2.4	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.14986	0.148758833	1.21E-06
341	120	3	0.02755878	0.04736008	0.21060704	0	0.12469905	0.15029699	0.11018668	0.61481728	0.20416	0.203680841	2.30E-07
342	10	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.07405	0.065854454	6.72E-05
342	10	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.08657	0.083779335	7.79E-06
342	10	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.0996	0.112333584	0.00016214
342	25	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.08383	0.078116112	3.26E-05
342	25	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.10145	0.099357529	4.38E-06
342	25	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.12134	0.133276253	0.00014247
342	50	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.09331	0.08887537	1.97E-05
342	50	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.11679	0.113034992	1.41E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
342	50	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.14564	0.151647091	3.61E-05
342	75	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.09788	0.095836054	4.18E-06
342	75	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.12564	0.121886304	1.41E-05
342	75	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.1614	0.163517634	4.48E-06
342	100	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.09989	0.101093731	1.45E-06
342	100	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.13115	0.12856123	6.70E-06
342	100	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.17218	0.172477188	8.83E-08
342	120	2	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.10036	0.104567218	1.77E-05
342	120	2.4	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.13393	0.132964516	9.32E-07
342	120	3	0.03935793	0.08796354	0.30500566	0	0.09197236	0.14694111	0.12645646	0.63463008	0.17905	0.178393698	4.31E-07
343	10	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.09174	0.081852627	9.78E-05
343	10	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.10891	0.105103016	1.45E-05
343	10	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.12676	0.142771244	0.00025636
343	25	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.10223	0.095209694	4.93E-05
343	25	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.12518	0.122313499	8.22E-06
343	25	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.15161	0.166129875	0.00021083
343	50	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.11191	0.106743965	2.67E-05
343	50	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.14219	0.137138329	2.55E-05
343	50	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.17896	0.186258564	5.33E-05
343	75	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.11647	0.114101537	5.61E-06
343	75	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.15143	0.14658858	2.34E-05
343	75	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.19654	0.199104729	6.58E-06
343	100	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.118	0.119618273	2.62E-06
343	100	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.15682	0.153664722	9.96E-06
343	100	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.20874	0.208720951	3.63E-10
343	120	2	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.11782	0.123244381	2.94E-05
343	120	2.4	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.15951	0.1583148	1.43E-06
343	120	3	0.03748459	0.06925531	0.18451186	0	0.08459106	0.15952546	0.10122769	0.65465579	0.21534	0.215035431	9.28E-08
344	10	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.07952	0.070703697	7.77E-05
344	10	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.09327	0.090035725	1.05E-05
344	10	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.10752	0.120992947	0.00018152
344	25	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.08987	0.083649445	3.87E-05
344	25	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.10887	0.106553459	5.37E-06
344	25	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.13057	0.143191223	0.0001593
344	50	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.09975	0.095006199	2.25E-05
344	50	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.1252	0.121010265	1.76E-05
344	50	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.15637	0.162618504	3.90E-05
344	75	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.10457	0.102336349	4.99E-06
344	75	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.13436	0.130332069	1.62E-05
344	75	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.17299	0.175158704	4.70E-06
344	100	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.1067	0.107865353	1.36E-06
344	100	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.14016	0.137367802	7.80E-06
344	100	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.18459	0.184613285	5.42E-10
344	120	2	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.10702	0.111514552	2.02E-05
344	120	2.4	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.14326	0.14201355	1.55E-06
344	120	3	0.05228764	0.03634266	0.33244954	0	0.06562922	0.14426779	0.11120407	0.67889892	0.19155	0.190850552	4.89E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
345	10	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.08785	0.077566242	0.00010576
345	10	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.10305	0.098673439	1.92E-05
345	10	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11885	0.132423306	0.00018423
345	25	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.09906	0.092075005	4.88E-05
345	25	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11998	0.117126541	8.14E-06
345	25	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.14387	0.157202072	0.00017774
345	50	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11002	0.104791279	2.73E-05
345	50	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.1379	0.13331522	2.10E-05
345	50	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.1722	0.178937073	4.54E-05
345	75	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11539	0.113019117	5.62E-06
345	75	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.14829	0.143782946	2.03E-05
345	75	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.1905	0.192994105	6.22E-06
345	100	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11785	0.119226437	1.89E-06
345	100	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.15464	0.151679564	8.76E-06
345	100	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.20359	0.203594608	2.12E-11
345	120	2	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.11824	0.123332779	2.59E-05
345	120	2.4	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.15816	0.156895026	1.60E-06
345	120	3	0.09157306	0.04977986	0.22448885	0	0.05681093	0.15881902	0.08355119	0.70081887	0.21125	0.210595703	4.28E-07
346	10	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.09813	0.087069893	0.00012233
346	10	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.11601	0.111489296	2.04E-05
346	10	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.13453	0.150867748	0.00026692
346	25	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.10979	0.102111206	5.90E-05
346	25	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.13378	0.130756378	9.14E-06
346	25	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.16136	0.176971397	0.00024372
346	50	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.1208	0.115178185	3.16E-05
346	50	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.1528	0.147490597	2.82E-05
346	50	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.19178	0.199598312	6.11E-05
346	75	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.12631	0.123551788	7.61E-06
346	75	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.16338	0.158223877	2.66E-05
346	75	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.21123	0.214117177	8.34E-06
346	100	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.12831	0.129838486	2.34E-06
346	100	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.16972	0.16627492	1.19E-05
346	100	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.22509	0.225020037	4.89E-09
346	120	2	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.12848	0.133981991	3.03E-05
346	120	2.4	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.17287	0.171578058	1.67E-06
346	120	3	0.07094523	0.05017881	0.1772058	0	0.05231359	0.16018254	0.06317733	0.72432654	0.23278	0.232191793	3.46E-07
347	10	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.08577	0.076007557	9.53E-05
347	10	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.10065	0.096876621	1.42E-05
347	10	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.11611	0.130388355	0.00020387
347	25	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.09688	0.090005417	4.73E-05
347	25	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.11736	0.114745216	6.84E-06
347	25	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.14086	0.154465714	0.00018512
347	50	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.10756	0.102258415	2.81E-05
347	50	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.13502	0.130388355	2.15E-05
347	50	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.16882	0.175516624	4.48E-05
347	75	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.11274	0.110178846	6.56E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
347	75	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.1449	0.140492388	1.94E-05
347	75	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.18664	0.189108938	6.10E-06
347	100	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.11494	0.116154528	1.48E-06
347	100	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.15095	0.148107576	8.08E-06
347	100	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.19943	0.19935585	5.50E-09
347	120	2	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.11536	0.120101754	2.25E-05
347	120	2.4	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.1544	0.153133615	1.60E-06
347	120	3	0.03827945	0.07114179	0.28161318	0	0.07777058	0.148125	0.05547103	0.7186334	0.20674	0.206116287	3.89E-07
348	10	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.08115	0.072327328	7.78E-05
348	10	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.09524	0.09213562	9.64E-06
348	10	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.10983	0.12380724	0.00019536
348	25	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.09161	0.085433273	3.82E-05
348	25	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.11099	0.10884819	4.59E-06
348	25	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.13325	0.146317253	0.00017075
348	50	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.1016	0.096902599	2.21E-05
348	50	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.12758	0.123456535	1.70E-05
348	50	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.15946	0.165974007	4.24E-05
348	75	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.10646	0.104290479	4.71E-06
348	75	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.13687	0.132875036	1.60E-05
348	75	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.17632	0.178642654	5.39E-06
348	100	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.10861	0.10986783	1.58E-06
348	100	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.14261	0.13997427	6.95E-06
348	100	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.18811	0.188193932	7.04E-09
348	120	2	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.10889	0.113551307	2.17E-05
348	120	2.4	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.14577	0.144660068	1.23E-06
348	120	3	0.05916517	0.06175137	0.27652853	0	0.08987266	0.15029363	0.08829281	0.67154089	0.19505	0.194487484	3.16E-07
349	10	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.09215	0.082177353	9.95E-05
349	10	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.10889	0.105362797	1.24E-05
349	10	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.12632	0.142771244	0.00027064
349	25	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.10329	0.09621418	5.01E-05
349	25	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.12603	0.123352623	7.17E-06
349	25	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.15212	0.167186317	0.00022699
349	50	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.11371	0.108384914	2.84E-05
349	50	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.14399	0.138952465	2.54E-05
349	50	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.18094	0.188319492	5.45E-05
349	75	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.1187	0.116171125	6.40E-06
349	75	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.15391	0.148946813	2.46E-05
349	75	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.19946	0.201864179	5.78E-06
349	100	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.12055	0.122023411	2.17E-06
349	100	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.15973	0.156446543	1.08E-05
349	100	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.21215	0.212026663	1.52E-08
349	120	2	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.12059	0.12587827	2.80E-05
349	120	2.4	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.16258	0.161379854	1.44E-06
349	120	3	0.05280366	0.05527744	0.22884511	0	0.08171405	0.14322082	0.04805212	0.72701301	0.21918	0.21870664	2.24E-07
350	10	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.0832	0.074383926	7.77E-05
350	10	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.09818	0.095274639	8.44E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
350	10	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.11384	0.129002857	0.00022991
350	25	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.09334	0.086983299	4.04E-05
350	25	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.1138	0.11142868	5.62E-06
350	25	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.13736	0.150889397	0.00018304
350	50	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.10278	0.097907085	2.37E-05
350	50	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.12993	0.1254352	2.02E-05
350	50	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.1633	0.169857731	4.30E-05
350	75	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.10728	0.104902407	5.65E-06
350	75	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.13883	0.134413516	1.95E-05
350	75	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.17993	0.182002487	4.30E-06
350	100	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.10888	0.110160084	1.64E-06
350	100	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.14404	0.141138954	8.42E-06
350	100	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.19134	0.191122961	4.71E-08
350	120	2	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.1088	0.113618056	2.32E-05
350	120	2.4	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.14666	0.145574713	1.18E-06
350	120	3	0.05365533	0.05569751	0.25493215	0	0.09143916	0.13931179	0.10307664	0.66617241	0.19755	0.197121374	1.84E-07
351	10	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.09112	0.08044548	0.00011395
351	10	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.10695	0.10246191	2.01E-05
351	10	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.12342	0.137727165	0.00020469
351	25	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.10271	0.095434837	5.29E-05
351	25	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.12455	0.121551476	8.99E-06
351	25	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.14938	0.163419495	0.00019711
351	50	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.11408	0.108588409	3.02E-05
351	50	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.14311	0.138316002	2.30E-05
351	50	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.17894	0.185942497	4.90E-05
351	75	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.11965	0.117086131	6.57E-06
351	75	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.15381	0.149137319	2.18E-05
351	75	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.19792	0.200498886	6.65E-06
351	100	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.122	0.123489008	2.22E-06
351	100	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.16027	0.15730382	8.80E-06
351	100	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.21156	0.211478958	6.57E-09
351	120	2	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.12248	0.127729209	2.76E-05
351	120	2.4	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.16405	0.162696799	1.83E-06
351	120	3	0.04763311	0.08966206	0.21739255	0	0.06590546	0.15495514	0.04521674	0.73392266	0.21921	0.21872468	2.36E-07
352	10	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.09761	0.087286377	0.00010658
352	10	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.11605	0.112268639	1.43E-05
352	10	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.13522	0.15288105	0.00031191
352	25	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.10859	0.10124527	5.39E-05
352	25	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.13328	0.130297432	8.90E-06
352	25	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.16174	0.177395706	0.0002451
352	50	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.11872	0.113255806	2.99E-05
352	50	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.15124	0.145767384	2.99E-05
352	50	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.19078	0.198468266	5.91E-05
352	75	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.12344	0.120930888	6.30E-06
352	75	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.16085	0.155637614	2.72E-05
352	75	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.20917	0.21190038	7.45E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
352	100	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.12514	0.126662664	2.32E-06
352	100	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.16652	0.163012505	1.23E-05
352	100	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.22187	0.221937304	4.53E-09
352	120	2	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.12483	0.130424436	3.13E-05
352	120	2.4	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.16922	0.167852728	1.87E-06
352	120	3	0.05650095	0.02923302	0.20669192	0	0.0699863	0.15074529	0.06633569	0.71293272	0.22899	0.228520584	2.20E-07
353	10	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.08663	0.07704668	9.18E-05
353	10	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.10201	0.098565197	1.19E-05
353	10	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.11806	0.133159351	0.00022799
353	25	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.09735	0.090542297	4.63E-05
353	25	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.11832	0.115836296	6.17E-06
353	25	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.14252	0.156535301	0.00019643
353	50	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.10748	0.102288723	2.69E-05
353	50	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.13555	0.13086895	2.19E-05
353	50	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.1699	0.176858826	4.84E-05
353	75	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.11245	0.109823812	6.90E-06
353	75	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.14503	0.140518366	2.04E-05
353	75	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.1874	0.189914258	6.32E-06
353	100	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.11418	0.115505075	1.76E-06
353	100	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.15086	0.147778521	9.50E-06
353	100	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.19973	0.199726038	1.57E-11
353	120	2	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.11437	0.119248446	2.38E-05
353	120	2.4	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.15379	0.152561736	1.51E-06
353	120	3	0.08291826	0.03887619	0.23796943	0	0.1139225	0.15808492	0.05035731	0.67763527	0.20654	0.206186644	1.25E-07
354	10	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.09058	0.080661964	9.84E-05
354	10	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.10682	0.103306198	1.23E-05
354	10	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.1238	0.139805412	0.00025617
354	25	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.10172	0.094681473	4.95E-05
354	25	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.12394	0.121274376	7.11E-06
354	25	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.14938	0.164146881	0.00021806
354	50	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.11224	0.106865196	2.89E-05
354	50	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.14177	0.136887207	2.38E-05
354	50	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.17803	0.185280056	5.26E-05
354	75	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.11734	0.11469326	7.01E-06
354	75	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.15174	0.146908976	2.33E-05
354	75	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.19641	0.198842061	5.91E-06
354	100	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.11912	0.120575132	2.12E-06
354	100	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.15754	0.154433241	9.65E-06
354	100	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.20913	0.209030523	9.90E-09
354	120	2	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.11922	0.124447672	2.73E-05
354	120	2.4	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.16065	0.159390004	1.59E-06
354	120	3	0.0568411	0.05896867	0.23269196	0	0.06772861	0.13827961	0.06296127	0.73103051	0.21627	0.2157372	2.84E-07
355	10	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.07506	0.066265774	7.73E-05
355	10	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.08774	0.084082413	1.34E-05
355	10	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.10089	0.112593365	0.00013697
355	25	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.08496	0.078852158	3.73E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
355	25	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.10264	0.100119553	6.35E-06
355	25	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.12262	0.134046936	0.00013057
355	50	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.09455	0.089953461	2.11E-05
355	50	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.11808	0.114221325	1.49E-05
355	50	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.14712	0.152924347	3.37E-05
355	75	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.0993	0.097140732	4.66E-06
355	75	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.12723	0.12334685	1.51E-05
355	75	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.1631	0.165165799	4.27E-06
355	100	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.10135	0.102580976	1.52E-06
355	100	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.13283	0.130245476	6.68E-06
355	100	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.17408	0.174408226	1.08E-07
355	120	2	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.10196	0.106180024	1.78E-05
355	120	2.4	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.13574	0.134815454	8.55E-07
355	120	3	0.06899628	0.06632981	0.28501234	0	0.09092086	0.16222887	0.13250062	0.61434965	0.18104	0.18051885	2.72E-07
356	10	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.09112	0.081159878	9.92E-05
356	10	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.1078	0.104193783	1.30E-05
356	10	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.12515	0.141407394	0.0002643
356	25	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.10209	0.094915276	5.15E-05
356	25	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.12473	0.121845894	8.32E-06
356	25	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.15062	0.165359192	0.00021724
356	50	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.11216	0.10681324	2.86E-05
356	50	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.14224	0.13711668	2.62E-05
356	50	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.17899	0.186098366	5.05E-05
356	75	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.11697	0.114421933	6.49E-06
356	75	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.15191	0.146903203	2.51E-05
356	75	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.1971	0.199381828	5.21E-06
356	100	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.11876	0.120146494	1.92E-06
356	100	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.15759	0.15424057	1.12E-05
356	100	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.20942	0.209344425	5.71E-09
356	120	2	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.11874	0.123911873	2.67E-05
356	120	2.4	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.16032	0.159067082	1.57E-06
356	120	3	0.03073649	0.07186114	0.23132662	0	0.07576079	0.13895193	0.06599512	0.71929216	0.21622	0.215892347	1.07E-07
357	10	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.09697	0.087481213	9.00E-05
357	10	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.11703	0.114173698	8.16E-06
357	10	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.13856	0.158141613	0.00038344
357	25	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.10609	0.09879467	5.32E-05
357	25	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.13218	0.128981209	1.02E-05
357	25	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.16311	0.178668633	0.00024207
357	50	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.11381	0.108319969	3.01E-05
357	50	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.14711	0.141407394	3.25E-05
357	50	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.18876	0.195879116	5.07E-05
357	75	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.11682	0.114292043	6.39E-06
357	75	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.15484	0.149189275	3.19E-05
357	75	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.20471	0.206652807	3.77E-06
357	100	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.11694	0.118702545	3.11E-06
357	100	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.15875	0.154941978	1.45E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
357	100	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.21442	0.214615812	3.83E-08
357	120	2	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.11583	0.121581062	3.31E-05
357	120	2.4	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.15992	0.158688235	1.52E-06
357	120	3	0.02388347	0.01993025	0.17578652	0	0.13188409	0.15043248	0.09788572	0.61979771	0.22011	0.219799884	9.62E-08
358	10	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.08791	0.078129101	9.57E-05
358	10	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.10326	0.099777508	1.21E-05
358	10	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.11926	0.134523201	0.00023297
358	25	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.09917	0.092300148	4.72E-05
358	25	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.12035	0.117853928	6.23E-06
358	25	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.14449	0.158907967	0.00020788
358	50	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.10997	0.104678707	2.80E-05
358	50	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.13828	0.133648605	2.14E-05
358	50	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.17303	0.180184021	5.12E-05
358	75	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.11515	0.112646764	6.27E-06
358	75	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.14823	0.143826243	1.94E-05
358	75	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.19124	0.193900452	7.08E-06
358	100	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.11731	0.118652754	1.80E-06
358	100	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.15447	0.151489058	8.89E-06
358	100	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.20425	0.204233236	2.81E-10
358	120	2	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.11762	0.122616577	2.50E-05
358	120	2.4	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.15782	0.156541435	1.63E-06
358	120	3	0.08750255	0.07287186	0.19845653	0	0.068701	0.13903125	0.06880489	0.72346286	0.21162	0.211044908	3.31E-07
359	10	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.08739	0.077804375	9.19E-05
359	10	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.1029	0.09934454	1.26E-05
359	10	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.11905	0.134003639	0.00022361
359	25	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.09818	0.091434212	4.55E-05
359	25	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.1193	0.116797485	6.26E-06
359	25	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.14352	0.157574425	0.00019753
359	50	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.10837	0.103319187	2.55E-05
359	50	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.13653	0.131986008	2.06E-05
359	50	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.1711	0.178071136	4.86E-05
359	75	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.11338	0.110952415	5.89E-06
359	75	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.14618	0.14174511	1.97E-05
359	75	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.18867	0.191233368	6.57E-06
359	100	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.11528	0.116695738	2.00E-06
359	100	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.15214	0.149081755	9.35E-06
359	100	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.20116	0.20112669	1.11E-09
359	120	2	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.11544	0.120486013	2.55E-05
359	120	2.4	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.15521	0.153909349	1.69E-06
359	120	3	0.11050768	0.036575	0.19491553	0	0.09447532	0.1592205	0.07915651	0.66714768	0.2083	0.2076425	4.32E-07
360	10	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.09274	0.082718563	0.00010043
360	10	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.10968	0.106098843	1.28E-05
360	10	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.12729	0.143788719	0.00027221
360	25	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.10391	0.09675106	5.13E-05
360	25	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.12684	0.124123306	7.38E-06
360	25	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.15311	0.168251419	0.00022926

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
360	50	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.11425	0.108947773	2.81E-05
360	50	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.1448	0.139744797	2.56E-05
360	50	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.18203	0.18944521	5.50E-05
360	75	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.11922	0.116751302	6.09E-06
360	75	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.15469	0.149757907	2.43E-05
360	75	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.20052	0.203001442	6.16E-06
360	100	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.12104	0.122614412	2.48E-06
360	100	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.16051	0.157262688	1.05E-05
360	100	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.21323	0.213182688	2.24E-09
360	120	2	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.12111	0.12646819	2.87E-05
360	120	2.4	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.16336	0.162198885	1.35E-06
360	120	3	0.09375281	0.04482441	0.17863612	0	0.07339236	0.13933686	0.06883834	0.71843244	0.22028	0.219879262	1.61E-07
361	10	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.09623	0.086268902	9.92E-05
361	10	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.11447	0.11129446	1.01E-05
361	10	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.13346	0.151971817	0.00034269
361	25	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.10719	0.099868431	5.36E-05
361	25	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.13167	0.128851318	7.94E-06
361	25	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.16003	0.17598423	0.00025454
361	50	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.11707	0.111549911	3.05E-05
361	50	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.14935	0.143940258	2.93E-05
361	50	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.1891	0.196567535	5.58E-05
361	75	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.12151	0.118985418	6.37E-06
361	75	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.15858	0.153527616	2.55E-05
361	75	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.20688	0.209654719	7.70E-06
361	100	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.12294	0.124547615	2.58E-06
361	100	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.16426	0.160689631	1.27E-05
361	100	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.21944	0.219434748	2.76E-11
361	120	2	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.12264	0.128192846	3.08E-05
361	120	2.4	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.16644	0.165390221	1.10E-06
361	120	3	0.03581638	0.02455065	0.25782382	0	0.08612666	0.13624714	0.03591146	0.74171475	0.22646	0.225845202	3.78E-07
362	10	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.08294	0.073907661	8.16E-05
362	10	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.09749	0.094343758	9.90E-06
362	10	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.11265	0.127249336	0.00021314
362	25	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.0935	0.087035255	4.18E-05
362	25	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.1135	0.11116024	5.47E-06
362	25	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.13645	0.149902229	0.00018096
362	50	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.10342	0.098508911	2.41E-05
362	50	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.13018	0.125824871	1.90E-05
362	50	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.16313	0.169667225	4.27E-05
362	75	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.10826	0.105889575	5.62E-06
362	75	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.13945	0.135244815	1.77E-05
362	75	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.18007	0.182389272	5.38E-06
362	100	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.11009	0.111452494	1.86E-06
362	100	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.14521	0.142338276	8.25E-06
362	100	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.192	0.19195426	2.09E-09
362	120	2	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.11026	0.115117208	2.36E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
362	120	2.4	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.14809	0.14701794	1.15E-06
362	120	3	0.09541712	0.03466906	0.255127	0	0.10642519	0.14572257	0.06716432	0.68068792	0.19882	0.198261523	3.12E-07
363	10	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.08914	0.079666138	8.98E-05
363	10	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.10531	0.102137184	1.01E-05
363	10	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.12214	0.138290024	0.00026082
363	25	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.09993	0.093174744	4.56E-05
363	25	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.12189	0.119421272	6.09E-06
363	25	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.14709	0.161765556	0.00021537
363	50	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.10993	0.104860554	2.57E-05
363	50	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.13922	0.13440197	2.32E-05
363	50	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.17498	0.182067432	5.02E-05
363	75	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.11486	0.112335027	6.38E-06
363	75	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.14881	0.14399943	2.31E-05
363	75	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.19291	0.195066579	4.65E-06
363	100	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.11661	0.11795784	1.82E-06
363	100	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.15431	0.151198969	9.68E-06
363	100	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.20501	0.204819908	3.61E-08
363	120	2	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.11656	0.121656831	2.60E-05
363	120	2.4	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.15714	0.155931671	1.46E-06
363	120	3	0.05928778	0.07402203	0.19573697	0	0.10308944	0.14578045	0.05962196	0.69150816	0.21176	0.211230723	2.80E-07
364	10	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.07828	0.069404793	7.88E-05
364	10	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.09158	0.088260555	1.10E-05
364	10	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.10538	0.118416786	0.00016996
364	25	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.08872	0.082497749	3.87E-05
364	25	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.10731	0.104942818	5.60E-06
364	25	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.12837	0.14079258	0.00015432
364	50	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.09882	0.09404068	2.28E-05
364	50	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.12365	0.119603119	1.64E-05
364	50	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.15424	0.160479641	3.89E-05
364	75	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.10374	0.101499278	5.02E-06
364	75	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.13314	0.129096667	1.63E-05
364	75	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.17101	0.173219007	4.88E-06
364	100	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.10595	0.107140131	1.42E-06
364	100	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.13902	0.136265898	7.59E-06
364	100	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.18262	0.182840281	4.85E-08
364	120	2	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.10636	0.110870512	2.03E-05
364	120	2.4	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.14207	0.141005095	1.13E-06
364	120	3	0.16340252	0.03828833	0.20087357	0	0.07804412	0.13762409	0.11760285	0.66672894	0.18984	0.189196253	4.14E-07
365	10	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.08765	0.078453827	8.46E-05
365	10	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.10357	0.100491905	9.47E-06
365	10	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.12017	0.136125183	0.00025457
365	25	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.09821	0.091624718	4.34E-05
365	25	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.11983	0.1174123	5.85E-06
365	25	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.14463	0.159029198	0.00020734
365	50	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.10805	0.103042088	2.51E-05
365	50	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.13673	0.132055283	2.19E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
365	50	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.17187	0.178859138	4.88E-05
365	75	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.11274	0.110343374	5.74E-06
365	75	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.14603	0.141421827	2.12E-05
365	75	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.18943	0.191550878	4.50E-06
365	100	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.11442	0.115829802	1.99E-06
365	100	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.15154	0.148445292	9.58E-06
365	100	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.20118	0.201061745	1.40E-08
365	120	2	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.11442	0.119441477	2.52E-05
365	120	2.4	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.15428	0.153063258	1.48E-06
365	120	3	0.05806906	0.05098583	0.23481708	0	0.10959998	0.15057791	0.06094554	0.67887657	0.20774	0.207315969	1.80E-07
366	10	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.08047	0.071309853	8.39E-05
366	10	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.09426	0.090750122	1.23E-05
366	10	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.10861	0.121815586	0.00017439
366	25	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.09094	0.084558678	4.07E-05
366	25	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.11008	0.107644539	5.93E-06
366	25	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.13188	0.144550743	0.00016055
366	50	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.10108	0.096227169	2.35E-05
366	50	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.12662	0.122469368	1.72E-05
366	50	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.15817	0.164484596	3.99E-05
366	75	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.10604	0.103753599	5.23E-06
366	75	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.13617	0.132055283	1.69E-05
366	75	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.17503	0.177361069	5.43E-06
366	100	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.10823	0.109452181	1.49E-06
366	100	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.14214	0.13929884	8.07E-06
366	100	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.18682	0.187083368	6.94E-08
366	120	2	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.1087	0.113212148	2.04E-05
366	120	2.4	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.14525	0.144084581	1.36E-06
366	120	3	0.06905692	0.0567492	0.28032581	0	0.0504471	0.14426606	0.12598111	0.67930574	0.19424	0.193502482	5.44E-07
367	10	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.08454	0.074773598	9.54E-05
367	10	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.09933	0.095296288	1.63E-05
367	10	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.11472	0.128223515	0.00018234
367	25	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.09515	0.088377457	4.59E-05
367	25	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.11536	0.11265831	7.30E-06
367	25	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.13858	0.151582146	0.00016906
367	50	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.10536	0.10028841	2.57E-05
367	50	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.13238	0.127842503	2.06E-05
367	50	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.16554	0.172018242	4.20E-05
367	75	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.11029	0.107964935	5.41E-06
367	75	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.14182	0.137637685	1.75E-05
367	75	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.18277	0.185189133	5.85E-06
367	100	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.11247	0.113758049	1.66E-06
367	100	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.1477	0.145014019	7.21E-06
367	100	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.19492	0.195110598	3.63E-08
367	120	2	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.11277	0.117585127	2.32E-05
367	120	2.4	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.15107	0.149882746	1.41E-06
367	120	3	0.12752147	0.04566604	0.17469719	0	0.1064391	0.16460239	0.08597192	0.64298659	0.20212	0.201654911	2.16E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
368	10	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.08498	0.076137447	7.82E-05
368	10	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.1001	0.097417831	7.19E-06
368	10	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.1159	0.131665611	0.00024855
368	25	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.09555	0.089200096	4.03E-05
368	25	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.11623	0.114173698	4.23E-06
368	25	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.14009	0.154327164	0.0002027
368	50	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.10545	0.100569839	2.38E-05
368	50	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.13313	0.128708439	1.96E-05
368	50	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.16699	0.173975258	4.88E-05
368	75	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.11028	0.107861023	5.85E-06
368	75	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.14232	0.138018697	1.85E-05
368	75	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.1842	0.186574631	5.64E-06
368	100	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.11202	0.11333807	1.74E-06
368	100	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.14805	0.145016184	9.20E-06
368	100	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.19627	0.196030655	5.73E-08
368	120	2	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.11204	0.116939282	2.40E-05
368	120	2.4	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.15081	0.149626573	1.40E-06
368	120	3	0.03438563	0.04068365	0.31130042	0	0.08326164	0.1426115	0.07339686	0.70073	0.20283	0.202257458	3.28E-07
369	10	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.08053	0.071786118	7.65E-05
369	10	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.09499	0.091897488	9.56E-06
369	10	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.11009	0.124305153	0.00020207
369	25	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.09028	0.084004478	3.94E-05
369	25	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.10999	0.107592583	5.75E-06
369	25	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.13271	0.14554657	0.00016478
369	50	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.09929	0.094599209	2.20E-05
369	50	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.12559	0.121148815	1.97E-05
369	50	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.15773	0.163908749	3.82E-05
369	75	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.10378	0.101386706	5.73E-06
369	75	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.134	0.129841372	1.73E-05
369	75	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.17362	0.175684039	4.26E-06
369	100	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.10525	0.106488514	1.53E-06
369	100	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.13904	0.13636548	7.15E-06
369	100	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.18474	0.184520197	4.83E-08
369	120	2	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.10512	0.109847625	2.24E-05
369	120	2.4	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.14185	0.14065872	1.42E-06
369	120	3	0.04720327	0.09107914	0.20981731	0	0.06183395	0.13526451	0.17205554	0.63084599	0.19062	0.190332794	8.25E-08
370	10	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.09102	0.081917572	8.29E-05
370	10	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.10812	0.105297852	7.96E-06
370	10	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.12593	0.14309597	0.00029467
370	25	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.10142	0.094897957	4.25E-05
370	25	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.12428	0.121958466	5.39E-06
370	25	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.15073	0.165757523	0.00022583
370	50	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.11089	0.106016579	2.38E-05
370	50	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.1411	0.136272392	2.33E-05
370	50	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.17788	0.185202122	5.36E-05
370	75	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.11523	0.113108597	4.50E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
370	75	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.15008	0.145379155	2.21E-05
370	75	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.19506	0.197583567	6.37E-06
370	100	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.11676	0.118412457	2.73E-06
370	100	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.15549	0.152188301	1.09E-05
370	100	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.20709	0.206839705	6.26E-08
370	120	2	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.11651	0.121896768	2.90E-05
370	120	2.4	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.15794	0.156658697	1.64E-06
370	120	3	0.07464629	0.02651933	0.20475757	0	0.10331646	0.15436556	0.08096451	0.66135347	0.21334	0.212901258	1.92E-07
371	10	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.08357	0.07392931	9.29E-05
371	10	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.0977	0.093910789	1.44E-05
371	10	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.11238	0.125755596	0.00017891
371	25	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.09478	0.088169632	4.37E-05
371	25	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.11456	0.112017517	6.46E-06
371	25	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.13693	0.150049438	0.00017212
371	50	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.10568	0.100747356	2.43E-05
371	50	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.1322	0.127976723	1.78E-05
371	50	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.1646	0.171429405	4.66E-05
371	75	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.11119	0.10889726	5.26E-06
371	75	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.14246	0.138313115	1.72E-05
371	75	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.18301	0.185290159	5.20E-06
371	100	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.11365	0.115054789	1.97E-06
371	100	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.14905	0.146137571	8.48E-06
371	100	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.19555	0.195775204	5.07E-08
371	120	2	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.1143	0.119134792	2.34E-05
371	120	2.4	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.15238	0.151311541	1.14E-06
371	120	3	0.06126901	0.08871718	0.25456103	0	0.06203616	0.14456168	0.07058449	0.72281766	0.20337	0.202708467	4.38E-07
372	10	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.09523	0.085467911	9.53E-05
372	10	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.1134	0.110255337	9.89E-06
372	10	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.13234	0.150478077	0.00032899
372	25	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.10584	0.098716736	5.07E-05
372	25	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.13008	0.127353249	7.44E-06
372	25	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.1582	0.173871346	0.00024559
372	50	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.11536	0.11008215	2.79E-05
372	50	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.14734	0.14200922	2.84E-05
372	50	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.18651	0.193891792	5.45E-05
372	75	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.11988	0.117305501	6.63E-06
372	75	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.15645	0.151319478	2.63E-05
372	75	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.20394	0.20660951	7.13E-06
372	100	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.12121	0.122698841	2.22E-06
372	100	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.16172	0.158271503	1.19E-05
372	100	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.21626	0.216096563	2.67E-08
372	120	2	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.12086	0.126231861	2.89E-05
372	120	2.4	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.16404	0.162828493	1.47E-06
372	120	3	0.04004448	0.04441352	0.20598391	0	0.06232187	0.13886676	0.09573492	0.70307644	0.22283	0.222309295	2.71E-07
373	10	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.08765	0.078237343	8.86E-05
373	10	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.10362	0.100318718	1.09E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
373	10	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.1202	0.135887051	0.00024608
373	25	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.09818	0.091434212	4.55E-05
373	25	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.11973	0.117213135	6.33E-06
373	25	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.14457	0.158804054	0.00020261
373	50	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.1079	0.102842922	2.56E-05
373	50	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.13663	0.131847458	2.29E-05
373	50	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.17167	0.178616676	4.83E-05
373	75	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.11266	0.110149981	6.30E-06
373	75	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.14588	0.141211116	2.18E-05
373	75	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.18898	0.191305529	5.41E-06
373	100	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.11438	0.115634966	1.57E-06
373	100	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.15125	0.148235302	9.09E-06
373	100	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.2008	0.200819283	3.72E-10
373	120	2	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.11421	0.119246642	2.54E-05
373	120	2.4	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.15406	0.152852186	1.46E-06
373	120	3	0.06876174	0.03954798	0.23182426	0	0.12825684	0.16153181	0.04936936	0.660842	0.20744	0.207068817	1.38E-07
374	10	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.0848	0.076288986	7.24E-05
374	10	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.10077	0.098305416	6.07E-06
374	10	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.11744	0.133938694	0.00027221
374	25	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.09452	0.088169632	4.03E-05
374	25	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.11601	0.113593521	5.84E-06
374	25	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.14084	0.154855385	0.00019643
374	50	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.10321	0.098348713	2.36E-05
374	50	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.13147	0.126716785	2.26E-05
374	50	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.16617	0.172749958	4.33E-05
374	75	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.10712	0.1048187	5.30E-06
374	75	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.13971	0.135065854	2.16E-05
374	75	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.18191	0.184124031	4.90E-06
374	100	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.10833	0.10966217	1.77E-06
374	100	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.14444	0.141299152	9.86E-06
374	100	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.19289	0.192618866	7.35E-08
374	120	2	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.10784	0.112840517	2.50E-05
374	120	2.4	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.14653	0.145387093	1.31E-06
374	120	3	0.06789913	0.03737534	0.21920435	0	0.14487525	0.14458364	0.07877605	0.63176506	0.19861	0.19818395	1.82E-07
375	10	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.09589	0.085186481	0.00011457
375	10	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.1133	0.109107971	1.76E-05
375	10	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.13138	0.147663784	0.00026516
375	25	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.10741	0.099911728	5.62E-05
375	25	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.1309	0.127985382	8.49E-06
375	25	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.15784	0.173221893	0.0002366
375	50	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.11826	0.112714596	3.08E-05
375	50	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.14956	0.144390545	2.67E-05
375	50	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.18779	0.195433159	5.84E-05
375	75	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.12369	0.120933774	7.60E-06
375	75	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.15991	0.154907341	2.50E-05
375	75	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.20688	0.209663378	7.75E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
375	100	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.12556	0.127104292	2.38E-06
375	100	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.16615	0.16280901	1.12E-05
375	100	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.22044	0.220354805	7.26E-09
375	120	2	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.12573	0.131167698	2.96E-05
375	120	2.4	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.1693	0.168009679	1.66E-06
375	120	3	0.04723932	0.05801919	0.21421186	0	0.04598909	0.15128969	0.06814563	0.73457558	0.22787	0.227389455	2.31E-07
376	10	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.09306	0.082653618	0.00010829
376	10	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.10996	0.105774117	1.75E-05
376	10	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.12744	0.142944431	0.00024039
376	25	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.1042	0.096915588	5.31E-05
376	25	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.12685	0.124036713	7.91E-06
376	25	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.15291	0.167662582	0.00021764
376	50	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.11469	0.109328785	2.87E-05
376	50	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.14482	0.139896336	2.42E-05
376	50	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.18176	0.189103165	5.39E-05
376	75	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.11989	0.11728241	6.80E-06
376	75	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.15484	0.150075417	2.27E-05
376	75	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.2002	0.202865779	7.11E-06
376	100	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.12163	0.123259535	2.66E-06
376	100	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.16084	0.157719469	9.74E-06
376	100	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.21326	0.213193512	4.42E-09
376	120	2	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.12192	0.127197019	2.78E-05
376	120	2.4	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.16406	0.162747312	1.72E-06
376	120	3	0.05039491	0.04044348	0.23740773	0	0.05550199	0.16450406	0.08494165	0.6950523	0.22061	0.219991112	3.83E-07
377	10	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.08617	0.076224041	9.89E-05
377	10	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.10126	0.097244644	1.61E-05
377	10	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.11696	0.130951214	0.00019575
377	25	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.09701	0.09009201	4.79E-05
377	25	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.11773	0.114935722	7.81E-06
377	25	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.14138	0.15478611	0.00017972
377	50	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.10742	0.102206459	2.72E-05
377	50	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.13502	0.130388355	2.15E-05
377	50	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.16903	0.175594559	4.31E-05
377	75	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.1125	0.110014318	6.18E-06
377	75	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.14472	0.140350952	1.91E-05
377	75	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.18665	0.189005025	5.55E-06
377	100	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.11462	0.115901241	1.64E-06
377	100	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.15062	0.14785429	7.65E-06
377	100	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.19914	0.199111223	8.28E-10
377	120	2	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.11492	0.119787852	2.37E-05
377	120	2.4	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.154	0.152803477	1.43E-06
377	120	3	0.07965981	0.07352616	0.19944584	0	0.04806996	0.14507646	0.11924375	0.68760983	0.20636	0.205775325	3.42E-07
378	10	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.08833	0.07882185	9.04E-05
378	10	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.10426	0.100859928	1.16E-05
378	10	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.12084	0.136363316	0.00024097
378	25	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.09906	0.092352104	4.50E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
378	25	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.12065	0.118182983	6.09E-06
378	25	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.1454	0.1598172	0.00020786
378	50	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.10912	0.104085541	2.53E-05
378	50	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.13784	0.133219967	2.13E-05
378	50	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.173	0.180132065	5.09E-05
378	75	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.11406	0.111601868	6.04E-06
378	75	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.14728	0.142856394	1.96E-05
378	75	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.19071	0.193170179	6.05E-06
378	100	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.11575	0.117262926	2.29E-06
378	100	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.15295	0.150092735	8.16E-06
378	100	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.20304	0.202951651	7.81E-09
378	120	2	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.11584	0.12098573	2.65E-05
378	120	2.4	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.15606	0.154856467	1.45E-06
378	120	3	0.04829952	0.02218273	0.29283141	0	0.07806288	0.15576538	0.07465618	0.69151555	0.20985	0.209385196	2.16E-07
379	10	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.07782	0.069404793	7.08E-05
379	10	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.0914	0.088455391	8.67E-06
379	10	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.10552	0.118957996	0.00018058
379	25	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.08769	0.081727066	3.56E-05
379	25	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.10638	0.104206772	4.72E-06
379	25	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.12779	0.140195084	0.00015389
379	50	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.09703	0.092503643	2.05E-05
379	50	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.12198	0.117949181	1.62E-05
379	50	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.15255	0.158713131	3.80E-05
379	75	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.10154	0.099452782	4.36E-06
379	75	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.13062	0.126799049	1.46E-05
379	75	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.16851	0.170618312	4.44E-06
379	100	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.10341	0.104683037	1.62E-06
379	100	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.13614	0.133460264	7.18E-06
379	100	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.17941	0.17958869	3.19E-08
379	120	2	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.10371	0.108131989	1.96E-05
379	120	2.4	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.13886	0.137840819	1.04E-06
379	120	3	0.08761445	0.07412821	0.21553903	0	0.12399549	0.15650835	0.10842264	0.61107352	0.18617	0.185496179	4.54E-07
380	10	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.08688	0.077566242	8.67E-05
380	10	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.10231	0.099106407	1.03E-05
380	10	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.1184	0.133765507	0.0002361
380	25	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.09766	0.091079178	4.33E-05
380	25	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.11869	0.116407814	5.21E-06
380	25	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.14298	0.157124138	0.00020006
380	50	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.10785	0.102855911	2.49E-05
380	50	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.13603	0.131466446	2.08E-05
380	50	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.17044	0.177443333	4.90E-05
380	75	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.11287	0.110415535	6.02E-06
380	75	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.14546	0.141130295	1.87E-05
380	75	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.18803	0.190480003	6.00E-06
380	100	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.11463	0.116111231	2.19E-06
380	100	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.15139	0.148393335	8.98E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
380	100	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.20043	0.200286732	2.05E-08
380	120	2	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.11482	0.119861817	2.54E-05
380	120	2.4	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.15435	0.15318052	1.37E-06
380	120	3	0.07406684	0.06032654	0.21729671	0	0.09015751	0.15035841	0.07482872	0.68465536	0.20734	0.206740483	3.59E-07
381	10	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.09784	0.087567806	0.00010552
381	10	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.11646	0.112636662	1.46E-05
381	10	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.1358	0.153249073	0.00030447
381	25	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.10861	0.101401138	5.20E-05
381	25	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.1333	0.130435982	8.20E-06
381	25	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.16189	0.177490959	0.00024339
381	50	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.11856	0.113273125	2.80E-05
381	50	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.15103	0.145711098	2.83E-05
381	50	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.19058	0.198256111	5.89E-05
381	75	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.12319	0.120826976	5.58E-06
381	75	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.16066	0.155432676	2.73E-05
381	75	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.20877	0.211476072	7.32E-06
381	100	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.1248	0.126476488	2.81E-06
381	100	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.16612	0.162692108	1.18E-05
381	100	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.22156	0.221350632	4.38E-08
381	120	2	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.12458	0.130182695	3.14E-05
381	120	2.4	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.16873	0.16745584	1.62E-06
381	120	3	0.03299524	0.02572018	0.22930948	0	0.05583097	0.16380082	0.09190023	0.68846798	0.22828	0.227818815	2.13E-07
382	10	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.07914	0.070682049	7.15E-05
382	10	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.09312	0.090338802	7.74E-06
382	10	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.10769	0.122010422	0.00020507
382	25	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.08906	0.082930717	3.76E-05
382	25	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.10824	0.106051216	4.79E-06
382	25	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.13026	0.14323452	0.00016834
382	50	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.09831	0.093594723	2.22E-05
382	50	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.12384	0.119689713	1.72E-05
382	50	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.15541	0.161665974	3.91E-05
382	75	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.10277	0.100445722	5.40E-06
382	75	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.13243	0.128452988	1.58E-05
382	75	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.17127	0.173504766	4.99E-06
382	100	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.1044	0.105600929	1.44E-06
382	100	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.13785	0.135036268	7.92E-06
382	100	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.18239	0.182394323	1.87E-11
382	120	2	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.10442	0.108996121	2.09E-05
382	120	2.4	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.14059	0.13937064	1.49E-06
382	120	3	0.09655972	0.02128449	0.27333675	0	0.08148544	0.13945884	0.13297579	0.64607992	0.18868	0.188249135	1.86E-07
383	10	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.08227	0.073669529	7.40E-05
383	10	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.09773	0.094841671	8.34E-06
383	10	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.11386	0.129132748	0.00023326
383	25	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.09164	0.085277405	4.05E-05
383	25	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.11231	0.10980072	6.30E-06
383	25	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.13617	0.149521217	0.00017826

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
383	50	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.10013	0.095252991	2.38E-05
383	50	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.12726	0.122638226	2.14E-05
383	50	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.16053	0.166995811	4.18E-05
383	75	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.10392	0.101591644	5.42E-06
383	75	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.1352	0.130805448	1.93E-05
383	75	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.17598	0.178123093	4.59E-06
383	100	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.10515	0.106345634	1.43E-06
383	100	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.13997	0.13691102	9.36E-06
383	100	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.18651	0.186442575	4.55E-09
383	120	2	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.10475	0.109466974	2.22E-05
383	120	2.4	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.14214	0.140914893	1.50E-06
383	120	3	0.05215375	0.05054642	0.21589866	0	0.11586614	0.15547726	0.14272356	0.58593304	0.19218	0.191895088	8.12E-08
384	10	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.09086	0.081051636	9.62E-05
384	10	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.10759	0.103869057	1.38E-05
384	10	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.12496	0.140584755	0.00024413
384	25	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.10151	0.094542923	4.85E-05
384	25	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.12382	0.121161804	7.07E-06
384	25	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.14964	0.164008331	0.00020645
384	50	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.11134	0.106220074	2.62E-05
384	50	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.14099	0.136099205	2.39E-05
384	50	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.17722	0.184253922	4.95E-05
384	75	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.11614	0.113677228	6.07E-06
384	75	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.15048	0.145647596	2.34E-05
384	75	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.19502	0.197188123	4.70E-06
384	100	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.11789	0.119274063	1.92E-06
384	100	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.15604	0.152805281	1.05E-05
384	100	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.20705	0.206883001	2.79E-08
384	120	2	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.11779	0.122952127	2.66E-05
384	120	2.4	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.15879	0.157517417	1.62E-06
384	120	3	0.07027445	0.03695607	0.20335955	0	0.04244776	0.1563882	0.13822062	0.66294342	0.21375	0.213254849	2.45E-07
385	10	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.09161	0.081289768	0.00010651
385	10	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.10775	0.103847408	1.52E-05
385	10	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.12456	0.140173435	0.00024378
385	25	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.10324	0.095963058	5.30E-05
385	25	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.12538	0.122642555	7.49E-06
385	25	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.15076	0.165541039	0.00021848
385	50	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.11433	0.108796234	3.06E-05
385	50	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.14407	0.139043388	2.53E-05
385	50	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.18026	0.187709007	5.55E-05
385	75	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.11971	0.117074585	6.95E-06
385	75	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.1544	0.14962513	2.28E-05
385	75	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.19929	0.201988297	7.28E-06
385	100	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.12192	0.123307161	1.92E-06
385	100	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.16091	0.157589579	1.10E-05
385	100	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.21274	0.212736731	1.07E-11
385	120	2	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.1222	0.127420719	2.73E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
385	120	2.4	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.16405	0.162841121	1.46E-06
385	120	3	0.04727648	0.07405341	0.23980183	0	0.04608598	0.13587075	0.05531291	0.76273035	0.22043	0.219823337	3.68E-07
386	10	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.07869	0.069231606	8.95E-05
386	10	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.09139	0.087372971	1.61E-05
386	10	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.10453	0.116143703	0.00013488
386	25	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.08977	0.083450279	3.99E-05
386	25	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.10777	0.105332489	5.94E-06
386	25	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.12794	0.140021896	0.00014597
386	50	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.10078	0.096118927	2.17E-05
386	50	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.12537	0.121304684	1.65E-05
386	50	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.1548	0.161267643	4.18E-05
386	75	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.10669	0.104388618	5.30E-06
386	75	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.13568	0.131740659	1.55E-05
386	75	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.1727	0.17512984	5.90E-06
386	100	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.1095	0.110660162	1.35E-06
386	100	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.14249	0.139664698	7.98E-06
386	100	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.18577	0.185658903	1.23E-08
386	120	2	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.11062	0.114826759	1.77E-05
386	120	2.4	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.14576	0.144918044	7.09E-07
386	120	3	0.05604079	0.12714423	0.2486945	0	0.0601005	0.16416808	0.08997935	0.68575207	0.1934	0.192643762	5.72E-07
387	10	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.08689	0.077414703	8.98E-05
387	10	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.1025	0.099041462	1.20E-05
387	10	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.11877	0.133895397	0.00022878
387	25	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.09746	0.090750122	4.50E-05
387	25	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.11867	0.116130714	6.45E-06
387	25	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.14303	0.157002907	0.00019524
387	50	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.1074	0.102349339	2.55E-05
387	50	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.13563	0.130977192	2.16E-05
387	50	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.17024	0.177045002	4.63E-05
387	75	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.11221	0.109792061	5.85E-06
387	75	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.14492	0.140495275	1.96E-05
387	75	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.18759	0.189920031	5.43E-06
387	100	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.11391	0.115383844	2.17E-06
387	100	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.15047	0.147642136	8.00E-06
387	100	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.19978	0.199585323	3.79E-08
387	120	2	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.11399	0.119068042	2.58E-05
387	120	2.4	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.15354	0.152352468	1.41E-06
387	120	3	0.11233873	0.05352399	0.15748759	0	0.11279962	0.15320089	0.0791997	0.65479978	0.20645	0.205944904	2.55E-07
388	10	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.08517	0.07583437	8.72E-05
388	10	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.10003	0.096768379	1.06E-05
388	10	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.11547	0.130388355	0.00022256
388	25	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.09614	0.089511833	4.39E-05
388	25	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.11662	0.114234314	5.69E-06
388	25	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.14	0.15396347	0.00019498
388	50	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.10653	0.101466084	2.56E-05
388	50	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.13388	0.129496441	1.92E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
388	50	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.16767	0.174520798	4.69E-05
388	75	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.11156	0.109171473	5.71E-06
388	75	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.1436	0.139329147	1.82E-05
388	75	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.18533	0.187778282	5.99E-06
388	100	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.11362	0.114974689	1.84E-06
388	100	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.14963	0.146732903	8.39E-06
388	100	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.19785	0.197751703	9.66E-09
388	120	2	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.11397	0.118802849	2.34E-05
388	120	2.4	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.15284	0.151618226	1.49E-06
388	120	3	0.04948326	0.08094883	0.24898612	0	0.0771386	0.14107151	0.07108836	0.71070152	0.20485	0.204323077	2.78E-07
389	10	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.10238	0.091356277	0.00012152
389	10	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.12207	0.117918873	1.72E-05
389	10	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.14255	0.161129093	0.00034518
389	25	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.11373	0.105782776	6.32E-05
389	25	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.13987	0.136532173	1.11E-05
389	25	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.1702	0.186565971	0.00026785
389	50	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.12403	0.118152676	3.45E-05
389	50	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.15837	0.152504368	3.44E-05
389	50	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.20067	0.208365917	5.92E-05
389	75	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.12876	0.126022593	7.49E-06
389	75	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.16806	0.162660357	2.92E-05
389	75	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.21935	0.222231	8.30E-06
389	100	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.13014	0.131901579	3.10E-06
389	100	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.17388	0.170238743	1.33E-05
389	100	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.23261	0.23257966	9.20E-10
389	120	2	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.12986	0.135758964	3.48E-05
389	120	2.4	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.17626	0.175209578	1.10E-06
389	120	3	0.06209191	0.01310667	0.2053255	0	0.04826599	0.13837962	0.05924598	0.75410841	0.24003	0.239364632	4.43E-07
390	10	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.08618	0.07732811	7.84E-05
390	10	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.10185	0.099171352	7.18E-06
390	10	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.11815	0.134328365	0.00026174
390	25	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.09658	0.090195923	4.08E-05
390	25	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.11775	0.115628471	4.50E-06
390	25	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.14219	0.156656532	0.00020928
390	50	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.10615	0.101292896	2.36E-05
390	50	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.13437	0.129860134	2.03E-05
390	50	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.16891	0.175932274	4.93E-05
390	75	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.11084	0.108392131	5.99E-06
390	75	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.14348	0.138953908	2.05E-05
390	75	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.18596	0.188248774	5.24E-06
390	100	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.11247	0.113716917	1.55E-06
390	100	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.14875	0.145769548	8.88E-06
390	100	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.19751	0.197483263	7.15E-10
390	120	2	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.11232	0.1172153	2.40E-05
390	120	2.4	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.15151	0.150257985	1.57E-06
390	120	3	0.05626475	0.03303363	0.26631783	0	0.10257915	0.15271647	0.07675448	0.66794989	0.20401	0.203549147	2.12E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
391	10	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.09721	0.087091541	0.00010238
391	10	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.11549	0.111965561	1.24E-05
391	10	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.13449	0.152318192	0.00031784
391	25	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.10823	0.101080742	5.11E-05
391	25	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.13278	0.129968376	7.91E-06
391	25	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.16098	0.176832848	0.00025131
391	50	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.11855	0.113117256	2.95E-05
391	50	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.15075	0.145468636	2.79E-05
391	50	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.19013	0.197901077	6.04E-05
391	75	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.12327	0.120786565	6.17E-06
391	75	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.16047	0.155351855	2.62E-05
391	75	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.20858	0.211320203	7.51E-06
391	100	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.12491	0.126534939	2.64E-06
391	100	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.16627	0.162731075	1.25E-05
391	100	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.22144	0.221361456	6.17E-09
391	120	2	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.12474	0.130312586	3.11E-05
391	120	2.4	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.16904	0.167578514	2.14E-06
391	120	3	0.09795869	0.01242364	0.17892759	0	0.06679646	0.14771703	0.07511835	0.71036816	0.22834	0.227941489	1.59E-07
392	10	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.08134	0.072716999	7.44E-05
392	10	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.09588	0.093153095	7.44E-06
392	10	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.11108	0.126058674	0.00022436
392	25	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.09129	0.08506958	3.87E-05
392	25	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.11116	0.108978081	4.76E-06
392	25	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.13406	0.147503586	0.00018073
392	50	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.10055	0.095781212	2.27E-05
392	50	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.12711	0.1227075	1.94E-05
392	50	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.15958	0.166077919	4.22E-05
392	75	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.10506	0.102653859	5.79E-06
392	75	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.1357	0.13149531	1.77E-05
392	75	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.17575	0.177972997	4.94E-06
392	100	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.10666	0.107811232	1.33E-06
392	100	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.14101	0.138093023	8.51E-06
392	100	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.18705	0.186910181	1.95E-08
392	120	2	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.10659	0.111204259	2.13E-05
392	120	2.4	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.1438	0.142435694	1.86E-06
392	120	3	0.07486618	0.03323336	0.26680596	0	0.11375212	0.14919998	0.09393498	0.64311291	0.19315	0.192782672	1.35E-07
393	10	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.09015	0.080467129	9.38E-05
393	10	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.10651	0.103133011	1.14E-05
393	10	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.12352	0.139740467	0.0002631
393	25	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.10107	0.094118614	4.83E-05
393	25	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.12326	0.12067688	6.67E-06
393	25	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.1487	0.163540726	0.00022025
393	50	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.1112	0.105977612	2.73E-05
393	50	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.14076	0.135887051	2.37E-05
393	50	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.17693	0.184128361	5.18E-05
393	75	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.11621	0.113570429	6.97E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
393	75	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.15046	0.145615845	2.35E-05
393	75	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.19495	0.197318014	5.61E-06
393	100	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.11792	0.119278393	1.85E-06
393	100	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.15612	0.152926512	1.02E-05
393	100	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.20737	0.207225046	2.10E-08
393	120	2	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.11796	0.123038721	2.58E-05
393	120	2.4	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.1589	0.157732097	1.36E-06
393	120	3	0.01298444	0.07074613	0.26493997	0	0.05661741	0.14009071	0.08292459	0.72036729	0.21423	0.213736526	2.44E-07
394	10	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.09502	0.083909225	0.00012345
394	10	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.11165	0.10681324	2.34E-05
394	10	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.12888	0.14350729	0.00021396
394	25	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.10685	0.099392166	5.56E-05
394	25	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.12958	0.126547928	9.19E-06
394	25	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.15546	0.170052567	0.00021294
394	50	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.11849	0.112970047	3.05E-05
394	50	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.14868	0.143832016	2.35E-05
394	50	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.18595	0.193294296	5.39E-05
394	75	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.12432	0.121730436	6.71E-06
394	75	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.15983	0.154996821	2.34E-05
394	75	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.20555	0.208289426	7.50E-06
394	100	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.12684	0.128333921	2.23E-06
394	100	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.16653	0.163410835	9.73E-06
394	100	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.21959	0.219597111	5.06E-11
394	120	2	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.12735	0.132699323	2.86E-05
394	120	2.4	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.17039	0.168962208	2.04E-06
394	120	3	0.10535456	0.03518857	0.1937789	0	0.03678898	0.16348117	0.06841149	0.73131836	0.22774	0.2270521	4.73E-07
395	10	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.08877	0.079687786	8.25E-05
395	10	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.10565	0.102548504	9.62E-06
395	10	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.12317	0.139610577	0.00027029
395	25	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.09861	0.092031708	4.33E-05
395	25	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.12102	0.118468742	6.51E-06
395	25	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.14689	0.161271973	0.00020684
395	50	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.1076	0.102609119	2.49E-05
395	50	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.13689	0.132076931	2.32E-05
395	50	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.17286	0.17979002	4.80E-05
395	75	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.1117	0.109330228	5.62E-06
395	75	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.14548	0.140726191	2.26E-05
395	75	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.18916	0.191568197	5.80E-06
395	100	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.11295	0.114355545	1.98E-06
395	100	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.15048	0.147185354	1.09E-05
395	100	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.20043	0.200358171	5.16E-09
395	120	2	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.11263	0.11765368	2.52E-05
395	120	2.4	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.15273	0.151426999	1.70E-06
395	120	3	0.05690676	0.04855838	0.17709011	0	0.09147824	0.16122319	0.13886409	0.60843448	0.20665	0.206121699	2.79E-07
396	10	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.09903	0.088130665	0.0001188
396	10	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.1175	0.113134575	1.91E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
396	10	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.13665	0.153530502	0.00028495
396	25	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.11045	0.102821274	5.82E-05
396	25	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.13509	0.131994667	9.58E-06
396	25	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.16338	0.17911026	0.00024744
396	50	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.12113	0.1155159	3.15E-05
396	50	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.15363	0.148274269	2.87E-05
396	50	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.19339	0.201204624	6.11E-05
396	75	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.12616	0.12362395	6.43E-06
396	75	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.164	0.15867705	2.83E-05
396	75	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.21255	0.215326602	7.71E-06
396	100	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.12808	0.129702101	2.63E-06
396	100	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.1701	0.16647625	1.31E-05
396	100	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.22585	0.225905457	3.08E-09
396	120	2	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.12806	0.133700562	3.18E-05
396	120	2.4	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.17313	0.171599706	2.34E-06
396	120	3	0.04471996	0.05338556	0.1880841	0	0.07629399	0.1649118	0.04788672	0.71090749	0.23342	0.232855678	3.18E-07
397	10	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.0923	0.082437134	9.73E-05
397	10	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.10885	0.105557632	1.08E-05
397	10	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.12611	0.142706299	0.00027544
397	25	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.1037	0.096699104	4.90E-05
397	25	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.12619	0.123820229	5.62E-06
397	25	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.15207	0.167437439	0.00023616
397	50	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.11441	0.109112301	2.81E-05
397	50	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.14448	0.139679852	2.30E-05
397	50	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.18127	0.18889101	5.81E-05
397	75	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.11967	0.117071699	6.75E-06
397	75	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.15459	0.149858932	2.24E-05
397	75	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.19999	0.202657954	7.12E-06
397	100	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.12156	0.12304738	2.21E-06
397	100	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.16065	0.157502985	9.90E-06
397	100	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.21304	0.212998676	1.71E-09
397	120	2	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.12169	0.126984143	2.80E-05
397	120	2.4	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.16381	0.162534436	1.63E-06
397	120	3	0.04984374	0.05433147	0.24356179	0	0.07464267	0.14767165	0.04241377	0.7352719	0.22046	0.21979808	4.38E-07
398	10	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.09501	0.085641098	8.78E-05
398	10	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.11315	0.11034193	7.89E-06
398	10	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.132	0.150348186	0.00033666
398	25	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.10547	0.098760033	4.50E-05
398	25	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.12966	0.127266655	5.73E-06
398	25	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.15763	0.173429718	0.00024963
398	50	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.11515	0.110008545	2.64E-05
398	50	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.1468	0.141753769	2.55E-05
398	50	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.18558	0.193194714	5.80E-05
398	75	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.11951	0.117155406	5.54E-06
398	75	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.15586	0.150944239	2.42E-05
398	75	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.20296	0.205726255	7.65E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
398	100	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.12103	0.122488852	2.13E-06
398	100	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.16122	0.157803898	1.17E-05
398	100	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.21527	0.215072594	3.90E-08
398	120	2	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.12059	0.125984708	2.91E-05
398	120	2.4	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.16371	0.162299911	1.99E-06
398	120	3	0.03382087	0.01854537	0.25111088	0	0.07597959	0.15535054	0.08165853	0.68701134	0.22173	0.221196206	2.85E-07
399	10	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.0861	0.076440525	9.33E-05
399	10	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.10092	0.097266293	1.33E-05
399	10	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.11631	0.130518246	0.00020187
399	25	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.09732	0.090689507	4.40E-05
399	25	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.11778	0.11537735	5.77E-06
399	25	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.14109	0.154872704	0.00018996
399	50	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.10818	0.103202286	2.48E-05
399	50	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.13554	0.131293259	1.80E-05
399	50	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.16921	0.176231022	4.93E-05
399	75	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.11357	0.111287244	5.21E-06
399	75	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.14584	0.141577695	1.82E-05
399	75	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.18745	0.190035489	6.68E-06
399	100	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.11598	0.117390652	1.99E-06
399	100	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.15221	0.149337206	8.25E-06
399	100	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.2003	0.200455589	2.42E-08
399	120	2	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.11643	0.121424111	2.49E-05
399	120	2.4	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.15568	0.154463188	1.48E-06
399	120	3	0.15455466	0.02153393	0.19770619	0	0.06983826	0.15136398	0.0771629	0.70163486	0.20795	0.207335814	3.77E-07
400	10	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.09054	0.080380535	0.00010321
400	10	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.10669	0.102851582	1.47E-05
400	10	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.12355	0.139069366	0.00024085
400	25	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.10174	0.09457756	5.13E-05
400	25	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.12379	0.121031914	7.61E-06
400	25	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.14908	0.163679276	0.00021314
400	50	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.11235	0.106925812	2.94E-05
400	50	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.14176	0.136861229	2.40E-05
400	50	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.17783	0.185054913	5.22E-05
400	75	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.11754	0.114877993	7.09E-06
400	75	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.15173	0.147030207	2.21E-05
400	75	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.19614	0.198807424	7.12E-06
400	100	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.11947	0.120858727	1.93E-06
400	100	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.15772	0.154677868	9.25E-06
400	100	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.20921	0.209143095	4.48E-09
400	120	2	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.11969	0.124799458	2.61E-05
400	120	2.4	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.16097	0.159716535	1.57E-06
400	120	3	0.08738273	0.07802988	0.1570207	0	0.06583726	0.140229	0.08263148	0.71130227	0.21649	0.21595188	2.90E-07
401	10	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.09712	0.086810112	0.00010629
401	10	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.11539	0.111554241	1.47E-05
401	10	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.13438	0.151560497	0.00029517
401	25	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.10813	0.100846939	5.30E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
401	25	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.1326	0.129630661	8.82E-06
401	25	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.1606	0.176166077	0.0002423
401	50	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.1184	0.112965717	2.95E-05
401	50	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.15045	0.145191536	2.77E-05
401	50	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.18958	0.19731657	5.99E-05
401	75	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.1231	0.120682653	5.84E-06
401	75	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.16033	0.155120939	2.71E-05
401	75	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.20821	0.210809301	6.76E-06
401	100	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.12487	0.126469994	2.56E-06
401	100	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.16614	0.162549229	1.29E-05
401	100	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.22096	0.22090251	3.31E-09
401	120	2	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.12472	0.130276505	3.09E-05
401	120	2.4	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.16875	0.167426976	1.75E-06
401	120	3	0.04602985	0.03729913	0.21102137	0	0.07530268	0.15999281	0.06375387	0.70095064	0.22791	0.227517541	1.54E-07
402	10	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.0978	0.087740993	0.00010118
402	10	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.11679	0.113459301	1.11E-05
402	10	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.13668	0.155457211	0.00035258
402	25	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.10848	0.101020126	5.56E-05
402	25	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.13364	0.130661125	8.87E-06
402	25	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.16301	0.179032326	0.00025671
402	50	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.11807	0.112376881	3.24E-05
402	50	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.15096	0.145360394	3.14E-05
402	50	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.19163	0.199148026	5.65E-05
402	75	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.1223	0.119577141	7.41E-06
402	75	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.1601	0.154667765	2.95E-05
402	75	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.20933	0.211903267	6.62E-06
402	100	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.12328	0.124945946	2.78E-06
402	100	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.16526	0.161611853	1.33E-05
402	100	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.22159	0.221411247	3.20E-08
402	120	2	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.12277	0.128463451	3.24E-05
402	120	2.4	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.16715	0.166160544	9.79E-07
402	120	3	0.02716012	0.0519885	0.19462486	0	0.08619683	0.13676746	0.06287694	0.71415877	0.22812	0.227631195	2.39E-07
403	10	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.09523	0.085489559	9.49E-05
403	10	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.1133	0.110060501	1.05E-05
403	10	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.13209	0.149806976	0.00031389
403	25	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.1058	0.098881264	4.79E-05
403	25	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.12989	0.127283974	6.79E-06
403	25	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.15772	0.173317146	0.00024327
403	50	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.11557	0.110376568	2.70E-05
403	50	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.14723	0.142074165	2.66E-05
403	50	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.18583	0.193428516	5.77E-05
403	75	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.12003	0.117686513	5.49E-06
403	75	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.15649	0.15147246	2.52E-05
403	75	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.2035	0.206231384	7.46E-06
403	100	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.12159	0.123149128	2.43E-06
403	100	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.1619	0.158492317	1.16E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
403	100	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.21599	0.215789156	4.03E-08
403	120	2	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.12131	0.126733383	2.94E-05
403	120	2.4	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.16443	0.163097294	1.78E-06
403	120	3	0.03709869	0.03182101	0.2261247	0	0.06402182	0.15610733	0.09673163	0.68313922	0.22242	0.222054927	1.33E-07
404	10	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.07798	0.069469738	7.24E-05
404	10	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.09142	0.088563633	8.16E-06
404	10	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.10533	0.11917448	0.00019167
404	25	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.08828	0.082160034	3.75E-05
404	25	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.1069	0.10476963	4.54E-06
404	25	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.12826	0.140983086	0.00016188
404	50	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.09804	0.093269997	2.28E-05
404	50	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.12299	0.118927689	1.65E-05
404	50	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.15381	0.160046673	3.89E-05
404	75	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.10268	0.100437063	5.03E-06
404	75	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.13204	0.12806043	1.58E-05
404	75	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.17014	0.172338638	4.83E-06
404	100	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.10475	0.105845556	1.20E-06
404	100	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.1376	0.134945345	7.05E-06
404	100	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.18159	0.181604156	2.00E-10
404	120	2	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.10501	0.109414657	1.94E-05
404	120	2.4	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.14062	0.139496922	1.26E-06
404	120	3	0.07909068	0.04758337	0.29597037	0	0.10192137	0.13773323	0.08292805	0.67741735	0.18832	0.187722357	3.57E-07
405	10	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.09437	0.084580326	9.58E-05
405	10	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.11279	0.109411049	1.14E-05
405	10	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.13213	0.14989357	0.00031554
405	25	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.10443	0.097235985	5.18E-05
405	25	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.12879	0.125785904	9.02E-06
405	25	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.15721	0.172347298	0.00022914
405	50	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.11349	0.10803421	2.98E-05
405	50	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.14513	0.139762115	2.88E-05
405	50	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.18453	0.191493149	4.85E-05
405	75	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.1175	0.11488088	6.86E-06
405	75	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.1537	0.148614871	2.59E-05
405	75	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.20099	0.203627803	6.96E-06
405	100	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.11832	0.119984131	2.77E-06
405	100	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.15875	0.155210419	1.25E-05
405	100	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.21266	0.212665291	2.80E-11
405	120	2	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.11774	0.123325562	3.12E-05
405	120	2.4	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.16057	0.159527111	1.09E-06
405	120	3	0.02833383	0.03089819	0.22189854	0	0.09340173	0.14770417	0.09039614	0.66849796	0.21906	0.218571337	2.39E-07
406	10	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.09056	0.080488777	0.00010143
406	10	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.10698	0.102916527	1.65E-05
406	10	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.124	0.139177608	0.00023036
406	25	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.10138	0.094283142	5.04E-05
406	25	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.12341	0.120668221	7.52E-06
406	25	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.1488	0.163159714	0.0002062

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
406	50	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.11152	0.106306667	2.72E-05
406	50	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.14089	0.136047249	2.35E-05
406	50	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.17676	0.183959503	5.18E-05
406	75	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.11664	0.114000511	6.97E-06
406	75	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.15053	0.145907377	2.14E-05
406	75	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.19464	0.197294922	7.05E-06
406	100	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.11831	0.11979146	2.19E-06
406	100	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.15652	0.153311853	1.03E-05
406	100	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.20729	0.20730298	1.68E-10
406	120	2	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.11844	0.123608796	2.67E-05
406	120	2.4	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.15958	0.158186714	1.94E-06
406	120	3	0.03531414	0.06619353	0.22283065	0	0.05110041	0.16200876	0.11364259	0.67324823	0.21432	0.213886261	1.88E-07
407	10	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.08384	0.075466347	7.01E-05
407	10	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.09917	0.096811676	5.56E-06
407	10	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.11517	0.131167698	0.00025593
407	25	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.0938	0.087736664	3.68E-05
407	25	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.11445	0.112554398	3.59E-06
407	25	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.13837	0.152500038	0.00019966
407	50	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.10293	0.098309746	2.13E-05
407	50	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.13041	0.126093311	1.86E-05
407	50	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.16385	0.170857887	4.91E-05
407	75	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.10734	0.105069822	5.15E-06
407	75	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.13907	0.134733912	1.88E-05
407	75	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.18034	0.182579778	5.02E-06
407	100	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.10877	0.110123281	1.83E-06
407	100	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.14397	0.141206064	7.64E-06
407	100	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.1916	0.191356764	5.92E-08
407	120	2	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.10864	0.113444869	2.31E-05
407	120	2.4	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.14663	0.145462863	1.36E-06
407	120	3	0.07072454	0.03498212	0.2367325	0	0.08790542	0.15088564	0.12969077	0.63151817	0.19757	0.19711957	2.03E-07
408	10	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.08382	0.074513817	8.66E-05
408	10	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.09857	0.095209694	1.13E-05
408	10	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.11389	0.128331757	0.00020856
408	25	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.09435	0.087771301	4.33E-05
408	25	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.11458	0.112121429	6.04E-06
408	25	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.13773	0.151183815	0.00018101
408	50	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.10431	0.099322891	2.49E-05
408	50	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.13123	0.126872654	1.90E-05
408	50	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.16445	0.171100349	4.42E-05
408	75	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.10919	0.10676417	5.88E-06
408	75	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.14058	0.136364759	1.78E-05
408	75	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.18152	0.183919093	5.76E-06
408	100	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.11105	0.112370386	1.74E-06
408	100	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.14638	0.143513784	8.22E-06
408	100	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.19346	0.193562737	1.06E-08
408	120	2	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.11133	0.116062522	2.24E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
408	120	2.4	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.14943	0.148226643	1.45E-06
408	120	3	0.05697748	0.03591935	0.29416326	0	0.10780627	0.15890523	0.06078685	0.67250164	0.20036	0.199917626	1.96E-07
409	10	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.07802	0.068863583	8.38E-05
409	10	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.09053	0.086918354	1.30E-05
409	10	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.10353	0.115624142	0.00014627
409	25	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.08917	0.083017311	3.79E-05
409	25	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.10702	0.104830246	4.80E-06
409	25	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.127	0.1394244	0.00015437
409	50	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.10022	0.095612354	2.12E-05
409	50	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.12465	0.120737495	1.53E-05
409	50	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.15391	0.160605202	4.48E-05
409	75	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.10618	0.103845965	5.45E-06
409	75	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.13501	0.13113739	1.50E-05
409	75	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.1719	0.174437091	6.44E-06
409	100	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.10889	0.110090809	1.44E-06
409	100	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.14186	0.139030399	8.01E-06
409	100	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.18498	0.184940176	1.59E-09
409	120	2	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.11008	0.114244056	1.73E-05
409	120	2.4	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.14512	0.144270396	7.22E-07
409	120	3	0.12022405	0.0175166	0.33540509	0	0.07667183	0.16248349	0.05137403	0.70947065	0.19253	0.19190952	3.85E-07
410	10	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.07925	0.070682049	7.34E-05
410	10	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.093	0.090143967	8.16E-06
410	10	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.1073	0.121425915	0.00019954
410	25	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.08957	0.083389664	3.82E-05
410	25	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.10863	0.106414909	4.91E-06
410	25	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.13041	0.14336441	0.00016782
410	50	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.09931	0.094525604	2.29E-05
410	50	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.1248	0.120629253	1.74E-05
410	50	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.15623	0.162518921	3.96E-05
410	75	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.104	0.101707102	5.26E-06
410	75	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.13382	0.12978653	1.63E-05
410	75	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.17269	0.174858513	4.70E-06
410	100	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.10597	0.107114153	1.31E-06
410	100	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.13943	0.136683712	7.54E-06
410	100	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.18412	0.184152174	1.04E-09
410	120	2	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.10617	0.110686501	2.04E-05
410	120	2.4	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.14235	0.141237815	1.24E-06
410	120	3	0.07301024	0.06244393	0.27056458	0	0.10688278	0.13831829	0.0791863	0.67561264	0.19103	0.190280477	5.62E-07
411	10	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.07719	0.068452263	7.63E-05
411	10	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.09	0.08683176	1.00E-05
411	10	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.10341	0.116208649	0.00016381
411	25	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.08759	0.081605835	3.58E-05
411	25	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.10579	0.103574638	4.91E-06
411	25	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.12616	0.138593102	0.00015458
411	50	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.09788	0.09322237	2.17E-05
411	50	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.1221	0.118325863	1.42E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
411	50	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.15182	0.15831913	4.22E-05
411	75	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.10295	0.100757459	4.81E-06
411	75	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.13183	0.127884356	1.56E-05
411	75	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.16887	0.171120555	5.06E-06
411	100	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.10527	0.106460371	1.42E-06
411	100	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.13787	0.135114202	7.59E-06
411	100	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.18053	0.180796671	7.11E-08
411	120	2	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.10593	0.110233688	1.85E-05
411	120	2.4	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.14103	0.13989381	1.29E-06
411	120	3	0.06585264	0.09048415	0.27054201	0	0.09000776	0.15234174	0.09216007	0.66549043	0.18777	0.187199187	3.26E-07
412	10	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.08922	0.080034161	8.44E-05
412	10	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.10581	0.103024769	7.76E-06
412	10	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.12314	0.140173435	0.00029014
412	25	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.09962	0.092975578	4.41E-05
412	25	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.12213	0.119637756	6.21E-06
412	25	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.14813	0.162813339	0.0002156
412	50	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.10924	0.10408987	2.65E-05
412	50	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.13891	0.133938694	2.47E-05
412	50	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.17526	0.182296906	4.95E-05
412	75	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.11355	0.111183332	5.60E-06
412	75	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.14781	0.143058446	2.26E-05
412	75	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.19242	0.194702886	5.21E-06
412	100	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.1151	0.116494408	1.94E-06
412	100	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.15315	0.149880581	1.07E-05
412	100	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.20419	0.203990774	3.97E-08
412	120	2	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.11467	0.11997908	2.82E-05
412	120	2.4	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.15563	0.154363966	1.60E-06
412	120	3	0.03663219	0.03356678	0.2761402	0	0.10418308	0.13611341	0.05325865	0.70644486	0.21041	0.210083357	1.07E-07
413	10	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.0828	0.073344803	8.94E-05
413	10	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.09628	0.092936611	1.12E-05
413	10	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.11041	0.124002075	0.00018474
413	25	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.0944	0.088013763	4.08E-05
413	25	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.11373	0.111497955	4.98E-06
413	25	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.13538	0.148828468	0.00018086
413	50	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.106	0.101015797	2.48E-05
413	50	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.13192	0.127959404	1.57E-05
413	50	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.16367	0.17082325	5.12E-05
413	75	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.11177	0.10948321	5.23E-06
413	75	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.14293	0.138682582	1.80E-05
413	75	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.18257	0.185140063	6.61E-06
413	100	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.11455	0.115896912	1.81E-06
413	100	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.14982	0.146808672	9.07E-06
413	100	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.1959	0.195985193	7.26E-09
413	120	2	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.11556	0.120152267	2.11E-05
413	120	2.4	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.15335	0.152191909	1.34E-06
413	120	3	0.07245333	0.08470576	0.28350408	0	0.06317422	0.14268353	0.03366986	0.76047239	0.20413	0.203173908	9.14E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
414	10	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.07964	0.070075893	9.15E-05
414	10	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.09272	0.088823414	1.52E-05
414	10	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.10639	0.118719864	0.00015203
414	25	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.09074	0.084160347	4.33E-05
414	25	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.10941	0.10667469	7.48E-06
414	25	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.13033	0.142585068	0.00015019
414	50	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.10174	0.096651478	2.59E-05
414	50	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.12669	0.122521324	1.74E-05
414	50	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.15733	0.163735561	4.10E-05
414	75	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.10708	0.104784063	5.27E-06
414	75	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.13707	0.132828852	1.80E-05
414	75	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.17529	0.177502505	4.90E-06
414	100	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.10968	0.110945921	1.60E-06
414	100	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.14352	0.14064537	8.26E-06
414	100	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.18768	0.187951469	7.37E-08
414	120	2	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.11061	0.115037831	1.96E-05
414	120	2.4	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.14687	0.145823669	1.09E-06
414	120	3	0.10581293	0.04720183	0.29474322	0	0.08881854	0.14650375	0.04300929	0.72166842	0.19557	0.194871744	4.88E-07
415	10	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.09525	0.084969997	0.00010568
415	10	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.11296	0.109324455	1.32E-05
415	10	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.13141	0.148637962	0.0002968
415	25	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.10633	0.098967857	5.42E-05
415	25	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.13029	0.127309952	8.88E-06
415	25	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.15783	0.173143959	0.00023452
415	50	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.11667	0.111051998	3.16E-05
415	50	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.14822	0.14282753	2.91E-05
415	50	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.18683	0.194264145	5.53E-05
415	75	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.12135	0.118757388	6.72E-06
415	75	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.15791	0.152748273	2.66E-05
415	75	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.2052	0.207743886	6.47E-06
415	100	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.12303	0.12454545	2.30E-06
415	100	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.16365	0.160176563	1.21E-05
415	100	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.21802	0.217845755	3.04E-08
415	120	2	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.12286	0.128349797	3.01E-05
415	120	2.4	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.16642	0.165056475	1.86E-06
415	120	3	0.03433921	0.0577684	0.22198588	0	0.06970313	0.13745658	0.05669919	0.73614109	0.22485	0.224474136	1.41E-07
416	10	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.07519	0.066482258	7.58E-05
416	10	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.08754	0.084190655	1.12E-05
416	10	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.10049	0.112290287	0.00013925
416	25	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.0855	0.079544907	3.55E-05
416	25	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.103	0.100743027	5.09E-06
416	25	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.12267	0.134384651	0.00013723
416	50	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.09562	0.091100826	2.04E-05
416	50	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.11917	0.115347042	1.46E-05
416	50	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.14774	0.153902855	3.80E-05
416	75	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.10069	0.098601278	4.36E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
416	75	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.12859	0.124842033	1.40E-05
416	75	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.16425	0.166585935	5.46E-06
416	100	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.10305	0.104291201	1.54E-06
416	100	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.13473	0.132040129	7.24E-06
416	100	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.17604	0.176187725	2.18E-08
416	120	2	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.10383	0.108059827	1.79E-05
416	120	2.4	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.13777	0.136810716	9.20E-07
416	120	3	0.12179732	0.04956151	0.26446425	0	0.10466652	0.1643889	0.09581729	0.63512729	0.18316	0.182546584	3.76E-07
417	10	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.08923	0.078995037	0.00010475
417	10	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.10473	0.100600147	1.71E-05
417	10	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.12085	0.135237598	0.000207
417	25	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.10056	0.093555756	4.91E-05
417	25	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.12192	0.119161491	7.61E-06
417	25	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.14625	0.160189552	0.00019431
417	50	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.11166	0.106298008	2.88E-05
417	50	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.14009	0.135415115	2.19E-05
417	50	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.17515	0.182041454	4.75E-05
417	75	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.11711	0.114534505	6.63E-06
417	75	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.15049	0.14590449	2.10E-05
417	75	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.19368	0.196151886	6.11E-06
417	100	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.11942	0.12074399	1.75E-06
417	100	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.15674	0.153811932	8.57E-06
417	100	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.20684	0.206783419	3.20E-09
417	120	2	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.11982	0.124849971	2.53E-05
417	120	2.4	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.1605	0.159032806	2.15E-06
417	120	3	0.08220973	0.04534402	0.24143528	0	0.05920268	0.15409211	0.06483371	0.7218715	0.21448	0.213799667	4.63E-07
418	10	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.07835	0.069318199	8.16E-05
418	10	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.09124	0.087805939	1.18E-05
418	10	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.10472	0.117204475	0.00015586
418	25	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.08909	0.082939377	3.78E-05
418	25	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.10742	0.105081367	5.47E-06
418	25	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.12787	0.140264359	0.00015362
418	50	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.09972	0.095006199	2.22E-05
418	50	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.12419	0.120343494	1.48E-05
418	50	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.15415	0.160639839	4.21E-05
418	75	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.10505	0.102838593	4.89E-06
418	75	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.13412	0.130259908	1.49E-05
418	75	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.17154	0.173882891	5.49E-06
418	100	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.10751	0.108774586	1.60E-06
418	100	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.1406	0.137768297	8.02E-06
418	100	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.18365	0.183905382	6.52E-08
418	120	2	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.1083	0.112703411	1.94E-05
418	120	2.4	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.14367	0.142740575	8.64E-07
418	120	3	0.14575079	0.04666544	0.22958982	0	0.08773263	0.15760755	0.08689836	0.66776147	0.19144	0.190542062	8.06E-07
419	10	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.08288	0.074232388	7.48E-05
419	10	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.09797	0.095144749	7.98E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
419	10	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.11369	0.128894615	0.00023118
419	25	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.09281	0.08655899	3.91E-05
419	25	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.11318	0.110961075	4.92E-06
419	25	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.13672	0.150291901	0.0001842
419	50	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.1019	0.097175369	2.23E-05
419	50	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.12904	0.124577923	1.99E-05
419	50	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.16211	0.168770981	4.44E-05
419	75	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.10636	0.103978742	5.67E-06
419	75	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.13769	0.133299344	1.93E-05
419	75	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.17843	0.180593898	4.68E-06
419	100	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.10777	0.109084158	1.73E-06
419	100	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.14269	0.13983572	8.15E-06
419	100	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.1897	0.189451704	6.17E-08
419	120	2	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.10768	0.112440022	2.27E-05
419	120	2.4	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.14529	0.144127878	1.35E-06
419	120	3	0.05560294	0.0286289	0.27637084	0	0.11120862	0.15691133	0.1003738	0.63150625	0.19571	0.195272239	1.92E-07
420	10	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.09311	0.082631969	0.00010979
420	10	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.10958	0.105622578	1.57E-05
420	10	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.12673	0.142489815	0.00024837
420	25	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.10475	0.09743515	5.35E-05
420	25	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.12726	0.124538956	7.40E-06
420	25	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.15305	0.168052254	0.00022507
420	50	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.11594	0.110354919	3.12E-05
420	50	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.14608	0.141043701	2.54E-05
420	50	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.18269	0.190337124	5.85E-05
420	75	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.12142	0.118676567	7.53E-06
420	75	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.15652	0.151665853	2.36E-05
420	75	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.20188	0.204681358	7.85E-06
420	100	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.12356	0.124935122	1.89E-06
420	100	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.16304	0.159657001	1.14E-05
420	100	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.21555	0.215473089	5.92E-09
420	120	2	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.12382	0.129065998	2.75E-05
420	120	2.4	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.16632	0.164926585	1.94E-06
420	120	3	0.11278913	0.06035571	0.14838429	0	0.04907465	0.14207779	0.07566986	0.73317769	0.22321	0.222585313	3.90E-07
421	10	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.08229	0.073950958	6.95E-05
421	10	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.09742	0.095014858	5.78E-06
421	10	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.11324	0.129002857	0.00024847
421	25	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.09202	0.085900879	3.74E-05
421	25	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.11248	0.110337601	4.59E-06
421	25	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.13613	0.149841614	0.00018801
421	50	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.10089	0.096188202	2.21E-05
421	50	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.12795	0.123551788	1.93E-05
421	50	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.16109	0.167779484	4.47E-05
421	75	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.10503	0.102740453	5.24E-06
421	75	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.13636	0.131974462	1.92E-05
421	75	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.17709	0.179214172	4.51E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
421	100	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.10634	0.107655363	1.73E-06
421	100	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.1411	0.138277035	7.97E-06
421	100	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.18794	0.187773952	2.76E-08
421	120	2	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.1061	0.110884945	2.29E-05
421	120	2.4	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.14366	0.142417653	1.54E-06
421	120	3	0.06492417	0.04110993	0.24030862	0	0.11350556	0.14626972	0.11425255	0.62597217	0.1938	0.193392436	1.66E-07
422	10	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.09559	0.085511208	0.00010158
422	10	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.11355	0.110103798	1.19E-05
422	10	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.13227	0.150001812	0.00031442
422	25	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.10655	0.099244957	5.34E-05
422	25	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.13064	0.127794876	8.09E-06
422	25	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.15859	0.174113808	0.00024099
422	50	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.11654	0.111060658	3.00E-05
422	50	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.14841	0.143009377	2.92E-05
422	50	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.18723	0.194818344	5.76E-05
422	75	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.12111	0.118578428	6.41E-06
422	75	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.15782	0.152696317	2.63E-05
422	75	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.20538	0.208015213	6.94E-06
422	100	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.12278	0.124207735	2.04E-06
422	100	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.16347	0.159936266	1.25E-05
422	100	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.21788	0.217871733	6.83E-11
422	120	2	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.12262	0.127906005	2.79E-05
422	120	2.4	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.16618	0.164690256	2.22E-06
422	120	3	0.06095298	0.03708021	0.20248309	0	0.07600864	0.14114491	0.06549773	0.71734871	0.22474	0.224342442	1.58E-07
423	10	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.08667	0.077154922	9.05E-05
423	10	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.10197	0.098716736	1.06E-05
423	10	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.11794	0.133332539	0.00023693
423	25	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.09758	0.090845375	4.54E-05
423	25	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.11861	0.11619133	5.85E-06
423	25	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.14278	0.156968269	0.00020131
423	50	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.10796	0.102769318	2.69E-05
423	50	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.13609	0.131436138	2.17E-05
423	50	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.17044	0.177551575	5.06E-05
423	75	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.11296	0.11043574	6.37E-06
423	75	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.14569	0.14123998	1.98E-05
423	75	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.18825	0.190794627	6.48E-06
423	100	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.11493	0.116204319	1.62E-06
423	100	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.1517	0.148607655	9.56E-06
423	100	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.20084	0.200750008	8.10E-09
423	120	2	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.11495	0.120007944	2.56E-05
423	120	2.4	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.15462	0.153467361	1.33E-06
423	120	3	0.09114229	0.06957071	0.19254722	0	0.11226612	0.14456346	0.04516831	0.69800211	0.20776	0.207310557	2.02E-07
424	10	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.09172	0.081787682	9.87E-05
424	10	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.10823	0.104756641	1.21E-05
424	10	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.1255	0.141818714	0.0002663
424	25	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.10295	0.095867805	5.02E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
424	25	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.12543	0.122833061	6.74E-06
424	25	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.15117	0.166277084	0.00022822
424	50	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.11352	0.108120804	2.92E-05
424	50	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.14337	0.138519497	2.35E-05
424	50	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.18005	0.187501183	5.55E-05
424	75	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.11869	0.115977732	7.36E-06
424	75	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.15345	0.148577347	2.37E-05
424	75	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.19848	0.201113701	6.94E-06
424	100	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.12042	0.121880531	2.13E-06
424	100	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.15932	0.156130476	1.02E-05
424	100	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.21143	0.211333914	9.23E-09
424	120	2	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.12056	0.125764616	2.71E-05
424	120	2.4	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.16239	0.161102033	1.66E-06
424	120	3	0.0591497	0.06351675	0.21169785	0	0.08261806	0.14750914	0.05108523	0.71878758	0.21856	0.218057187	2.53E-07
425	10	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.07889	0.069859409	8.16E-05
425	10	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.09187	0.08860693	1.06E-05
425	10	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10545	0.118546677	0.00017152
425	25	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.08981	0.083536873	3.94E-05
425	25	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10835	0.106016579	5.44E-06
425	25	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.12915	0.141866341	0.00016171
425	50	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10056	0.095655651	2.41E-05
425	50	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.12531	0.121399937	1.53E-05
425	50	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.15582	0.162462635	4.41E-05
425	75	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10582	0.103534228	5.22E-06
425	75	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.13551	0.131400057	1.69E-05
425	75	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.17361	0.175837021	4.96E-06
425	100	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10828	0.109501972	1.49E-06
425	100	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.14186	0.138971949	8.34E-06
425	100	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.18569	0.185968475	7.75E-08
425	120	2	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.10913	0.113455693	1.87E-05
425	120	2.4	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.14511	0.143981751	1.27E-06
425	120	3	0.12805658	0.0514656	0.257664	0	0.08856381	0.14176785	0.06060663	0.70906171	0.19334	0.192679842	4.36E-07
426	10	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.09425	0.083974171	0.00010559
426	10	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.11183	0.10789566	1.55E-05
426	10	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.13014	0.146559715	0.00026961
426	25	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.10509	0.097764206	5.37E-05
426	25	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.1287	0.125647354	9.32E-06
426	25	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.15574	0.1706847	0.00022334
426	50	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.11512	0.109683819	2.96E-05
426	50	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.14624	0.140939789	2.81E-05
426	50	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.18415	0.191484489	5.38E-05
426	75	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.11986	0.117279523	6.66E-06
426	75	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.15594	0.150698891	2.75E-05
426	75	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.20224	0.204756406	6.33E-06
426	100	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.12148	0.1229846	2.26E-06
426	100	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.16154	0.158018217	1.24E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
426	100	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.2147	0.214698076	3.70E-12
426	120	2	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.12135	0.12672797	2.89E-05
426	120	2.4	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.16423	0.162828493	1.96E-06
426	120	3	0.02293801	0.07954357	0.18970543	0	0.10165717	0.16077113	0.05606387	0.68150783	0.2217	0.221225071	2.26E-07
427	10	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.0942	0.084233952	9.93E-05
427	10	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.11186	0.108285332	1.28E-05
427	10	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.13022	0.147274113	0.00029084
427	25	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.10494	0.097868118	5.00E-05
427	25	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.12871	0.125829201	8.30E-06
427	25	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.15599	0.171109009	0.00022858
427	50	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.11488	0.109605885	2.78E-05
427	50	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.14614	0.1409268	2.72E-05
427	50	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.18423	0.19161871	5.46E-05
427	75	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.11948	0.117086131	5.73E-06
427	75	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.15566	0.150537249	2.62E-05
427	75	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.20228	0.204698677	5.85E-06
427	100	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.12109	0.122692347	2.57E-06
427	100	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.16122	0.157741117	1.21E-05
427	100	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.21465	0.214488087	2.62E-08
427	120	2	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.1209	0.12637438	3.00E-05
427	120	2.4	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.16387	0.162467686	1.97E-06
427	120	3	0.0752717	0.02319682	0.20651448	0	0.08789903	0.15025738	0.0659956	0.69584799	0.22134	0.220909365	1.85E-07
428	10	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.08541	0.07637558	8.16E-05
428	10	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.10055	0.097655964	8.38E-06
428	10	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.11631	0.131903744	0.00024316
428	25	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.09609	0.089633064	4.17E-05
428	25	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.11677	0.114615326	4.64E-06
428	25	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.14061	0.154846725	0.00020268
428	50	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.10612	0.101167336	2.45E-05
428	50	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.13381	0.129379539	1.96E-05
428	50	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.16768	0.174776249	5.04E-05
428	75	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.11107	0.108571091	6.24E-06
428	75	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.14324	0.138849996	1.93E-05
428	75	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.18496	0.187564685	6.78E-06
428	100	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.11287	0.114143391	1.62E-06
428	100	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.14902	0.145968714	9.31E-06
428	100	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.19729	0.19717802	1.25E-08
428	120	2	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.11297	0.117810631	2.34E-05
428	120	2.4	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.15185	0.15065848	1.42E-06
428	120	3	0.05582307	0.02737393	0.30157557	0	0.07679879	0.14735695	0.07866747	0.69717679	0.20395	0.203507654	1.96E-07
429	10	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.10186	0.090966606	0.00011867
429	10	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.12153	0.117312717	1.78E-05
429	10	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.142	0.160241508	0.00033275
429	25	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.11287	0.105081367	6.07E-05
429	25	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.1389	0.135579643	1.10E-05
429	25	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.16902	0.185197792	0.00026172

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
429	50	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.12292	0.117195816	3.28E-05
429	50	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.15705	0.151222782	3.40E-05
429	50	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.19893	0.20656477	5.83E-05
429	75	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.12763	0.124882444	7.55E-06
429	75	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.16677	0.161156514	3.15E-05
429	75	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.21732	0.220126775	7.88E-06
429	100	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.12898	0.130637312	2.75E-06
429	100	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.1723	0.168571815	1.39E-05
429	100	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.2304	0.230254622	2.11E-08
429	120	2	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.12874	0.134404135	3.21E-05
429	120	2.4	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.1747	0.1734308	1.61E-06
429	120	3	0.02288185	0.03442986	0.21332248	0	0.08179436	0.1636079	0.04466104	0.7099367	0.23759	0.236887693	4.93E-07
430	10	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.08051	0.071504688	8.11E-05
430	10	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.09417	0.090966606	1.03E-05
430	10	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.10833	0.122010422	0.00018715
430	25	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.09126	0.085000305	3.92E-05
430	25	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.11034	0.108103485	5.00E-06
430	25	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.13196	0.145027008	0.00017075
430	50	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.10171	0.096846313	2.37E-05
430	50	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.12718	0.123170776	1.61E-05
430	50	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.15858	0.16525095	4.45E-05
430	75	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.10682	0.104506963	5.35E-06
430	75	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.13707	0.132924105	1.72E-05
430	75	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.176	0.178339577	5.47E-06
430	100	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.10912	0.110302963	1.40E-06
430	100	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.14311	0.140286007	7.97E-06
430	100	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.18804	0.18821558	3.08E-08
430	120	2	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.10963	0.114132206	2.03E-05
430	120	2.4	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.14631	0.145152569	1.34E-06
430	120	3	0.06825152	0.03567653	0.32775036	0	0.08062228	0.14920262	0.06969789	0.70047721	0.19532	0.194749069	3.26E-07
431	10	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.09829	0.087416267	0.00011824
431	10	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.11687	0.112528419	1.88E-05
431	10	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.13622	0.153184128	0.00028778
431	25	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.10935	0.101678238	5.89E-05
431	25	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.13428	0.130860291	1.17E-05
431	25	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.16301	0.17815773	0.00022945
431	50	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.11948	0.113948555	3.06E-05
431	50	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.15232	0.146654968	3.21E-05
431	50	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.19238	0.199654598	5.29E-05
431	75	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.12432	0.121779505	6.45E-06
431	75	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.16198	0.156734467	2.75E-05
431	75	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.21085	0.213369586	6.35E-06
431	100	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.12594	0.127643337	2.90E-06
431	100	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.16774	0.164268112	1.21E-05
431	100	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.22368	0.223630209	2.48E-09
431	120	2	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.12567	0.131492424	3.39E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
431	120	2.4	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.17055	0.169220185	1.77E-06
431	120	3	0.05503229	0.06824246	0.13825354	0	0.08155163	0.14602548	0.06531311	0.70710978	0.23076	0.230360699	1.59E-07
432	10	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.08868	0.079081631	9.21E-05
432	10	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.10483	0.101271248	1.27E-05
432	10	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.12161	0.137056065	0.00023858
432	25	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.09929	0.092464676	4.66E-05
432	25	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.12103	0.118451424	6.65E-06
432	25	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.14608	0.160328102	0.00020301
432	50	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.10915	0.1040942	2.56E-05
432	50	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.13806	0.133336868	2.23E-05
432	50	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.1735	0.180482769	4.88E-05
432	75	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.11395	0.111532593	5.84E-06
432	75	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.1475	0.14286794	2.15E-05
432	75	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.19102	0.193378003	5.56E-06
432	100	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.11576	0.117122211	1.86E-06
432	100	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.15299	0.150016966	8.84E-06
432	100	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.20315	0.203059893	8.12E-09
432	120	2	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.11561	0.120798111	2.69E-05
432	120	2.4	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.15598	0.154724773	1.58E-06
432	120	3	0.05972142	0.06817385	0.19113261	0	0.10946517	0.16172885	0.07353441	0.65527157	0.20973	0.209426689	9.20E-08
433	10	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.08941	0.080337238	8.23E-05
433	10	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.10703	0.104107189	8.54E-06
433	10	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.12556	0.142987728	0.00030373
433	25	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.09881	0.09199707	4.64E-05
433	25	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.1221	0.119248085	8.13E-06
433	25	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.14939	0.163791847	0.00020741
433	50	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.10723	0.10191637	2.82E-05
433	50	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.1373	0.132124557	2.68E-05
433	50	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.17501	0.181482925	4.19E-05
433	75	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.11084	0.108181419	7.07E-06
433	75	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.14532	0.140255699	2.56E-05
433	75	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.19041	0.192662163	5.07E-06
433	100	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.11117	0.11285531	2.84E-06
433	100	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.14957	0.146310759	1.06E-05
433	100	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.201	0.200972986	7.30E-10
433	120	2	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.11054	0.115914591	2.89E-05
433	120	2.4	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.15126	0.150268809	9.82E-07
433	120	3	0.03339809	0.02918027	0.2274279	0	0.16151707	0.14724756	0.05886755	0.63236782	0.20691	0.206401324	2.59E-07
434	10	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.08333	0.074383926	8.00E-05
434	10	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.09829	0.095339584	8.70E-06
434	10	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.11391	0.129089451	0.00023042
434	25	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.09351	0.087087212	4.13E-05
434	25	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.11392	0.111601868	5.37E-06
434	25	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.13741	0.151105881	0.00018758
434	50	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.10298	0.098093262	2.39E-05
434	50	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.13015	0.125694981	1.98E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
434	50	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.16348	0.170195446	4.51E-05
434	75	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.10762	0.105147756	6.11E-06
434	75	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.13903	0.134731026	1.85E-05
434	75	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.18017	0.182432569	5.12E-06
434	100	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.10921	0.110443678	1.52E-06
434	100	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.14435	0.141511307	8.06E-06
434	100	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.19164	0.191612215	7.72E-10
434	120	2	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.10911	0.113931958	2.33E-05
434	120	2.4	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.14714	0.145975208	1.36E-06
434	120	3	0.05200062	0.08137479	0.21706408	0	0.07965834	0.13773609	0.12164851	0.66095707	0.19794	0.197649956	8.41E-08
435	10	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.08668	0.077436352	8.54E-05
435	10	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.10269	0.099539375	9.93E-06
435	10	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.11938	0.135324192	0.00025422
435	25	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.09687	0.090143967	4.52E-05
435	25	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.11852	0.115879593	6.97E-06
435	25	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.14345	0.15750515	0.00019755
435	50	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.10625	0.10110672	2.65E-05
435	50	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.13491	0.129959717	2.45E-05
435	50	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.16973	0.176638012	4.77E-05
435	75	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.11062	0.108103485	6.33E-06
435	75	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.14366	0.138948135	2.22E-05
435	75	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.18657	0.18885493	5.22E-06
435	100	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.11198	0.113348894	1.87E-06
435	100	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.14885	0.145678625	1.01E-05
435	100	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.19819	0.19800499	3.42E-08
435	120	2	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.11176	0.11679496	2.54E-05
435	120	2.4	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.15143	0.150106446	1.75E-06
435	120	3	0.02866449	0.03052568	0.29515384	0	0.12917449	0.155669	0.05030484	0.66485166	0.20445	0.204014587	1.90E-07
436	10	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.09542	0.08520813	0.00010428
436	10	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.11325	0.109302807	1.56E-05
436	10	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.13171	0.148075104	0.00026782
436	25	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.10633	0.09921032	5.07E-05
436	25	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.13011	0.127232018	8.28E-06
436	25	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.15738	0.17245121	0.00022714
436	50	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.11651	0.111281471	2.73E-05
436	50	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.14781	0.142710629	2.60E-05
436	50	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.18597	0.193458824	5.61E-05
436	75	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.12135	0.118982531	5.60E-06
436	75	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.15763	0.152598178	2.53E-05
436	75	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.20447	0.206846199	5.65E-06
436	100	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.12311	0.124764099	2.74E-06
436	100	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.16339	0.160003376	1.15E-05
436	100	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.2171	0.216878071	4.93E-08
436	120	2	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.1231	0.128566281	2.99E-05
436	120	2.4	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.16617	0.164867051	1.70E-06
436	120	3	0.04138497	0.05196745	0.19731384	0	0.05296993	0.16335133	0.10406657	0.67961216	0.22406	0.223469289	3.49E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
437	10	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.08617	0.076310635	9.72E-05
437	10	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.10109	0.097114754	1.58E-05
437	10	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.1166	0.130345058	0.00018893
437	25	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.09716	0.090438385	4.52E-05
437	25	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.1177	0.11510025	6.76E-06
437	25	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.14121	0.15450901	0.00017686
437	50	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.10789	0.102829933	2.56E-05
437	50	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.13531	0.130855961	1.98E-05
437	50	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.16903	0.175672493	4.41E-05
437	75	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.11315	0.110831184	5.38E-06
437	75	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.1454	0.141029269	1.91E-05
437	75	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.18697	0.189339854	5.62E-06
437	100	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.11547	0.11686676	1.95E-06
437	100	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.15157	0.148702908	8.22E-06
437	100	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.19963	0.199643774	1.90E-10
437	120	2	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.11581	0.120854036	2.54E-05
437	120	2.4	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.15495	0.153770439	1.39E-06
437	120	3	0.04036514	0.09519243	0.23308812	0	0.09415345	0.16190897	0.05465424	0.68928334	0.20711	0.206448229	4.38E-07
438	10	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.09271	0.082913399	9.60E-05
438	10	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.10996	0.10640192	1.27E-05
438	10	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.12797	0.144438171	0.0002712
438	25	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.10339	0.096447983	4.82E-05
438	25	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.1266	0.12380291	7.82E-06
438	25	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.15323	0.168060913	0.00021996
438	50	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.11328	0.108142452	2.64E-05
438	50	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.14387	0.138822575	2.55E-05
438	50	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.18123	0.188436394	5.19E-05
438	75	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.11794	0.115602493	5.46E-06
438	75	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.15342	0.148398387	2.52E-05
438	75	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.19891	0.201422551	6.31E-06
438	100	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.11948	0.121187782	2.92E-06
438	100	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.15894	0.155569782	1.14E-05
438	100	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.21126	0.211154232	1.12E-08
438	120	2	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.11927	0.124860795	3.13E-05
438	120	2.4	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.1616	0.160283001	1.73E-06
438	120	3	0.03509766	0.05047971	0.2265351	0	0.04570135	0.14581601	0.11375406	0.69472859	0.21805	0.217546646	2.53E-07
439	10	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.10181	0.090425396	0.00012961
439	10	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.12082	0.11605711	2.27E-05
439	10	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.14057	0.157513809	0.00028709
439	25	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.11343	0.105557632	6.20E-05
439	25	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.13888	0.135475731	1.16E-05
439	25	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.16796	0.183846931	0.00025239
439	50	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.1244	0.11863327	3.33E-05
439	50	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.15788	0.152261906	3.16E-05
439	50	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.19872	0.206612396	6.23E-05
439	75	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.12952	0.126998215	6.36E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
439	75	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.16847	0.162995186	3.00E-05
439	75	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.21845	0.221174558	7.42E-06
439	100	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.13158	0.133269758	2.86E-06
439	100	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.17483	0.171039734	1.44E-05
439	100	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.23216	0.232090406	4.84E-09
439	120	2	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.13151	0.137391615	3.46E-05
439	120	2.4	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.17781	0.176328079	2.20E-06
439	120	3	0.06028627	0.02453429	0.20451539	0	0.04876711	0.16067923	0.05364835	0.73690531	0.23981	0.239258194	3.04E-07
440	10	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.07922	0.069729519	9.01E-05
440	10	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.09231	0.088260555	1.64E-05
440	10	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10594	0.117788982	0.0001404
440	25	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.08991	0.083528214	4.07E-05
440	25	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10841	0.105765457	6.99E-06
440	25	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.12911	0.141112976	0.00014407
440	50	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10063	0.095755234	2.38E-05
440	50	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.12539	0.121239738	1.72E-05
440	50	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.15546	0.161765556	3.98E-05
440	75	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10602	0.103704529	5.36E-06
440	75	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.13531	0.131301918	1.61E-05
440	75	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.1729	0.175193342	5.26E-06
440	100	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10844	0.109731445	1.67E-06
440	100	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.14185	0.138922157	8.57E-06
440	100	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.18503	0.185368814	1.15E-07
440	120	2	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.10943	0.113724494	1.84E-05
440	120	2.4	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.14493	0.143970927	9.20E-07
440	120	3	0.13206497	0.04549912	0.2372475	0	0.07266069	0.16486704	0.10382609	0.65864617	0.19291	0.192104355	6.49E-07
441	10	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.09428	0.084363842	9.83E-05
441	10	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.1117	0.108285332	1.17E-05
441	10	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.12988	0.147079277	0.00029582
441	25	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.10533	0.098275108	4.98E-05
441	25	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.12889	0.126192894	7.27E-06
441	25	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.15587	0.171403427	0.00024129
441	50	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.11565	0.110294304	2.87E-05
441	50	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.14678	0.141645527	2.64E-05
441	50	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.18477	0.192376404	5.79E-05
441	75	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.12043	0.117966499	6.07E-06
441	75	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.15657	0.151518644	2.55E-05
441	75	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.20315	0.205760892	6.82E-06
441	100	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.12217	0.12372714	2.42E-06
441	100	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.16242	0.158907967	1.23E-05
441	100	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.21583	0.215791321	1.50E-09
441	120	2	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.12212	0.127509117	2.90E-05
441	120	2.4	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.16517	0.163759375	1.99E-06
441	120	3	0.05528286	0.04076568	0.22328143	0	0.0742378	0.14535308	0.05922734	0.72118178	0.22292	0.222383261	2.88E-07
442	10	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.09109	0.080488777	0.00011239
442	10	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.10656	0.102158833	1.94E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
442	10	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.12258	0.136731339	0.00020026
442	25	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.10307	0.096023674	4.97E-05
442	25	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.12456	0.121854553	7.32E-06
442	25	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.14888	0.163099098	0.00020218
442	50	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.11492	0.109692478	2.73E-05
442	50	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.14368	0.139216576	1.99E-05
442	50	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.17875	0.186336498	5.76E-05
442	75	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.12099	0.11855245	5.94E-06
442	75	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.1549	0.150462201	1.97E-05
442	75	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.19868	0.201387914	7.33E-06
442	100	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.12369	0.125249023	2.43E-06
442	100	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.16215	0.158966417	1.01E-05
442	100	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.21247	0.212767038	8.82E-08
442	120	2	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.12456	0.129684782	2.63E-05
442	120	2.4	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.16594	0.16458923	1.82E-06
442	120	3	0.05964343	0.08570349	0.22619736	0	0.04797545	0.1621959	0.04338113	0.74644752	0.2211	0.220290581	6.55E-07
443	10	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.091	0.081441307	9.14E-05
443	10	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.10819	0.104994774	1.02E-05
443	10	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.12614	0.143160915	0.00028971
443	25	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.10133	0.094274483	4.98E-05
443	25	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.12443	0.121577454	8.14E-06
443	25	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.15122	0.165809479	0.00021285
443	50	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.1106	0.105341148	2.77E-05
443	50	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.14107	0.135804787	2.77E-05
443	50	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.17845	0.18523243	4.60E-05
443	75	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.11488	0.112375437	6.27E-06
443	75	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.14973	0.144865367	2.37E-05
443	75	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.1952	0.197603772	5.78E-06
443	100	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.11622	0.117637444	2.01E-06
443	100	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.15496	0.151631937	1.11E-05
443	100	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.20705	0.20683321	4.70E-08
443	120	2	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.11574	0.12108856	2.86E-05
443	120	2.4	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.15731	0.156079602	1.51E-06
443	120	3	0.0572708	0.02921342	0.22875649	0	0.10159369	0.13897245	0.07219684	0.68723703	0.21326	0.212886826	1.39E-07
444	10	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.09644	0.086983299	8.94E-05
444	10	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.11528	0.112571716	7.33E-06
444	10	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.13507	0.1542449	0.00036768
444	25	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.10673	0.099755859	4.86E-05
444	25	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.13166	0.129076462	6.67E-06
444	25	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.16073	0.176876144	0.0002607
444	50	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.11605	0.110593052	2.98E-05
444	50	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.14841	0.143113289	2.81E-05
444	50	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.18868	0.196112919	5.52E-05
444	75	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.12008	0.11746137	6.86E-06
444	75	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.15723	0.151989136	2.75E-05
444	75	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.20566	0.208283653	6.88E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
444	100	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.12098	0.12257761	2.55E-06
444	100	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.16214	0.158598394	1.25E-05
444	100	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.21749	0.217332687	2.47E-08
444	120	2	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.12045	0.125925175	3.00E-05
444	120	2.4	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.16406	0.162924107	1.29E-06
444	120	3	0.04828444	0.04065795	0.17011443	0	0.1087243	0.14736881	0.07103522	0.67287168	0.22387	0.223247393	3.88E-07
445	10	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.08773	0.078497124	8.52E-05
445	10	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.10394	0.100708389	1.04E-05
445	10	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.12082	0.136601448	0.00024905
445	25	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.09797	0.09132164	4.42E-05
445	25	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.11972	0.117178497	6.46E-06
445	25	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.14478	0.158985901	0.00020181
445	50	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.1073	0.102388306	2.41E-05
445	50	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.13617	0.131397171	2.28E-05
445	50	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.17129	0.178265972	4.87E-05
445	75	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.1119	0.109460119	5.95E-06
445	75	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.14508	0.140477956	2.12E-05
445	75	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.18824	0.190578143	5.47E-06
445	100	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.11343	0.11476037	1.77E-06
445	100	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.15034	0.147271948	9.41E-06
445	100	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.20001	0.199803972	4.24E-08
445	120	2	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.11331	0.118243599	2.43E-05
445	120	2.4	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.153	0.151731881	1.61E-06
445	120	3	0.0479602	0.03065292	0.25445196	0	0.09929494	0.16269807	0.09303768	0.6449693	0.2063	0.20585831	1.95E-07
446	10	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.07781	0.068473911	8.72E-05
446	10	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.09045	0.086507034	1.55E-05
446	10	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.10365	0.115082932	0.00013071
446	25	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.0887	0.082367859	4.01E-05
446	25	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.10663	0.104068222	6.56E-06
446	25	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.12675	0.138489189	0.00013781
446	50	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.09946	0.09472477	2.24E-05
446	50	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.12374	0.119689713	1.64E-05
446	50	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.15307	0.159288979	3.87E-05
446	75	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.10496	0.102786636	4.72E-06
446	75	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.1338	0.129873123	1.54E-05
446	75	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.17054	0.172835108	5.27E-06
446	100	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.10756	0.108904476	1.81E-06
446	100	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.14037	0.13759944	7.68E-06
446	100	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.18306	0.183119545	3.55E-09
446	120	2	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.10864	0.1129668	1.87E-05
446	120	2.4	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.14355	0.142724339	6.82E-07
446	120	3	0.12888479	0.04978971	0.25997513	0	0.07550209	0.16164274	0.08804737	0.67480781	0.19074	0.189937711	6.44E-07
447	10	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.08218	0.072846889	8.71E-05
447	10	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.09659	0.093153095	1.18E-05
447	10	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.11162	0.125733948	0.0001992
447	25	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.09266	0.085961494	4.49E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
447	25	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.11251	0.109913292	6.74E-06
447	25	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.13528	0.148378181	0.00017156
447	50	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.10251	0.097417831	2.59E-05
447	50	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.12902	0.124551945	2.00E-05
447	50	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.16167	0.168147507	4.20E-05
447	75	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.10728	0.104781176	6.24E-06
447	75	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.13814	0.133969002	1.74E-05
447	75	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.17855	0.180882543	5.44E-06
447	100	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.10909	0.110344095	1.57E-06
447	100	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.1439	0.14106535	8.04E-06
447	100	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.19034	0.190467014	1.61E-08
447	120	2	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.10921	0.114013139	2.31E-05
447	120	2.4	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.14679	0.1457479	1.09E-06
447	120	3	0.09824858	0.07133627	0.19803975	0	0.11068929	0.14052826	0.07919851	0.66958394	0.19711	0.196780411	1.09E-07
448	10	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.09524	0.085186481	0.00010107
448	10	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.1129	0.109475994	1.17E-05
448	10	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.13135	0.148724556	0.00030188
448	25	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.10636	0.099149704	5.20E-05
448	25	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.13023	0.127405205	7.98E-06
448	25	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.15756	0.173143959	0.00024286
448	50	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.11665	0.111203537	2.97E-05
448	50	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.14821	0.142892475	2.83E-05
448	50	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.18661	0.194186211	5.74E-05
448	75	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.12149	0.11891037	6.65E-06
448	75	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.15795	0.152785797	2.67E-05
448	75	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.20503	0.207616882	6.69E-06
448	100	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.12319	0.124671011	2.19E-06
448	100	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.16393	0.160185223	1.40E-05
448	100	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.21789	0.217681227	4.36E-08
448	120	2	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.12312	0.128456235	2.85E-05
448	120	2.4	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.16659	0.165043847	2.39E-06
448	120	3	0.08015274	0.04184518	0.17795364	0	0.07854375	0.14394437	0.06188101	0.71563087	0.22473	0.224286517	1.97E-07
449	10	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.08426	0.075791073	7.17E-05
449	10	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.09992	0.097461128	6.05E-06
449	10	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.11627	0.132553196	0.00026514
449	25	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.09412	0.087866554	3.91E-05
449	25	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.1152	0.112987366	4.90E-06
449	25	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.13964	0.15370369	0.00019779
449	50	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.10305	0.09825779	2.30E-05
449	50	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.13098	0.126366081	2.13E-05
449	50	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.16505	0.171875362	4.66E-05
449	75	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.10717	0.104882202	5.23E-06
449	75	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.13935	0.134881121	2.00E-05
449	75	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.18122	0.183460147	5.02E-06
449	100	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.10843	0.109828863	1.96E-06
449	100	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.14425	0.141249361	9.00E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
449	100	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.19233	0.192116623	4.55E-08
449	120	2	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.10819	0.113084062	2.40E-05
449	120	2.4	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.14665	0.145432194	1.48E-06
449	120	3	0.03650617	0.05453431	0.24810394	0	0.13891752	0.1523784	0.07491761	0.63378647	0.19827	0.197797887	2.23E-07
450	10	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.09582	0.085922527	9.80E-05
450	10	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.114	0.110861492	9.85E-06
450	10	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.13296	0.151452255	0.00034196
450	25	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.10664	0.099348869	5.32E-05
450	25	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.13104	0.128253822	7.76E-06
450	25	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.15929	0.175230865	0.00025411
450	50	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.11635	0.110909119	2.96E-05
450	50	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.14855	0.143152256	2.91E-05
450	50	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.18816	0.195571709	5.49E-05
450	75	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.12089	0.118258031	6.93E-06
450	75	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.15774	0.152627042	2.61E-05
450	75	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.20579	0.208523229	7.47E-06
450	100	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.12229	0.123748789	2.13E-06
450	100	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.16322	0.159702463	1.24E-05
450	100	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.21825	0.218192129	3.35E-09
450	120	2	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.12198	0.12734495	2.88E-05
450	120	2.4	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.16541	0.164349294	1.13E-06
450	120	3	0.06118163	0.0389032	0.19283367	0	0.08785543	0.13598988	0.05797927	0.71817542	0.22514	0.224528257	3.74E-07
451	10	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.07979	0.070162487	9.27E-05
451	10	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.09278	0.088823414	1.57E-05
451	10	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.1064	0.118460083	0.00014545
451	25	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.09094	0.084420128	4.25E-05
451	25	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.10951	0.106865196	6.99E-06
451	25	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.13024	0.142507133	0.00015048
451	50	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.10206	0.097071457	2.49E-05
451	50	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.12695	0.122876358	1.66E-05
451	50	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.15747	0.163869781	4.10E-05
451	75	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.10765	0.10532383	5.41E-06
451	75	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.13731	0.133308004	1.60E-05
451	75	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.17543	0.177785378	5.55E-06
451	100	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.11019	0.111578054	1.93E-06
451	100	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.14413	0.141225548	8.44E-06
451	100	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.18791	0.18835413	1.97E-07
451	120	2	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.11131	0.115735992	1.96E-05
451	120	2.4	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.14746	0.146478534	9.63E-07
451	120	3	0.13394034	0.0677311	0.2251083	0	0.06139354	0.14757491	0.08461068	0.70642087	0.19614	0.195360637	6.07E-07
452	10	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.08685	0.077436352	8.86E-05
452	10	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.10233	0.098954868	1.14E-05
452	10	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.11844	0.133505726	0.00022698
452	25	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.09748	0.090888672	4.34E-05
452	25	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.11851	0.116148033	5.58E-06
452	25	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.14271	0.156725807	0.00019644

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
452	50	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.10753	0.10260046	2.43E-05
452	50	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.13557	0.131107082	1.99E-05
452	50	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.16995	0.176902122	4.83E-05
452	75	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.11249	0.110103798	5.69E-06
452	75	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.14505	0.14069444	1.90E-05
452	75	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.18737	0.189850756	6.15E-06
452	100	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.11429	0.115758362	2.16E-06
452	100	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.15092	0.147906246	9.08E-06
452	100	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.19969	0.199583158	1.14E-08
452	120	2	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.11445	0.119479362	2.53E-05
452	120	2.4	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.15397	0.152650134	1.74E-06
452	120	3	0.08974725	0.04470154	0.20843439	0	0.10510947	0.16333972	0.07443719	0.65711361	0.20662	0.205990005	3.97E-07
453	10	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.08841	0.079059982	8.74E-05
453	10	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.10444	0.101206303	1.05E-05
453	10	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.12115	0.137034416	0.00025231
453	25	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.09911	0.092438698	4.45E-05
453	25	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.12088	0.118416786	6.07E-06
453	25	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.14585	0.160319443	0.00020936
453	50	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.10908	0.104042244	2.54E-05
453	50	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.13807	0.13331089	2.26E-05
453	50	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.17354	0.180491428	4.83E-05
453	75	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.11391	0.111495069	5.83E-06
453	75	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.14757	0.142844849	2.23E-05
453	75	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.19124	0.193406868	4.70E-06
453	100	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.11561	0.117083244	2.17E-06
453	100	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.15308	0.149999647	9.49E-06
453	100	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.20323	0.203096695	1.78E-08
453	120	2	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.11562	0.120763834	2.65E-05
453	120	2.4	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.15588	0.15471034	1.37E-06
453	120	3	0.03993857	0.07580541	0.2227503	0	0.08061373	0.14234782	0.08239056	0.69464788	0.20994	0.209468182	2.23E-07
454	10	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.09046	0.080250645	0.00010423
454	10	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.10673	0.102678394	1.64E-05
454	10	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.12365	0.13874464	0.00022785
454	25	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.10139	0.094205208	5.16E-05
454	25	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.12336	0.120555649	7.86E-06
454	25	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.14865	0.16294323	0.0002043
454	50	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.1117	0.106362953	2.85E-05
454	50	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.14102	0.136099205	2.42E-05
454	50	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.17683	0.183981152	5.11E-05
454	75	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.1168	0.114165039	6.94E-06
454	75	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.15074	0.146089223	2.16E-05
454	75	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.19486	0.197479655	6.86E-06
454	100	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.11867	0.120033922	1.86E-06
454	100	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.15685	0.153593283	1.06E-05
454	100	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.20757	0.207623377	2.85E-09
454	120	2	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.11884	0.123901049	2.56E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
454	120	2.4	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.15978	0.158534892	1.55E-06
454	120	3	0.08257124	0.04604117	0.19737445	0	0.04498012	0.15259968	0.11640101	0.68601919	0.21477	0.214304797	2.16E-07
455	10	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.08716	0.078107452	8.19E-05
455	10	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.10336	0.100383663	8.86E-06
455	10	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.1203	0.136449909	0.00026082
455	25	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.09724	0.090663528	4.32E-05
455	25	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.11904	0.116563683	6.13E-06
455	25	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.14417	0.158440361	0.00020364
455	50	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.10647	0.101496391	2.47E-05
455	50	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.13534	0.130483608	2.36E-05
455	50	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.17035	0.177356739	4.91E-05
455	75	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.11081	0.108409449	5.76E-06
455	75	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.14401	0.139355125	2.17E-05
455	75	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.18718	0.189423561	5.03E-06
455	100	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.1121	0.113587027	2.21E-06
455	100	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.14913	0.145994692	9.83E-06
455	100	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.1987	0.198444452	6.53E-08
455	120	2	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.11199	0.116984383	2.49E-05
455	120	2.4	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.15155	0.150351795	1.44E-06
455	120	3	0.03265682	0.04748298	0.24988416	0	0.09048298	0.15118077	0.10698812	0.65134813	0.20486	0.204366374	2.44E-07
456	10	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.08747	0.077263165	0.00010418
456	10	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.10233	0.098088932	1.80E-05
456	10	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11772	0.131362534	0.00018612
456	25	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.09898	0.092109642	4.72E-05
456	25	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11966	0.116944695	7.37E-06
456	25	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.14305	0.156587257	0.00018326
456	50	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11038	0.10518961	2.69E-05
456	50	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.13798	0.133536034	1.97E-05
456	50	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.17174	0.178798523	4.98E-05
456	75	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11605	0.11365991	5.71E-06
456	75	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.14867	0.144290962	1.92E-05
456	75	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.1907	0.193210589	6.30E-06
456	100	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11858	0.120053406	2.17E-06
456	100	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.15552	0.152424269	9.58E-06
456	100	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.2039	0.204099016	3.96E-08
456	120	2	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.11938	0.124292525	2.41E-05
456	120	2.4	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.15913	0.157802455	1.76E-06
456	120	3	0.07935349	0.09152721	0.19924219	0	0.08706528	0.16409243	0.03939435	0.70944794	0.2121	0.211297472	6.44E-07
457	10	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.08941	0.079384708	0.00010051
457	10	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.10486	0.101076412	1.43E-05
457	10	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.12091	0.135843754	0.00022302
457	25	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.1011	0.094187889	4.78E-05
457	25	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.1225	0.119966812	6.42E-06
457	25	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.14689	0.161237335	0.00020585
457	50	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.11249	0.107202911	2.80E-05
457	50	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.14108	0.136527843	2.07E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
457	50	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.17637	0.183504887	5.09E-05
457	75	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.11804	0.115608266	5.91E-06
457	75	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.15175	0.147226486	2.05E-05
457	75	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.19533	0.197898191	6.60E-06
457	100	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.12037	0.121943312	2.48E-06
457	100	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.15824	0.155305672	8.61E-06
457	100	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.20883	0.208757753	5.22E-09
457	120	2	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.12093	0.126134443	2.71E-05
457	120	2.4	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.16191	0.1606402	1.61E-06
457	120	3	0.0488676	0.07889551	0.25665503	0	0.05405224	0.13797901	0.04119397	0.76677478	0.21648	0.215928427	3.04E-07
458	10	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.0899	0.080510426	8.82E-05
458	10	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.10679	0.103695869	9.57E-06
458	10	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.12438	0.141234207	0.00028406
458	25	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.10015	0.093330612	4.65E-05
458	25	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.12287	0.120191956	7.17E-06
458	25	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.14912	0.163713913	0.00021298
458	50	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.10953	0.104345322	2.69E-05
458	50	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.13948	0.134363003	2.62E-05
458	50	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.17604	0.183041611	4.90E-05
458	75	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.11378	0.111356519	5.87E-06
458	75	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.14822	0.143396161	2.33E-05
458	75	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.1929	0.195343679	5.97E-06
458	100	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.11527	0.116604815	1.78E-06
458	100	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.15342	0.150144691	1.07E-05
458	100	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.2047	0.204538479	2.61E-08
458	120	2	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.11489	0.120047633	2.66E-05
458	120	2.4	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.15583	0.154573234	1.58E-06
458	120	3	0.03575332	0.04328945	0.24233356	0	0.08352466	0.14111788	0.09449235	0.68086512	0.21093	0.210570447	1.29E-07
459	10	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.08244	0.073907661	7.28E-05
459	10	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.09741	0.094646835	7.64E-06
459	10	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.11299	0.128136921	0.00022943
459	25	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.09233	0.086169319	3.80E-05
459	25	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.11255	0.110398216	4.63E-06
459	25	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.13594	0.149451942	0.00018257
459	50	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.10143	0.096794357	2.15E-05
459	50	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.12832	0.124010735	1.86E-05
459	50	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.16115	0.167896385	4.55E-05
459	75	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.10587	0.103583298	5.23E-06
459	75	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.13692	0.132713394	1.77E-05
459	75	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.17743	0.179678891	5.06E-06
459	100	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.10733	0.108679333	1.82E-06
459	100	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.14196	0.139236059	7.42E-06
459	100	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.18873	0.188507833	4.94E-08
459	120	2	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.10722	0.112030506	2.31E-05
459	120	2.4	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.14475	0.143519918	1.51E-06
459	120	3	0.03766512	0.04359344	0.28034612	0	0.08930302	0.15345335	0.12468576	0.63255787	0.19473	0.194316101	1.71E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
460	10	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.09836	0.08819561	0.00010331
460	10	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.11682	0.113242817	1.28E-05
460	10	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.13597	0.153725338	0.00031525
460	25	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.1096	0.102414284	5.16E-05
460	25	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.13421	0.131527061	7.20E-06
460	25	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.16251	0.178556061	0.00025748
460	50	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.12005	0.114649963	2.92E-05
460	50	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.15242	0.147239475	2.68E-05
460	50	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.19201	0.19990572	6.23E-05
460	75	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.12486	0.122449163	5.81E-06
460	75	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.16246	0.157265574	2.70E-05
460	75	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.2108	0.213508135	7.33E-06
460	100	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.12669	0.128294954	2.58E-06
460	100	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.1685	0.164761696	1.40E-05
460	100	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.22393	0.22368433	6.04E-08
460	120	2	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.12662	0.13213466	3.04E-05
460	120	2.4	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.17129	0.16967841	2.60E-06
460	120	3	0.03501263	0.05430382	0.19630698	0	0.07529652	0.16362506	0.05760369	0.70347473	0.23104	0.230366111	4.54E-07
461	10	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.0911	0.081441307	9.33E-05
461	10	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.10822	0.104670048	1.26E-05
461	10	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.12605	0.142208385	0.00026109
461	25	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.10141	0.094560242	4.69E-05
461	25	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.12427	0.121499519	7.68E-06
461	25	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.15058	0.165082092	0.00021031
461	50	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.11086	0.105817413	2.54E-05
461	50	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.14099	0.135964985	2.53E-05
461	50	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.17756	0.184717197	5.12E-05
461	75	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.1153	0.112987366	5.35E-06
461	75	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.14997	0.145177104	2.30E-05
461	75	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.19486	0.197240079	5.66E-06
461	100	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.1168	0.118356171	2.42E-06
461	100	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.15535	0.152064905	1.08E-05
461	100	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.20678	0.206603737	3.11E-08
461	120	2	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.11653	0.121885943	2.87E-05
461	120	2.4	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.15796	0.156591948	1.87E-06
461	120	3	0.0339098	0.0462551	0.22290985	0	0.08388735	0.16414666	0.10524418	0.64672181	0.21325	0.212744308	2.56E-07
462	10	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.08697	0.077241516	9.46E-05
462	10	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.10233	0.098630142	1.37E-05
462	10	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.11828	0.133007813	0.00021691
462	25	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.0979	0.091027222	4.72E-05
462	25	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.11888	0.116269264	6.82E-06
462	25	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.14298	0.156803741	0.0001911
462	50	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.10825	0.103081055	2.67E-05
462	50	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.13631	0.131639633	2.18E-05
462	50	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.17077	0.177564564	4.62E-05
462	75	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.11334	0.110828298	6.31E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
462	75	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.14603	0.141545944	2.01E-05
462	75	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.18838	0.190927404	6.49E-06
462	100	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.11523	0.11666543	2.06E-06
462	100	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.15201	0.149001656	9.05E-06
462	100	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.2011	0.20098381	1.35E-08
462	120	2	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.11547	0.120516682	2.55E-05
462	120	2.4	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.15517	0.153916566	1.57E-06
462	120	3	0.02824853	0.08510694	0.25127426	0	0.06681919	0.14624349	0.08210878	0.70482854	0.20832	0.207610027	5.04E-07
463	10	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.08795	0.078129101	9.65E-05
463	10	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.10333	0.099777508	1.26E-05
463	10	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.11936	0.134544849	0.00023058
463	25	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.09919	0.092300148	4.75E-05
463	25	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.1204	0.117853928	6.48E-06
463	25	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.14464	0.158925285	0.00020407
463	50	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.10997	0.104678707	2.80E-05
463	50	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.13832	0.133657265	2.17E-05
463	50	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.17317	0.180231647	4.99E-05
463	75	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.11515	0.112646764	6.27E-06
463	75	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.14825	0.143834902	1.95E-05
463	75	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.19135	0.193943748	6.73E-06
463	100	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.11724	0.118652754	2.00E-06
463	100	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.1545	0.151499882	9.00E-06
463	100	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.2043	0.204278698	4.54E-10
463	120	2	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.11749	0.122616577	2.63E-05
463	120	2.4	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.15772	0.156557671	1.35E-06
463	120	3	0.04389559	0.05395763	0.28912842	0	0.05953462	0.13951558	0.05824849	0.7427013	0.21167	0.211088204	3.38E-07
464	10	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.08651	0.076830196	9.37E-05
464	10	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.10162	0.0978508	1.42E-05
464	10	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.11732	0.131600666	0.00020394
464	25	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.09735	0.090706825	4.41E-05
464	25	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.11806	0.115567856	6.21E-06
464	25	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.14181	0.155452881	0.00018613
464	50	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.1079	0.102838593	2.56E-05
464	50	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.13556	0.131033478	2.05E-05
464	50	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.16953	0.176269989	4.54E-05
464	75	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.11299	0.110652224	5.47E-06
464	75	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.14534	0.141003291	1.88E-05
464	75	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.18714	0.189671796	6.41E-06
464	100	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.11522	0.116546364	1.76E-06
464	100	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.15128	0.148514566	7.65E-06
464	100	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.19977	0.199775829	3.40E-11
464	120	2	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.11558	0.120433696	2.36E-05
464	120	2.4	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.15474	0.153469165	1.62E-06
464	120	3	0.09205556	0.06397204	0.19395316	0	0.07970452	0.15946899	0.08880474	0.67202175	0.20717	0.206437405	5.37E-07
465	10	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.08211	0.073085022	8.15E-05
465	10	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.09632	0.093109798	1.03E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
465	10	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.11105	0.125257683	0.00020186
465	25	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.09284	0.086420441	4.12E-05
465	25	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.11243	0.110138435	5.25E-06
465	25	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.13498	0.148204994	0.0001749
465	50	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.10308	0.098123569	2.46E-05
465	50	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.1294	0.125067177	1.88E-05
465	50	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.16175	0.168255749	4.23E-05
465	75	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.10799	0.105667318	5.39E-06
465	75	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.13882	0.134693502	1.70E-05
465	75	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.17891	0.181205826	5.27E-06
465	100	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.11019	0.111363735	1.38E-06
465	100	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.14454	0.141948605	6.72E-06
465	100	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.19094	0.190967093	7.34E-10
465	120	2	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.11049	0.115128032	2.15E-05
465	120	2.4	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.14786	0.146736511	1.26E-06
465	120	3	0.05774037	0.05503925	0.29437012	0	0.10825715	0.14940542	0.04845085	0.69388659	0.198	0.197408215	3.50E-07
466	10	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.0978	0.087134838	0.00011375
466	10	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.11615	0.111878967	1.82E-05
466	10	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.13515	0.151885223	0.00028007
466	25	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.10892	0.101427116	5.61E-05
466	25	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.1334	0.130254135	9.90E-06
466	25	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.16147	0.176858826	0.00023682
466	50	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.11927	0.113775368	3.02E-05
466	50	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.15141	0.146118088	2.80E-05
466	50	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.19074	0.198398991	5.87E-05
466	75	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.12422	0.121664047	6.53E-06
466	75	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.16155	0.156240883	2.82E-05
466	75	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.20941	0.212131297	7.41E-06
466	100	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.1259	0.127571898	2.80E-06
466	100	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.16742	0.163813496	1.30E-05
466	100	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.22238	0.222417898	1.44E-09
466	120	2	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.12587	0.131452735	3.12E-05
466	120	2.4	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.17014	0.168790825	1.82E-06
466	120	3	0.05120281	0.05721882	0.16422406	0	0.06576945	0.16246469	0.08299319	0.68877266	0.22965	0.229170036	2.30E-07
467	10	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.08522	0.075791073	8.89E-05
467	10	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.10012	0.096746731	1.14E-05
467	10	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.11558	0.130388355	0.00021929
467	25	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.09615	0.089442558	4.50E-05
467	25	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.11665	0.114199677	6.00E-06
467	25	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.14008	0.153937492	0.00019203
467	50	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.10652	0.10138382	2.64E-05
467	50	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.13388	0.129431496	1.98E-05
467	50	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.16764	0.174481831	4.68E-05
467	75	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.11153	0.10907622	6.02E-06
467	75	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.14357	0.1392541	1.86E-05
467	75	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.18529	0.187720553	5.91E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
467	100	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.11361	0.114868612	1.58E-06
467	100	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.14955	0.146646309	8.43E-06
467	100	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.19773	0.197686758	1.87E-09
467	120	2	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.11393	0.118694607	2.27E-05
467	120	2.4	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.15279	0.151520809	1.61E-06
467	120	3	0.0579339	0.08540712	0.2268002	0	0.05553972	0.13688237	0.1002356	0.7073423	0.20484	0.204263544	3.32E-07
468	10	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.09121	0.081073284	0.00010275
468	10	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.10772	0.103739166	1.58E-05
468	10	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.12484	0.140281677	0.00023845
468	25	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.10222	0.095036507	5.16E-05
468	25	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.12444	0.121655388	7.75E-06
468	25	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.14998	0.164536552	0.00021189
468	50	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.11255	0.107198582	2.86E-05
468	50	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.14215	0.137216263	2.43E-05
468	50	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.17839	0.185578804	5.17E-05
468	75	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.11763	0.115002111	6.91E-06
468	75	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.15189	0.147206281	2.19E-05
468	75	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.19648	0.19908741	6.80E-06
468	100	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.11937	0.120863056	2.23E-06
468	100	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.15779	0.154703846	9.52E-06
468	100	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.20934	0.209221029	1.42E-08
468	120	2	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.11961	0.124720081	2.61E-05
468	120	2.4	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.161	0.159637157	1.86E-06
468	120	3	0.03990249	0.06002051	0.23175516	0	0.08334944	0.16446378	0.06637429	0.68581249	0.21648	0.215895955	3.41E-07
469	10	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.0767	0.068408966	6.87E-05
469	10	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.08999	0.087178135	7.91E-06
469	10	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.10376	0.117247772	0.00018192
469	25	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.08669	0.080765877	3.51E-05
469	25	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.10506	0.102925186	4.56E-06
469	25	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.1261	0.138463211	0.00015285
469	50	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.09605	0.091546783	2.03E-05
469	50	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.12071	0.116680584	1.62E-05
469	50	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.1509	0.156981258	3.70E-05
469	75	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.10066	0.098497365	4.68E-06
469	75	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.12938	0.125546328	1.47E-05
469	75	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.16677	0.16891819	4.61E-06
469	100	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.10262	0.103739166	1.25E-06
469	100	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.13488	0.13222414	7.05E-06
469	100	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.17785	0.177908773	3.45E-09
469	120	2	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.10282	0.107201107	1.92E-05
469	120	2.4	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.13765	0.136630313	1.04E-06
469	120	3	0.03804701	0.11721745	0.24038431	0	0.14765199	0.15259282	0.07066238	0.62909281	0.18446	0.183836468	3.89E-07
470	10	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.08606	0.075812721	0.00010501
470	10	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.10051	0.096205521	1.85E-05
470	10	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.11552	0.128743076	0.00017485
470	25	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.09752	0.090628891	4.75E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
470	25	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.11783	0.115030975	7.83E-06
470	25	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.14058	0.153954811	0.00017889
470	50	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.10896	0.103717518	2.75E-05
470	50	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.13596	0.131648293	1.86E-05
470	50	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.16903	0.176183395	5.12E-05
470	75	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.11461	0.112222455	5.70E-06
470	75	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.1468	0.142443631	1.90E-05
470	75	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.18801	0.190618553	6.80E-06
470	100	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.11727	0.118654919	1.92E-06
470	100	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.15357	0.150607967	8.77E-06
470	100	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.20096	0.201550999	3.49E-07
470	120	2	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.11817	0.122919655	2.26E-05
470	120	2.4	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.15725	0.156011049	1.53E-06
470	120	3	0.07599759	0.08830683	0.22228526	0	0.07353816	0.16316374	0.05151455	0.71178354	0.20944	0.208786257	4.27E-07
471	10	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.08481	0.075401402	8.85E-05
471	10	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.09962	0.096227169	1.15E-05
471	10	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.11503	0.129738903	0.00021635
471	25	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.09567	0.08901825	4.42E-05
471	25	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.11613	0.113636818	6.22E-06
471	25	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.13947	0.153210106	0.00018879
471	50	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.10603	0.100933533	2.60E-05
471	50	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.13334	0.128859978	2.01E-05
471	50	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.167	0.173715477	4.51E-05
471	75	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.11097	0.108608615	5.58E-06
471	75	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.14287	0.138662376	1.77E-05
471	75	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.18444	0.186929665	6.20E-06
471	100	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.11301	0.114394512	1.92E-06
471	100	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.14882	0.146044483	7.70E-06
471	100	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.19688	0.196877108	8.37E-12
471	120	2	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.11336	0.118211126	2.35E-05
471	120	2.4	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.15199	0.150911045	1.16E-06
471	120	3	0.05889377	0.05328516	0.27836713	0	0.06521644	0.13715129	0.08089427	0.71673801	0.20394	0.203444513	2.46E-07
472	10	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.09763	0.087719345	9.82E-05
472	10	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.11592	0.112831497	9.54E-06
472	10	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.13496	0.153400612	0.00034006
472	25	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.10878	0.10179081	4.88E-05
472	25	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.13341	0.130920906	6.20E-06
472	25	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.16167	0.17801918	0.0002673
472	50	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.11921	0.113892269	2.83E-05
472	50	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.15158	0.146468792	2.61E-05
472	50	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.19112	0.199182663	6.50E-05
472	75	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.12401	0.121594772	5.83E-06
472	75	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.16142	0.156379433	2.54E-05
472	75	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.20976	0.212659518	8.41E-06
472	100	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.12568	0.127368402	2.85E-06
472	100	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.16738	0.163787518	1.29E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
472	100	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.22278	0.222729635	2.54E-09
472	120	2	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.12561	0.131156874	3.08E-05
472	120	2.4	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.17003	0.168650111	1.90E-06
472	120	3	0.05854081	0.02736225	0.21759481	0	0.05587326	0.14502434	0.06724946	0.73185294	0.22978	0.229328791	2.04E-07
473	10	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.08875	0.079254818	9.02E-05
473	10	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.10514	0.101834106	1.09E-05
473	10	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.12221	0.138333321	0.00025996
473	25	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.0992	0.092369423	4.67E-05
473	25	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.12136	0.118693886	7.11E-06
473	25	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.14687	0.161211357	0.00020567
473	50	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.10884	0.10368721	2.66E-05
473	50	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.13816	0.133237286	2.42E-05
473	50	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.17384	0.180989342	5.11E-05
473	75	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.11336	0.110929324	5.91E-06
473	75	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.1473	0.142530225	2.28E-05
473	75	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.19125	0.193626239	5.65E-06
473	100	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.11489	0.116353693	2.14E-06
473	100	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.15267	0.149493074	1.01E-05
473	100	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.2031	0.20309453	2.99E-11
473	120	2	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.11486	0.119919546	2.56E-05
473	120	2.4	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.15527	0.154077125	1.42E-06
473	120	3	0.0252942	0.04601162	0.27295328	0	0.0767189	0.14295312	0.0882209	0.69210709	0.20953	0.209313035	4.71E-08
474	10	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.09023	0.079622841	0.00011251
474	10	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.10582	0.101401138	1.95E-05
474	10	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.12204	0.136276722	0.00020268
474	25	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.1018	0.094525604	5.29E-05
474	25	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.12332	0.120382462	8.63E-06
474	25	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.14786	0.161808853	0.00019457
474	50	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.11313	0.107614231	3.04E-05
474	50	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.14182	0.137056065	2.27E-05
474	50	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.17719	0.184219284	4.94E-05
474	75	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.11874	0.116075872	7.10E-06
474	75	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.15259	0.147832642	2.26E-05
474	75	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.19611	0.198703512	6.73E-06
474	100	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.12121	0.122458544	1.56E-06
474	100	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.15908	0.155963783	9.71E-06
474	100	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.20963	0.209636679	4.46E-11
474	120	2	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.12174	0.126684674	2.44E-05
474	120	2.4	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.16275	0.161340165	1.99E-06
474	120	3	0.07596002	0.05580281	0.23768769	0	0.06672709	0.15714267	0.04328159	0.73284865	0.21765	0.216853897	6.34E-07
475	10	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.07225	0.063906097	6.96E-05
475	10	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.08417	0.080965042	1.03E-05
475	10	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.09669	0.108155441	0.00013146
475	25	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.08205	0.076297646	3.31E-05
475	25	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.09897	0.096673126	5.28E-06
475	25	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.11797	0.129111099	0.00012412

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
475	50	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.0916	0.087221432	1.92E-05
475	50	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.11423	0.110515118	1.38E-05
475	50	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.14184	0.147629147	3.35E-05
475	75	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.09631	0.094312007	3.99E-06
475	75	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.12314	0.119499207	1.33E-05
475	75	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.1576	0.159632467	4.13E-06
475	100	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.09852	0.09968009	1.35E-06
475	100	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.12896	0.126298971	7.08E-06
475	100	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.16848	0.168721189	5.82E-08
475	120	2	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.09919	0.103232233	1.63E-05
475	120	2.4	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.13165	0.130806891	7.11E-07
475	120	3	0.07017518	0.10859313	0.24905972	0	0.11205392	0.16158417	0.12566535	0.60069656	0.17542	0.174736921	4.67E-07
476	10	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.0886	0.079038334	9.14E-05
476	10	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.105	0.101660919	1.11E-05
476	10	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.12217	0.138268375	0.00025916
476	25	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.09905	0.092049026	4.90E-05
476	25	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.12124	0.118390808	8.12E-06
476	25	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.1469	0.161098785	0.00020161
476	50	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.10866	0.103288879	2.88E-05
476	50	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.13808	0.132864933	2.72E-05
476	50	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.17391	0.180785847	4.73E-05
476	75	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.11298	0.110479037	6.25E-06
476	75	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.14696	0.142111689	2.35E-05
476	75	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.19106	0.193363571	5.31E-06
476	100	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.11453	0.115866604	1.79E-06
476	100	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.15238	0.149040623	1.12E-05
476	100	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.2029	0.202787123	1.27E-08
476	120	2	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.11423	0.119405397	2.68E-05
476	120	2.4	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.15485	0.153595448	1.57E-06
476	120	3	0.03894535	0.08459604	0.19419512	0	0.12449371	0.14001872	0.05460625	0.68088132	0.20935	0.208979289	1.37E-07
477	10	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.09719	0.087372971	9.64E-05
477	10	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.11636	0.113047981	1.10E-05
477	10	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.13643	0.154980946	0.00034414
477	25	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.10726	0.10015419	5.05E-05
477	25	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.13248	0.129604683	8.27E-06
477	25	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.16182	0.177681465	0.00025159
477	50	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.11649	0.111017361	2.99E-05
477	50	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.1491	0.143684807	2.93E-05
477	50	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.18959	0.196987514	5.47E-05
477	75	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.12054	0.117897224	6.98E-06
477	75	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.15785	0.152601064	2.76E-05
477	75	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.20645	0.20919	7.51E-06
477	100	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.12128	0.123030062	3.06E-06
477	100	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.16282	0.159232693	1.29E-05
477	100	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.21826	0.218265734	3.29E-11
477	120	2	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.12088	0.126385204	3.03E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
477	120	2.4	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.16468	0.163566343	1.24E-06
477	120	3	0.03389537	0.02268485	0.20490977	0	0.0993135	0.16137381	0.08303126	0.65628143	0.22451	0.224203531	9.39E-08
478	10	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.08382	0.074015903	9.61E-05
478	10	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.09761	0.093780899	1.47E-05
478	10	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.11204	0.125192738	0.00017299
478	25	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.09531	0.088697853	4.37E-05
478	25	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.11492	0.112398529	6.36E-06
478	25	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.1369	0.150075417	0.00017359
478	50	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.10683	0.101717205	2.61E-05
478	50	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.133	0.128868637	1.71E-05
478	50	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.16517	0.172074528	4.77E-05
478	75	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.11248	0.110178846	5.30E-06
478	75	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.14389	0.139577382	1.86E-05
478	75	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.18396	0.186378352	5.85E-06
478	100	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.1152	0.116578836	1.90E-06
478	100	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.15073	0.147691927	9.23E-06
478	100	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.19706	0.197219152	2.53E-08
478	120	2	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.11621	0.120826976	2.13E-05
478	120	2.4	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.15424	0.153065062	1.38E-06
478	120	3	0.12090134	0.08244544	0.1989487	0	0.07864044	0.15274327	0.04623018	0.7223861	0.20539	0.204393435	9.93E-07
479	10	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.08354	0.074167442	8.78E-05
479	10	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.09794	0.094430351	1.23E-05
479	10	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.11286	0.12692461	0.00019781
479	25	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.09445	0.087953148	4.22E-05
479	25	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.11438	0.111991539	5.70E-06
479	25	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.13711	0.150499725	0.00017928
479	50	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.10504	0.100037289	2.50E-05
479	50	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.13166	0.127379227	1.83E-05
479	50	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.16432	0.171173954	4.70E-05
479	75	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.11014	0.107843704	5.27E-06
479	75	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.14153	0.137325948	1.77E-05
479	75	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.182	0.184533908	6.42E-06
479	100	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.11249	0.113732071	1.54E-06
479	100	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.14756	0.144821348	7.50E-06
479	100	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.19448	0.194617014	1.88E-08
479	120	2	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.1128	0.117624815	2.33E-05
479	120	2.4	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.15086	0.149770896	1.19E-06
479	120	3	0.08612618	0.06376916	0.23935456	0	0.07203234	0.14518373	0.08285719	0.69992674	0.20184	0.201270652	3.24E-07
480	10	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.09401	0.084060764	9.90E-05
480	10	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.11116	0.107614231	1.26E-05
480	10	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.12896	0.145650482	0.00027857
480	25	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.10517	0.098171196	4.90E-05
480	25	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.12815	0.125742607	5.80E-06
480	25	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.15462	0.170173798	0.00024192
480	50	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.11561	0.110415535	2.70E-05
480	50	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.14622	0.141411724	2.31E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
480	50	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.18365	0.191384907	5.98E-05
480	75	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.12087	0.118243599	6.90E-06
480	75	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.15624	0.151449369	2.30E-05
480	75	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.20222	0.204944026	7.42E-06
480	100	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.12264	0.124121141	2.19E-06
480	100	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.16216	0.158968582	1.02E-05
480	100	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.21517	0.215122385	2.27E-09
480	120	2	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.12272	0.127990794	2.78E-05
480	120	2.4	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.16538	0.163910913	2.16E-06
480	120	3	0.08728865	0.02645323	0.1996468	0	0.05567757	0.16009118	0.0899913	0.69423995	0.22238	0.22181499	3.19E-07
481	10	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.08698	0.077306461	9.36E-05
481	10	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.1026	0.09893322	1.34E-05
481	10	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.11891	0.133830452	0.00022262
481	25	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.09762	0.090706825	4.78E-05
481	25	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.11889	0.116165352	7.42E-06
481	25	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.14331	0.157150116	0.00019155
481	50	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.10756	0.102401295	2.66E-05
481	50	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.13589	0.13113306	2.26E-05
481	50	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.17058	0.177404366	4.66E-05
481	75	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.11243	0.109901746	6.39E-06
481	75	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.14529	0.140749283	2.06E-05
481	75	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.18806	0.190416501	5.55E-06
481	100	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.11413	0.115554867	2.03E-06
481	100	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.15084	0.147971191	8.23E-06
481	100	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.20025	0.200184984	4.23E-09
481	120	2	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.1141	0.119273702	2.68E-05
481	120	2.4	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.15387	0.152729511	1.30E-06
481	120	3	0.06003273	0.02967701	0.27535733	0	0.11536203	0.15627724	0.04471884	0.68364189	0.20698	0.206610592	1.36E-07
482	10	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.09842	0.087611103	0.00011683
482	10	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.11672	0.112485123	1.79E-05
482	10	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.13575	0.152772808	0.00028978
482	25	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.1098	0.1021978	5.78E-05
482	25	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.13432	0.131249962	9.43E-06
482	25	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.16248	0.178227005	0.00024797
482	50	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.12045	0.114810162	3.18E-05
482	50	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.15287	0.147438641	2.95E-05
482	50	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.19241	0.200204468	6.08E-05
482	75	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.12541	0.122867699	6.46E-06
482	75	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.16307	0.157785136	2.79E-05
482	75	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.2115	0.214244181	7.53E-06
482	100	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.12732	0.128907604	2.52E-06
482	100	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.16915	0.165536709	1.31E-05
482	100	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.22473	0.224764585	1.20E-09
482	120	2	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.12725	0.132877922	3.17E-05
482	120	2.4	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.17202	0.17063094	1.93E-06
482	120	3	0.05183434	0.03725272	0.2114086	0	0.04635228	0.15217608	0.0716108	0.72986084	0.23211	0.231677643	1.87E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
483	10	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.08683	0.077089977	9.49E-05
483	10	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.10203	0.098413658	1.31E-05
483	10	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.11788	0.132661438	0.00021849
483	25	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.09779	0.090975266	4.64E-05
483	25	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.11872	0.116156693	6.57E-06
483	25	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.14257	0.15655262	0.00019551
483	50	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.10825	0.103107033	2.65E-05
483	50	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.13615	0.131626644	2.05E-05
483	50	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.17053	0.177413025	4.74E-05
483	75	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.1134	0.110912005	6.19E-06
483	75	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.14596	0.141595014	1.91E-05
483	75	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.1883	0.190846583	6.49E-06
483	100	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.11544	0.116790991	1.83E-06
483	100	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.15188	0.149092579	7.77E-06
483	100	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.20093	0.200959997	9.00E-10
483	120	2	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.11568	0.120673633	2.49E-05
483	120	2.4	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.1553	0.154041044	1.58E-06
483	120	3	0.06531352	0.04928176	0.25946913	0	0.06901018	0.14865408	0.07607677	0.70625898	0.20819	0.207629871	3.14E-07
484	10	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.07762	0.068712044	7.94E-05
484	10	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.09059	0.087199783	1.15E-05
484	10	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.10415	0.116706562	0.00015767
484	25	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.08804	0.081926231	3.74E-05
484	25	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.10637	0.103972969	5.75E-06
484	25	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.127	0.139181938	0.0001484
484	50	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.09823	0.093573074	2.17E-05
484	50	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.12269	0.118763161	1.54E-05
484	50	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.15275	0.158964252	3.86E-05
484	75	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.10319	0.101112493	4.32E-06
484	75	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.13234	0.128343302	1.60E-05
484	75	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.16968	0.171798871	4.49E-06
484	100	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.10561	0.106828394	1.48E-06
484	100	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.13835	0.135594797	7.59E-06
484	100	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.18133	0.181500244	2.90E-08
484	120	2	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.10626	0.110608927	1.89E-05
484	120	2.4	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.14138	0.140389919	9.80E-07
484	120	3	0.07876871	0.08189001	0.25975645	0	0.06573632	0.14483041	0.11899098	0.6704423	0.18863	0.187918997	5.06E-07
485	10	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.08299	0.074665356	6.93E-05
485	10	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.0987	0.096140575	6.55E-06
485	10	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.11509	0.130951214	0.00025158
485	25	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.0923	0.086169319	3.76E-05
485	25	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.11331	0.110969734	5.48E-06
485	25	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.13753	0.151175156	0.00018619
485	50	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.10064	0.096036663	2.12E-05
485	50	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.12819	0.123673019	2.04E-05
485	50	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.16201	0.168459244	4.16E-05
485	75	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.10451	0.102304598	4.86E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
485	75	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.13616	0.131734886	1.96E-05
485	75	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.17718	0.179442202	5.12E-06
485	100	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.10551	0.106986427	2.18E-06
485	100	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.14087	0.137755308	9.70E-06
485	100	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.18766	0.187650557	8.92E-11
485	120	2	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.10509	0.110055089	2.47E-05
485	120	2.4	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.14284	0.141703256	1.29E-06
485	120	3	0.05737149	0.02873046	0.23668382	0	0.12100266	0.15419402	0.13083447	0.59396886	0.19346	0.193024413	1.90E-07
486	10	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.08418	0.07501173	8.41E-05
486	10	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.09882	0.095707607	9.69E-06
486	10	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.11401	0.128916264	0.0002222
486	25	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.0951	0.088559303	4.28E-05
486	25	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.11532	0.113022003	5.28E-06
486	25	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.1384	0.152248917	0.00019179
486	50	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.10551	0.10042696	2.58E-05
486	50	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.13251	0.12814558	1.90E-05
486	50	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.16583	0.172624397	4.62E-05
486	75	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.11049	0.108060188	5.90E-06
486	75	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.1421	0.137897466	1.77E-05
486	75	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.18332	0.185746218	5.89E-06
486	100	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.11263	0.113820829	1.42E-06
486	100	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.14808	0.145234833	8.09E-06
486	100	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.19581	0.195634489	3.08E-08
486	120	2	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.11292	0.117624815	2.21E-05
486	120	2.4	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.15132	0.150079385	1.54E-06
486	120	3	0.05341741	0.0511119	0.2961731	0	0.0940599	0.14641109	0.04843434	0.71109467	0.20277	0.202160041	3.72E-07
487	10	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.08727	0.077111626	0.00010319
487	10	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.10251	0.098413658	1.68E-05
487	10	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.11835	0.132574844	0.00020235
487	25	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.09825	0.09119175	4.98E-05
487	25	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.11912	0.116373177	7.55E-06
487	25	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.14308	0.156751785	0.00018692
487	50	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.10887	0.103501034	2.88E-05
487	50	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.13681	0.132068272	2.25E-05
487	50	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.17112	0.177906609	4.61E-05
487	75	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.11402	0.111443113	6.64E-06
487	75	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.1466	0.142198283	1.94E-05
487	75	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.18896	0.191545105	6.68E-06
487	100	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.11624	0.117427454	1.41E-06
487	100	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.15268	0.14982646	8.14E-06
487	100	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.20178	0.201821604	1.73E-09
487	120	2	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.11654	0.12137901	2.34E-05
487	120	2.4	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.15612	0.154861879	1.58E-06
487	120	3	0.05284456	0.06148658	0.25455631	0	0.08107356	0.16013523	0.06476572	0.6940255	0.20911	0.208602246	2.58E-07
488	10	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.07669	0.068105888	7.37E-05
488	10	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.0897	0.08657198	9.78E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
488	10	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.10324	0.116295242	0.00017044
488	25	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.08702	0.080930405	3.71E-05
488	25	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.10527	0.102959824	5.34E-06
488	25	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.12596	0.138264046	0.00015139
488	50	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.09691	0.092217884	2.20E-05
488	50	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.12128	0.117347355	1.55E-05
488	50	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.15143	0.157561436	3.76E-05
488	75	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.10169	0.099524943	4.69E-06
488	75	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.13062	0.126646067	1.58E-05
488	75	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.16786	0.170055453	4.82E-06
488	100	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.10387	0.105048895	1.39E-06
488	100	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.13625	0.133672419	6.64E-06
488	100	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.17919	0.179489107	8.95E-08
488	120	2	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.10413	0.108698455	2.09E-05
488	120	2.4	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.13932	0.138320692	9.99E-07
488	120	3	0.07798324	0.09755873	0.24155511	0	0.11395569	0.13887282	0.0788539	0.66831759	0.1863	0.185718075	3.39E-07
489	10	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.08017	0.070898533	8.60E-05
489	10	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.09391	0.090252209	1.34E-05
489	10	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10818	0.121166134	0.00016864
489	25	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.09064	0.084169006	4.19E-05
489	25	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10972	0.107159615	6.56E-06
489	25	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.13137	0.143866653	0.00015617
489	50	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10077	0.095824509	2.45E-05
489	50	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.12619	0.121975784	1.78E-05
489	50	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.15759	0.163778858	3.83E-05
489	75	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10574	0.103346608	5.73E-06
489	75	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.13571	0.131555926	1.73E-05
489	75	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.17447	0.176656774	4.78E-06
489	100	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10794	0.109038696	1.21E-06
489	100	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.14167	0.138787937	8.31E-06
489	100	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.18615	0.186373301	4.99E-08
489	120	2	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.10835	0.112795417	1.98E-05
489	120	2.4	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.14478	0.143561411	1.48E-06
489	120	3	0.10631657	0.07598055	0.20130809	0	0.11773605	0.15728987	0.0761745	0.64879958	0.19356	0.192788084	5.96E-07
490	10	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.08123	0.072370625	7.85E-05
490	10	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.09555	0.092352104	1.02E-05
490	10	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.11046	0.124521637	0.00019773
490	25	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.09137	0.085043602	4.00E-05
490	25	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.111	0.108623047	5.65E-06
490	25	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.1335	0.146429825	0.00016718
490	50	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.1009	0.096118927	2.29E-05
490	50	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.12702	0.122755127	1.82E-05
490	50	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.15914	0.165497742	4.04E-05
490	75	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.10554	0.103245583	5.26E-06
490	75	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.13593	0.131841685	1.67E-05
490	75	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.17562	0.177753627	4.55E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
490	100	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.10734	0.108605728	1.60E-06
490	100	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.14147	0.138675365	7.81E-06
490	100	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.18711	0.186977291	1.76E-08
490	120	2	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.10748	0.112140552	2.17E-05
490	120	2.4	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.14434	0.143186172	1.33E-06
490	120	3	0.05694723	0.0915329	0.21073841	0	0.12471568	0.15750177	0.08800733	0.62977521	0.1936	0.193053277	2.99E-07
491	10	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.07944	0.07094183	7.22E-05
491	10	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.0938	0.091009903	7.78E-06
491	10	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.10888	0.123417568	0.00021134
491	25	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.08906	0.082809486	3.91E-05
491	25	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.10871	0.1062677	5.96E-06
491	25	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.1314	0.144135094	0.00016218
491	50	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.09789	0.09309248	2.30E-05
491	50	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.12399	0.119464569	2.05E-05
491	50	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.15584	0.162033997	3.84E-05
491	75	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.10208	0.099666379	5.83E-06
491	75	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.13226	0.127904561	1.90E-05
491	75	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.17165	0.173490334	3.39E-06
491	100	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.1034	0.104609432	1.46E-06
491	100	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.137	0.134235277	7.64E-06
491	100	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.18227	0.182086916	3.35E-08
491	120	2	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.10321	0.107857776	2.16E-05
491	120	2.4	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.13943	0.138401874	1.06E-06
491	120	3	0.0412087	0.06985539	0.25743706	0	0.12232424	0.13873023	0.10666687	0.63227866	0.18796	0.187731377	5.23E-08
492	10	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.08164	0.072478867	8.39E-05
492	10	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.09614	0.092698479	1.18E-05
492	10	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.11125	0.125171089	0.0001938
492	25	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.0917	0.085182152	4.25E-05
492	25	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.1115	0.108917465	6.67E-06
492	25	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.13428	0.147131233	0.00016515
492	50	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.10112	0.096222839	2.40E-05
492	50	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.12751	0.123040886	2.00E-05
492	50	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.15995	0.166212139	3.92E-05
492	75	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.1057	0.10332063	5.66E-06
492	75	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.13626	0.132118785	1.71E-05
492	75	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.17632	0.178472354	4.63E-06
492	100	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.10738	0.108657684	1.63E-06
492	100	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.14176	0.138939476	7.96E-06
492	100	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.18775	0.187689524	3.66E-09
492	120	2	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.10736	0.112174829	2.32E-05
492	120	2.4	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.14461	0.143438737	1.37E-06
492	120	3	0.09233173	0.05976661	0.20150777	0	0.12643697	0.1566296	0.09219265	0.62474077	0.19415	0.193760459	1.52E-07
493	10	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.08411	0.074513817	9.21E-05
493	10	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.09848	0.094798374	1.36E-05
493	10	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.11337	0.127184391	0.00019084
493	25	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.09531	0.0886026	4.50E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
493	25	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.11525	0.112736244	6.32E-06
493	25	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.13801	0.151296387	0.00017653
493	50	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.10605	0.101002808	2.55E-05
493	50	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.13281	0.128496284	1.86E-05
493	50	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.16573	0.172459869	4.53E-05
493	75	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.11139	0.109021378	5.61E-06
493	75	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.14299	0.138697014	1.84E-05
493	75	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.18382	0.186156095	5.46E-06
493	100	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.11382	0.115080767	1.59E-06
493	100	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.14942	0.146403847	9.10E-06
493	100	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.19641	0.19650259	8.57E-09
493	120	2	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.11427	0.119091495	2.32E-05
493	120	2.4	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.15271	0.151495552	1.47E-06
493	120	3	0.06768278	0.08066607	0.24775424	0	0.05227465	0.1405146	0.08537708	0.72183367	0.204	0.203338075	4.38E-07
494	10	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.08879	0.078756905	0.00010066
494	10	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.10429	0.100405312	1.51E-05
494	10	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.12039	0.13521595	0.00021981
494	25	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.10013	0.093105469	4.93E-05
494	25	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.12146	0.11877182	7.23E-06
494	25	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.14579	0.159938431	0.00020018
494	50	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.11106	0.105696182	2.88E-05
494	50	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.1395	0.134821949	2.19E-05
494	50	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.17457	0.181569519	4.90E-05
494	75	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.11641	0.113810005	6.76E-06
494	75	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.14972	0.145171331	2.07E-05
494	75	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.19303	0.19551398	6.17E-06
494	100	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.11858	0.119923515	1.81E-06
494	100	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.15592	0.152969809	8.70E-06
494	100	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.20606	0.20601923	1.66E-09
494	120	2	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.119	0.123962386	2.46E-05
494	120	2.4	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.15948	0.158116357	1.86E-06
494	120	3	0.09716305	0.05844227	0.20262061	0	0.07293597	0.14662783	0.0598126	0.7206236	0.21362	0.212949967	4.49E-07
495	10	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.093	0.083194828	9.61E-05
495	10	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.11018	0.106748295	1.18E-05
495	10	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.12803	0.144827843	0.00028217
495	25	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.10388	0.096958885	4.79E-05
495	25	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.12706	0.124417725	6.98E-06
495	25	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.1536	0.168814278	0.00023147
495	50	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.114	0.108843861	2.66E-05
495	50	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.14466	0.139684181	2.48E-05
495	50	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.18202	0.189523144	5.63E-05
495	75	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.11886	0.116430906	5.90E-06
495	75	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.15429	0.149425964	2.37E-05
495	75	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.2002	0.20275032	6.50E-06
495	100	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.12055	0.122129488	2.49E-06
495	100	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.15999	0.156734467	1.06E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
495	100	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.21276	0.212654467	1.11E-08
495	120	2	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.12054	0.125871054	2.84E-05
495	120	2.4	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.16279	0.161538609	1.57E-06
495	120	3	0.02051026	0.06759065	0.23035465	0	0.0909931	0.15608841	0.05452969	0.6983888	0.21956	0.21916306	1.58E-07
496	10	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.08728	0.077263165	0.00010034
496	10	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.10243	0.098478603	1.56E-05
496	10	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.11818	0.132444954	0.00020349
496	25	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.09853	0.091564102	4.85E-05
496	25	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.11946	0.116710892	7.56E-06
496	25	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.14332	0.157011566	0.00018746
496	50	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.10946	0.104128838	2.84E-05
496	50	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.13739	0.132730713	2.17E-05
496	50	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.17173	0.178547401	4.65E-05
496	75	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.11472	0.112242661	6.14E-06
496	75	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.14742	0.143067106	1.89E-05
496	75	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.18995	0.192465884	6.33E-06
496	100	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.11697	0.118366995	1.95E-06
496	100	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.15369	0.150865583	7.98E-06
496	100	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.20296	0.202953815	3.82E-11
496	120	2	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.11736	0.122410917	2.55E-05
496	120	2.4	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.15721	0.156014657	1.43E-06
496	120	3	0.03936257	0.08203661	0.25916218	0	0.06753957	0.14640793	0.05782026	0.72823225	0.21042	0.209879502	2.92E-07
497	10	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.09305	0.083497906	9.12E-05
497	10	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.11066	0.107570934	9.54E-06
497	10	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.12902	0.146689606	0.00031221
497	25	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.10358	0.096586533	4.89E-05
497	25	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.12718	0.124495659	7.21E-06
497	25	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.15457	0.169749489	0.00023042
497	50	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.11309	0.107839375	2.76E-05
497	50	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.14421	0.138991432	2.72E-05
497	50	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.18247	0.189536133	4.99E-05
497	75	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.11747	0.115004997	6.08E-06
497	75	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.1531	0.148219426	2.38E-05
497	75	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.19959	0.202132619	6.46E-06
497	100	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.11889	0.120358648	2.16E-06
497	100	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.15855	0.155108671	1.18E-05
497	100	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.21177	0.211535244	5.51E-08
497	120	2	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.1185	0.123870381	2.88E-05
497	120	2.4	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.16099	0.159633549	1.84E-06
497	120	3	0.03479962	0.02554083	0.26036974	0	0.10129423	0.1447202	0.05078172	0.70320385	0.21826	0.217699989	3.14E-07
498	10	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.09212	0.082675266	8.92E-05
498	10	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.10922	0.106033897	1.02E-05
498	10	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.12699	0.143853664	0.00028438
498	25	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.10283	0.096101608	4.53E-05
498	25	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.1258	0.123335304	6.07E-06
498	25	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.15211	0.167324867	0.00023149

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
498	50	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.11276	0.107705154	2.56E-05
498	50	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.14306	0.138216419	2.35E-05
498	50	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.1801	0.187505512	5.48E-05
498	75	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.11754	0.115103137	5.94E-06
498	75	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.15257	0.147711411	2.36E-05
498	75	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.198	0.20040652	5.79E-06
498	100	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.11918	0.120653067	2.17E-06
498	100	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.15813	0.154829407	1.09E-05
498	100	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.21022	0.210056658	2.67E-08
498	120	2	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.11906	0.124297937	2.74E-05
498	120	2.4	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.16088	0.159501855	1.90E-06
498	120	3	0.04405317	0.04055168	0.23369818	0	0.07549148	0.15745004	0.08519012	0.68186836	0.21703	0.216384848	4.16E-07
499	10	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.09183	0.082415485	8.86E-05
499	10	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.10962	0.106575108	9.27E-06
499	10	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.12822	0.145975208	0.00031525
499	25	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.10179	0.094742088	4.97E-05
499	25	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.1254	0.122564621	8.04E-06
499	25	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.1528	0.167870407	0.00022712
499	50	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.11062	0.105276203	2.86E-05
499	50	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.14141	0.136177139	2.74E-05
499	50	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.1797	0.186531334	4.67E-05
499	75	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.11457	0.111956902	6.83E-06
499	75	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.14993	0.144807638	2.62E-05
499	75	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.19586	0.198354251	6.22E-06
499	100	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.11545	0.116936035	2.21E-06
499	100	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.15472	0.151237936	1.21E-05
499	100	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.20727	0.207160101	1.21E-08
499	120	2	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.11491	0.120191956	2.79E-05
499	120	2.4	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.15663	0.15544819	1.40E-06
499	120	3	0.03783913	0.02426836	0.23347337	0	0.08426642	0.1421676	0.10917752	0.66438846	0.21336	0.212917495	1.96E-07
500	10	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.09334	0.083216476	0.00010249
500	10	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.11034	0.106531811	1.45E-05
500	10	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.128	0.1440485	0.00025755
500	25	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.10448	0.097400513	5.01E-05
500	25	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.12731	0.124686165	6.88E-06
500	25	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.15358	0.168632431	0.00022658
500	50	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.11491	0.109683819	2.73E-05
500	50	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.14529	0.140415897	2.38E-05
500	50	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.18248	0.189899826	5.51E-05
500	75	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.12013	0.117556623	6.62E-06
500	75	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.15524	0.150491066	2.26E-05
500	75	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.20091	0.20353255	6.88E-06
500	100	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.12187	0.123469524	2.56E-06
500	100	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.1612	0.158048525	9.93E-06
500	100	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.21388	0.213756371	1.53E-08
500	120	2	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.12196	0.127357578	2.91E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
500	120	2.4	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.16436	0.163021525	1.79E-06
500	120	3	0.05970625	0.05740382	0.19468965	0	0.08482714	0.16409741	0.06269029	0.68838517	0.22102	0.220474593	2.97E-07
501	10	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.07597	0.067932701	6.46E-05
501	10	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.08957	0.087069893	6.25E-06
501	10	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.1038	0.117832279	0.0001969
501	25	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.08521	0.079328423	3.46E-05
501	25	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.10383	0.101678238	4.63E-06
501	25	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.12528	0.137692528	0.00015407
501	50	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.09377	0.089221745	2.07E-05
501	50	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.11852	0.114351215	1.74E-05
501	50	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.14885	0.154851055	3.60E-05
501	75	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.09787	0.095550296	5.38E-06
501	75	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.12647	0.122463595	1.61E-05
501	75	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.16383	0.165826797	3.99E-06
501	100	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.09913	0.100307894	1.39E-06
501	100	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.13115	0.128550406	6.76E-06
501	100	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.17423	0.174070511	2.54E-08
501	120	2	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.09898	0.103439697	1.99E-05
501	120	2.4	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.13376	0.132553196	1.46E-06
501	120	3	0.05763829	0.0776011	0.23387715	0	0.11319182	0.14206733	0.15241621	0.59232464	0.17976	0.179488746	7.36E-08
502	10	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.09185	0.081289768	0.00011152
502	10	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.10819	0.103912354	1.83E-05
502	10	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.12519	0.140303326	0.00022841
502	25	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.10317	0.095789871	5.45E-05
502	25	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.12536	0.122460709	8.41E-06
502	25	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.15093	0.165350533	0.00020795
502	50	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.11397	0.10844553	3.05E-05
502	50	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.14377	0.138632069	2.64E-05
502	50	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.17992	0.187176456	5.27E-05
502	75	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.11929	0.116581001	7.34E-06
502	75	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.15389	0.149024747	2.37E-05
502	75	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.19855	0.20121184	7.09E-06
502	100	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.12134	0.122703171	1.86E-06
502	100	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.16014	0.156849203	1.08E-05
502	100	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.21195	0.211777706	2.97E-08
502	120	2	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.12152	0.126742403	2.73E-05
502	120	2.4	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.16335	0.162005854	1.81E-06
502	120	3	0.05839442	0.05476654	0.23030804	0	0.09046753	0.16283303	0.03675304	0.7099464	0.21931	0.218735504	3.30E-07
503	10	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.08304	0.073994255	8.18E-05
503	10	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.09748	0.094365406	9.70E-06
503	10	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.11247	0.127119446	0.00021461
503	25	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.09372	0.087303696	4.12E-05
503	25	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.11363	0.111402702	4.96E-06
503	25	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.1364	0.150040779	0.00018607
503	50	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.10389	0.098954868	2.44E-05
503	50	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.13051	0.126257839	1.81E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
503	50	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.16335	0.170069885	4.52E-05
503	75	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.10881	0.10644666	5.59E-06
503	75	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.14001	0.135830765	1.75E-05
503	75	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.18049	0.18296079	6.10E-06
503	100	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.11091	0.11210844	1.44E-06
503	100	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.1458	0.143041849	7.61E-06
503	100	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.19263	0.192668657	1.49E-09
503	120	2	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.11126	0.11584243	2.10E-05
503	120	2.4	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.14902	0.147795479	1.50E-06
503	120	3	0.04631805	0.05573249	0.29777143	0	0.10543527	0.15177889	0.05160275	0.69118309	0.19966	0.199075143	3.42E-07
504	10	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.09557	0.085316372	0.00010514
504	10	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.11368	0.109779072	1.52E-05
504	10	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.13252	0.14935236	0.00028333
504	25	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.10622	0.098959198	5.27E-05
504	25	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.1304	0.127318611	9.49E-06
504	25	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.15831	0.173239212	0.00022288
504	50	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.11607	0.110701294	2.88E-05
504	50	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.14788	0.14241621	2.99E-05
504	50	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.18662	0.193761902	5.10E-05
504	75	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.12055	0.118174324	5.64E-06
504	75	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.15713	0.152023773	2.61E-05
504	75	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.20439	0.206846199	6.03E-06
504	100	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.12212	0.123768272	2.72E-06
504	100	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.16263	0.159211044	1.17E-05
504	100	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.21687	0.216626949	5.91E-08
504	120	2	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.12186	0.127436956	3.11E-05
504	120	2.4	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.16526	0.163932562	1.76E-06
504	120	3	0.04767899	0.01572439	0.23912297	0	0.08120628	0.15934053	0.07104688	0.6884063	0.22342	0.223041733	1.43E-07
505	10	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.10029	0.089299679	0.00012079
505	10	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.11917	0.114736557	1.97E-05
505	10	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.13876	0.155933475	0.00029493
505	25	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.11161	0.103921013	5.91E-05
505	25	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.13688	0.133562012	1.10E-05
505	25	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.1658	0.181543541	0.00024786
505	50	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.12223	0.116555023	3.22E-05
505	50	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.15536	0.149802647	3.09E-05
505	50	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.19582	0.203594608	6.04E-05
505	75	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.12713	0.124619776	6.30E-06
505	75	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.1656	0.160160688	2.96E-05
505	75	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.21491	0.21766463	7.59E-06
505	100	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.12901	0.130656796	2.71E-06
505	100	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.17153	0.167913704	1.31E-05
505	100	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.22837	0.228198023	2.96E-08
505	120	2	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.12891	0.134624227	3.27E-05
505	120	2.4	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.17443	0.173005048	2.03E-06
505	120	3	0.04354943	0.03563293	0.20830833	0	0.05628853	0.15945564	0.06143642	0.72281941	0.23551	0.235114328	1.57E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
506	10	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.07838	0.069599628	7.71E-05
506	10	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.09144	0.088390446	9.30E-06
506	10	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.10511	0.118373489	0.00017592
506	25	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.08905	0.082965355	3.70E-05
506	25	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.10758	0.105375786	4.86E-06
506	25	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.12847	0.141138954	0.0001605
506	50	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.09955	0.094750748	2.30E-05
506	50	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.12429	0.120343494	1.56E-05
506	50	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.15472	0.161198368	4.20E-05
506	75	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.10455	0.102388306	4.67E-06
506	75	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.13406	0.130043424	1.61E-05
506	75	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.1721	0.174200401	4.41E-06
506	100	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.10692	0.108170595	1.56E-06
506	100	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.14017	0.137382956	7.77E-06
506	100	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.18378	0.184026613	6.08E-08
506	120	2	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.10754	0.111994425	1.98E-05
506	120	2.4	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.14327	0.14223725	1.07E-06
506	120	3	0.09892167	0.10625967	0.2054585	0	0.08362904	0.13537447	0.09074828	0.69024821	0.19132	0.190529434	6.25E-07
507	10	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.09278	0.082696915	0.00010167
507	10	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.10988	0.106163788	1.38E-05
507	10	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.12768	0.1440485	0.00026793
507	25	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.10364	0.096508598	5.09E-05
507	25	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.12677	0.123898163	8.25E-06
507	25	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.1532	0.168121529	0.00022265
507	50	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.11376	0.108458519	2.81E-05
507	50	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.14436	0.139229565	2.63E-05
507	50	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.18156	0.188938637	5.44E-05
507	75	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.11862	0.116093191	6.38E-06
507	75	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.154	0.149042066	2.46E-05
507	75	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.19979	0.202242304	6.01E-06
507	100	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.12028	0.12183074	2.40E-06
507	100	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.15969	0.156390257	1.09E-05
507	100	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.21226	0.212215004	2.02E-09
507	120	2	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.12031	0.125602253	2.80E-05
507	120	2.4	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.16247	0.161222903	1.56E-06
507	120	3	0.04849198	0.06799014	0.18948265	0	0.08484972	0.15173251	0.07136306	0.6920547	0.21905	0.218762565	8.26E-08
508	10	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.0941	0.083454609	0.00011332
508	10	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.11079	0.106661701	1.70E-05
508	10	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.12814	0.143832016	0.00024624
508	25	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.1058	0.098448296	5.40E-05
508	25	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.12855	0.125768585	7.74E-06
508	25	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.15457	0.169645576	0.00022727
508	50	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.11701	0.111523933	3.01E-05
508	50	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.14748	0.142459507	2.52E-05
508	50	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.1845	0.192146931	5.85E-05
508	75	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.12253	0.119937948	6.72E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
508	75	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.15796	0.15319856	2.27E-05
508	75	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.20383	0.206626829	7.82E-06
508	100	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.12469	0.126268663	2.49E-06
508	100	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.16443	0.161280632	9.92E-06
508	100	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.21755	0.217527523	5.05E-10
508	120	2	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.12499	0.130447888	2.98E-05
508	120	2.4	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.16785	0.166607944	1.54E-06
508	120	3	0.04693798	0.06552638	0.23064532	0	0.06292149	0.15501943	0.03909979	0.74295929	0.22524	0.224710464	2.80E-07
509	10	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.08697	0.076895142	0.0001015
509	10	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.10173	0.09756937	1.73E-05
509	10	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.11704	0.13073473	0.00018755
509	25	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.09845	0.091642036	4.63E-05
509	25	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.119	0.116381836	6.85E-06
509	25	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.14228	0.15586853	0.00018465
509	50	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.10974	0.104661388	2.58E-05
509	50	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.13725	0.13290823	1.89E-05
509	50	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.17087	0.177997532	5.08E-05
509	75	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.11539	0.113097051	5.26E-06
509	75	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.14792	0.143615532	1.85E-05
509	75	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.18978	0.192344653	6.58E-06
509	100	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.11796	0.119468899	2.28E-06
509	100	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.15468	0.151714201	8.80E-06
509	100	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.20283	0.203187618	1.28E-07
509	120	2	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.11877	0.123693585	2.42E-05
509	120	2.4	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.15832	0.157070017	1.56E-06
509	120	3	0.06392814	0.07113029	0.25697785	0	0.06100576	0.15691152	0.05459152	0.7274912	0.21102	0.210355767	4.41E-07
510	10	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.09426	0.084190655	0.00010139
510	10	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.11188	0.108285332	1.29E-05
510	10	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.13026	0.147274113	0.00028948
510	25	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.10507	0.097876778	5.17E-05
510	25	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.12881	0.125898476	8.48E-06
510	25	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.1562	0.171238899	0.00022617
510	50	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.11504	0.109679489	2.87E-05
510	50	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.1464	0.141078339	2.83E-05
510	50	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.18458	0.191891479	5.35E-05
510	75	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.11955	0.117204475	5.50E-06
510	75	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.15584	0.150759506	2.58E-05
510	75	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.20257	0.20506237	6.21E-06
510	100	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.12122	0.12285038	2.66E-06
510	100	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.16134	0.158000898	1.11E-05
510	100	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.21497	0.21491456	3.07E-09
510	120	2	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.12103	0.126556587	3.05E-05
510	120	2.4	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.16399	0.162754528	1.53E-06
510	120	3	0.08551491	0.03598954	0.17337663	0	0.08186915	0.14043252	0.07516514	0.70253319	0.22168	0.221374806	9.31E-08
511	10	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.09187	0.081354713	0.00011057
511	10	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.10834	0.104107189	1.79E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
511	10	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.12549	0.140736294	0.00023245
511	25	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.10318	0.095737915	5.54E-05
511	25	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.12551	0.122529984	8.88E-06
511	25	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.15124	0.16565361	0.00020775
511	50	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.11381	0.108281002	3.06E-05
511	50	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.14373	0.138575783	2.66E-05
511	50	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.18023	0.187349644	5.07E-05
511	75	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.11911	0.116344312	7.65E-06
511	75	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.15374	0.14889197	2.35E-05
511	75	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.19879	0.201298434	6.29E-06
511	100	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.12088	0.122410917	2.34E-06
511	100	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.15967	0.156650038	9.12E-06
511	100	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.21201	0.21178853	4.90E-08
511	120	2	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.12109	0.126412265	2.83E-05
511	120	2.4	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.16301	0.161760505	1.56E-06
511	120	3	0.07750342	0.04586282	0.21569747	0	0.07045596	0.14869769	0.0598274	0.72101895	0.21927	0.218695815	3.30E-07
512	10	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.09727	0.087091541	0.0001036
512	10	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.11624	0.112679958	1.27E-05
512	10	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.13614	0.154418087	0.00033409
512	25	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.10767	0.100197487	5.58E-05
512	25	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.13279	0.12963932	9.93E-06
512	25	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.16208	0.177646828	0.00024233
512	50	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.11714	0.111368065	3.33E-05
512	50	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.14978	0.144117775	3.21E-05
512	50	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.19023	0.197481098	5.26E-05
512	75	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.12128	0.118465856	7.92E-06
512	75	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.15873	0.15328804	2.96E-05
512	75	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.20758	0.21004439	6.07E-06
512	100	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.12221	0.123750954	2.37E-06
512	100	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.16375	0.160118113	1.32E-05
512	100	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.21969	0.21940877	7.91E-08
512	120	2	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.12156	0.127213256	3.20E-05
512	120	2.4	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.16572	0.164596446	1.26E-06
512	120	3	0.04022724	0.0449974	0.17703999	0	0.11203824	0.14767869	0.05599928	0.68428379	0.22608	0.225533104	2.99E-07
513	10	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.08792	0.079038334	7.89E-05
513	10	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.10421	0.101639271	6.61E-06
513	10	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.12124	0.138290024	0.0002907
513	25	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.09821	0.091745949	4.18E-05
513	25	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.12023	0.118018456	4.89E-06
513	25	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.14572	0.160561905	0.00022028
513	50	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.10773	0.102695713	2.53E-05
513	50	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.13688	0.13209425	2.29E-05
513	50	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.17245	0.179707756	5.27E-05
513	75	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.11197	0.109676603	5.26E-06
513	75	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.1457	0.141072566	2.14E-05
513	75	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.18946	0.191911685	6.01E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
513	100	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.11345	0.11490325	2.11E-06
513	100	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.15103	0.147785015	1.05E-05
513	100	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.20105	0.201044426	3.11E-11
513	120	2	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.11323	0.118335605	2.61E-05
513	120	2.4	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.15348	0.152195517	1.65E-06
513	120	3	0.06434986	0.07199864	0.17526718	0	0.12238488	0.14033091	0.07087979	0.66640442	0.20745	0.207038148	1.70E-07
514	10	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.08626	0.0767869	8.97E-05
514	10	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.10131	0.097915745	1.15E-05
514	10	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.117	0.13181715	0.00021955
514	25	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.0972	0.090585594	4.38E-05
514	25	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.11794	0.115533218	5.79E-06
514	25	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.14161	0.155556793	0.00019451
514	50	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.10771	0.102648087	2.56E-05
514	50	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.13536	0.130916576	1.97E-05
514	50	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.16944	0.176282978	4.68E-05
514	75	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.11286	0.110418421	5.96E-06
514	75	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.1452	0.140830104	1.91E-05
514	75	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.18718	0.18961984	5.95E-06
514	100	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.11497	0.116267099	1.68E-06
514	100	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.15117	0.148291588	8.29E-06
514	100	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.19979	0.199669752	1.45E-08
514	120	2	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.11533	0.120128814	2.30E-05
514	120	2.4	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.15457	0.153209384	1.85E-06
514	120	3	0.04666175	0.03575402	0.31043942	0	0.08291136	0.15540916	0.05312501	0.70855448	0.20699	0.206284062	4.98E-07
515	10	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.07959	0.070573807	8.13E-05
515	10	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.09301	0.08968935	1.10E-05
515	10	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10695	0.120105362	0.00017306
515	25	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.09036	0.084082413	3.94E-05
515	25	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10923	0.106847878	5.67E-06
515	25	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.13052	0.14310463	0.00015837
515	50	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10081	0.096006355	2.31E-05
515	50	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.12598	0.121945477	1.63E-05
515	50	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.15701	0.163363209	4.04E-05
515	75	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10583	0.103721848	4.44E-06
515	75	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.13585	0.131752205	1.68E-05
515	75	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.1744	0.176498019	4.40E-06
515	100	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10817	0.109558258	1.93E-06
515	100	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.14196	0.139162455	7.83E-06
515	100	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.18637	0.186425257	3.05E-09
515	120	2	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.10877	0.113419612	2.16E-05
515	120	2.4	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.14509	0.144061128	1.06E-06
515	120	3	0.08292637	0.10680503	0.21385981	0	0.07577911	0.13721497	0.09467981	0.6923261	0.19357	0.192988332	3.38E-07
516	10	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.08762	0.07799921	9.26E-05
516	10	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.10302	0.099669266	1.12E-05
516	10	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.11905	0.134479904	0.00023808
516	25	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.09869	0.091893158	4.62E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
516	25	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.11981	0.117446938	5.58E-06
516	25	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.14403	0.158474998	0.00020866
516	50	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.10922	0.104020596	2.70E-05
516	50	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.13747	0.132934208	2.06E-05
516	50	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.17218	0.17938736	5.19E-05
516	75	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.11437	0.111827011	6.47E-06
516	75	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.1473	0.142902578	1.93E-05
516	75	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.19006	0.192832464	7.69E-06
516	100	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.11639	0.117700224	1.72E-06
516	100	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.15334	0.150400143	8.64E-06
516	100	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.20288	0.202958145	6.11E-09
516	120	2	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.11661	0.12157565	2.47E-05
516	120	2.4	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.15659	0.155343556	1.55E-06
516	120	3	0.08632262	0.04994169	0.22688398	0	0.05765741	0.14130755	0.08713981	0.71389523	0.21016	0.209628741	2.82E-07
517	10	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.08726	0.077284813	9.95E-05
517	10	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.10252	0.098630142	1.51E-05
517	10	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.11842	0.132812977	0.00020716
517	25	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.0983	0.091347618	4.83E-05
517	25	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.1193	0.116572342	7.44E-06
517	25	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.14325	0.156994247	0.0001889
517	50	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.10887	0.103661232	2.71E-05
517	50	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.13689	0.132267437	2.14E-05
517	50	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.17139	0.178127422	4.54E-05
517	75	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.11407	0.111593208	6.13E-06
517	75	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.14677	0.142377243	1.93E-05
517	75	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.1893	0.191750043	6.00E-06
517	100	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.11617	0.117574663	1.97E-06
517	100	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.15277	0.149997482	7.69E-06
517	100	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.20209	0.20201211	6.07E-09
517	120	2	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.11654	0.121521529	2.48E-05
517	120	2.4	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.15622	0.155024242	1.43E-06
517	120	3	0.12272672	0.06510765	0.15124875	0	0.10815402	0.15320432	0.05618081	0.68246085	0.20937	0.208782649	3.45E-07
518	10	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.081	0.071916008	8.25E-05
518	10	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.09519	0.091745949	1.19E-05
518	10	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.10993	0.123612404	0.00018721
518	25	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.09122	0.084809799	4.11E-05
518	25	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.11069	0.108233376	6.04E-06
518	25	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.133	0.145806351	0.000164
518	50	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.10091	0.09607563	2.34E-05
518	50	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.12687	0.122603588	1.82E-05
518	50	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.15883	0.165151367	4.00E-05
518	75	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.10563	0.103326403	5.31E-06
518	75	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.13596	0.131847458	1.69E-05
518	75	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.1754	0.177603531	4.86E-06
518	100	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.10755	0.108791904	1.54E-06
518	100	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.1415	0.138813915	7.22E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
518	100	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.18679	0.18699028	4.01E-08
518	120	2	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.10785	0.112394921	2.07E-05
518	120	2.4	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.14445	0.143409872	1.08E-06
518	120	3	0.08760897	0.05720264	0.22947098	0	0.09852274	0.15303425	0.10578832	0.64265469	0.19378	0.193183168	3.56E-07
519	10	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.0809	0.072240734	7.50E-05
519	10	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.09507	0.092330456	7.51E-06
519	10	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.10986	0.124521637	0.00021496
519	25	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.09122	0.084991646	3.88E-05
519	25	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.11077	0.108614388	4.65E-06
519	25	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.13316	0.146481781	0.00017747
519	50	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.10089	0.096092949	2.30E-05
519	50	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.12697	0.122785435	1.75E-05
519	50	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.15913	0.165605984	4.19E-05
519	75	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.10557	0.103245583	5.40E-06
519	75	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.13592	0.131893641	1.62E-05
519	75	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.17577	0.177897949	4.53E-06
519	100	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.10738	0.108618717	1.53E-06
519	100	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.14165	0.13874464	8.44E-06
519	100	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.1873	0.187143984	2.43E-08
519	120	2	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.10756	0.112158593	2.11E-05
519	120	2.4	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.14444	0.143254725	1.40E-06
519	120	3	0.0307786	0.0999623	0.25280059	0	0.08338085	0.13596599	0.10547685	0.67517631	0.19383	0.193237289	3.51E-07
520	10	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.0912	0.080618668	0.00011196
520	10	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.10697	0.102548504	1.95E-05
520	10	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.12334	0.137705517	0.00020637
520	25	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.10293	0.095737915	5.17E-05
520	25	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.12465	0.121819916	8.01E-06
520	25	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.14947	0.163584023	0.00019921
520	50	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.1144	0.109034367	2.88E-05
520	50	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.14339	0.138740311	2.16E-05
520	50	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.17917	0.18631485	5.10E-05
520	75	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.12013	0.117637444	6.21E-06
520	75	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.1544	0.149691518	2.22E-05
520	75	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.19834	0.201009789	7.13E-06
520	100	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.12261	0.124123306	2.29E-06
520	100	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.16091	0.157955437	8.73E-06
520	100	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.21206	0.212106762	2.19E-09
520	120	2	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.12313	0.128416546	2.79E-05
520	120	2.4	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.16472	0.163413	1.71E-06
520	120	3	0.04019819	0.08956678	0.23407019	0	0.05084538	0.15363414	0.05011357	0.7454069	0.22011	0.219431861	4.60E-07
521	10	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.09365	0.083865929	9.57E-05
521	10	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.11102	0.10763588	1.15E-05
521	10	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.12913	0.14608345	0.00028742
521	25	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.10452	0.097556381	4.85E-05
521	25	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.12791	0.125249023	7.08E-06
521	25	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.15475	0.169991951	0.00023232

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
521	50	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.11469	0.1093894	2.81E-05
521	50	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.14548	0.140446205	2.53E-05
521	50	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.18321	0.190614223	5.48E-05
521	75	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.11939	0.116938922	6.01E-06
521	75	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.15517	0.150141805	2.53E-05
521	75	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.20115	0.203775012	6.89E-06
521	100	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.12104	0.122601423	2.44E-06
521	100	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.16089	0.157401237	1.22E-05
521	100	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.21376	0.213628645	1.73E-08
521	120	2	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.12095	0.126320259	2.88E-05
521	120	2.4	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.16356	0.162171825	1.93E-06
521	120	3	0.06631273	0.01547293	0.24048439	0	0.05237076	0.14756329	0.09220979	0.70785617	0.22072	0.220086726	4.01E-07
522	10	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.09395	0.08412571	9.65E-05
522	10	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.11176	0.10830698	1.19E-05
522	10	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.13029	0.147468948	0.00029512
522	25	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.10447	0.09743515	4.95E-05
522	25	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.12831	0.125465508	8.09E-06
522	25	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.15591	0.170840569	0.00022292
522	50	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.11415	0.108891487	2.77E-05
522	50	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.14551	0.140195084	2.82E-05
522	50	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.18383	0.190891323	4.99E-05
522	75	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.11858	0.116182671	5.75E-06
522	75	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.15444	0.149558741	2.38E-05
522	75	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.20125	0.203653781	5.78E-06
522	100	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.12008	0.12162941	2.40E-06
522	100	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.15991	0.156559114	1.12E-05
522	100	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.2134	0.213184853	4.63E-08
522	120	2	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.11964	0.125199954	3.09E-05
522	120	2.4	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.16242	0.161157958	1.59E-06
522	120	3	0.03632724	0.05807231	0.19554084	0	0.11581068	0.15420545	0.05145455	0.67852932	0.21987	0.219437273	1.87E-07
523	10	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.08293	0.073149967	9.56E-05
523	10	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.0969	0.092850018	1.64E-05
523	10	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.11139	0.124196911	0.00016402
523	25	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.09393	0.087321014	4.37E-05
523	25	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.11347	0.110822525	7.01E-06
523	25	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.13545	0.148248291	0.0001638
523	50	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.10476	0.099816475	2.44E-05
523	50	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.13086	0.126664829	1.76E-05
523	50	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.16277	0.169442081	4.45E-05
523	75	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.11023	0.107918752	5.34E-06
523	75	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.14121	0.136936277	1.83E-05
523	75	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.18093	0.18318882	5.10E-06
523	100	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.11268	0.114048138	1.87E-06
523	100	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.14757	0.144710941	8.17E-06
523	100	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.19327	0.193590879	1.03E-07
523	120	2	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.11345	0.118111904	2.17E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
523	120	2.4	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.151	0.149855685	1.31E-06
523	120	3	0.13594952	0.01252865	0.25805528	0	0.06974619	0.1624944	0.08163121	0.6861282	0.20114	0.200473269	4.45E-07
524	10	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.09244	0.082415485	0.00010049
524	10	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.10934	0.105687523	1.33E-05
524	10	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.12693	0.143160915	0.00026344
524	25	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.1035	0.096396027	5.05E-05
524	25	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.1263	0.123586426	7.36E-06
524	25	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.1525	0.167437439	0.00022313
524	50	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.11377	0.108501816	2.78E-05
524	50	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.14414	0.139099674	2.54E-05
524	50	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.1812	0.188471031	5.29E-05
524	75	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.11875	0.116254832	6.23E-06
524	75	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.15395	0.149039179	2.41E-05
524	75	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.19953	0.201930567	5.76E-06
524	100	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.12059	0.122077532	2.21E-06
524	100	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.15979	0.156498499	1.08E-05
524	100	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.21212	0.212030993	7.92E-09
524	120	2	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.12053	0.125912547	2.90E-05
524	120	2.4	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.16254	0.161403306	1.29E-06
524	120	3	0.04715452	0.02635458	0.27061211	0	0.07028288	0.14986619	0.06006368	0.71978726	0.21906	0.218674167	1.49E-07
525	10	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.08416	0.074773598	8.81E-05
525	10	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.09865	0.095144749	1.23E-05
525	10	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.11371	0.127768898	0.00019765
525	25	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.09513	0.088619919	4.24E-05
525	25	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.11515	0.11279686	5.54E-06
525	25	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.13796	0.151495552	0.00018321
525	50	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.10573	0.100769005	2.46E-05
525	50	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.13252	0.128262482	1.81E-05
525	50	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.16544	0.172269363	4.66E-05
525	75	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.11093	0.108617274	5.35E-06
525	75	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.14247	0.138246727	1.78E-05
525	75	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.18316	0.185685603	6.38E-06
525	100	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.11333	0.114541721	1.47E-06
525	100	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.14864	0.145784702	8.15E-06
525	100	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.19564	0.195807676	2.81E-08
525	120	2	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.11363	0.118454671	2.33E-05
525	120	2.4	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.15196	0.150763114	1.43E-06
525	120	3	0.07789241	0.08846677	0.20740531	0	0.07637498	0.15008905	0.08348177	0.6900542	0.20314	0.202484767	4.29E-07
526	10	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.08926	0.079557896	9.41E-05
526	10	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.10516	0.101660919	1.22E-05
526	10	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.12174	0.137229252	0.00023992
526	25	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.10021	0.093408546	4.63E-05
526	25	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.12184	0.119429932	5.81E-06
526	25	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.14676	0.161220016	0.00020909
526	50	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.1106	0.105479698	2.62E-05
526	50	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.13952	0.134839268	2.19E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
526	50	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.17478	0.182045784	5.28E-05
526	75	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.11574	0.113226941	6.32E-06
526	75	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.14927	0.144749908	2.04E-05
526	75	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.19285	0.195421613	6.61E-06
526	100	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.11761	0.119057579	2.10E-06
526	100	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.15534	0.152190466	9.92E-06
526	100	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.20552	0.205475855	1.95E-09
526	120	2	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.11769	0.122901615	2.72E-05
526	120	2.4	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.1584	0.157095273	1.70E-06
526	120	3	0.05056315	0.06311651	0.23315914	0	0.08543205	0.15781624	0.06372655	0.69302516	0.21266	0.212093051	3.21E-07
527	10	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.09318	0.083368015	9.63E-05
527	10	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.11083	0.107311153	1.24E-05
527	10	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.12914	0.146040154	0.00028562
527	25	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.10364	0.096603851	4.95E-05
527	25	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.12717	0.124331131	8.06E-06
527	25	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.15438	0.169264565	0.00022155
527	50	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.11319	0.107990913	2.70E-05
527	50	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.1442	0.138978443	2.73E-05
527	50	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.18195	0.189189758	5.24E-05
527	75	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.11757	0.115233027	5.46E-06
527	75	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.15326	0.148294474	2.47E-05
527	75	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.19925	0.201884384	6.94E-06
527	100	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.11912	0.120650902	2.34E-06
527	100	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.15859	0.155258045	1.11E-05
527	100	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.21156	0.211364222	3.83E-08
527	120	2	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.11874	0.124204127	2.99E-05
527	120	2.4	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.16115	0.159828385	1.75E-06
527	120	3	0.05288671	0.04177552	0.1960294	0	0.05902657	0.14777757	0.11952517	0.67367069	0.21787	0.217577314	8.57E-08
528	10	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.07748	0.068365669	8.31E-05
528	10	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.08995	0.086507034	1.19E-05
528	10	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.10302	0.115277767	0.00015025
528	25	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.08855	0.082324562	3.88E-05
528	25	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.1065	0.104172134	5.42E-06
528	25	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.12656	0.138852882	0.00015111
528	50	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.09955	0.094750748	2.30E-05
528	50	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.12388	0.119875889	1.60E-05
528	50	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.15341	0.159799881	4.08E-05
528	75	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.10512	0.102855911	5.13E-06
528	75	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.134	0.130118472	1.51E-05
528	75	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.17098	0.173458583	6.14E-06
528	100	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.10774	0.109006224	1.60E-06
528	100	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.14087	0.137896023	8.84E-06
528	100	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.18364	0.183829613	3.60E-08
528	120	2	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.10888	0.11308767	1.77E-05
528	120	2.4	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.14396	0.143056281	8.17E-07
528	120	3	0.08565283	0.1144368	0.24761299	0	0.08835508	0.14467065	0.0536441	0.71333017	0.19154	0.190706229	6.95E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
529	10	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.08832	0.078886795	8.90E-05
529	10	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.10484	0.101531029	1.09E-05
529	10	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.12211	0.138116837	0.00025622
529	25	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.09845	0.09159008	4.71E-05
529	25	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.1206	0.117853928	7.54E-06
529	25	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.14622	0.16036274	0.00020002
529	50	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.10765	0.102522526	2.63E-05
529	50	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.13693	0.131908073	2.52E-05
529	50	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.17262	0.179478283	4.70E-05
529	75	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.11191	0.109497643	5.82E-06
529	75	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.14572	0.1408734	2.35E-05
529	75	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.1894	0.191669223	5.15E-06
529	100	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.11325	0.114719238	2.16E-06
529	100	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.15088	0.14757719	1.09E-05
529	100	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.20082	0.20078681	1.10E-09
529	120	2	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.11305	0.118147985	2.60E-05
529	120	2.4	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.15327	0.151982641	1.66E-06
529	120	3	0.01978949	0.04097711	0.270372	0	0.12219845	0.15988779	0.06584755	0.6520662	0.20701	0.206767543	5.88E-08
530	10	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.08262	0.07351799	8.28E-05
530	10	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.09735	0.09404068	1.10E-05
530	10	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.11267	0.127054501	0.00020691
530	25	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.09279	0.086273232	4.25E-05
530	25	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.11281	0.11034626	6.07E-06
530	25	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.13589	0.149105568	0.00017465
530	50	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.1023	0.097352886	2.45E-05
530	50	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.12903	0.124512978	2.04E-05
530	50	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.1618	0.16823843	4.15E-05
530	75	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.10686	0.10446078	5.76E-06
530	75	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.13786	0.133605309	1.81E-05
530	75	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.17834	0.180521736	4.76E-06
530	100	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.10856	0.109807215	1.56E-06
530	100	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.14332	0.140439711	8.30E-06
530	100	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.18985	0.189756947	8.66E-09
530	120	2	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.10861	0.113327607	2.23E-05
530	120	2.4	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.14628	0.144945105	1.78E-06
530	120	3	0.04035859	0.08248639	0.23343583	0	0.13379082	0.16384903	0.07235052	0.63000964	0.19636	0.195838706	2.72E-07
531	10	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.0759	0.067478085	7.09E-05
531	10	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.08909	0.086095715	8.97E-06
531	10	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.10281	0.116013813	0.00017434
531	25	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.08575	0.07964016	3.73E-05
531	25	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.10396	0.1016436	5.37E-06
531	25	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.12489	0.13698246	0.00014623
531	50	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.09494	0.090269527	2.18E-05
531	50	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.11936	0.11523447	1.70E-05
531	50	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.1493	0.155292683	3.59E-05
531	75	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.09941	0.097132072	5.19E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
531	75	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.1278	0.123987643	1.45E-05
531	75	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.16505	0.167093951	4.18E-06
531	100	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.10127	0.102306042	1.07E-06
531	100	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.1332	0.130585356	6.84E-06
531	100	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.17578	0.175990725	4.44E-08
531	120	2	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.10141	0.105718191	1.86E-05
531	120	2.4	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.13588	0.134939933	8.84E-07
531	120	3	0.05852215	0.08216976	0.26511386	0	0.13629222	0.14708143	0.08700669	0.62961966	0.18223	0.181852031	1.43E-07
532	10	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.08115	0.072219086	7.98E-05
532	10	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.09544	0.092308807	9.80E-06
532	10	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.11034	0.124499989	0.00020051
532	25	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.09137	0.084974327	4.09E-05
532	25	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.11097	0.108597069	5.63E-06
532	25	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.1335	0.146516418	0.00016943
532	50	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.10093	0.09607996	2.35E-05
532	50	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.12708	0.122772446	1.86E-05
532	50	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.15927	0.165644951	4.06E-05
532	75	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.10561	0.103216718	5.73E-06
532	75	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.13601	0.131884982	1.70E-05
532	75	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.1758	0.177949905	4.62E-06
532	100	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.10726	0.108590574	1.77E-06
532	100	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.14165	0.138740311	8.47E-06
532	100	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.18733	0.187204599	1.57E-08
532	120	2	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.10742	0.112133336	2.22E-05
532	120	2.4	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.14438	0.143251117	1.27E-06
532	120	3	0.05615946	0.0478812	0.28608719	0	0.09275764	0.14603285	0.09830513	0.66290438	0.19376	0.193295018	2.16E-07
533	10	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.07839	0.069664574	7.61E-05
533	10	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.09203	0.088585281	1.19E-05
533	10	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.10614	0.118936348	0.00016375
533	25	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.08828	0.082272606	3.61E-05
533	25	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.10705	0.104674377	5.64E-06
533	25	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.1284	0.14051548	0.00014678
533	50	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.09781	0.093317623	2.02E-05
533	50	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.12275	0.118728523	1.62E-05
533	50	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.15324	0.159379902	3.77E-05
533	75	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.10251	0.100437063	4.30E-06
533	75	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.13167	0.127786217	1.51E-05
533	75	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.16951	0.171541977	4.13E-06
533	100	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.1044	0.105806589	1.98E-06
533	100	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.13735	0.134611959	7.50E-06
533	100	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.18048	0.180705748	5.10E-08
533	120	2	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.1048	0.109346104	2.07E-05
533	120	2.4	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.14018	0.139118075	1.13E-06
533	120	3	0.08385039	0.0371737	0.27232634	0	0.0979179	0.16499769	0.12278421	0.61430019	0.18734	0.186751787	3.46E-07
534	10	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.08325	0.074578762	7.52E-05
534	10	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.09856	0.095794201	7.65E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
534	10	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.11456	0.13019352	0.00024441
534	25	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.09316	0.086758156	4.10E-05
534	25	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.1139	0.111489296	5.81E-06
534	25	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.13779	0.151478233	0.00018737
534	50	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.10219	0.097266293	2.42E-05
534	50	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.12965	0.125002232	2.16E-05
534	50	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.16314	0.169827423	4.47E-05
534	75	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.10637	0.103987401	5.68E-06
534	75	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.13813	0.133631287	2.02E-05
534	75	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.17939	0.181546427	4.65E-06
534	100	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.10772	0.109017048	1.68E-06
534	100	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.14302	0.140089006	8.59E-06
534	100	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.19052	0.1903263	3.75E-08
534	120	2	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.10745	0.112326368	2.38E-05
534	120	2.4	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.14548	0.144329929	1.32E-06
534	120	3	0.06945965	0.04833491	0.22484678	0	0.09260363	0.13535447	0.12479041	0.64725149	0.19643	0.196087662	1.17E-07
535	10	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.08173	0.072716999	8.12E-05
535	10	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.09593	0.092568588	1.13E-05
535	10	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.11065	0.124370098	0.00018824
535	25	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.09213	0.08589222	3.89E-05
535	25	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.11166	0.10939373	5.14E-06
535	25	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.13401	0.147018661	0.00016923
535	50	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.10219	0.09743948	2.26E-05
535	50	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.1283	0.124088669	1.77E-05
535	50	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.16026	0.166757679	4.22E-05
535	75	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.10705	0.104870656	4.75E-06
535	75	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.13761	0.133559125	1.64E-05
535	75	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.17704	0.179482613	5.97E-06
535	100	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.10916	0.11048048	1.74E-06
535	100	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.14346	0.140690832	7.67E-06
535	100	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.18897	0.189070692	1.01E-08
535	120	2	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.10957	0.114179111	2.12E-05
535	120	2.4	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.14663	0.145401525	1.51E-06
535	120	3	0.05035915	0.08113724	0.24967814	0	0.08219342	0.15616619	0.10498617	0.65665423	0.19595	0.195398521	3.04E-07
536	10	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.08743	0.07732811	0.00010205
536	10	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.10253	0.098456955	1.66E-05
536	10	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.11823	0.13222847	0.00019596
536	25	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.0987	0.091737289	4.85E-05
536	25	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.1195	0.116806145	7.26E-06
536	25	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.1433	0.156907654	0.00018517
536	50	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.10968	0.104397278	2.79E-05
536	50	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.13745	0.132895241	2.07E-05
536	50	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.17169	0.178517094	4.66E-05
536	75	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.11505	0.112563057	6.18E-06
536	75	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.14789	0.143298022	2.11E-05
536	75	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.19006	0.192480316	5.86E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
536	100	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.11749	0.118726358	1.53E-06
536	100	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.15422	0.151144848	9.46E-06
536	100	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.20306	0.203020926	1.53E-09
536	120	2	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.1179	0.122804197	2.41E-05
536	120	2.4	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.15768	0.156326755	1.83E-06
536	120	3	0.11974342	0.03959063	0.20932285	0	0.09068515	0.15905416	0.04819795	0.70206274	0.21068	0.209980528	4.89E-07
537	10	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.09528	0.084818459	0.00010944
537	10	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.11257	0.108631706	1.55E-05
537	10	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.13053	0.146949387	0.0002696
537	25	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.10675	0.099418144	5.38E-05
537	25	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.13009	0.127327271	7.63E-06
537	25	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.15683	0.172278023	0.00023864
537	50	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.11752	0.112104111	2.93E-05
537	50	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.14861	0.143563576	2.55E-05
537	50	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.18657	0.194233837	5.87E-05
537	75	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.12292	0.120235252	7.21E-06
537	75	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.15893	0.153966357	2.46E-05
537	75	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.20568	0.208306745	6.90E-06
537	100	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.12476	0.126342268	2.50E-06
537	100	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.16512	0.161772051	1.12E-05
537	100	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.21907	0.218880548	3.59E-08
537	120	2	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.12491	0.130361295	2.97E-05
537	120	2.4	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.16816	0.166912826	1.56E-06
537	120	3	0.04291096	0.04788041	0.23921996	0	0.05118624	0.15328151	0.06133164	0.7342006	0.22648	0.225834378	4.17E-07
538	10	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.0852	0.075358105	9.69E-05
538	10	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.09987	0.095837498	1.63E-05
538	10	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.11513	0.128483295	0.00017831
538	25	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.0962	0.089477196	4.52E-05
538	25	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.11642	0.113784027	6.95E-06
538	25	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.13941	0.152577972	0.0001734
538	50	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.10679	0.101873074	2.42E-05
538	50	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.13381	0.129526749	1.83E-05
538	50	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.16706	0.173719807	4.44E-05
538	75	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.11216	0.109887314	5.17E-06
538	75	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.14398	0.139710159	1.82E-05
538	75	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.18494	0.187379951	5.95E-06
538	100	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.11448	0.115938044	2.13E-06
538	100	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.15041	0.147397509	9.08E-06
538	100	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.19751	0.197691088	3.28E-08
538	120	2	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.11497	0.119937587	2.47E-05
538	120	2.4	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.15367	0.152476947	1.42E-06
538	120	3	0.03831454	0.13555438	0.17609519	0	0.06443512	0.15564146	0.10264333	0.67728009	0.20517	0.204501677	4.47E-07
539	10	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.09638	0.086528683	9.70E-05
539	10	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.11498	0.111857319	9.75E-06
539	10	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.13442	0.153119183	0.00034966
539	25	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.10692	0.099651947	5.28E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
539	25	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.13162	0.12882534	7.81E-06
539	25	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.16042	0.176356583	0.00025397
539	50	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.11637	0.110878811	3.02E-05
539	50	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.14873	0.143334103	2.91E-05
539	50	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.18874	0.196208172	5.58E-05
539	75	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.1206	0.118004023	6.74E-06
539	75	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.15782	0.152534676	2.79E-05
539	75	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.20598	0.208806101	7.99E-06
539	100	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.12177	0.123313656	2.38E-06
539	100	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.16299	0.159395056	1.29E-05
539	100	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.21823	0.218194294	1.27E-09
539	120	2	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.12123	0.126792916	3.09E-05
539	120	2.4	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.16505	0.163891069	1.34E-06
539	120	3	0.05256526	0.04742202	0.16833203	0	0.07744518	0.13502494	0.08898396	0.69854592	0.22485	0.224337029	2.63E-07
540	10	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.09014	0.080553722	9.19E-05
540	10	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.10658	0.103262901	1.10E-05
540	10	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.12367	0.140000248	0.00026668
540	25	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.10102	0.094083977	4.81E-05
540	25	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.12332	0.120702858	6.85E-06
540	25	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.14888	0.163661957	0.00021851
540	50	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.11105	0.105847721	2.71E-05
540	50	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.14074	0.135787468	2.45E-05
540	50	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.17694	0.184102383	5.13E-05
540	75	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.11588	0.113391469	6.19E-06
540	75	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.15029	0.145442657	2.35E-05
540	75	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.19499	0.197196782	4.87E-06
540	100	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.11766	0.11904026	1.91E-06
540	100	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.15593	0.15268405	1.05E-05
540	100	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.20719	0.207015057	3.06E-08
540	120	2	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.11763	0.122755488	2.63E-05
540	120	2.4	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.15869	0.157448864	1.54E-06
540	120	3	0.08024816	0.03706712	0.21939188	0	0.08178362	0.14104431	0.07068717	0.7064849	0.21388	0.213465921	1.71E-07
541	10	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.08793	0.078800201	8.34E-05
541	10	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.1046	0.10150938	9.55E-06
541	10	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.12193	0.138311672	0.00026836
541	25	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.09777	0.091131134	4.41E-05
541	25	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.12008	0.117394981	7.21E-06
541	25	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.14584	0.159929771	0.00019852
541	50	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.10675	0.101704216	2.55E-05
541	50	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.13605	0.13099884	2.55E-05
541	50	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.17179	0.178465137	4.46E-05
541	75	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.11079	0.108432541	5.56E-06
541	75	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.14443	0.13965243	2.28E-05
541	75	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.18809	0.190251973	4.67E-06
541	100	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.11211	0.113461466	1.83E-06
541	100	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.14938	0.146118088	1.06E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
541	100	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.19936	0.199061432	8.91E-08
541	120	2	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.11159	0.116760683	2.67E-05
541	120	2.4	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.15157	0.150360815	1.46E-06
541	120	3	0.04448697	0.04124076	0.22427131	0	0.1235832	0.15549155	0.08780235	0.6331229	0.20524	0.204835423	1.64E-07
542	10	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.08807	0.077847672	0.0001045
542	10	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.10336	0.099106407	1.81E-05
542	10	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.11923	0.133116055	0.00019282
542	25	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.09922	0.092230873	4.88E-05
542	25	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.12022	0.117464256	7.59E-06
542	25	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.14422	0.157799568	0.0001844
542	50	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.1102	0.104869213	2.84E-05
542	50	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.13817	0.133544693	2.14E-05
542	50	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.17259	0.179400349	4.64E-05
542	75	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.11557	0.11302489	6.48E-06
542	75	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.14848	0.143915723	2.08E-05
542	75	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.19089	0.193352025	6.06E-06
542	100	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.11787	0.119176645	1.71E-06
542	100	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.15467	0.151746674	8.55E-06
542	100	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.20384	0.203873873	1.15E-09
542	120	2	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.11827	0.123244381	2.47E-05
542	120	2.4	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.15823	0.15691487	1.73E-06
542	120	3	0.05153366	0.05120001	0.27492229	0	0.07308533	0.16476765	0.05744117	0.70470586	0.2114	0.210813991	3.43E-07
543	10	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.08741	0.078302288	8.30E-05
543	10	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.10343	0.100362015	9.41E-06
543	10	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.12009	0.135973644	0.00025229
543	25	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.09774	0.091235046	4.23E-05
543	25	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.11935	0.116953354	5.74E-06
543	25	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.14418	0.158500977	0.00020509
543	50	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.10729	0.102401295	2.39E-05
543	50	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.13598	0.131288929	2.20E-05
543	50	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.17091	0.177919598	4.91E-05
543	75	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.11196	0.109543826	5.84E-06
543	75	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.14512	0.140440432	2.19E-05
543	75	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.18815	0.190332794	4.76E-06
543	100	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.11349	0.114896755	1.98E-06
543	100	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.1503	0.147300091	9.00E-06
543	100	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.1998	0.19962862	2.94E-08
543	120	2	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.11341	0.118414982	2.50E-05
543	120	2.4	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.15306	0.151813062	1.55E-06
543	120	3	0.06622982	0.07184125	0.17205446	0	0.1105827	0.15619385	0.09248696	0.64073649	0.20617	0.205735636	1.89E-07
544	10	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.0903	0.08072691	9.16E-05
544	10	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.10715	0.103804111	1.12E-05
544	10	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.12476	0.141169262	0.00026926
544	25	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.10073	0.093780899	4.83E-05
544	25	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.12338	0.120633583	7.54E-06
544	25	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.1496	0.164051628	0.00020885

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
544	50	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.11026	0.1050424	2.72E-05
544	50	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.14028	0.135107708	2.68E-05
544	50	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.17676	0.183768997	4.91E-05
544	75	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.11458	0.112239774	5.48E-06
544	75	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.14921	0.144348691	2.36E-05
544	75	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.19391	0.196351051	5.96E-06
544	100	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.11619	0.117624454	2.06E-06
544	100	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.15461	0.151268244	1.12E-05
544	100	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.20584	0.205763779	5.81E-09
544	120	2	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.11585	0.121160722	2.82E-05
544	120	2.4	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.15717	0.155816213	1.83E-06
544	120	3	0.0332423	0.03899692	0.25601712	0	0.06180198	0.13996671	0.1065903	0.69164101	0.21216	0.2119361	5.01E-08
545	10	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.08498	0.076029205	8.01E-05
545	10	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.1006	0.097720909	8.29E-06
545	10	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.11695	0.132834625	0.00025232
545	25	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.09505	0.08847271	4.33E-05
545	25	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.11623	0.113732071	6.24E-06
545	25	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.14064	0.154630241	0.00019573
545	50	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.1043	0.09921032	2.59E-05
545	50	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.13238	0.127535095	2.35E-05
545	50	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.16657	0.17340374	4.67E-05
545	75	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.10857	0.106059875	6.30E-06
545	75	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.14104	0.136356099	2.19E-05
545	75	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.18313	0.185382525	5.07E-06
545	100	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.10995	0.111197042	1.56E-06
545	100	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.14608	0.142953091	9.78E-06
545	100	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.19458	0.194355068	5.06E-08
545	120	2	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.10976	0.114577802	2.32E-05
545	120	2.4	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.14855	0.147292153	1.58E-06
545	120	3	0.06576877	0.06305067	0.20159768	0	0.10177592	0.13716014	0.10603626	0.65502767	0.20066	0.200244157	1.73E-07
546	10	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.0827	0.073691177	8.12E-05
546	10	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.09739	0.094192219	1.02E-05
546	10	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.1127	0.127249336	0.00021168
546	25	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.09296	0.086507034	4.16E-05
546	25	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.11297	0.1106147	5.55E-06
546	25	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.13608	0.149425964	0.00017811
546	50	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.10256	0.097655964	2.40E-05
546	50	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.12929	0.124881001	1.94E-05
546	50	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.16214	0.168701706	4.31E-05
546	75	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.1072	0.104815814	5.68E-06
546	75	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.13824	0.13403539	1.77E-05
546	75	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.17879	0.181078822	5.24E-06
546	100	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.10901	0.110199051	1.41E-06
546	100	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.14376	0.14092247	8.05E-06
546	100	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.19049	0.190378256	1.25E-08
546	120	2	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.10897	0.113744338	2.28E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
546	120	2.4	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.14673	0.145459255	1.61E-06
546	120	3	0.07281824	0.04536184	0.25200016	0	0.09285781	0.15008181	0.10241939	0.65464099	0.197	0.196506198	2.44E-07
547	10	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.09777	0.086853409	0.00011917
547	10	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.11554	0.111272812	1.82E-05
547	10	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.13402	0.150607967	0.00027516
547	25	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.10956	0.1019207	5.84E-05
547	25	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.1337	0.130574532	9.77E-06
547	25	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.1613	0.17679821	0.00024019
547	50	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.12064	0.114996338	3.19E-05
547	50	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.15274	0.147352047	2.90E-05
547	50	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.1919	0.199511719	5.79E-05
547	75	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.12606	0.123407466	7.04E-06
547	75	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.16344	0.158119965	2.83E-05
547	75	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.21153	0.214094086	6.57E-06
547	100	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.12808	0.129723749	2.70E-06
547	100	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.16986	0.166207809	1.33E-05
547	100	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.22523	0.22504385	3.47E-08
547	120	2	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.12821	0.133884573	3.22E-05
547	120	2.4	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.17292	0.171531153	1.93E-06
547	120	3	0.09587735	0.05947701	0.14027825	0	0.068135	0.14127913	0.04054241	0.75004346	0.23305	0.232249522	6.41E-07
548	10	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.09076	0.081419659	8.72E-05
548	10	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.10811	0.105124664	8.91E-06
548	10	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.12624	0.143680477	0.00030417
548	25	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.1008	0.093919449	4.73E-05
548	25	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.12403	0.121274376	7.59E-06
548	25	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.15086	0.165714226	0.00022065
548	50	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.10976	0.104618092	2.64E-05
548	50	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.14021	0.135068741	2.64E-05
548	50	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.17775	0.184578648	4.66E-05
548	75	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.11391	0.111414248	6.23E-06
548	75	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.1489	0.143834902	2.57E-05
548	75	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.19408	0.196561762	6.16E-06
548	100	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.115	0.116481419	2.19E-06
548	100	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.15364	0.150378494	1.06E-05
548	100	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.20553	0.205495338	1.20E-09
548	120	2	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.11442	0.119807696	2.90E-05
548	120	2.4	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.15572	0.154667044	1.11E-06
548	120	3	0.03826819	0.05249183	0.20397809	0	0.09592614	0.13924963	0.09884325	0.66598098	0.2118	0.211349789	2.03E-07
549	10	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.08797	0.078627014	8.73E-05
549	10	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.10383	0.100794983	9.21E-06
549	10	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.12041	0.136514854	0.00025937
549	25	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.09868	0.09199707	4.47E-05
549	25	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.12038	0.117914543	6.08E-06
549	25	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.14524	0.159721947	0.00020973
549	50	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.10862	0.103574638	2.55E-05
549	50	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.13754	0.132752361	2.29E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
549	50	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.17289	0.179807339	4.78E-05
549	75	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.11352	0.11098128	6.45E-06
549	75	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.14706	0.142253126	2.31E-05
549	75	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.19063	0.192685254	4.22E-06
549	100	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.11519	0.116548529	1.85E-06
549	100	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.15257	0.149384832	1.01E-05
549	100	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.2026	0.20234333	6.59E-08
549	120	2	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.11514	0.1202118	2.57E-05
549	120	2.4	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.15535	0.154068104	1.64E-06
549	120	3	0.08685366	0.02388835	0.24668232	0	0.07897716	0.13598857	0.07540688	0.70962738	0.20927	0.208694251	3.31E-07
550	10	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.08213	0.072911835	8.50E-05
550	10	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.09644	0.09308815	1.12E-05
550	10	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.11129	0.125387573	0.00019874
550	25	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.09264	0.086091385	4.29E-05
550	25	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.11234	0.109913292	5.89E-06
550	25	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.13493	0.148109741	0.00017371
550	50	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.10266	0.097629986	2.53E-05
550	50	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.12902	0.124629879	1.93E-05
550	50	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.16144	0.167944012	4.23E-05
550	75	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.10755	0.105058276	6.21E-06
550	75	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.13832	0.134107552	1.77E-05
550	75	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.17839	0.180729561	5.47E-06
550	100	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.10962	0.110662327	1.09E-06
550	100	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.144	0.141251526	7.55E-06
550	100	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.19029	0.190354443	4.15E-09
550	120	2	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.10991	0.114363122	1.98E-05
550	120	2.4	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.14718	0.145966188	1.47E-06
550	120	3	0.0954834	0.05404872	0.23143207	0	0.12232088	0.15464389	0.06013988	0.66289534	0.19733	0.196704642	3.91E-07
551	10	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.09841	0.087762642	0.00011337
551	10	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.11666	0.112679958	1.58E-05
551	10	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.13566	0.152945995	0.00029881
551	25	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.1098	0.102345009	5.56E-05
551	25	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.13449	0.131440468	9.30E-06
551	25	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.16272	0.178460808	0.00024777
551	50	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.12055	0.11497036	3.11E-05
551	50	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.1531	0.147659454	2.96E-05
551	50	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.1928	0.200477238	5.89E-05
551	75	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.12555	0.123043772	6.28E-06
551	75	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.16326	0.158010279	2.76E-05
551	75	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.21182	0.214547259	7.44E-06
551	100	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.12738	0.129093781	2.94E-06
551	100	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.16934	0.165772676	1.27E-05
551	100	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.22524	0.225087147	2.34E-08
551	120	2	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.12734	0.13306915	3.28E-05
551	120	2.4	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.17219	0.170876288	1.73E-06
551	120	3	0.07915544	0.04598047	0.16367468	0	0.05636519	0.14043457	0.06378195	0.73941828	0.23246	0.23201139	2.01E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
552	10	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.07868	0.069361496	8.68E-05
552	10	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.09145	0.087719345	1.39E-05
552	10	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10484	0.116879749	0.00014496
552	25	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.08969	0.083406982	3.95E-05
552	25	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10801	0.105522995	6.19E-06
552	25	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.12843	0.140636711	0.000149
552	50	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10071	0.095906773	2.31E-05
552	50	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.12529	0.121322002	1.57E-05
552	50	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.15538	0.1617136	4.01E-05
552	75	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10621	0.10405379	4.65E-06
552	75	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.13553	0.131625201	1.52E-05
552	75	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.17301	0.175444463	5.93E-06
552	100	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10883	0.110235853	1.98E-06
552	100	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.14225	0.139443884	7.87E-06
552	100	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.1855	0.185873222	1.39E-07
552	120	2	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.10997	0.114337866	1.91E-05
552	120	2.4	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.14558	0.144627595	9.07E-07
552	120	3	0.04403624	0.06671232	0.3532531	0	0.07525098	0.15480164	0.05323058	0.71671681	0.19345	0.192779064	4.50E-07
553	10	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.08268	0.074557114	6.60E-05
553	10	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.09862	0.096335411	5.22E-06
553	10	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.11534	0.131838799	0.00027221
553	25	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.09165	0.085485229	3.80E-05
553	25	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.11288	0.110528107	5.53E-06
553	25	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.1376	0.151279068	0.00018712
553	50	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.09961	0.094846001	2.27E-05
553	50	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.12729	0.122607918	2.19E-05
553	50	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.16154	0.167814121	3.94E-05
553	75	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.10313	0.100763232	5.60E-06
553	75	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.13466	0.130251249	1.94E-05
553	75	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.17607	0.178278961	4.88E-06
553	100	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.10381	0.105174456	1.86E-06
553	100	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.13907	0.135949831	9.74E-06
553	100	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.18607	0.186076717	4.51E-11
553	120	2	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.10317	0.108063436	2.39E-05
553	120	2.4	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.14089	0.139675522	1.47E-06
553	120	3	0.03644393	0.01181637	0.27952069	0	0.11859375	0.14339862	0.13702494	0.60098269	0.19143	0.19117167	6.67E-08
554	10	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.08938	0.079731083	9.31E-05
554	10	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.10611	0.102570152	1.25E-05
554	10	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.12359	0.139523983	0.00025389
554	25	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.09961	0.092637863	4.86E-05
554	25	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.12205	0.11917881	8.24E-06
554	25	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.14803	0.162155228	0.00019952
554	50	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.10896	0.103747826	2.72E-05
554	50	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.13861	0.133475418	2.64E-05
554	50	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.17475	0.181612816	4.71E-05
554	75	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.11322	0.11084273	5.65E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
554	75	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.14744	0.142590841	2.35E-05
554	75	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.19166	0.194030342	5.62E-06
554	100	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.11472	0.116152363	2.05E-06
554	100	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.15274	0.149412975	1.11E-05
554	100	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.20339	0.203315344	5.57E-09
554	120	2	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.11444	0.119638117	2.70E-05
554	120	2.4	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.15512	0.153893113	1.51E-06
554	120	3	0.04685607	0.0480303	0.2181112	0	0.1201327	0.15604663	0.07022246	0.65359822	0.20981	0.209408649	1.61E-07
555	10	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.08861	0.07977438	7.81E-05
555	10	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.10563	0.103024769	6.79E-06
555	10	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.12346	0.140801239	0.00030072
555	25	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.09829	0.091745949	4.28E-05
555	25	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.12103	0.118477402	6.52E-06
555	25	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.14735	0.16198204	0.0002141
555	50	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.10688	0.101972656	2.41E-05
555	50	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.13659	0.131691589	2.40E-05
555	50	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.17334	0.180041142	4.49E-05
555	75	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.11081	0.108452746	5.56E-06
555	75	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.14494	0.14005942	2.38E-05
555	75	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.18925	0.191478717	4.97E-06
555	100	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.11174	0.113290443	2.40E-06
555	100	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.1495	0.146299934	1.02E-05
555	100	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.20007	0.200007467	3.91E-09
555	120	2	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.1112	0.116459409	2.77E-05
555	120	2.4	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.15154	0.150386071	1.33E-06
555	120	3	0.0334801	0.02924098	0.24700133	0	0.12301556	0.14833425	0.08614012	0.64251008	0.20613	0.205587705	2.94E-07
556	10	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.08453	0.074968433	9.14E-05
556	10	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.09899	0.095426178	1.27E-05
556	10	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.11398	0.128028679	0.00019737
556	25	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.09568	0.089078865	4.36E-05
556	25	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.11572	0.113359718	5.57E-06
556	25	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.13859	0.152136345	0.0001835
556	50	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.10646	0.101466084	2.49E-05
556	50	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.13335	0.12909811	1.81E-05
556	50	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.16634	0.173286839	4.83E-05
556	75	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.11178	0.109471664	5.33E-06
556	75	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.14355	0.139280078	1.82E-05
556	75	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.18445	0.186964302	6.32E-06
556	100	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.11422	0.115518064	1.68E-06
556	100	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.14995	0.14696887	8.89E-06
556	100	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.19701	0.197286263	7.63E-08
556	120	2	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.11476	0.119515443	2.26E-05
556	120	2.4	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.15325	0.152047586	1.45E-06
556	120	3	0.09260085	0.04229414	0.26556991	0	0.08671056	0.15445236	0.04952369	0.70931339	0.2047	0.204102985	3.56E-07
557	10	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.08532	0.076115799	8.47E-05
557	10	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.10037	0.097179699	1.02E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
557	10	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.116	0.131102753	0.00022809
557	25	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.09597	0.089477196	4.22E-05
557	25	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.1166	0.114312248	5.23E-06
557	25	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.1401	0.154188614	0.00019849
557	50	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.10613	0.101137028	2.49E-05
557	50	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.1335	0.129215012	1.84E-05
557	50	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.16735	0.174295654	4.82E-05
557	75	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.11103	0.108625933	5.78E-06
557	75	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.14299	0.138783607	1.77E-05
557	75	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.18455	0.187209651	7.07E-06
557	100	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.11288	0.114273281	1.94E-06
557	100	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.14889	0.145983868	8.45E-06
557	100	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.19683	0.19691824	7.79E-09
557	120	2	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.11314	0.117992838	2.36E-05
557	120	2.4	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.15193	0.150723426	1.46E-06
557	120	3	0.04655159	0.05478566	0.27280741	0	0.09791863	0.15866191	0.06558052	0.67783894	0.20378	0.203311014	2.20E-07
558	10	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.09799	0.087329674	0.00011364
558	10	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.11644	0.112160397	1.83E-05
558	10	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.13557	0.152296543	0.00027978
558	25	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.10907	0.101548347	5.66E-05
558	25	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.13361	0.130470619	9.86E-06
558	25	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.16183	0.177170563	0.00023533
558	50	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.11938	0.113848972	3.06E-05
558	50	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.15159	0.146243649	2.86E-05
558	50	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.19099	0.198602486	5.79E-05
558	75	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.12422	0.121687139	6.42E-06
558	75	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.16157	0.156315931	2.76E-05
558	75	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.20954	0.21227562	7.48E-06
558	100	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.12584	0.127563238	2.97E-06
558	100	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.16751	0.163848133	1.34E-05
558	100	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.22265	0.222510986	1.93E-08
558	120	2	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.12583	0.131422067	3.13E-05
558	120	2.4	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.17023	0.168798041	2.05E-06
558	120	3	0.0482302	0.0514851	0.17362395	0	0.05989357	0.16317309	0.08960376	0.68732958	0.22971	0.229227765	2.33E-07
559	10	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.08245	0.073453045	8.09E-05
559	10	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.09705	0.093845844	1.03E-05
559	10	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.11222	0.126621532	0.0002074
559	25	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.09264	0.086247253	4.09E-05
559	25	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.11261	0.11021637	5.73E-06
559	25	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.13547	0.148733215	0.00017591
559	50	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.10224	0.097391853	2.35E-05
559	50	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.12877	0.124461021	1.86E-05
559	50	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.16139	0.16796133	4.32E-05
559	75	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.10693	0.104553146	5.65E-06
559	75	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.13773	0.133599536	1.71E-05
559	75	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.17809	0.180311025	4.93E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
559	100	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.1087	0.109937105	1.53E-06
559	100	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.14341	0.140478678	8.59E-06
559	100	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.1896	0.189590254	9.50E-11
559	120	2	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.10889	0.113488166	2.11E-05
559	120	2.4	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.14625	0.145013658	1.53E-06
559	120	3	0.031563	0.07554763	0.26233786	0	0.08588016	0.1547559	0.11143309	0.64793085	0.19619	0.195703403	2.37E-07
560	10	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.08063	0.071288204	8.73E-05
560	10	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.09398	0.09051199	1.20E-05
560	10	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.10798	0.121166134	0.00017387
560	25	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.09166	0.085234108	4.13E-05
560	25	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.11068	0.108233376	5.99E-06
560	25	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.132	0.144940414	0.00016745
560	50	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.10254	0.0975737	2.47E-05
560	50	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.12797	0.123885174	1.67E-05
560	50	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.15923	0.165913391	4.47E-05
560	75	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.10783	0.105580724	5.06E-06
560	75	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.1382	0.134055595	1.72E-05
560	75	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.17729	0.179534569	5.04E-06
560	100	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.11038	0.111640835	1.59E-06
560	100	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.14453	0.141755934	7.70E-06
560	100	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.18941	0.189845705	1.90E-07
560	120	2	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.11105	0.115658418	2.12E-05
560	120	2.4	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.14802	0.146851969	1.36E-06
560	120	3	0.05398199	0.11872305	0.24623045	0	0.06956337	0.13814358	0.07215319	0.72013986	0.19725	0.196666757	3.40E-07
561	10	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.08358	0.074167442	8.86E-05
561	10	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.09817	0.094603539	1.27E-05
561	10	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.11334	0.127400875	0.00019771
561	25	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.09414	0.087528839	4.37E-05
561	25	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.1142	0.111679802	6.35E-06
561	25	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.13718	0.15043911	0.0001758
561	50	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.10432	0.099236298	2.58E-05
561	50	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.13105	0.126612873	1.97E-05
561	50	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.16395	0.170541821	4.35E-05
561	75	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.1092	0.106767057	5.92E-06
561	75	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.14051	0.136229095	1.83E-05
561	75	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.18107	0.183489011	5.85E-06
561	100	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.11135	0.112454815	1.22E-06
561	100	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.14622	0.143470488	7.56E-06
561	100	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.19313	0.193244505	1.31E-08
561	120	2	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.11168	0.116203237	2.05E-05
561	120	2.4	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.14946	0.148251899	1.46E-06
561	120	3	0.0428985	0.10028412	0.22099934	0	0.09024602	0.15489917	0.09015792	0.66469689	0.20037	0.199672278	4.87E-07
562	10	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.08827	0.079406357	7.86E-05
562	10	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.10479	0.102158833	6.92E-06
562	10	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.12206	0.138896179	0.00028346
562	25	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.0984	0.091936455	4.18E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
562	25	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.12053	0.118269577	5.11E-06
562	25	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.14614	0.160839005	0.00021606
562	50	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.10759	0.102700043	2.39E-05
562	50	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.13687	0.132102909	2.27E-05
562	50	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.17251	0.179664459	5.12E-05
562	75	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.11187	0.109558258	5.34E-06
562	75	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.14562	0.140910924	2.22E-05
562	75	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.1893	0.191640358	5.48E-06
562	100	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.11319	0.114682436	2.23E-06
562	100	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.15078	0.147492762	1.08E-05
562	100	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.20074	0.200598469	2.00E-08
562	120	2	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.11299	0.118046959	2.56E-05
562	120	2.4	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.15314	0.151805846	1.78E-06
562	120	3	0.06403091	0.03221606	0.22027303	0	0.08799778	0.14854849	0.11262232	0.65083141	0.20691	0.206469878	1.94E-07
563	10	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.08691	0.0767869	0.00010248
563	10	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.10202	0.097742558	1.83E-05
563	10	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.11768	0.131254292	0.00018426
563	25	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.09795	0.091009903	4.82E-05
563	25	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.11863	0.115827637	7.85E-06
563	25	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.14233	0.155565453	0.00017518
563	50	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.10868	0.103466396	2.72E-05
563	50	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.13625	0.131691589	2.08E-05
563	50	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.17014	0.176880474	4.54E-05
563	75	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.11395	0.111521047	5.90E-06
563	75	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.14643	0.141935616	2.02E-05
563	75	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.18811	0.190635872	6.38E-06
563	100	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.11628	0.117594147	1.73E-06
563	100	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.15262	0.149664097	8.74E-06
563	100	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.20092	0.201014118	8.86E-09
563	120	2	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.11665	0.121606318	2.46E-05
563	120	2.4	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.15604	0.154766266	1.62E-06
563	120	3	0.05148174	0.0452665	0.28397997	0	0.04670734	0.16113755	0.09508591	0.69706919	0.20847	0.207858984	3.73E-07
564	10	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.09505	0.085467911	9.18E-05
564	10	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.11351	0.110580063	8.58E-06
564	10	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.13294	0.151344013	0.00033871
564	25	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.10522	0.098231812	4.88E-05
564	25	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.1297	0.127024193	7.16E-06
564	25	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.15823	0.173897324	0.00024547
564	50	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.11437	0.109073334	2.81E-05
564	50	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.14631	0.141043701	2.77E-05
564	50	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.18587	0.19310379	5.23E-05
564	75	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.1185	0.115948868	6.51E-06
564	75	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.15497	0.149919548	2.55E-05
564	75	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.20255	0.205270195	7.40E-06
564	100	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.11937	0.121073046	2.90E-06
564	100	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.15999	0.156535301	1.19E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
564	100	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.21435	0.214327888	4.89E-10
564	120	2	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.11883	0.124429631	3.14E-05
564	120	2.4	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.16189	0.160869312	1.04E-06
564	120	3	0.04802667	0.03290629	0.19020599	0	0.06593473	0.13843252	0.11802525	0.67760751	0.22082	0.220247285	3.28E-07
565	10	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.09466	0.084320545	0.0001069
565	10	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.11201	0.108068848	1.55E-05
565	10	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.13002	0.146429825	0.00026928
565	25	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.10586	0.098630142	5.23E-05
565	25	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.12925	0.126444016	7.87E-06
565	25	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.15603	0.171308174	0.00023342
565	50	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.11641	0.111051998	2.87E-05
565	50	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.14746	0.142355595	2.61E-05
565	50	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.18533	0.192869987	5.69E-05
565	75	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.12154	0.119005623	6.42E-06
565	75	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.15749	0.152543335	2.45E-05
565	75	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.20411	0.206678785	6.60E-06
565	100	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.1234	0.124974089	2.48E-06
565	100	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.16345	0.160189552	1.06E-05
565	100	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.2171	0.217036104	4.08E-09
565	120	2	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.12334	0.128900027	3.09E-05
565	120	2.4	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.16644	0.165220642	1.49E-06
565	120	3	0.02871922	0.05257311	0.24615517	0	0.07002451	0.15509664	0.0525324	0.72234646	0.22428	0.223846332	1.88E-07
566	10	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.0846	0.074751949	9.70E-05
566	10	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.09887	0.094863319	1.61E-05
566	10	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.11367	0.126902962	0.00017511
566	25	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.0958	0.08914814	4.42E-05
566	25	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.11578	0.113160553	6.86E-06
566	25	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.13821	0.151408958	0.00017421
566	50	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.10691	0.101860085	2.55E-05
566	50	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.13354	0.129275627	1.82E-05
566	50	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.16603	0.172988091	4.84E-05
566	75	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.11239	0.110103798	5.23E-06
566	75	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.14405	0.139730364	1.87E-05
566	75	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.18466	0.186972961	5.35E-06
566	100	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.1149	0.116338539	2.07E-06
566	100	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.15053	0.147637806	8.36E-06
566	100	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.19721	0.197556868	1.20E-07
566	120	2	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.11571	0.120466169	2.26E-05
566	120	2.4	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.15411	0.152866618	1.55E-06
566	120	3	0.04722595	0.07917984	0.27517936	0	0.062166	0.16191496	0.06989871	0.70602032	0.20534	0.20455219	6.21E-07
567	10	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.08894	0.079860973	8.24E-05
567	10	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.10596	0.102981472	8.87E-06
567	10	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.12374	0.14051981	0.00028156
567	25	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.09867	0.092083664	4.34E-05
567	25	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.12148	0.11877182	7.33E-06
567	25	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.14776	0.162059975	0.00020449

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
567	50	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.10751	0.102552834	2.46E-05
567	50	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.13725	0.132245789	2.50E-05
567	50	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.17389	0.180478439	4.34E-05
567	75	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.11154	0.109200338	5.47E-06
567	75	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.14557	0.140809898	2.27E-05
567	75	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.18978	0.192171466	5.72E-06
567	100	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.11259	0.114154215	2.45E-06
567	100	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.15033	0.147196178	9.82E-06
567	100	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.20081	0.200895052	7.23E-09
567	120	2	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.11204	0.117404723	2.88E-05
567	120	2.4	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.15266	0.151385506	1.62E-06
567	120	3	0.04627715	0.06070167	0.17570816	0	0.13929406	0.1535268	0.08341269	0.62376645	0.20702	0.206606984	1.71E-07
568	10	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.08593	0.076830196	8.28E-05
568	10	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.10128	0.098435307	8.09E-06
568	10	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.1174	0.133159351	0.00024836
568	25	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.09656	0.089979439	4.33E-05
568	25	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.11766	0.115290756	5.61E-06
568	25	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.14189	0.156033058	0.00020003
568	50	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.10641	0.101409798	2.50E-05
568	50	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.13456	0.129933739	2.14E-05
568	50	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.16906	0.175867329	4.63E-05
568	75	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.11135	0.108741391	6.80E-06
568	75	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.14392	0.139317602	2.12E-05
568	75	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.18646	0.188572057	4.46E-06
568	100	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.11295	0.114249468	1.69E-06
568	100	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.14943	0.146369209	9.37E-06
568	100	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.19837	0.198119726	6.26E-08
568	120	2	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.1129	0.117879184	2.48E-05
568	120	2.4	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.15219	0.151008463	1.40E-06
568	120	3	0.05643768	0.06202771	0.24606559	0	0.10166465	0.13678596	0.05890181	0.70264757	0.20496	0.204404259	3.09E-07
569	10	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.08965	0.08031559	8.71E-05
569	10	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.10624	0.103154659	9.52E-06
569	10	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.12359	0.140065193	0.00027143
569	25	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.10011	0.093399887	4.50E-05
569	25	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.12252	0.12000145	6.34E-06
569	25	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.14831	0.16294323	0.00021413
569	50	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.10978	0.104704685	2.58E-05
569	50	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.13944	0.134510212	2.43E-05
569	50	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.17556	0.182669258	5.05E-05
569	75	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.1143	0.111925151	5.64E-06
569	75	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.14856	0.1437714	2.29E-05
569	75	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.19277	0.195265745	6.23E-06
569	100	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.11575	0.117330036	2.50E-06
569	100	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.15399	0.15070755	1.08E-05
569	100	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.20483	0.204696512	1.78E-08
569	120	2	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.11559	0.120884705	2.80E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
569	120	2.4	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.15659	0.155271395	1.74E-06
569	120	3	0.06214091	0.02313592	0.24957731	0	0.08670987	0.14546755	0.0812385	0.68658408	0.21132	0.210889761	1.85E-07
570	10	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.08203	0.07215414	9.75E-05
570	10	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.09564	0.091334629	1.85E-05
570	10	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.10983	0.121837234	0.00014417
570	25	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.09302	0.086420441	4.36E-05
570	25	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.1123	0.109437027	8.20E-06
570	25	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.1338	0.146031494	0.00014961
570	50	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.10408	0.099076099	2.50E-05
570	50	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.12967	0.125456848	1.78E-05
570	50	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.16098	0.16742012	4.15E-05
570	75	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.10951	0.107303937	4.87E-06
570	75	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.1401	0.135876948	1.78E-05
570	75	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.1791	0.181318398	4.92E-06
570	100	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.11205	0.1135394	2.22E-06
570	100	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.14662	0.143769236	8.13E-06
570	100	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.19161	0.191852512	5.88E-08
570	120	2	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.113	0.11767172	2.18E-05
570	120	2.4	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.14994	0.148995161	8.93E-07
570	120	3	0.03884535	0.09519325	0.27992128	0	0.05916336	0.1624273	0.08494994	0.6934594	0.1995	0.198826186	4.54E-07
571	10	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.09304	0.082956696	0.00010167
571	10	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.11024	0.10640192	1.47E-05
571	10	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.12814	0.144264984	0.00026002
571	25	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.10389	0.096777039	5.06E-05
571	25	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.12696	0.124131966	8.00E-06
571	25	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.1535	0.168312035	0.0002194
571	50	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.11392	0.108709641	2.71E-05
571	50	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.1445	0.139441719	2.56E-05
571	50	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.18179	0.189090176	5.33E-05
571	75	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.11873	0.116335653	5.73E-06
571	75	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.15412	0.149244118	2.38E-05
571	75	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.19989	0.202369308	6.15E-06
571	100	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.12055	0.122066708	2.30E-06
571	100	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.15985	0.156580763	1.07E-05
571	100	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.21236	0.212321081	1.51E-09
571	120	2	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.12043	0.125834974	2.92E-05
571	120	2.4	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.16264	0.161408718	1.52E-06
571	120	3	0.0333488	0.02716045	0.26937149	0	0.08082916	0.16292636	0.06399891	0.69224557	0.21912	0.218852766	7.14E-08
572	10	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.08914	0.078973389	0.00010336
572	10	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.10485	0.100924873	1.54E-05
572	10	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.12123	0.136276722	0.0002264
572	25	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.10047	0.093287315	5.16E-05
572	25	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.12208	0.119248085	8.02E-06
572	25	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.14681	0.16102951	0.00020219
572	50	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.11128	0.105800095	3.00E-05
572	50	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.14023	0.135263577	2.47E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
572	50	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.1755	0.182656269	5.12E-05
572	75	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.11643	0.113873507	6.54E-06
572	75	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.15022	0.145581207	2.15E-05
572	75	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.19399	0.196590627	6.76E-06
572	100	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.11849	0.119955988	2.15E-06
572	100	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.15647	0.153352985	9.72E-06
572	100	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.2071	0.207077837	4.91E-10
572	120	2	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.11872	0.123969603	2.76E-05
572	120	2.4	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.15966	0.158477163	1.40E-06
572	120	3	0.05051443	0.07606023	0.24025405	0	0.06696691	0.13549745	0.05243546	0.74510018	0.2144	0.213992699	1.66E-07
573	10	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.08471	0.075163269	9.11E-05
573	10	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.09939	0.095685959	1.37E-05
573	10	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.11465	0.128526592	0.00019256
573	25	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.0955	0.088914337	4.34E-05
573	25	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.11569	0.113229828	6.05E-06
573	25	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.13879	0.152127686	0.00017789
573	50	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.10596	0.1009725	2.49E-05
573	50	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.13298	0.128574219	1.94E-05
573	50	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.16605	0.172741299	4.48E-05
573	75	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.1111	0.10875871	5.48E-06
573	75	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.14277	0.138489189	1.83E-05
573	75	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.18359	0.186057955	6.09E-06
573	100	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.11343	0.11463048	1.44E-06
573	100	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.14881	0.14595356	8.16E-06
573	100	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.19602	0.19609127	5.08E-09
573	120	2	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.11368	0.118510596	2.33E-05
573	120	2.4	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.15211	0.150883985	1.50E-06
573	120	3	0.04906943	0.0841052	0.23902038	0	0.0742031	0.15816834	0.08921887	0.67840968	0.2034	0.202715683	4.68E-07
574	10	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.07874	0.0699893	7.66E-05
574	10	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.09223	0.08914814	9.50E-06
574	10	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.1062	0.119823933	0.00018561
574	25	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.08914	0.082948036	3.83E-05
574	25	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.1079	0.105687523	4.90E-06
574	25	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.12934	0.142048187	0.0001615
574	50	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.09911	0.094322109	2.29E-05
574	50	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.12426	0.120165977	1.68E-05
574	50	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.15522	0.161510105	3.96E-05
574	75	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.10386	0.101684011	4.73E-06
574	75	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.1335	0.129518089	1.59E-05
574	75	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.17184	0.174090716	5.07E-06
574	100	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.10606	0.107228889	1.37E-06
574	100	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.13927	0.13657547	7.26E-06
574	100	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.1834	0.183582821	3.34E-08
574	120	2	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.10633	0.110892161	2.08E-05
574	120	2.4	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.14236	0.141239619	1.26E-06
574	120	3	0.07791698	0.05213669	0.29039684	0	0.07232918	0.1350357	0.10563489	0.68700022	0.19028	0.189849313	1.85E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
575	10	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.07821	0.069902706	6.90E-05
575	10	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.0922	0.089624405	6.63E-06
575	10	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.10685	0.121404266	0.00021183
575	25	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.08781	0.081744385	3.68E-05
575	25	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.10702	0.104804268	4.91E-06
575	25	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.12916	0.141978912	0.00016432
575	50	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.09671	0.0920014	2.22E-05
575	50	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.1223	0.117949181	1.89E-05
575	50	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.15352	0.159799881	3.94E-05
575	75	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.10091	0.098569527	5.48E-06
575	75	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.13049	0.126366081	1.70E-05
575	75	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.16916	0.171207148	4.19E-06
575	100	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.10234	0.103501034	1.35E-06
575	100	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.13538	0.132685251	7.26E-06
575	100	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.18	0.179779196	4.88E-08
575	120	2	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.10219	0.106750099	2.08E-05
575	120	2.4	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.13796	0.136846797	1.24E-06
575	120	3	0.06923279	0.05448069	0.25485488	0	0.11937841	0.13820522	0.11331537	0.629101	0.18575	0.185409586	1.16E-07
576	10	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.08053	0.07107172	8.95E-05
576	10	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.09381	0.089970779	1.47E-05
576	10	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.1077	0.120083714	0.00015336
576	25	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.09149	0.085086899	4.10E-05
576	25	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.11037	0.107757111	6.83E-06
576	25	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.13146	0.143866653	0.00015393
576	50	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.10248	0.097508755	2.47E-05
576	50	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.12759	0.123508492	1.67E-05
576	50	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.15835	0.164904575	4.30E-05
576	75	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.10781	0.105586497	4.94E-06
576	75	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.13786	0.133743858	1.69E-05
576	75	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.17633	0.178579152	5.06E-06
576	100	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.11036	0.11170578	1.81E-06
576	100	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.14445	0.141498318	8.71E-06
576	100	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.18876	0.188936472	3.11E-08
576	120	2	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.11128	0.11576666	2.01E-05
576	120	2.4	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.14772	0.146637289	1.17E-06
576	120	3	0.09602683	0.07424059	0.24821989	0	0.09083752	0.16067261	0.06151718	0.68697269	0.19662	0.195795409	6.80E-07
577	10	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.08884	0.07936306	8.98E-05
577	10	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.10498	0.101660919	1.10E-05
577	10	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.12176	0.13766222	0.00025288
577	25	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.09951	0.092785072	4.52E-05
577	25	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.12122	0.118858414	5.58E-06
577	25	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.14624	0.160934258	0.00021592
577	50	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.10944	0.104397278	2.54E-05
577	50	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.13835	0.133743858	2.12E-05
577	50	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.17378	0.181058617	5.30E-05
577	75	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.11431	0.111832784	6.14E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
577	75	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.14782	0.143269157	2.07E-05
577	75	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.19143	0.193963954	6.42E-06
577	100	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.11606	0.11741663	1.84E-06
577	100	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.15343	0.150417461	9.08E-06
577	100	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.20369	0.203637905	2.71E-09
577	120	2	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.11599	0.121093973	2.61E-05
577	120	2.4	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.15655	0.15512166	2.04E-06
577	120	3	0.05233684	0.05181595	0.23080427	0	0.0858937	0.15901187	0.08487672	0.67021771	0.21032	0.209993156	1.07E-07
578	10	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.07943	0.071396446	6.45E-05
578	10	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.09413	0.091984081	4.60E-06
578	10	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.10952	0.12530098	0.00024904
578	25	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.08886	0.08275753	3.72E-05
578	25	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.10881	0.106622734	4.78E-06
578	25	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.13181	0.145286789	0.00018162
578	50	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.09736	0.09254694	2.32E-05
578	50	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.12371	0.119226437	2.01E-05
578	50	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.15598	0.162466965	4.21E-05
578	75	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.10114	0.098786011	5.54E-06
578	75	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.13156	0.127249336	1.86E-05
578	75	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.17132	0.173406626	4.35E-06
578	100	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.10221	0.103451242	1.54E-06
578	100	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.13624	0.133254604	8.91E-06
578	100	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.18168	0.181589003	8.28E-09
578	120	2	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.10185	0.106517378	2.18E-05
578	120	2.4	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.13835	0.137196779	1.33E-06
578	120	3	0.06962937	0.07030533	0.20187689	0	0.16102517	0.1359671	0.09077201	0.61223571	0.1873	0.186957447	1.17E-07
579	10	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.08925	0.080358887	7.91E-05
579	10	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.10706	0.104453564	6.79E-06
579	10	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.12586	0.143961906	0.00032768
579	25	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.09846	0.091650696	4.64E-05
579	25	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.1219	0.119161491	7.50E-06
579	25	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.14951	0.164207497	0.00021602
579	50	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.10646	0.101227951	2.74E-05
579	50	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.13675	0.131596336	2.66E-05
579	50	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.17468	0.181340046	4.44E-05
579	75	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.10987	0.1072693	6.76E-06
579	75	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.14449	0.139441719	2.55E-05
579	75	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.1899	0.19215126	5.07E-06
579	100	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.11023	0.111759901	2.34E-06
579	100	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.14865	0.14526947	1.14E-05
579	100	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.20018	0.200171995	6.41E-11
579	120	2	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.10938	0.11469326	2.82E-05
579	120	2.4	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.15013	0.149074539	1.11E-06
579	120	3	0.02103897	0.03503561	0.22578635	0	0.13696732	0.13590653	0.09283622	0.63428994	0.2059	0.20541091	2.39E-07
580	10	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.08597	0.077111626	7.85E-05
580	10	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.10234	0.099387836	8.72E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
580	10	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.11947	0.135519028	0.00025757
580	25	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.09541	0.088948975	4.17E-05
580	25	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.11738	0.114641304	7.50E-06
580	25	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.14268	0.156344795	0.00018673
580	50	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.10399	0.099076099	2.41E-05
580	50	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.13263	0.127703953	2.43E-05
580	50	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.16783	0.174148445	3.99E-05
580	75	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.10786	0.105508563	5.53E-06
580	75	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.14077	0.135986633	2.29E-05
580	75	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.18322	0.185440254	4.93E-06
580	100	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.10884	0.110311623	2.17E-06
580	100	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.14529	0.142171583	9.72E-06
580	100	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.19408	0.193878803	4.05E-08
580	120	2	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.10831	0.113461105	2.65E-05
580	120	2.4	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.14754	0.146225969	1.73E-06
580	120	3	0.08211117	0.04049859	0.16276422	0	0.15059912	0.15772545	0.1016458	0.59002962	0.19972	0.199401673	1.01E-07
581	10	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.07692	0.067629623	8.63E-05
581	10	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.08927	0.085381317	1.51E-05
581	10	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.10208	0.113589191	0.00013246
581	25	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.08795	0.081631813	3.99E-05
581	25	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.10555	0.103098373	6.01E-06
581	25	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.12531	0.137198944	0.00014135
581	50	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.09881	0.094135933	2.18E-05
581	50	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.12293	0.118893051	1.63E-05
581	50	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.15182	0.15818491	4.05E-05
581	75	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.10466	0.102295939	5.59E-06
581	75	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.13313	0.129200579	1.54E-05
581	75	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.16952	0.171911443	5.72E-06
581	100	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.10738	0.108490992	1.23E-06
581	100	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.13982	0.137036581	7.75E-06
581	100	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.18243	0.182335873	8.86E-09
581	120	2	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.10848	0.112609601	1.71E-05
581	120	2.4	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.14299	0.142239054	5.64E-07
581	120	3	0.0715307	0.15233094	0.20923716	0	0.0820677	0.15412134	0.07612034	0.68769061	0.18989	0.18925759	4.00E-07
582	10	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.08947	0.079687786	9.57E-05
582	10	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.10591	0.102288723	1.31E-05
582	10	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.12306	0.138896179	0.00025078
582	25	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.1001	0.093070831	4.94E-05
582	25	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.12241	0.119499207	8.47E-06
582	25	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.14802	0.162276459	0.00020325
582	50	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.10993	0.104652729	2.78E-05
582	50	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.13946	0.134393311	2.57E-05
582	50	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.17553	0.182491741	4.85E-05
582	75	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.11454	0.1120637	6.13E-06
582	75	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.14877	0.14391861	2.35E-05
582	75	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.19318	0.195427386	5.05E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
582	100	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.1162	0.117630949	2.05E-06
582	100	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.1543	0.151062584	1.05E-05
582	100	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.20518	0.205125151	3.01E-09
582	120	2	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.11609	0.12129422	2.71E-05
582	120	2.4	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.15697	0.155753072	1.48E-06
582	120	3	0.03461655	0.05021624	0.25853232	0	0.09130209	0.14310753	0.06376185	0.70182853	0.21184	0.211501328	1.15E-07
583	10	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.09445	0.084926701	9.07E-05
583	10	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.11243	0.109432697	8.98E-06
583	10	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.13116	0.149200821	0.00032547
583	25	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.10495	0.098067284	4.74E-05
583	25	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.12896	0.126400719	6.55E-06
583	25	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.15683	0.172329979	0.00024025
583	50	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.11447	0.109337444	2.63E-05
583	50	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.14608	0.140905151	2.68E-05
583	50	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.18491	0.192133942	5.22E-05
583	75	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.11899	0.116494408	6.23E-06
583	75	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.15507	0.150130259	2.44E-05
583	75	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.20211	0.204721769	6.82E-06
583	100	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.12031	0.121843729	2.35E-06
583	100	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.16051	0.157015896	1.22E-05
583	100	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.21431	0.214107075	4.12E-08
583	120	2	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.11992	0.125351493	2.95E-05
583	120	2.4	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.16279	0.161527785	1.59E-06
583	120	3	0.04581726	0.01968741	0.24018488	0	0.06958334	0.14411534	0.08723122	0.69907009	0.22096	0.220254501	4.98E-07
584	10	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.08175	0.072284031	8.96E-05
584	10	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.09569	0.091897488	1.44E-05
584	10	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.11016	0.123157787	0.00016894
584	25	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.09245	0.085935516	4.24E-05
584	25	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.11186	0.109272499	6.70E-06
584	25	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.13378	0.1464991	0.00016178
584	50	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.10298	0.097963371	2.52E-05
584	50	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.12876	0.124538956	1.78E-05
584	50	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.1605	0.166987152	4.21E-05
584	75	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.10807	0.105742366	5.42E-06
584	75	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.13873	0.134427948	1.85E-05
584	75	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.17798	0.180235977	5.09E-06
584	100	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.11035	0.111623516	1.62E-06
584	100	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.14492	0.141894484	9.15E-06
584	100	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.19006	0.190248365	3.55E-08
584	120	2	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.11103	0.115512292	2.01E-05
584	120	2.4	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.148	0.146826712	1.38E-06
584	120	3	0.12222034	0.0537322	0.2100257	0	0.0806883	0.15624372	0.09722407	0.66584391	0.19749	0.196867005	3.88E-07
585	10	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.07993	0.070725346	8.47E-05
585	10	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.09369	0.089992428	1.37E-05
585	10	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.108	0.120624924	0.00015939
585	25	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.09022	0.083909225	3.98E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
585	25	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.10924	0.106709328	6.40E-06
585	25	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.13082	0.14309597	0.0001507
585	50	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.10022	0.095434837	2.29E-05
585	50	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.12551	0.12135664	1.73E-05
585	50	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.15662	0.162791691	3.81E-05
585	75	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.10515	0.10287323	5.18E-06
585	75	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.13488	0.130834312	1.64E-05
585	75	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.17328	0.175507965	4.96E-06
585	100	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.1072	0.108506145	1.71E-06
585	100	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.14073	0.137978287	7.57E-06
585	100	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.18481	0.185096045	8.18E-08
585	120	2	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.10765	0.112225342	2.09E-05
585	120	2.4	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.14389	0.142704495	1.41E-06
585	120	3	0.09743656	0.05118712	0.23950145	0	0.08054255	0.1598225	0.1217163	0.63791865	0.19207	0.191431451	4.08E-07
586	10	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.09904	0.088217258	0.00011713
586	10	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.11777	0.113589191	1.75E-05
586	10	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.13725	0.154677868	0.00030373
586	25	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.11025	0.102509537	5.99E-05
586	25	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.13531	0.132003326	1.09E-05
586	25	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.16434	0.179803009	0.0002391
586	50	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.12049	0.11483614	3.20E-05
586	50	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.15355	0.147880268	3.21E-05
586	50	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.19406	0.201429768	5.43E-05
586	75	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.12537	0.122697398	7.14E-06
586	75	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.16342	0.15800162	2.94E-05
586	75	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.2127	0.215228462	6.39E-06
586	100	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.12699	0.128582878	2.54E-06
586	100	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.16924	0.165567017	1.35E-05
586	100	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.22555	0.225541763	6.78E-11
586	120	2	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.12678	0.132450366	3.22E-05
586	120	2.4	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.17177	0.170535326	1.52E-06
586	120	3	0.04335314	0.03509597	0.21774606	0	0.05511116	0.14233699	0.06214433	0.74040751	0.23293	0.232310859	3.83E-07
587	10	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.09155	0.081874275	9.36E-05
587	10	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.1086	0.105059719	1.25E-05
587	10	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.12631	0.14255476	0.00026389
587	25	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.10212	0.09526165	4.70E-05
587	25	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.12502	0.122287521	7.47E-06
587	25	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.15126	0.165913391	0.00021472
587	50	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.11197	0.106834888	2.64E-05
587	50	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.1421	0.13712534	2.47E-05
587	50	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.17886	0.18604641	5.16E-05
587	75	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.11658	0.114228541	5.53E-06
587	75	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.15152	0.146603012	2.42E-05
587	75	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.19655	0.19890845	5.56E-06
587	100	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.11816	0.119758987	2.56E-06
587	100	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.15699	0.15369503	1.09E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
587	100	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.20871	0.208534775	3.07E-08
587	120	2	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.11806	0.123392312	2.84E-05
587	120	2.4	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.15969	0.158361705	1.76E-06
587	120	3	0.06909715	0.03762716	0.19983521	0	0.09560583	0.15933078	0.08052956	0.66453382	0.21543	0.214858635	3.26E-07
588	10	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.08886	0.079752731	8.29E-05
588	10	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.10592	0.10287323	9.28E-06
588	10	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.12379	0.140476513	0.00027844
588	25	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.09851	0.091858521	4.42E-05
588	25	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.12132	0.118512039	7.88E-06
588	25	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.14758	0.161817513	0.00020271
588	50	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.10722	0.10219347	2.53E-05
588	50	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.13695	0.131860447	2.59E-05
588	50	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.17347	0.180054131	4.34E-05
588	75	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.11122	0.108755824	6.07E-06
588	75	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.14518	0.140324974	2.36E-05
588	75	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.18931	0.191608607	5.28E-06
588	100	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.11218	0.113654137	2.17E-06
588	100	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.14989	0.146631155	1.06E-05
588	100	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.20031	0.200226116	7.04E-09
588	120	2	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.11172	0.116865317	2.65E-05
588	120	2.4	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.15216	0.150764918	1.95E-06
588	120	3	0.06327747	0.01769411	0.21562279	0	0.08684957	0.14736999	0.13483571	0.63094472	0.20626	0.205863722	1.57E-07
589	10	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.08245	0.074124146	6.93E-05
589	10	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.09745	0.095014858	5.93E-06
589	10	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.11306	0.128808022	0.000248
589	25	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.09239	0.086281891	3.73E-05
589	25	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.11273	0.110666656	4.26E-06
589	25	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.13622	0.15002346	0.00019054
589	50	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.10154	0.096798687	2.25E-05
589	50	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.1286	0.124166603	1.97E-05
589	50	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.16158	0.168320694	4.54E-05
589	75	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.10591	0.103519796	5.71E-06
589	75	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.13718	0.132788442	1.93E-05
589	75	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.17791	0.180016607	4.44E-06
589	100	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.10738	0.108560266	1.39E-06
589	100	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.1421	0.139246883	8.14E-06
589	100	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.18899	0.188769779	4.85E-08
589	120	2	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.10717	0.111875359	2.21E-05
589	120	2.4	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.14466	0.143487446	1.37E-06
589	120	3	0.07547546	0.02100747	0.26879856	0	0.08921966	0.14137308	0.11973413	0.64967313	0.19494	0.194527173	1.70E-07
590	10	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.09679	0.08724308	9.11E-05
590	10	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.11587	0.112831497	9.23E-06
590	10	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.13586	0.154591274	0.00035086
590	25	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.10685	0.099929047	4.79E-05
590	25	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.13197	0.129266968	7.31E-06
590	25	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.16123	0.177109947	0.00025217

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
590	50	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.11608	0.110740261	2.85E-05
590	50	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.14854	0.14323452	2.81E-05
590	50	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.18886	0.19622982	5.43E-05
590	75	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.12009	0.117562396	6.39E-06
590	75	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.15723	0.152069956	2.66E-05
590	75	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.20566	0.208315404	7.05E-06
590	100	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.12084	0.12264039	3.24E-06
590	100	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.16217	0.158633032	1.25E-05
590	100	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.21745	0.217308874	1.99E-08
590	120	2	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.12032	0.125964864	3.19E-05
590	120	2.4	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.16396	0.162922303	1.08E-06
590	120	3	0.03193159	0.02503144	0.20691878	0	0.08992044	0.15633004	0.0926013	0.66114823	0.22367	0.223186056	2.34E-07
591	10	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.08928	0.080402184	7.88E-05
591	10	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.10704	0.104323673	7.38E-06
591	10	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.12574	0.143485641	0.00031491
591	25	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.09842	0.091745949	4.45E-05
591	25	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.12173	0.11904892	7.19E-06
591	25	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.14907	0.163731232	0.00021495
591	50	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.10664	0.101362171	2.79E-05
591	50	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.1367	0.131522732	2.68E-05
591	50	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.17441	0.1808811	4.19E-05
591	75	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.11006	0.107422282	6.96E-06
591	75	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.14441	0.139401309	2.51E-05
591	75	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.18927	0.19170386	5.92E-06
591	100	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.11037	0.111930923	2.44E-06
591	100	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.14869	0.145249987	1.18E-05
591	100	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.19975	0.199741192	7.76E-11
591	120	2	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.10976	0.114882684	2.62E-05
591	120	2.4	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.1503	0.149069126	1.52E-06
591	120	3	0.03983101	0.04236294	0.17677292	0	0.15948129	0.15484092	0.09130604	0.59437175	0.2056	0.20499057	3.71E-07
592	10	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.08192	0.07310667	7.77E-05
592	10	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.09659	0.093607712	8.89E-06
592	10	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.11193	0.126643181	0.00021648
592	25	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.09201	0.085641098	4.06E-05
592	25	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.11207	0.109688148	5.67E-06
592	25	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.13521	0.148378181	0.0001734
592	50	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.10138	0.096521587	2.36E-05
592	50	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.12814	0.123621063	2.04E-05
592	50	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.16091	0.167246933	4.02E-05
592	75	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.10594	0.103514023	5.89E-06
592	75	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.1369	0.132563299	1.88E-05
592	75	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.17736	0.179344063	3.94E-06
592	100	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.10749	0.108763762	1.62E-06
592	100	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.14217	0.139277191	8.37E-06
592	100	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.18871	0.188432064	7.72E-08
592	120	2	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.10747	0.112218126	2.25E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
592	120	2.4	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.14485	0.143698517	1.33E-06
592	120	3	0.04967253	0.06122796	0.26129188	0	0.12162022	0.1462067	0.07697175	0.65520133	0.19485	0.194409911	1.94E-07
593	10	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.09213	0.082263947	9.73E-05
593	10	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.10916	0.105600929	1.27E-05
593	10	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.12686	0.143312454	0.00027068
593	25	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.10295	0.095911102	4.95E-05
593	25	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.12591	0.123136139	7.69E-06
593	25	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.15226	0.16715168	0.00022176
593	50	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.11295	0.107705154	2.75E-05
593	50	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.14326	0.138290024	2.47E-05
593	50	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.18039	0.187709007	5.36E-05
593	75	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.11772	0.1152388	6.16E-06
593	75	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.15294	0.147971191	2.47E-05
593	75	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.19843	0.200851034	5.86E-06
593	100	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.11937	0.120902023	2.35E-06
593	100	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.15854	0.155227737	1.10E-05
593	100	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.21056	0.210699615	1.95E-08
593	120	2	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.11933	0.124624467	2.80E-05
593	120	2.4	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.16125	0.159999768	1.56E-06
593	120	3	0.07173104	0.01722268	0.24045866	0	0.09506699	0.15387743	0.05452486	0.69653073	0.21755	0.217169603	1.45E-07
594	10	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.08146	0.072305679	8.38E-05
594	10	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.09517	0.091854191	1.10E-05
594	10	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.10941	0.123092842	0.00018722
594	25	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.09254	0.086186638	4.04E-05
594	25	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.11183	0.109514961	5.36E-06
594	25	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.13364	0.14676754	0.00017233
594	50	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.10331	0.098422318	2.39E-05
594	50	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.12909	0.125062847	1.62E-05
594	50	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.16079	0.167606297	4.65E-05
594	75	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.10863	0.10635718	5.17E-06
594	75	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.13931	0.135143789	1.74E-05
594	75	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.17881	0.181119232	5.33E-06
594	100	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.11109	0.112359562	1.61E-06
594	100	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.14565	0.142766914	8.31E-06
594	100	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.19114	0.191335115	3.81E-08
594	120	2	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.11167	0.116331323	2.17E-05
594	120	2.4	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.14899	0.147808107	1.40E-06
594	120	3	0.05591308	0.105761	0.25225235	0	0.07240664	0.13847441	0.06824705	0.7208719	0.19874	0.198091944	4.20E-07
595	10	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.08944	0.079168224	0.00010551
595	10	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.10541	0.101163006	1.80E-05
595	10	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.12208	0.136601448	0.00021087
595	25	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.10044	0.093200722	5.24E-05
595	25	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.12215	0.119152832	8.98E-06
595	25	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.14712	0.160916939	0.00019036
595	50	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.11081	0.10544939	2.87E-05
595	50	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.13987	0.134830608	2.54E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
595	50	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.17531	0.18210207	4.61E-05
595	75	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.11596	0.113327967	6.93E-06
595	75	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.14959	0.144908663	2.19E-05
595	75	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.19337	0.195713145	5.49E-06
595	100	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.11776	0.119263239	2.26E-06
595	100	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.15557	0.152495708	9.45E-06
595	100	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.20615	0.205958614	3.66E-08
595	120	2	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.11798	0.123177632	2.70E-05
595	120	2.4	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.15862	0.157492161	1.27E-06
595	120	3	0.08095215	0.0248052	0.25020773	0	0.07589325	0.15246408	0.06738156	0.70426111	0.21327	0.212708227	3.16E-07
596	10	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.08048	0.071656227	7.79E-05
596	10	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.09414	0.090988255	9.93E-06
596	10	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.10831	0.121793938	0.00018182
596	25	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.09121	0.085138855	3.69E-05
596	25	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.11034	0.108129463	4.89E-06
596	25	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.13189	0.144749908	0.00016538
596	50	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.10165	0.097006512	2.16E-05
596	50	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.12708	0.123179436	1.52E-05
596	50	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.15844	0.164913235	4.19E-05
596	75	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.10672	0.104685923	4.14E-06
596	75	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.137	0.132926992	1.66E-05
596	75	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.17584	0.177970111	4.54E-06
596	100	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.10906	0.110486975	2.04E-06
596	100	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.14306	0.140286007	7.70E-06
596	100	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.1878	0.187825909	6.71E-10
596	120	2	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.10964	0.114321629	2.19E-05
596	120	2.4	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.14623	0.145150765	1.16E-06
596	120	3	0.05488236	0.08224845	0.27592197	0	0.10155313	0.15477307	0.06041184	0.68326196	0.19514	0.194337749	6.44E-07
597	10	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.07377	0.065616322	6.65E-05
597	10	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.08637	0.083541203	8.00E-06
597	10	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.0995	0.112225342	0.00016193
597	25	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.08347	0.077665825	3.37E-05
597	25	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.10112	0.09893322	4.78E-06
597	25	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.12103	0.13291256	0.0001412
597	50	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.09275	0.088251896	2.02E-05
597	50	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.11623	0.11238554	1.48E-05
597	50	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.14502	0.151001968	3.58E-05
597	75	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.09728	0.095074031	4.87E-06
597	75	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.12493	0.121078097	1.48E-05
597	75	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.16061	0.162683449	4.30E-06
597	100	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.09914	0.100229959	1.19E-06
597	100	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.1304	0.127630348	7.67E-06
597	100	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.17124	0.17149868	6.69E-08
597	120	2	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.09946	0.103636336	1.74E-05
597	120	2.4	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.13303	0.131963277	1.14E-06
597	120	3	0.07264386	0.05188109	0.30755414	0	0.08149331	0.14058372	0.14477149	0.63315149	0.17801	0.177311277	4.88E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
598	10	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.08422	0.07447052	9.51E-05
598	10	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.09867	0.094776726	1.52E-05
598	10	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.11365	0.127184391	0.00018318
598	25	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.09531	0.088567963	4.55E-05
598	25	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.11536	0.112727585	6.93E-06
598	25	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.13815	0.151313705	0.00017328
598	50	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.10606	0.100985489	2.58E-05
598	50	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.13287	0.128509274	1.90E-05
598	50	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.16585	0.172520485	4.45E-05
598	75	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.11136	0.109012718	5.51E-06
598	75	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.14295	0.138717219	1.79E-05
598	75	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.18382	0.186242688	5.87E-06
598	100	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.11376	0.115078602	1.74E-06
598	100	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.14925	0.146434155	7.93E-06
598	100	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.19645	0.196604338	2.38E-08
598	120	2	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.11415	0.119089691	2.44E-05
598	120	2.4	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.15265	0.151537045	1.24E-06
598	120	3	0.09342164	0.06045154	0.23799228	0	0.08099331	0.14813401	0.06265506	0.70821762	0.20397	0.203451729	2.69E-07
599	10	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.07651	0.067867756	7.47E-05
599	10	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.08941	0.08629055	9.73E-06
599	10	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.10283	0.115732384	0.00016647
599	25	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.08688	0.080757217	3.75E-05
599	25	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.10504	0.102691383	5.52E-06
599	25	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.12556	0.137761803	0.00014888
599	50	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.09686	0.092105312	2.26E-05
599	50	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.12112	0.117130871	1.59E-05
599	50	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.1511	0.157137127	3.64E-05
599	75	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.10169	0.099447009	5.03E-06
599	75	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.13051	0.12647288	1.63E-05
599	75	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.16752	0.169680214	4.67E-06
599	100	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.10384	0.105005598	1.36E-06
599	100	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.1362	0.133533869	7.11E-06
599	100	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.17902	0.179160051	1.96E-08
599	120	2	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.10428	0.108678611	1.93E-05
599	120	2.4	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.13921	0.138207038	1.01E-06
599	120	3	0.04914917	0.10816334	0.26981087	0	0.13937128	0.14883608	0.04586904	0.6659236	0.18616	0.185427626	5.36E-07
600	10	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.08969	0.080488777	8.47E-05
600	10	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.10688	0.103998947	8.30E-06
600	10	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.12482	0.142251682	0.00030386
600	25	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.09963	0.092724457	4.77E-05
600	25	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.12265	0.11985424	7.82E-06
600	25	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.14921	0.163921738	0.00021644
600	50	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.10844	0.103232594	2.71E-05
600	50	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.13856	0.133393154	2.67E-05
600	50	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.17574	0.182470093	4.53E-05
600	75	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.11243	0.1098902	6.45E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
600	75	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.14709	0.141996231	2.59E-05
600	75	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.19186	0.19423528	5.64E-06
600	100	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.11347	0.114859953	1.93E-06
600	100	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.15172	0.148410654	1.10E-05
600	100	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.20314	0.203005772	1.80E-08
600	120	2	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.11284	0.118124533	2.79E-05
600	120	2.4	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.15372	0.152615857	1.22E-06
600	120	3	0.04592576	0.04853614	0.20245096	0	0.13341544	0.14396814	0.06917889	0.65343752	0.20926	0.208750176	2.60E-07
601	10	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.09235	0.08289175	8.95E-05
601	10	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.11004	0.107051373	8.93E-06
601	10	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.12847	0.146429825	0.00032256
601	25	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.10266	0.095573387	5.02E-05
601	25	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.12627	0.123491173	7.72E-06
601	25	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.1537	0.168944168	0.00023238
601	50	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.11182	0.106445217	2.89E-05
601	50	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.14286	0.137553978	2.82E-05
601	50	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.18109	0.188198261	5.05E-05
601	75	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.11595	0.113371264	6.65E-06
601	75	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.15159	0.146496213	2.59E-05
601	75	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.19789	0.200423838	6.42E-06
601	100	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.11704	0.118533688	2.23E-06
601	100	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.15658	0.153160315	1.17E-05
601	100	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.20959	0.20954792	1.77E-09
601	120	2	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.1166	0.12192022	2.83E-05
601	120	2.4	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.15854	0.15753185	1.02E-06
601	120	3	0.05195441	0.0158168	0.24498886	0	0.12485395	0.14378639	0.04282353	0.68853614	0.21602	0.215518912	2.51E-07
602	10	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.08626	0.07704668	8.49E-05
602	10	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.10186	0.098695087	1.00E-05
602	10	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.11815	0.133657265	0.00024048
602	25	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.09672	0.09010067	4.38E-05
602	25	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.1179	0.115481262	5.85E-06
602	25	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.14231	0.156370773	0.00019771
602	50	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.10644	0.101435776	2.50E-05
602	50	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.13463	0.130011673	2.13E-05
602	50	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.16921	0.176044846	4.67E-05
602	75	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.11116	0.108695208	6.08E-06
602	75	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.14387	0.139311829	2.08E-05
602	75	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.18631	0.188655764	5.50E-06
602	100	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.11287	0.11415205	1.64E-06
602	100	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.14925	0.146291275	8.75E-06
602	100	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.19811	0.198113232	1.04E-11
602	120	2	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.11273	0.117743882	2.51E-05
602	120	2.4	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.15195	0.150876768	1.15E-06
602	120	3	0.04566871	0.02780978	0.2944705	0	0.09973498	0.15132077	0.06720635	0.6817379	0.20455	0.204333901	4.67E-08
603	10	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.07567	0.066828632	7.82E-05
603	10	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.08765	0.084363842	1.08E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
603	10	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.10011	0.112095451	0.00014365
603	25	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.0867	0.080696602	3.60E-05
603	25	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.10396	0.101894722	4.27E-06
603	25	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.1233	0.135432434	0.0001472
603	50	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.09763	0.09309248	2.06E-05
603	50	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.12127	0.117511883	1.41E-05
603	50	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.14974	0.156206245	4.18E-05
603	75	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.10338	0.101178881	4.84E-06
603	75	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.13143	0.127714055	1.38E-05
603	75	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.16741	0.16978124	5.62E-06
603	100	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.10607	0.107321978	1.57E-06
603	100	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.13829	0.135471401	7.94E-06
603	100	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.18015	0.180095263	3.00E-09
603	120	2	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.10729	0.111408114	1.70E-05
603	120	2.4	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.14135	0.140620836	5.32E-07
603	120	3	0.08673475	0.08793067	0.30170647	0	0.07911155	0.15049771	0.05939588	0.71099486	0.18753	0.18694121	3.47E-07
604	10	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.08586	0.07637558	9.00E-05
604	10	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.10107	0.097461128	1.30E-05
604	10	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.11684	0.131319237	0.00020965
604	25	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.0965	0.089866867	4.40E-05
604	25	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.11727	0.11470192	6.60E-06
604	25	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.14093	0.154586945	0.00018651
604	50	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.10662	0.101639271	2.48E-05
604	50	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.13415	0.129734573	1.95E-05
604	50	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.16816	0.174832535	4.45E-05
604	75	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.11154	0.109217656	5.39E-06
604	75	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.14365	0.139395536	1.81E-05
604	75	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.18543	0.187859103	5.90E-06
604	100	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.11346	0.114911909	2.11E-06
604	100	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.14958	0.146663628	8.51E-06
604	100	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.19771	0.197652121	3.35E-09
604	120	2	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.11362	0.118663939	2.54E-05
604	120	2.4	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.1526	0.151454059	1.31E-06
604	120	3	0.05615618	0.06860291	0.22966557	0	0.0914673	0.15988941	0.08346439	0.66517889	0.20471	0.204101181	3.71E-07
605	10	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.09311	0.082999992	0.00010221
605	10	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.11014	0.106423569	1.38E-05
605	10	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.12792	0.144264984	0.00026716
605	25	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.10429	0.097097435	5.17E-05
605	25	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.12745	0.124538956	8.47E-06
605	25	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.15394	0.168848915	0.00022228
605	50	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.11467	0.109324455	2.86E-05
605	50	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.14541	0.140221062	2.69E-05
605	50	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.183	0.19011631	5.06E-05
605	75	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.11962	0.117161179	6.05E-06
605	75	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.15534	0.150277468	2.56E-05
605	75	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.20138	0.203746147	5.60E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
605	100	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.12142	0.123045216	2.64E-06
605	100	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.16118	0.157821217	1.13E-05
605	100	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.21406	0.21397069	7.98E-09
605	120	2	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.12134	0.12691559	3.11E-05
605	120	2.4	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.16397	0.162781588	1.41E-06
605	120	3	0.07173117	0.05411333	0.19666179	0	0.09084252	0.13973995	0.04137132	0.72804621	0.22114	0.220689273	2.03E-07
606	10	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.08844	0.079536247	7.93E-05
606	10	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.10502	0.102418613	6.77E-06
606	10	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.12234	0.139459038	0.00029306
606	25	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.09856	0.092075005	4.21E-05
606	25	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.12098	0.118529358	6.01E-06
606	25	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.14688	0.161427841	0.00021164
606	50	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.10781	0.102821274	2.49E-05
606	50	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.13733	0.132371349	2.46E-05
606	50	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.17345	0.180287933	4.68E-05
606	75	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.112	0.10967083	5.43E-06
606	75	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.14588	0.141176478	2.21E-05
606	75	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.19001	0.192292697	5.21E-06
606	100	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.11335	0.114786348	2.06E-06
606	100	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.151	0.147759037	1.05E-05
606	100	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.20147	0.20125658	4.55E-08
606	120	2	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.11292	0.118144377	2.73E-05
606	120	2.4	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.15334	0.152081863	1.58E-06
606	120	3	0.06016217	0.02378902	0.24822389	0	0.10249716	0.13643455	0.07958293	0.68148536	0.20763	0.20713737	2.43E-07
607	10	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.09775	0.087502861	0.000105
607	10	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.11665	0.112874794	1.43E-05
607	10	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.13636	0.154006767	0.00031141
607	25	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.10823	0.100942192	5.31E-05
607	25	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.13319	0.130158882	9.19E-06
607	25	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.16217	0.177629509	0.000239
607	50	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.11775	0.112411518	2.85E-05
607	50	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.15051	0.144957733	3.08E-05
607	50	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.19053	0.197814484	5.31E-05
607	75	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.12228	0.119701258	6.65E-06
607	75	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.15963	0.154344482	2.79E-05
607	75	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.20804	0.210621681	6.67E-06
607	100	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.12359	0.125142946	2.41E-06
607	100	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.16474	0.161354237	1.15E-05
607	100	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.22033	0.220177288	2.33E-08
607	120	2	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.12317	0.128705192	3.06E-05
607	120	2.4	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.16729	0.165949472	1.80E-06
607	120	3	0.08394892	0.03044484	0.12278743	0	0.069186	0.15661999	0.1218459	0.65234811	0.22709	0.226433317	4.31E-07
608	10	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.08797	0.078388882	9.18E-05
608	10	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.10414	0.100405312	1.39E-05
608	10	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.12094	0.135995293	0.00022666
608	25	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.09835	0.09146019	4.75E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
608	25	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.11995	0.117213135	7.49E-06
608	25	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.14498	0.158752098	0.00018967
608	50	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.10783	0.102777977	2.55E-05
608	50	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.13664	0.131717567	2.42E-05
608	50	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.17169	0.178408852	4.51E-05
608	75	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.11251	0.110022977	6.19E-06
608	75	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.14579	0.141003291	2.29E-05
608	75	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.18889	0.190982246	4.38E-06
608	100	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.11416	0.115457449	1.68E-06
608	100	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.15105	0.147964697	9.52E-06
608	100	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.20062	0.200414457	4.22E-08
608	120	2	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.11402	0.119030158	2.51E-05
608	120	2.4	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.15375	0.152549108	1.44E-06
608	120	3	0.04910286	0.05693184	0.21375443	0	0.09029884	0.16250923	0.10607738	0.64111455	0.20707	0.206612396	2.09E-07
609	10	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.08425	0.075682831	7.34E-05
609	10	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.09966	0.097201347	6.04E-06
609	10	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.11572	0.131968689	0.00026402
609	25	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.09442	0.088100357	3.99E-05
609	25	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.11534	0.113169212	4.71E-06
609	25	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.13946	0.153677711	0.00020214
609	50	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.10364	0.098816319	2.33E-05
609	50	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.13147	0.126950588	2.04E-05
609	50	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.16537	0.172394924	4.93E-05
609	75	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.10805	0.105678864	5.62E-06
609	75	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.14023	0.135749944	2.01E-05
609	75	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.18198	0.184346288	5.60E-06
609	100	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.10951	0.110816031	1.71E-06
609	100	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.1453	0.142340441	8.76E-06
609	100	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.19338	0.193298626	6.62E-09
609	120	2	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.10943	0.114193543	2.27E-05
609	120	2.4	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.14775	0.146675173	1.16E-06
609	120	3	0.0720358	0.03956973	0.2420284	0	0.1099667	0.13802083	0.08590106	0.66611142	0.19941	0.199179777	5.30E-08
610	10	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.08438	0.074860191	9.06E-05
610	10	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.09911	0.095512772	1.29E-05
610	10	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.1144	0.128656483	0.00020325
610	25	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.09513	0.088412094	4.51E-05
610	25	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.1154	0.112814178	6.69E-06
610	25	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.13856	0.151980476	0.00018011
610	50	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.1054	0.100262432	2.64E-05
610	50	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.13244	0.127929096	2.03E-05
610	50	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.16575	0.172355957	4.36E-05
610	75	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.11038	0.107898547	6.16E-06
610	75	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.14199	0.137675209	1.86E-05
610	75	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.1831	0.185480665	5.67E-06
610	100	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.11244	0.113654137	1.47E-06
610	100	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.14783	0.145011854	7.94E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
610	100	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.19543	0.195366049	4.09E-09
610	120	2	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.11277	0.117449824	2.19E-05
610	120	2.4	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.15108	0.149855685	1.50E-06
610	120	3	0.0404864	0.04516942	0.31076268	0	0.07562661	0.15077577	0.07505217	0.69854544	0.20257	0.201889435	4.63E-07
611	10	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.08623	0.076938438	8.63E-05
611	10	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.10168	0.098456955	1.04E-05
611	10	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.1178	0.133202648	0.00023724
611	25	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.09679	0.090143967	4.42E-05
611	25	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.11779	0.115403328	5.70E-06
611	25	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.14202	0.156119652	0.0001988
611	50	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.10669	0.101617622	2.57E-05
611	50	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.13477	0.130111256	2.17E-05
611	50	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.16903	0.175992889	4.85E-05
611	75	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.11151	0.108983854	6.38E-06
611	75	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.14397	0.139531199	1.97E-05
611	75	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.18633	0.188736585	5.79E-06
611	100	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.11321	0.114520073	1.72E-06
611	100	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.14945	0.146607342	8.08E-06
611	100	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.19847	0.198310232	2.55E-08
611	120	2	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.11323	0.118160613	2.43E-05
611	120	2.4	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.15248	0.151271852	1.46E-06
611	120	3	0.10810037	0.02772948	0.21249424	0	0.09828798	0.15075557	0.08252316	0.66843329	0.20509	0.204609919	2.30E-07
612	10	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.09304	0.082935047	0.00010211
612	10	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.11004	0.106315327	1.39E-05
612	10	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.1277	0.144005203	0.00026586
612	25	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.10413	0.096967545	5.13E-05
612	25	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.12701	0.12434845	7.08E-06
612	25	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.15328	0.168467903	0.00023067
612	50	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.11446	0.109164257	2.80E-05
612	50	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.1449	0.139965611	2.43E-05
612	50	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.1821	0.189635715	5.68E-05
612	75	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.11947	0.116967786	6.26E-06
612	75	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.15479	0.149968618	2.32E-05
612	75	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.20057	0.203189061	6.86E-06
612	100	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.12141	0.122828732	2.01E-06
612	100	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.16071	0.157470512	1.05E-05
612	100	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.21336	0.21335371	3.96E-11
612	120	2	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.12136	0.12668287	2.83E-05
612	120	2.4	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.16357	0.162406349	1.35E-06
612	120	3	0.068202	0.04887565	0.19891014	0	0.06124427	0.15053619	0.08507093	0.70314861	0.22038	0.220030801	1.22E-07
613	10	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.08569	0.075682831	0.00010014
613	10	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.10041	0.096183872	1.79E-05
613	10	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.11571	0.128894615	0.00017383
613	25	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.0968	0.089988098	4.64E-05
613	25	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.11712	0.114355545	7.64E-06
613	25	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.14022	0.153270721	0.00017032

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
613	50	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.10752	0.102552834	2.47E-05
613	50	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.13473	0.13031908	1.95E-05
613	50	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.16808	0.174668007	4.34E-05
613	75	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.11297	0.110681089	5.24E-06
613	75	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.14506	0.140651143	1.94E-05
613	75	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.18626	0.188520101	5.11E-06
613	100	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.11535	0.116823463	2.17E-06
613	100	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.15145	0.148456116	8.96E-06
613	100	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.19876	0.198981333	4.90E-08
613	120	2	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.11593	0.120886509	2.46E-05
613	120	2.4	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.15488	0.153611684	1.61E-06
613	120	3	0.07048746	0.0784928	0.22395016	0	0.08107088	0.16314827	0.06876093	0.68701993	0.2066	0.205890783	5.03E-07
614	10	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.08268	0.073496342	8.43E-05
614	10	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.09699	0.093694305	1.09E-05
614	10	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.11181	0.126037025	0.00020241
614	25	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.09345	0.08697464	4.19E-05
614	25	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.11319	0.110874481	5.36E-06
614	25	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.13584	0.149166183	0.00017759
614	50	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.10381	0.098786011	2.52E-05
614	50	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.13026	0.125911465	1.89E-05
614	50	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.16279	0.169385796	4.35E-05
614	75	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.10877	0.106391818	5.66E-06
614	75	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.13979	0.135620054	1.74E-05
614	75	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.18007	0.182438342	5.61E-06
614	100	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.11098	0.112136583	1.34E-06
614	100	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.14559	0.142929277	7.08E-06
614	100	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.19221	0.192283316	5.38E-09
614	120	2	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.11135	0.115932631	2.10E-05
614	120	2.4	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.149	0.147761202	1.53E-06
614	120	3	0.12409176	0.06517428	0.18337409	0	0.12854707	0.15177777	0.04779128	0.67188388	0.19933	0.198781085	3.01E-07
615	10	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.0915	0.081376362	0.00010249
615	10	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.10789	0.104042244	1.48E-05
615	10	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.12493	0.140433216	0.00024035
615	25	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.10267	0.095599365	5.00E-05
615	25	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.12481	0.122209587	6.76E-06
615	25	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.15033	0.164995499	0.00021508
615	50	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.11319	0.107969265	2.73E-05
615	50	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.14283	0.138017254	2.32E-05
615	50	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.17888	0.186327839	5.55E-05
615	75	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.11846	0.115917117	6.47E-06
615	75	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.15285	0.148170357	2.19E-05
615	75	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.19736	0.200025508	7.10E-06
615	100	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.12039	0.121891356	2.25E-06
615	100	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.15905	0.155799255	1.06E-05
615	100	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.2104	0.210322933	5.94E-09
615	120	2	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.12061	0.125825953	2.72E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
615	120	2.4	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.16217	0.160822407	1.82E-06
615	120	3	0.05836646	0.0615565	0.2090321	0	0.05624869	0.15901509	0.0899409	0.69479531	0.21764	0.217099245	2.92E-07
616	10	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.08572	0.076851845	7.86E-05
616	10	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.10195	0.099019814	8.59E-06
616	10	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.11885	0.134999466	0.00026081
616	25	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.09545	0.088845062	4.36E-05
616	25	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.11722	0.114494095	7.43E-06
616	25	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.14237	0.156110992	0.00018881
616	50	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.10415	0.099141045	2.51E-05
616	50	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.13274	0.127773228	2.47E-05
616	50	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.16787	0.174235039	4.05E-05
616	75	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.10802	0.105701955	5.37E-06
616	75	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.14096	0.136226209	2.24E-05
616	75	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.18357	0.185760651	4.80E-06
616	100	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.10919	0.110606041	2.01E-06
616	100	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.14553	0.142539606	8.94E-06
616	100	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.19454	0.194374552	2.74E-08
616	120	2	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.10867	0.113821912	2.65E-05
616	120	2.4	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.14784	0.146680586	1.34E-06
616	120	3	0.08895538	0.03507786	0.18068602	0	0.11399122	0.13887066	0.11924087	0.62789725	0.20022	0.200016848	4.13E-08
617	10	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.08746	0.077826023	9.28E-05
617	10	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.10277	0.099236298	1.25E-05
617	10	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.11871	0.133613968	0.00022213
617	25	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.09848	0.091780586	4.49E-05
617	25	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.11953	0.117048607	6.16E-06
617	25	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.14351	0.157600403	0.00019854
617	50	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.10907	0.103977299	2.59E-05
617	50	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.13709	0.132613811	2.00E-05
617	50	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.17167	0.178534412	4.71E-05
617	75	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.11422	0.11183567	5.69E-06
617	75	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.14701	0.142631251	1.92E-05
617	75	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.18952	0.192027143	6.29E-06
617	100	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.11634	0.117754345	2.00E-06
617	100	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.15304	0.150172834	8.22E-06
617	100	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.20234	0.202183132	2.46E-08
617	120	2	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.11667	0.121656831	2.49E-05
617	120	2.4	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.15642	0.155146917	1.62E-06
617	120	3	0.07463961	0.0425847	0.25352166	0	0.06300401	0.15082888	0.08019254	0.70597457	0.20959	0.208874655	5.12E-07
618	10	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.08142	0.072673702	7.65E-05
618	10	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.09613	0.093044853	9.52E-06
618	10	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.11148	0.125798893	0.00020503
618	25	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.09121	0.084896393	3.99E-05
618	25	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.11105	0.108709641	5.48E-06
618	25	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.13402	0.147018661	0.00016897
618	50	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.10016	0.095482464	2.19E-05
618	50	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.12666	0.122248554	1.95E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
618	50	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.15904	0.165363522	4.00E-05
618	75	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.10457	0.102267075	5.30E-06
618	75	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.13518	0.130932452	1.80E-05
618	75	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.17502	0.177098401	4.32E-06
618	100	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.10608	0.107360945	1.64E-06
618	100	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.14039	0.137441406	8.69E-06
618	100	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.18612	0.18590353	4.69E-08
618	120	2	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.10603	0.110711757	2.19E-05
618	120	2.4	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.14316	0.141724904	2.06E-06
618	120	3	0.0486183	0.02831824	0.28973997	0	0.08570505	0.15870944	0.13776995	0.61781557	0.19214	0.191687624	2.05E-07
619	10	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.09159	0.081895924	9.40E-05
619	10	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.10824	0.10477829	1.20E-05
619	10	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.12547	0.141688824	0.00026305
619	25	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.1026	0.095755234	4.69E-05
619	25	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.12494	0.12258194	5.56E-06
619	25	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.1506	0.165757523	0.00022975
619	50	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.11292	0.107791748	2.63E-05
619	50	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.14263	0.137978287	2.16E-05
619	50	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.17909	0.18658762	5.62E-05
619	75	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.11797	0.115492808	6.14E-06
619	75	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.15239	0.147844187	2.07E-05
619	75	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.19718	0.199930255	7.56E-06
619	100	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.1197	0.121276541	2.49E-06
619	100	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.15833	0.155236397	9.57E-06
619	100	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.21004	0.209935427	1.09E-08
619	120	2	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.11986	0.125084496	2.73E-05
619	120	2.4	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.1616	0.160104402	2.24E-06
619	120	3	0.06310764	0.048073	0.21224993	0	0.05971203	0.15897749	0.09556206	0.68574842	0.21718	0.216505718	4.55E-07
620	10	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.08983	0.079752731	0.00010155
620	10	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.10573	0.101812458	1.53E-05
620	10	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.12218	0.137229252	0.00022648
620	25	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.10097	0.093971405	4.90E-05
620	25	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.1226	0.119966812	6.93E-06
620	25	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.1473	0.161696281	0.00020725
620	50	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.1116	0.106375942	2.73E-05
620	50	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.14044	0.135787468	2.16E-05
620	50	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.17584	0.183028622	5.17E-05
620	75	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.11686	0.114349772	6.30E-06
620	75	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.15044	0.145962219	2.01E-05
620	75	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.19411	0.196737836	6.91E-06
620	100	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.11897	0.120352154	1.91E-06
620	100	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.15662	0.153617096	9.02E-06
620	100	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.20705	0.207056189	3.83E-11
620	120	2	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.11929	0.124308761	2.52E-05
620	120	2.4	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.16002	0.158664783	1.84E-06
620	120	3	0.05282223	0.04155578	0.2649135	0	0.06471298	0.16313843	0.07191255	0.70023604	0.21442	0.2138592	3.14E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
621	10	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.08764	0.077977562	9.34E-05
621	10	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.10345	0.099842453	1.30E-05
621	10	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.11989	0.135064411	0.00023026
621	25	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.09832	0.091408234	4.78E-05
621	25	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.11977	0.117083244	7.22E-06
621	25	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.14441	0.158423042	0.00019637
621	50	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.10831	0.103102703	2.71E-05
621	50	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.13683	0.132042294	2.29E-05
621	50	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.17182	0.178677292	4.70E-05
621	75	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.11318	0.110585836	6.73E-06
621	75	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.1463	0.141644084	2.17E-05
621	75	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.18939	0.191669223	5.19E-06
621	100	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.11489	0.116225967	1.78E-06
621	100	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.1518	0.148856611	8.66E-06
621	100	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.20163	0.201434097	3.84E-08
621	120	2	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.11487	0.119939391	2.57E-05
621	120	2.4	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.15486	0.153608076	1.57E-06
621	120	3	0.06219487	0.05030875	0.23531302	0	0.05256542	0.14048792	0.113636	0.69331066	0.20834	0.20785718	2.33E-07
622	10	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.09185	0.08235054	9.02E-05
622	10	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.10971	0.106596756	9.69E-06
622	10	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.1285	0.146061802	0.00030842
622	25	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.10171	0.094603539	5.05E-05
622	25	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.12535	0.122452049	8.40E-06
622	25	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.15299	0.16782711	0.00022014
622	50	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.11043	0.10505106	2.89E-05
622	50	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.14126	0.135969315	2.80E-05
622	50	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.17965	0.186379795	4.53E-05
622	75	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.11434	0.111671143	7.12E-06
622	75	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.14953	0.144533424	2.50E-05
622	75	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.19559	0.198111788	6.36E-06
622	100	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.11502	0.11660265	2.50E-06
622	100	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.15443	0.150902386	1.24E-05
622	100	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.20689	0.206846199	1.92E-09
622	120	2	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.11457	0.119832953	2.77E-05
622	120	2.4	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.15623	0.155071147	1.34E-06
622	120	3	0.03657686	0.05730957	0.17214164	0	0.08965881	0.13862593	0.12345592	0.64825934	0.21304	0.212565708	2.25E-07
623	10	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.08167	0.072630405	8.17E-05
623	10	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.09601	0.092806721	1.03E-05
623	10	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.11095	0.125171089	0.00020224
623	25	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.09202	0.085545845	4.19E-05
623	25	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.11176	0.109307137	6.02E-06
623	25	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.13436	0.14744297	0.00017116
623	50	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.10172	0.096803017	2.42E-05
623	50	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.12801	0.123681679	1.87E-05
623	50	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.16046	0.166835613	4.06E-05
623	75	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.10647	0.104042244	5.89E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
623	75	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.1371	0.132926992	1.74E-05
623	75	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.17718	0.179312312	4.55E-06
623	100	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.10826	0.109499807	1.54E-06
623	100	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.1428	0.139883347	8.51E-06
623	100	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.18882	0.188704834	1.33E-08
623	120	2	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.10848	0.113093082	2.13E-05
623	120	2.4	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.1457	0.14447786	1.49E-06
623	120	3	0.06289452	0.05074325	0.27588352	0	0.14217169	0.1580015	0.04147114	0.65835567	0.19546	0.194898804	3.15E-07
624	10	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.08869	0.079168224	9.07E-05
624	10	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.10453	0.101314545	1.03E-05
624	10	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.12112	0.137056065	0.00025396
624	25	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.09968	0.092854347	4.66E-05
624	25	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.12137	0.118884392	6.18E-06
624	25	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.1463	0.160813026	0.00021063
624	50	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.10994	0.10476963	2.67E-05
624	50	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.13881	0.13413353	2.19E-05
624	50	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.17437	0.181443958	5.00E-05
624	75	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.11501	0.112404302	6.79E-06
624	75	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.14861	0.14391861	2.20E-05
624	75	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.19236	0.194676908	5.37E-06
624	100	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.11675	0.118150511	1.96E-06
624	100	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.15429	0.151263914	9.16E-06
624	100	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.20491	0.204614248	8.75E-08
624	120	2	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.11677	0.12193826	2.67E-05
624	120	2.4	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.15739	0.156104859	1.65E-06
624	120	3	0.0800593	0.04538685	0.22891498	0	0.08388615	0.13941971	0.06057347	0.71612067	0.21173	0.211158562	3.27E-07
625	10	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.09717	0.086961651	0.00010421
625	10	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.11558	0.1121171	1.20E-05
625	10	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.13471	0.152794456	0.00032705
625	25	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.10818	0.100803642	5.44E-05
625	25	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.13282	0.129933739	8.33E-06
625	25	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.1613	0.177170563	0.00025187
625	50	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.11814	0.112697277	2.96E-05
625	50	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.1507	0.145256481	2.96E-05
625	50	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.19057	0.198065605	5.62E-05
625	75	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.1228	0.120281436	6.34E-06
625	75	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.16026	0.155008367	2.76E-05
625	75	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.20864	0.211366386	7.43E-06
625	100	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.1244	0.125941772	2.38E-06
625	100	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.16584	0.162295942	1.26E-05
625	100	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.22135	0.221298676	2.63E-09
625	120	2	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.12412	0.129659526	3.07E-05
625	120	2.4	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.16823	0.167080601	1.32E-06
625	120	3	0.03507121	0.07605467	0.16508843	0	0.07107928	0.13630852	0.07092561	0.72168659	0.22844	0.227813403	3.93E-07
626	10	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.0924	0.082047462	0.00010718
626	10	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.10906	0.105103016	1.57E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
626	10	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.12641	0.142056847	0.00024482
626	25	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.10361	0.09635273	5.27E-05
626	25	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.12613	0.123343964	7.76E-06
626	25	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.15199	0.166770668	0.00021847
626	50	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.11414	0.108761597	2.89E-05
626	50	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.14417	0.139212246	2.46E-05
626	50	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.18097	0.18821991	5.26E-05
626	75	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.1194	0.116722438	7.17E-06
626	75	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.15417	0.149394213	2.28E-05
626	75	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.19941	0.201991183	6.66E-06
626	100	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.12125	0.12271183	2.14E-06
626	100	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.16005	0.157046204	9.02E-06
626	100	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.21244	0.2123384	1.03E-08
626	120	2	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.1213	0.126654005	2.87E-05
626	120	2.4	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.16344	0.162081623	1.85E-06
626	120	3	0.04699849	0.07763913	0.19540536	0	0.0660325	0.15319269	0.0759165	0.70485831	0.21976	0.219141412	3.83E-07
627	10	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.08572	0.075812721	9.82E-05
627	10	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.10008	0.096227169	1.48E-05
627	10	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.11501	0.128743076	0.0001886
627	25	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.09721	0.090550957	4.43E-05
627	25	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.11745	0.114935722	6.32E-06
627	25	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.14011	0.153798943	0.00018739
627	50	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.10868	0.10355732	2.62E-05
627	50	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.13562	0.131431808	1.75E-05
627	50	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.16859	0.175880318	5.31E-05
627	75	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.11433	0.112000198	5.43E-06
627	75	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.1465	0.142134781	1.91E-05
627	75	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.1876	0.190208677	6.81E-06
627	100	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.11697	0.118375654	1.98E-06
627	100	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.15318	0.15023345	8.68E-06
627	100	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.20056	0.201046591	2.37E-07
627	120	2	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.11783	0.122605753	2.28E-05
627	120	2.4	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.15683	0.155592513	1.53E-06
627	120	3	0.08460601	0.07159323	0.24310224	0	0.05004696	0.15263675	0.06702362	0.73029267	0.20893	0.208214378	5.12E-07
628	10	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.0904	0.08126812	8.34E-05
628	10	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.1076	0.104756641	8.08E-06
628	10	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.12549	0.142901134	0.00030315
628	25	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.10058	0.093832855	4.55E-05
628	25	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.12359	0.120979958	6.81E-06
628	25	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.15022	0.165004158	0.00021857
628	50	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.10969	0.104600773	2.59E-05
628	50	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.13998	0.134869576	2.61E-05
628	50	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.17705	0.183963833	4.78E-05
628	75	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.11392	0.111451772	6.09E-06
628	75	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.14851	0.143693466	2.32E-05
628	75	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.19361	0.19600179	5.72E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
628	100	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.1151	0.116572342	2.17E-06
628	100	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.15357	0.150278912	1.08E-05
628	100	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.20525	0.204984436	7.05E-08
628	120	2	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.1147	0.119928567	2.73E-05
628	120	2.4	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.15592	0.154591274	1.77E-06
628	120	3	0.06681982	0.04973873	0.17342214	0	0.10099477	0.13849962	0.09801512	0.6624905	0.2114	0.210864504	2.87E-07
629	10	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.09475	0.084688568	0.00010123
629	10	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.1124	0.108696651	1.37E-05
629	10	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.13073	0.147425652	0.00027874
629	25	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.10566	0.098569527	5.03E-05
629	25	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.12926	0.126530609	7.45E-06
629	25	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.15644	0.171645889	0.00023122
629	50	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.11585	0.110571404	2.79E-05
629	50	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.14694	0.141922626	2.52E-05
629	50	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.18501	0.192545261	5.68E-05
629	75	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.12064	0.11822628	5.83E-06
629	75	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.15679	0.151758219	2.53E-05
629	75	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.20342	0.205879237	6.05E-06
629	100	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.12237	0.123976097	2.58E-06
629	100	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.16248	0.159115791	1.13E-05
629	100	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.21582	0.215864925	2.02E-09
629	120	2	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.12233	0.127752662	2.94E-05
629	120	2.4	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.16533	0.16395421	1.89E-06
629	120	3	0.06513641	0.06845794	0.13905368	0	0.0965446	0.16183809	0.07327739	0.66833992	0.22298	0.222417537	3.16E-07
630	10	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.08532	0.075920963	8.83E-05
630	10	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.10036	0.096919918	1.18E-05
630	10	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.11595	0.130583191	0.00021413
630	25	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.09596	0.089390602	4.32E-05
630	25	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.11647	0.114113083	5.56E-06
630	25	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.13996	0.153772964	0.0001908
630	50	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.1061	0.101145687	2.45E-05
630	50	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.13344	0.12910244	1.88E-05
630	50	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.16717	0.173962269	4.61E-05
630	75	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.11108	0.108695208	5.69E-06
630	75	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.14288	0.13874897	1.71E-05
630	75	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.18438	0.186955643	6.63E-06
630	100	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.11307	0.114390182	1.74E-06
630	100	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.14883	0.145999022	8.01E-06
630	100	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.19664	0.196727734	7.70E-09
630	120	2	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.11336	0.118140769	2.29E-05
630	120	2.4	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.15203	0.150779351	1.56E-06
630	120	3	0.06793249	0.05138043	0.24520551	0	0.0498296	0.1512247	0.12325352	0.67569218	0.20368	0.203168495	2.62E-07
631	10	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.08787	0.078215694	9.32E-05
631	10	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.10374	0.100123882	1.31E-05
631	10	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.12026	0.135367489	0.00022824
631	25	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.09844	0.091659355	4.60E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
631	25	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.11987	0.117317047	6.52E-06
631	25	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.14448	0.158613548	0.00019976
631	50	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.10838	0.103310528	2.57E-05
631	50	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.13689	0.13222414	2.18E-05
631	50	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.17171	0.178755226	4.96E-05
631	75	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.11321	0.110785001	5.88E-06
631	75	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.14625	0.141771088	2.01E-05
631	75	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.18925	0.191672109	5.87E-06
631	100	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.11491	0.116394825	2.20E-06
631	100	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.15198	0.148943205	9.22E-06
631	100	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.20153	0.201369152	2.59E-08
631	120	2	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.11502	0.120083714	2.56E-05
631	120	2.4	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.15501	0.153658589	1.83E-06
631	120	3	0.0458822	0.0449177	0.25517049	0	0.07366752	0.16057924	0.09886807	0.66688517	0.20814	0.207741721	1.59E-07
632	10	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.07984	0.071309853	7.28E-05
632	10	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.09426	0.091442871	7.94E-06
632	10	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.10933	0.123850536	0.00021085
632	25	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.08942	0.083207817	3.86E-05
632	25	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.10897	0.106700668	5.15E-06
632	25	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.13154	0.144568062	0.00016973
632	50	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.0982	0.093508129	2.20E-05
632	50	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.12423	0.119897537	1.88E-05
632	50	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.15615	0.162453976	3.97E-05
632	75	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.10252	0.100087802	5.92E-06
632	75	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.13251	0.128334643	1.74E-05
632	75	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.17175	0.173897324	4.61E-06
632	100	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.10384	0.105033741	1.43E-06
632	100	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.13744	0.134663916	7.71E-06
632	100	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.1826	0.182474422	1.58E-08
632	120	2	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.10378	0.108283528	2.03E-05
632	120	2.4	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.14008	0.13882943	1.56E-06
632	120	3	0.0486859	0.07171991	0.2297886	0	0.05745191	0.14054187	0.18856995	0.61343627	0.1884	0.188112028	8.29E-08
633	10	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.08653	0.077154922	8.79E-05
633	10	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.10201	0.098760033	1.06E-05
633	10	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.11815	0.133592319	0.00023847
633	25	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.09717	0.090464363	4.50E-05
633	25	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.11822	0.115801659	5.85E-06
633	25	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.14245	0.156647873	0.00020158
633	50	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.10711	0.102015953	2.59E-05
633	50	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.13522	0.13060051	2.13E-05
633	50	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.16965	0.176646671	4.90E-05
633	75	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.11199	0.109425481	6.58E-06
633	75	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.14453	0.140091171	1.97E-05
633	75	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.18706	0.189487063	5.89E-06
633	100	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.11367	0.115002832	1.78E-06
633	100	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.15027	0.147222157	9.29E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
633	100	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.19926	0.199126377	1.79E-08
633	120	2	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.11376	0.118671155	2.41E-05
633	120	2.4	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.15322	0.1519195	1.69E-06
633	120	3	0.06341126	0.0902642	0.17580159	0	0.12274313	0.15633871	0.06219464	0.65872352	0.20599	0.205472247	2.68E-07
634	10	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.07762	0.068517208	8.29E-05
634	10	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.09083	0.086983299	1.48E-05
634	10	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.10455	0.116381836	0.00013999
634	25	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.08773	0.081501923	3.88E-05
634	25	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.10607	0.103488045	6.67E-06
634	25	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.12681	0.138523827	0.00013721
634	50	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.09761	0.092945271	2.18E-05
634	50	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.12204	0.118005466	1.63E-05
634	50	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.15204	0.157968426	3.51E-05
634	75	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.10249	0.100347582	4.59E-06
634	75	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.13141	0.127410978	1.60E-05
634	75	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.1685	0.170563469	4.26E-06
634	100	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.10464	0.105953798	1.73E-06
634	100	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.13718	0.134514542	7.10E-06
634	100	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.17989	0.180080109	3.61E-08
634	120	2	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.10527	0.109665418	1.93E-05
634	120	2.4	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.14023	0.139213689	1.03E-06
634	120	3	0.05107442	0.11469043	0.22223764	0	0.07655613	0.16043202	0.1414524	0.62155945	0.187	0.186371136	3.95E-07
635	10	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.08446	0.075466347	8.09E-05
635	10	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.09998	0.096984863	8.97E-06
635	10	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.11622	0.131752205	0.00024125
635	25	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.09449	0.087883873	4.36E-05
635	25	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.11547	0.112952728	6.34E-06
635	25	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.13977	0.153443909	0.00018698
635	50	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.10361	0.098599834	2.51E-05
635	50	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.13148	0.126716785	2.27E-05
635	50	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.16543	0.172156792	4.52E-05
635	75	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.10788	0.105459493	5.86E-06
635	75	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.14009	0.135519028	2.09E-05
635	75	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.18189	0.184109599	4.93E-06
635	100	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.1093	0.110597382	1.68E-06
635	100	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.14508	0.142104473	8.85E-06
635	100	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.19325	0.193062658	3.51E-08
635	120	2	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.10908	0.113973451	2.39E-05
635	120	2.4	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.14757	0.146440649	1.28E-06
635	120	3	0.04947714	0.04485146	0.25309998	0	0.07210417	0.13573387	0.1315682	0.66059376	0.19922	0.198945252	7.55E-08
636	10	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.09347	0.084039116	8.89E-05
636	10	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.11145	0.108436871	9.08E-06
636	10	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.13021	0.148010159	0.00031685
636	25	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.10359	0.096785698	4.63E-05
636	25	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.12752	0.124876671	6.99E-06
636	25	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.15518	0.170494194	0.00023452

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
636	50	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.11274	0.107692165	2.55E-05
636	50	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.1441	0.138922157	2.68E-05
636	50	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.18247	0.189670353	5.18E-05
636	75	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.1171	0.114606667	6.22E-06
636	75	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.15296	0.147844187	2.62E-05
636	75	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.19932	0.201841087	6.36E-06
636	100	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.11824	0.119763317	2.32E-06
636	100	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.15781	0.154485197	1.11E-05
636	100	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.21098	0.210909605	4.96E-09
636	120	2	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.1177	0.123143355	2.96E-05
636	120	2.4	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.16011	0.158843382	1.60E-06
636	120	3	0.02920937	0.01618859	0.25644841	0	0.08770464	0.15581364	0.08843922	0.66804251	0.21743	0.216846681	3.40E-07
637	10	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.08713	0.077219868	9.82E-05
637	10	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.10231	0.098348713	1.57E-05
637	10	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.11807	0.132185173	0.00019924
637	25	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.09814	0.091338959	4.63E-05
637	25	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.11897	0.116373177	6.74E-06
637	25	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.1428	0.156431389	0.00018581
637	50	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.10891	0.103726177	2.69E-05
637	50	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.13673	0.132141876	2.11E-05
637	50	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.17079	0.177625179	4.67E-05
637	75	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.11412	0.111714439	5.79E-06
637	75	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.14667	0.142307968	1.90E-05
637	75	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.18883	0.191302643	6.11E-06
637	100	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.11642	0.117737026	1.73E-06
637	100	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.15275	0.149973669	7.71E-06
637	100	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.20154	0.201611614	5.13E-09
637	120	2	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.11679	0.12171456	2.43E-05
637	120	2.4	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.15629	0.155033263	1.58E-06
637	120	3	0.07622119	0.03105839	0.27196351	0	0.06804943	0.15966015	0.07272592	0.6995645	0.20915	0.208412822	5.43E-07
638	10	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.0792	0.071201611	6.40E-05
638	10	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.09347	0.091291332	4.75E-06
638	10	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.10843	0.123785591	0.00023579
638	25	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.08877	0.08289608	3.45E-05
638	25	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.10828	0.106319656	3.84E-06
638	25	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.13076	0.144161072	0.00017959
638	50	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.09764	0.093005886	2.15E-05
638	50	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.12351	0.119300041	1.77E-05
638	50	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.1552	0.161748238	4.29E-05
638	75	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.1018	0.099458555	5.48E-06
638	75	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.13177	0.127584165	1.75E-05
638	75	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.17094	0.172982318	4.17E-06
638	100	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.10317	0.10430419	1.29E-06
638	100	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.13661	0.133795815	7.92E-06
638	100	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.18174	0.181402826	1.14E-07
638	120	2	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.103	0.107491557	2.02E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
638	120	2.4	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.13897	0.137878704	1.19E-06
638	120	3	0.03548042	0.05011066	0.29446662	0	0.10578364	0.14184767	0.12049655	0.63187214	0.18736	0.186930386	1.85E-07
639	10	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.09138	0.081657791	9.45E-05
639	10	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.10836	0.10490818	1.19E-05
639	10	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.12611	0.142576408	0.00027114
639	25	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.10197	0.095010529	4.84E-05
639	25	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.12492	0.122105675	7.92E-06
639	25	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.15129	0.165939369	0.0002146
639	50	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.11182	0.10653614	2.79E-05
639	50	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.14209	0.136926174	2.67E-05
639	50	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.17897	0.186063728	5.03E-05
639	75	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.11624	0.113890826	5.52E-06
639	75	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.15126	0.146374982	2.39E-05
639	75	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.19657	0.198905563	5.45E-06
639	100	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.11786	0.119403954	2.38E-06
639	100	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.15687	0.153450403	1.17E-05
639	100	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.20864	0.208526115	1.30E-08
639	120	2	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.11769	0.123024289	2.85E-05
639	120	2.4	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.15945	0.15810012	1.82E-06
639	120	3	0.06516283	0.03327177	0.22211735	0	0.10500614	0.1483569	0.05723074	0.68940621	0.21528	0.214846007	1.88E-07
640	10	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.09201	0.081787682	0.0001045
640	10	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.10847	0.104713345	1.41E-05
640	10	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.1257	0.141753769	0.00025772
640	25	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.10336	0.096118927	5.24E-05
640	25	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.12586	0.123092842	7.66E-06
640	25	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.15168	0.166580162	0.00022201
640	50	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.11403	0.108566761	2.98E-05
640	50	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.14405	0.139056377	2.49E-05
640	50	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.18082	0.188193932	5.44E-05
640	75	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.11928	0.116572342	7.33E-06
640	75	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.1542	0.14930762	2.39E-05
640	75	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.19961	0.202069117	6.05E-06
640	100	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.1211	0.122597094	2.24E-06
640	100	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.16019	0.157013731	1.01E-05
640	100	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.21252	0.212496433	5.55E-10
640	120	2	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.12129	0.126565607	2.78E-05
640	120	2.4	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.16327	0.162087035	1.40E-06
640	120	3	0.06570727	0.0474584	0.2356418	0	0.05567806	0.13740752	0.06213671	0.74477771	0.21989	0.219363308	2.77E-07
641	10	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.0885	0.078432178	0.00010136
641	10	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.10388	0.09988575	1.60E-05
641	10	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.11988	0.134285069	0.00020751
641	25	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.09976	0.092854347	4.77E-05
641	25	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.12093	0.118286896	6.99E-06
641	25	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.14509	0.159029198	0.0001943
641	50	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.11074	0.105497017	2.75E-05
641	50	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.13898	0.134388981	2.11E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
641	50	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.17372	0.180668945	4.83E-05
641	75	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.11614	0.113654137	6.18E-06
641	75	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.14923	0.144781659	1.98E-05
641	75	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.19212	0.194633611	6.32E-06
641	100	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.11835	0.119806614	2.12E-06
641	100	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.15535	0.15261694	7.47E-06
641	100	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.20513	0.205166283	1.32E-09
641	120	2	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.11875	0.123873989	2.63E-05
641	120	2.4	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.15906	0.157789826	1.61E-06
641	120	3	0.03598578	0.06274111	0.2813587	0	0.07966552	0.159563	0.04125386	0.71951761	0.21273	0.212118308	3.74E-07
642	10	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.09201	0.082372189	9.29E-05
642	10	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.10917	0.10586071	1.10E-05
642	10	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.12707	0.143875313	0.00028242
642	25	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.10263	0.095729256	4.76E-05
642	25	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.12575	0.123040886	7.34E-06
642	25	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.15232	0.167238274	0.00022255
642	50	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.11249	0.107254868	2.74E-05
642	50	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.14296	0.137839737	2.62E-05
642	50	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.18011	0.187345314	5.23E-05
642	75	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.11691	0.114598007	5.35E-06
642	75	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.1522	0.147275556	2.43E-05
642	75	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.19772	0.20016983	6.00E-06
642	100	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.11851	0.120096703	2.52E-06
642	100	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.1578	0.154340153	1.20E-05
642	100	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.20997	0.209770899	3.96E-08
642	120	2	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.11828	0.123708018	2.95E-05
642	120	2.4	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.16035	0.158982293	1.87E-06
642	120	3	0.07183832	0.03244746	0.20760916	0	0.09838859	0.14929084	0.06671764	0.68560294	0.21649	0.216069142	1.77E-07
643	10	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.08584	0.07691679	7.96E-05
643	10	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.1016	0.098565197	9.21E-06
643	10	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.11802	0.133678913	0.0002452
643	25	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.09606	0.089589767	4.19E-05
643	25	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.11738	0.114909744	6.10E-06
643	25	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.14199	0.155842552	0.00019189
643	50	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.10539	0.10055685	2.34E-05
643	50	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.13373	0.128998528	2.24E-05
643	50	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.1682	0.174953766	4.56E-05
643	75	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.10981	0.107583923	4.96E-06
643	75	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.14258	0.138015811	2.08E-05
643	75	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.18499	0.187166354	4.74E-06
643	100	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.1113	0.112844486	2.39E-06
643	100	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.14773	0.144760733	8.82E-06
643	100	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.19664	0.196316414	1.05E-07
643	120	2	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.11118	0.116304262	2.63E-05
643	120	2.4	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.1503	0.149202625	1.20E-06
643	120	3	0.04494053	0.06689878	0.22396005	0	0.08247785	0.13848941	0.11299354	0.6660392	0.20275	0.202324208	1.81E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
644	10	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.09128	0.081636143	9.30E-05
644	10	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.10829	0.104951477	1.11E-05
644	10	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.12608	0.142619705	0.00027356
644	25	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.10183	0.094915276	4.78E-05
644	25	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.12474	0.122019081	7.40E-06
644	25	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.15117	0.165852776	0.00021558
644	50	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.11154	0.106358624	2.68E-05
644	50	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.14183	0.136735668	2.60E-05
644	50	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.17871	0.185842915	5.09E-05
644	75	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.11595	0.113668569	5.20E-06
644	75	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.15095	0.146115201	2.34E-05
644	75	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.19617	0.198599599	5.90E-06
644	100	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.11754	0.119142008	2.57E-06
644	100	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.15642	0.153138666	1.08E-05
644	100	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.20834	0.208149433	3.63E-08
644	120	2	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.11736	0.122739251	2.89E-05
644	120	2.4	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.15906	0.15775555	1.70E-06
644	120	3	0.04051843	0.08057863	0.17538882	0	0.07437162	0.13891343	0.10293994	0.68377501	0.21472	0.214422059	8.88E-08
645	10	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.08104	0.071959305	8.25E-05
645	10	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.09496	0.091551113	1.16E-05
645	10	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.10946	0.122811413	0.00017826
645	25	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.09156	0.085312042	3.90E-05
645	25	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.11083	0.108501816	5.42E-06
645	25	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.13279	0.145581207	0.00016361
645	50	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.1017	0.097006512	2.20E-05
645	50	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.12745	0.123378601	1.66E-05
645	50	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.1592	0.165554028	4.04E-05
645	75	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.10668	0.104558919	4.50E-06
645	75	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.13696	0.132990494	1.58E-05
645	75	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.17613	0.178446376	5.37E-06
645	100	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.10891	0.110263996	1.83E-06
645	100	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.14301	0.14024271	7.66E-06
645	100	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.18793	0.188180943	6.30E-08
645	120	2	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.10935	0.11403118	2.19E-05
645	120	2.4	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.14613	0.145026286	1.22E-06
645	120	3	0.05448227	0.0565	0.29513408	0	0.09737245	0.16006219	0.07501463	0.66755072	0.19533	0.194610159	5.18E-07
646	10	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.09351	0.083281422	0.00010462
646	10	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.11096	0.107008076	1.56E-05
646	10	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.12915	0.145433998	0.00026517
646	25	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.10425	0.096967545	5.30E-05
646	25	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.12771	0.124608231	9.62E-06
646	25	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.15467	0.169351158	0.00021554
646	50	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.11421	0.108774586	2.95E-05
646	50	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.1451	0.139796753	2.81E-05
646	50	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.18282	0.189973431	5.12E-05
646	75	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.11879	0.116312561	6.14E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
646	75	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.15463	0.149492353	2.64E-05
646	75	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.2007	0.203151538	6.01E-06
646	100	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.12046	0.12196929	2.28E-06
646	100	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.16028	0.156751785	1.24E-05
646	100	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.2131	0.213020325	6.35E-09
646	120	2	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.12021	0.125685239	3.00E-05
646	120	2.4	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.16299	0.161524177	2.15E-06
646	120	3	0.04348153	0.03363268	0.23883515	0	0.07372414	0.15221451	0.07735312	0.69670823	0.21987	0.219500415	1.37E-07
647	10	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.08746	0.078150749	8.67E-05
647	10	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.10346	0.100188828	1.07E-05
647	10	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.12011	0.13575716	0.00024483
647	25	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.09793	0.091235046	4.48E-05
647	25	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.11958	0.116987991	6.72E-06
647	25	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.14444	0.158509636	0.00019795
647	50	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.10747	0.102557163	2.41E-05
647	50	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.1362	0.131509743	2.20E-05
647	50	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.17139	0.178214016	4.66E-05
647	75	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.11219	0.109803607	5.69E-06
647	75	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.14539	0.140804125	2.10E-05
647	75	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.18871	0.190820605	4.45E-06
647	100	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.11379	0.115245295	2.12E-06
647	100	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.15075	0.147772026	8.87E-06
647	100	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.20045	0.200267248	3.34E-08
647	120	2	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.11369	0.118828106	2.64E-05
647	120	2.4	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.15354	0.15235788	1.40E-06
647	120	3	0.01354132	0.03805049	0.31080281	0	0.07414217	0.14644641	0.08822197	0.69118945	0.20684	0.206482506	1.28E-07
648	10	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.08533	0.076180744	8.37E-05
648	10	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.10091	0.097677612	1.04E-05
648	10	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.11713	0.132380009	0.00023256
648	25	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.0955	0.088905678	4.35E-05
648	25	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.11657	0.114000511	6.60E-06
648	25	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.14086	0.15450901	0.0001863
648	50	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.10486	0.099907398	2.45E-05
648	50	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.13284	0.128106613	2.24E-05
648	50	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.167	0.173641872	4.41E-05
648	75	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.10939	0.106948903	5.96E-06
648	75	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.14169	0.137138329	2.07E-05
648	75	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.18379	0.185884768	4.39E-06
648	100	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.11099	0.112231836	1.54E-06
648	100	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.14685	0.143907785	8.66E-06
648	100	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.19522	0.195058641	2.60E-08
648	120	2	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.11079	0.115705323	2.42E-05
648	120	2.4	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.14951	0.148351121	1.34E-06
648	120	3	0.08657152	0.02649602	0.22865602	0	0.09101244	0.14851549	0.11095526	0.64951681	0.20151	0.201088444	1.78E-07
649	10	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.08655	0.077154922	8.83E-05
649	10	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.10204	0.098695087	1.12E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
649	10	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.11819	0.133289242	0.00022799
649	25	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.09709	0.090464363	4.39E-05
649	25	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.11816	0.115723724	5.94E-06
649	25	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.14234	0.156318817	0.00019541
649	50	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.10699	0.102037601	2.45E-05
649	50	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.13512	0.130500927	2.13E-05
649	50	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.16947	0.176282978	4.64E-05
649	75	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.11186	0.109448573	5.81E-06
649	75	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.14438	0.1399786	1.94E-05
649	75	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.18681	0.189103165	5.26E-06
649	100	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.11363	0.115026646	1.95E-06
649	100	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.15019	0.147100925	9.54E-06
649	100	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.19897	0.198723717	6.07E-08
649	120	2	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.11366	0.118701824	2.54E-05
649	120	2.4	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.15307	0.151795022	1.63E-06
649	120	3	0.07928377	0.0308251	0.24509089	0	0.09728665	0.15811564	0.07701533	0.66758238	0.20562	0.205062731	3.11E-07
650	10	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.0766	0.068408966	6.71E-05
650	10	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.09003	0.087329674	7.29E-06
650	10	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.10402	0.117724037	0.0001878
650	25	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.08633	0.080410843	3.50E-05
650	25	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.10483	0.102691383	4.57E-06
650	25	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.12606	0.138445892	0.00015341
650	50	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.0954	0.090884342	2.04E-05
650	50	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.1201	0.11606144	1.63E-05
650	50	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.15045	0.156483345	3.64E-05
650	75	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.09979	0.097616997	4.72E-06
650	75	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.12848	0.124648641	1.47E-05
650	75	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.16618	0.168081118	3.61E-06
650	100	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.10156	0.102682724	1.26E-06
650	100	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.13377	0.131115742	7.05E-06
650	100	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.17684	0.176804705	1.25E-09
650	120	2	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.10163	0.106023073	1.93E-05
650	120	2.4	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.13644	0.135376509	1.13E-06
650	120	3	0.07122586	0.04813829	0.28357974	0	0.09297579	0.14012725	0.13356109	0.63333587	0.183	0.182546584	2.06E-07
651	10	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.09157	0.081571198	1.00E-04
651	10	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.10834	0.104821587	1.24E-05
651	10	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.1258	0.142338276	0.00027351
651	25	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.10255	0.095339584	5.20E-05
651	25	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.12531	0.122486687	7.97E-06
651	25	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.1514	0.166355019	0.00022365
651	50	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.11268	0.107254868	2.94E-05
651	50	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.14287	0.137770462	2.60E-05
651	50	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.17983	0.187111511	5.30E-05
651	75	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.11742	0.114875107	6.48E-06
651	75	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.15254	0.147564201	2.48E-05
651	75	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.19807	0.200403633	5.45E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
651	100	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.11924	0.120596781	1.84E-06
651	100	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.15829	0.154903011	1.15E-05
651	100	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.2102	0.210368395	2.84E-08
651	120	2	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.1192	0.124359274	2.66E-05
651	120	2.4	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.16104	0.159729163	1.72E-06
651	120	3	0.03910573	0.06385798	0.22990718	0	0.0946626	0.14342382	0.04491085	0.71700273	0.21728	0.21692245	1.28E-07
652	10	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.09141	0.081982517	8.89E-05
652	10	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.10873	0.105557632	1.01E-05
652	10	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.12678	0.143767071	0.00028856
652	25	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.10159	0.094863319	4.52E-05
652	25	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.12479	0.122105675	7.21E-06
652	25	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.15164	0.166285744	0.0002145
652	50	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.11096	0.105882359	2.58E-05
652	50	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.14143	0.136294041	2.64E-05
652	50	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.1787	0.185600452	4.76E-05
652	75	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.11525	0.112889226	5.57E-06
652	75	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.1501	0.14531854	2.29E-05
652	75	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.19553	0.197889531	5.57E-06
652	100	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.11664	0.118128862	2.22E-06
652	100	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.15531	0.152058411	1.06E-05
652	100	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.20732	0.207060518	6.73E-08
652	120	2	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.11621	0.121566629	2.87E-05
652	120	2.4	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.15781	0.156478294	1.77E-06
652	120	3	0.06668514	0.03703433	0.18822888	0	0.10873712	0.15266162	0.08453003	0.65407122	0.21342	0.213074446	1.19E-07
653	10	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.08994	0.080034161	9.81E-05
653	10	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.10621	0.10246191	1.40E-05
653	10	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.12314	0.13861475	0.00023947
653	25	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.10083	0.093806877	4.93E-05
653	25	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.12279	0.120114021	7.16E-06
653	25	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.14807	0.162544899	0.00020952
653	50	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.111	0.105765457	2.74E-05
653	50	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.14025	0.135441093	2.31E-05
653	50	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.1761	0.183288403	5.17E-05
653	75	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.11601	0.113437653	6.62E-06
653	75	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.14988	0.145275243	2.12E-05
653	75	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.19401	0.196587741	6.64E-06
653	100	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.11776	0.119206953	2.09E-06
653	100	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.15564	0.152655907	8.90E-06
653	100	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.2066	0.206573429	7.06E-10
653	120	2	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.11782	0.123008053	2.69E-05
653	120	2.4	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.15889	0.157515613	1.89E-06
653	120	3	0.06285043	0.0446403	0.22990894	0	0.0936985	0.1599612	0.06293395	0.68340635	0.21347	0.213150215	1.02E-07
654	10	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.07822	0.069058418	8.39E-05
654	10	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.09101	0.087416267	1.29E-05
654	10	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.10437	0.116533375	0.00014795
654	25	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.08909	0.082818146	3.93E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
654	25	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.10719	0.104795609	5.73E-06
654	25	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.1275	0.139744797	0.00014994
654	50	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.09976	0.09499754	2.27E-05
654	50	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.12425	0.120213604	1.63E-05
654	50	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.1539	0.160302124	4.10E-05
654	75	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.10515	0.102930959	4.92E-06
654	75	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.13419	0.130248362	1.55E-05
654	75	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.17123	0.173675067	5.98E-06
654	100	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.10769	0.108943443	1.57E-06
654	100	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.1407	0.137850561	8.12E-06
654	100	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.18359	0.183818789	5.23E-08
654	120	2	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.10867	0.112930719	1.82E-05
654	120	2.4	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.14397	0.142888506	1.17E-06
654	120	3	0.09448822	0.04875869	0.29990431	0	0.05913775	0.15818449	0.09953621	0.68314155	0.19127	0.190534846	5.40E-07
655	10	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.09157	0.082307243	8.58E-05
655	10	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.10946	0.106531811	8.57E-06
655	10	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.12825	0.146105099	0.0003188
655	25	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.10132	0.094395714	4.79E-05
655	25	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.12496	0.122218246	7.52E-06
655	25	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.15264	0.167636604	0.0002249
655	50	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.11002	0.104704685	2.83E-05
655	50	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.14076	0.135557995	2.71E-05
655	50	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.17907	0.185955486	4.74E-05
655	75	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.11384	0.111220856	6.86E-06
655	75	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.14903	0.14400809	2.52E-05
655	75	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.19498	0.197531611	6.51E-06
655	100	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.11455	0.116080923	2.34E-06
655	100	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.15393	0.150298395	1.32E-05
655	100	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.20622	0.20614912	5.02E-09
655	120	2	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.11395	0.119262878	2.82E-05
655	120	2.4	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.15555	0.154412675	1.29E-06
655	120	3	0.03188225	0.04149018	0.20642772	0	0.09685359	0.14053705	0.110715	0.65189436	0.21238	0.211784561	3.55E-07
656	10	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.08974	0.079124928	0.00011268
656	10	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.10557	0.101033115	2.06E-05
656	10	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.12197	0.136146832	0.00020098
656	25	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.10091	0.093512459	5.47E-05
656	25	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.1225	0.119403954	9.59E-06
656	25	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.14711	0.160942917	0.00019135
656	50	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.11162	0.106116161	3.03E-05
656	50	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.14041	0.135475731	2.43E-05
656	50	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.17581	0.182595654	4.60E-05
656	75	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.1169	0.114231428	7.12E-06
656	75	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.15053	0.145826556	2.21E-05
656	75	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.19406	0.196558876	6.24E-06
656	100	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.11912	0.120345659	1.50E-06
656	100	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.15661	0.15362359	8.92E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
656	100	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.20704	0.207075672	1.27E-09
656	120	2	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.11934	0.124380922	2.54E-05
656	120	2.4	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.16011	0.158773025	1.79E-06
656	120	3	0.05014386	0.06594071	0.23494013	0	0.07164881	0.16170693	0.06777471	0.69886955	0.21453	0.214012543	2.68E-07
657	10	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.08202	0.072695351	8.69E-05
657	10	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.09627	0.092611885	1.34E-05
657	10	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.11102	0.124413395	0.00017938
657	25	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.09249	0.08602211	4.18E-05
657	25	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.11211	0.109584236	6.38E-06
657	25	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.13455	0.147269783	0.00016179
657	50	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.10256	0.097716579	2.35E-05
657	50	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.12879	0.124469681	1.87E-05
657	50	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.16099	0.16728157	3.96E-05
657	75	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.10744	0.105251668	4.79E-06
657	75	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.13816	0.134072914	1.67E-05
657	75	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.17789	0.180175362	5.22E-06
657	100	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.10962	0.110943756	1.75E-06
657	100	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.14402	0.141305647	7.37E-06
657	100	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.1898	0.189908485	1.18E-08
657	120	2	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.10994	0.114704084	2.27E-05
657	120	2.4	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.14715	0.146087058	1.13E-06
657	120	3	0.09103494	0.0473445	0.24634797	0	0.07744252	0.1517077	0.1057328	0.66511698	0.19684	0.196329403	2.61E-07
658	10	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.08735	0.078237343	8.30E-05
658	10	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.1034	0.100470257	8.58E-06
658	10	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.12016	0.136384964	0.00026325
658	25	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.09771	0.091096497	4.37E-05
658	25	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.11951	0.117022629	6.19E-06
658	25	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.14453	0.158916626	0.00020698
658	50	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.10722	0.102232437	2.49E-05
658	50	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.13613	0.131314907	2.32E-05
658	50	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.17124	0.178322258	5.02E-05
658	75	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.11168	0.10934466	5.45E-06
658	75	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.14514	0.140443319	2.21E-05
658	75	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.18836	0.190722466	5.58E-06
658	100	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.11318	0.114671612	2.22E-06
658	100	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.15038	0.147282772	9.59E-06
658	100	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.20009	0.200013962	5.78E-09
658	120	2	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.11307	0.118173242	2.60E-05
658	120	2.4	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.1529	0.151776981	1.26E-06
658	120	3	0.0269665	0.06152928	0.2556668	0	0.10846391	0.14437315	0.0657182	0.68144473	0.20655	0.206116287	1.88E-07
659	10	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.08893	0.079016685	9.83E-05
659	10	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.10479	0.101076412	1.38E-05
659	10	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.12132	0.136666393	0.00023551
659	25	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.09995	0.092940941	4.91E-05
659	25	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.12155	0.118919029	6.92E-06
659	25	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.14639	0.160743752	0.00020603

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
659	50	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.11038	0.105077038	2.81E-05
659	50	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.13925	0.134436607	2.32E-05
659	50	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.17457	0.181712399	5.10E-05
659	75	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.11551	0.112874794	6.94E-06
659	75	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.14902	0.144417966	2.12E-05
659	75	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.19256	0.195176264	6.84E-06
659	100	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.11734	0.118741512	1.96E-06
659	100	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.15502	0.151915531	9.64E-06
659	100	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.20535	0.205311327	1.50E-09
659	120	2	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.11754	0.122607557	2.57E-05
659	120	2.4	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.15802	0.156855337	1.36E-06
659	120	3	0.07646094	0.01419801	0.27952275	0	0.05648433	0.14457583	0.07852748	0.72041236	0.21249	0.211986613	2.53E-07
660	10	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.0713	0.063256645	6.47E-05
660	10	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.08288	0.080185699	7.26E-06
660	10	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09507	0.107073021	0.00014407
660	25	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.08139	0.075717468	3.22E-05
660	25	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09809	0.095989037	4.41E-06
660	25	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.11678	0.128227844	0.00013105
660	50	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09125	0.086771145	2.01E-05
660	50	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.11362	0.109991226	1.32E-05
660	50	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.14107	0.146953716	3.46E-05
660	75	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09602	0.0939512	4.28E-06
660	75	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.12271	0.11908933	1.31E-05
660	75	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.15707	0.159112905	4.17E-06
660	100	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09825	0.099396496	1.31E-06
660	100	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.12863	0.125978575	7.03E-06
660	100	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.16814	0.168331518	3.67E-08
660	120	2	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.09904	0.103004924	1.57E-05
660	120	2.4	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.13145	0.130548914	8.12E-07
660	120	3	0.09086205	0.0391033	0.3585708	0	0.14602139	0.15047481	0.04482629	0.65867751	0.17512	0.174430235	4.76E-07
661	10	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.08398	0.075184917	7.74E-05
661	10	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.09885	0.096205521	6.99E-06
661	10	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.1144	0.130128574	0.00024739
661	25	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.09458	0.088186951	4.09E-05
661	25	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.11502	0.11292675	4.38E-06
661	25	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.13856	0.152759819	0.00020163
661	50	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.10452	0.099513397	2.51E-05
661	50	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.13182	0.127431183	1.93E-05
661	50	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.16539	0.172386265	4.89E-05
661	75	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.10932	0.106784376	6.43E-06
661	75	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.14102	0.136734225	1.84E-05
661	75	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.18263	0.184989967	5.57E-06
661	100	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.11103	0.11225132	1.49E-06
661	100	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.14678	0.143728104	9.31E-06
661	100	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.19458	0.194456816	1.52E-08
661	120	2	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.11106	0.11585145	2.30E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
661	120	2.4	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.14949	0.148336689	1.33E-06
661	120	3	0.07574906	0.0377188	0.27292597	0	0.10480923	0.13749936	0.05624184	0.70144957	0.20117	0.200678929	2.41E-07
662	10	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.09106	0.080683613	0.00010767
662	10	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.10706	0.102894878	1.73E-05
662	10	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.12366	0.138484859	0.00021978
662	25	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.10241	0.095287628	5.07E-05
662	25	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.12425	0.121534157	7.38E-06
662	25	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.14922	0.163601341	0.00020682
662	50	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.11343	0.108047199	2.90E-05
662	50	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.14256	0.137809429	2.26E-05
662	50	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.17834	0.185535507	5.18E-05
662	75	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.11888	0.116277924	6.77E-06
662	75	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.15292	0.148300247	2.13E-05
662	75	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.19703	0.199664701	6.94E-06
662	100	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.12109	0.122478027	1.93E-06
662	100	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.15915	0.156204081	8.68E-06
662	100	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.21019	0.210307779	1.39E-08
662	120	2	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.12149	0.126569215	2.58E-05
662	120	2.4	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.16275	0.161415935	1.78E-06
662	120	3	0.08572687	0.06772945	0.17906299	0	0.06405909	0.15925321	0.07519561	0.70149209	0.21788	0.217321142	3.12E-07
663	10	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.08727	0.077782726	9.00E-05
663	10	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.10293	0.099539375	1.15E-05
663	10	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.11927	0.134588146	0.00023465
663	25	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.0979	0.091165771	4.53E-05
663	25	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.11919	0.116702232	6.19E-06
663	25	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.14363	0.157782249	0.00020029
663	50	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.10789	0.102808285	2.58E-05
663	50	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.13627	0.131592007	2.19E-05
663	50	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.17099	0.177915268	4.80E-05
663	75	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.11278	0.110268326	6.31E-06
663	75	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.14561	0.141133181	2.00E-05
663	75	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.18846	0.190826378	5.60E-06
663	100	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.1145	0.115877428	1.90E-06
663	100	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.15117	0.148300247	8.24E-06
663	100	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.20068	0.20051837	2.61E-08
663	120	2	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.11457	0.119571368	2.50E-05
663	120	2.4	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.15426	0.153014549	1.55E-06
663	120	3	0.05923413	0.08084335	0.19144586	0	0.08195456	0.14874008	0.09727737	0.67202799	0.2075	0.206888413	3.74E-07
664	10	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.09135	0.081549549	9.60E-05
664	10	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.10803	0.104410267	1.31E-05
664	10	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.12535	0.141342449	0.00025576
664	25	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.10227	0.095296288	4.86E-05
664	25	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.12474	0.122062378	7.17E-06
664	25	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.15055	0.16524662	0.00021599
664	50	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.11239	0.107211571	2.68E-05
664	50	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.1423	0.137341824	2.46E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
664	50	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.17883	0.185942497	5.06E-05
664	75	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.11738	0.11483181	6.49E-06
664	75	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.15202	0.147128347	2.39E-05
664	75	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.19697	0.199188436	4.92E-06
664	100	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.11916	0.120564308	1.97E-06
664	100	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.15773	0.154465714	1.07E-05
664	100	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.20944	0.209123611	1.00E-07
664	120	2	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.11912	0.124337626	2.72E-05
664	120	2.4	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.16059	0.159292587	1.68E-06
664	120	3	0.06408502	0.07922218	0.15822901	0	0.07586685	0.14954469	0.09257291	0.68201554	0.21627	0.215646998	3.88E-07
665	10	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.08108	0.072197437	7.89E-05
665	10	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.09533	0.092092323	1.05E-05
665	10	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.11014	0.124023724	0.00019276
665	25	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.09116	0.08493103	3.88E-05
665	25	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.11074	0.108371925	5.61E-06
665	25	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.13313	0.145962219	0.00016467
665	50	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.10078	0.096049652	2.24E-05
665	50	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.12679	0.122560291	1.79E-05
665	50	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.15873	0.165086422	4.04E-05
665	75	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.10544	0.103199399	5.02E-06
665	75	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.13577	0.131674271	1.68E-05
665	75	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.17532	0.177381274	4.25E-06
665	100	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.10729	0.10858408	1.67E-06
665	100	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.14126	0.13853898	7.40E-06
665	100	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.18657	0.186626587	3.20E-09
665	120	2	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.10748	0.112133336	2.17E-05
665	120	2.4	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.14422	0.143070714	1.32E-06
665	120	3	0.05495361	0.02762807	0.31154671	0	0.10698698	0.16274814	0.0878058	0.64245907	0.19327	0.192724943	2.97E-07
666	10	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.08112	0.072110844	8.12E-05
666	10	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.09493	0.091616058	1.10E-05
666	10	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.10926	0.122724819	0.0001813
666	25	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.09177	0.085589142	3.82E-05
666	25	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.111	0.108770256	4.97E-06
666	25	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.13285	0.145754395	0.00016652
666	50	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.10222	0.097461128	2.26E-05
666	50	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.12785	0.123841877	1.61E-05
666	50	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.15941	0.165956688	4.29E-05
666	75	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.10731	0.105133324	4.74E-06
666	75	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.1377	0.133593763	1.69E-05
666	75	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.17679	0.179026553	5.00E-06
666	100	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.10957	0.110932932	1.86E-06
666	100	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.14376	0.140952778	7.88E-06
666	100	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.18878	0.18889101	1.23E-08
666	120	2	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.11009	0.114765422	2.19E-05
666	120	2.4	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.14689	0.145816453	1.15E-06
666	120	3	0.04584289	0.09009641	0.26653344	0	0.0808148	0.15455964	0.08618834	0.67843722	0.19615	0.195409346	5.49E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
667	10	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.08928	0.079817677	8.95E-05
667	10	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.10536	0.102180481	1.01E-05
667	10	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.12211	0.138225079	0.0002597
667	25	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.10022	0.093469162	4.56E-05
667	25	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.12205	0.119698372	5.53E-06
667	25	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.14715	0.161930084	0.00021845
667	50	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.11044	0.105345478	2.60E-05
667	50	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.13953	0.134882565	2.16E-05
667	50	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.17521	0.182470093	5.27E-05
667	75	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.11552	0.112946955	6.62E-06
667	75	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.1492	0.144622904	2.09E-05
667	75	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.19308	0.195635211	6.53E-06
667	100	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.11724	0.118663578	2.03E-06
667	100	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.15486	0.15192852	8.59E-06
667	100	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.20563	0.205523481	1.13E-08
667	120	2	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.11723	0.122423546	2.70E-05
667	120	2.4	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.15812	0.156741683	1.90E-06
667	120	3	0.04907358	0.06121499	0.23477729	0	0.08610039	0.14991739	0.06414761	0.69983461	0.21251	0.212028106	2.32E-07
668	10	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.09261	0.082631969	9.96E-05
668	10	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.10984	0.106163788	1.35E-05
668	10	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.1278	0.144264984	0.0002711
668	25	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.10335	0.096231499	5.07E-05
668	25	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.12658	0.123681679	8.40E-06
668	25	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.15329	0.168043594	0.00021767
668	50	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.11332	0.107995243	2.84E-05
668	50	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.14395	0.138783607	2.67E-05
668	50	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.18132	0.188561954	5.24E-05
668	75	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.11786	0.115504354	5.55E-06
668	75	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.1533	0.148424365	2.38E-05
668	75	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.19913	0.201662127	6.41E-06
668	100	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.11952	0.121137991	2.62E-06
668	100	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.15902	0.155649881	1.14E-05
668	100	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.21154	0.211474628	4.27E-09
668	120	2	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.11939	0.124840951	2.97E-05
668	120	2.4	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.16171	0.160398459	1.72E-06
668	120	3	0.05841957	0.04851217	0.20249558	0	0.06635116	0.14098295	0.09200539	0.7006605	0.21828	0.217921885	1.28E-07
669	10	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.09074	0.081073284	9.34E-05
669	10	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.10772	0.104150486	1.27E-05
669	10	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.12541	0.141407394	0.00025592
669	25	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.10113	0.094222527	4.77E-05
669	25	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.12389	0.121049232	8.07E-06
669	25	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.15003	0.164389343	0.00020619
669	50	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.11064	0.105561962	2.58E-05
669	50	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.14068	0.135609951	2.57E-05
669	50	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.17717	0.184171658	4.90E-05
669	75	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.11514	0.112805519	5.45E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
669	75	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.14968	0.144900004	2.28E-05
669	75	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.19441	0.196789792	5.66E-06
669	100	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.11655	0.118224115	2.80E-06
669	100	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.15514	0.151854916	1.08E-05
669	100	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.20641	0.206240044	2.89E-08
669	120	2	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.11634	0.121784918	2.96E-05
669	120	2.4	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.15772	0.156416957	1.70E-06
669	120	3	0.03080384	0.02815352	0.2659389	0	0.09921103	0.16353665	0.07435496	0.66289735	0.21291	0.212439426	2.21E-07
670	10	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.09778	0.08778429	9.99E-05
670	10	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.11688	0.113654137	1.04E-05
670	10	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.1369	0.155890179	0.00036063
670	25	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.10828	0.100881577	5.47E-05
670	25	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.13356	0.130609169	8.71E-06
670	25	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.16306	0.179144897	0.00025872
670	50	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.11778	0.112034836	3.30E-05
670	50	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.15059	0.145061646	3.06E-05
670	50	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.19144	0.198987827	5.70E-05
670	75	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.12192	0.119106649	7.91E-06
670	75	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.15968	0.154217478	2.98E-05
670	75	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.20876	0.21154246	7.74E-06
670	100	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.12281	0.124372263	2.44E-06
670	100	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.16468	0.161031675	1.33E-05
670	100	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.22098	0.220891685	7.80E-09
670	120	2	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.12218	0.127819411	3.18E-05
670	120	2.4	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.16657	0.165496659	1.15E-06
670	120	3	0.04168999	0.04897732	0.16793333	0	0.08316537	0.13607074	0.08114064	0.69962325	0.22742	0.227005196	1.72E-07
671	10	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.09199	0.082177353	9.63E-05
671	10	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.10882	0.1053195	1.23E-05
671	10	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.12633	0.14268465	0.00026747
671	25	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.10299	0.095989037	4.90E-05
671	25	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.12569	0.123066864	6.88E-06
671	25	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.15177	0.166727371	0.00022372
671	50	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.11316	0.107969265	2.69E-05
671	50	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.14344	0.138398266	2.54E-05
671	50	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.18023	0.187496853	5.28E-05
671	75	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.11812	0.115622698	6.24E-06
671	75	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.15313	0.14821654	2.41E-05
671	75	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.19851	0.200787532	5.19E-06
671	100	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.11993	0.121373959	2.09E-06
671	100	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.15886	0.155578442	1.08E-05
671	100	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.21099	0.210758066	5.38E-08
671	120	2	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.11984	0.125160265	2.83E-05
671	120	2.4	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.16164	0.160420108	1.49E-06
671	120	3	0.07531156	0.02011473	0.24072788	0	0.08717403	0.15232966	0.05450934	0.70598698	0.21793	0.217312121	3.82E-07
672	10	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.08788	0.078886795	8.09E-05
672	10	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.10455	0.101704216	8.10E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
672	10	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.12192	0.13874464	0.00028307
672	25	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.0978	0.091131134	4.45E-05
672	25	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.12014	0.117507553	6.93E-06
672	25	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.14598	0.160319443	0.00020562
672	50	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.10668	0.101634941	2.55E-05
672	50	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.13607	0.131042137	2.53E-05
672	50	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.17205	0.178772545	4.52E-05
672	75	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.11077	0.108314196	6.03E-06
672	75	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.14442	0.139646657	2.28E-05
672	75	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.18817	0.190511754	5.48E-06
672	100	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.11197	0.113299103	1.77E-06
672	100	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.14926	0.146070461	1.02E-05
672	100	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.19943	0.199282246	2.18E-08
672	120	2	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.11151	0.116571259	2.56E-05
672	120	2.4	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.1516	0.150285045	1.73E-06
672	120	3	0.03246514	0.04827488	0.23513837	0	0.11045416	0.14498284	0.09326884	0.65129416	0.20538	0.205024846	1.26E-07
673	10	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.09198	0.082242298	9.48E-05
673	10	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.10902	0.105557632	1.20E-05
673	10	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.12677	0.143247509	0.00027151
673	25	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.10274	0.095789871	4.83E-05
673	25	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.12573	0.122962952	7.66E-06
673	25	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.15208	0.166891899	0.00021939
673	50	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.11265	0.107493	2.66E-05
673	50	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.14305	0.137982616	2.57E-05
673	50	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.18016	0.187284698	5.08E-05
673	75	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.11737	0.1149617	5.80E-06
673	75	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.1526	0.147572861	2.53E-05
673	75	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.19789	0.200305494	5.83E-06
673	100	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.11896	0.120562143	2.57E-06
673	100	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.15816	0.154762297	1.15E-05
673	100	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.21022	0.210060987	2.53E-08
673	120	2	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.11888	0.124243816	2.88E-05
673	120	2.4	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.16085	0.15948201	1.87E-06
673	120	3	0.0624067	0.02347078	0.24281673	0	0.07694427	0.14740665	0.07418698	0.70146211	0.21706	0.216464225	3.55E-07
674	10	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.09879	0.08873682	0.00010107
674	10	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.11794	0.114714909	1.04E-05
674	10	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.13798	0.156929302	0.00035908
674	25	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.1096	0.102223778	5.44E-05
674	25	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.13499	0.132133217	8.16E-06
674	25	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.16465	0.180816154	0.00026134
674	50	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.11935	0.11374939	3.14E-05
674	50	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.15258	0.147018661	3.09E-05
674	50	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.19363	0.201187305	5.71E-05
674	75	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.12364	0.121057892	6.67E-06
674	75	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.1618	0.156457367	2.85E-05
674	75	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.21152	0.214111404	6.72E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
674	100	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.12479	0.126506796	2.95E-06
674	100	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.16697	0.163497429	1.21E-05
674	100	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.22397	0.223749275	4.87E-08
674	120	2	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.12432	0.130074453	3.31E-05
674	120	2.4	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.1691	0.168103488	9.93E-07
674	120	3	0.02585794	0.02888896	0.23572278	0	0.08570668	0.14023348	0.04422284	0.72983699	0.23077	0.230059425	5.05E-07
675	10	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.09389	0.083995819	9.79E-05
675	10	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.1112	0.107830715	1.14E-05
675	10	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.12933	0.14636488	0.00029019
675	25	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.10499	0.097946053	4.96E-05
675	25	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.12852	0.125733948	7.76E-06
675	25	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.15546	0.170658722	0.000231
675	50	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.11535	0.109999886	2.86E-05
675	50	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.1463	0.141203899	2.60E-05
675	50	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.18436	0.191636028	5.29E-05
675	75	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.12009	0.117695173	5.74E-06
675	75	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.1561	0.151091448	2.51E-05
675	75	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.20272	0.205050824	5.43E-06
675	100	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.12183	0.123469524	2.69E-06
675	100	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.162	0.158500977	1.22E-05
675	100	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.21542	0.215107231	9.78E-08
675	120	2	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.1217	0.127270985	3.10E-05
675	120	2.4	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.16467	0.163371507	1.69E-06
675	120	3	0.05076085	0.06771632	0.19397696	0	0.080319	0.13595275	0.05416148	0.72956677	0.22221	0.221708552	2.51E-07
676	10	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.08855	0.07841053	0.00010281
676	10	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.10447	0.100340366	1.71E-05
676	10	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.12107	0.135670567	0.00021318
676	25	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.09934	0.092152939	5.17E-05
676	25	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.12089	0.11795784	8.60E-06
676	25	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.14568	0.159479485	0.00019043
676	50	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.10942	0.104141827	2.79E-05
676	50	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.13822	0.133284912	2.44E-05
676	50	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.17337	0.18019268	4.65E-05
676	75	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.11438	0.111832784	6.49E-06
676	75	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.14767	0.143133494	2.06E-05
676	75	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.19102	0.193507894	6.19E-06
676	100	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.11616	0.117624454	2.14E-06
676	100	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.15342	0.150536528	8.31E-06
676	100	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.20361	0.203514509	9.12E-09
676	120	2	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.11632	0.121442151	2.62E-05
676	120	2.4	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.15654	0.155410306	1.28E-06
676	120	3	0.0559951	0.04649527	0.24491433	0	0.08742949	0.15824051	0.07306688	0.68126312	0.21051	0.210101398	1.67E-07
677	10	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.08779	0.078302288	9.00E-05
677	10	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.10355	0.100210476	1.12E-05
677	10	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.11999	0.135454082	0.00023914
677	25	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.09858	0.091841202	4.54E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
677	25	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.12003	0.117533531	6.23E-06
677	25	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.14468	0.158899307	0.00020219
677	50	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.10867	0.103591957	2.58E-05
677	50	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.13725	0.132579174	2.18E-05
677	50	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.17229	0.179235821	4.82E-05
677	75	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.11359	0.111125603	6.07E-06
677	75	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.14675	0.142227147	2.05E-05
677	75	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.18995	0.192292697	5.49E-06
677	100	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.11529	0.116795321	2.27E-06
677	100	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.15238	0.149469261	8.47E-06
677	100	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.20234	0.202096539	5.93E-08
677	120	2	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.11531	0.120523898	2.72E-05
677	120	2.4	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.1555	0.154237684	1.59E-06
677	120	3	0.05140739	0.03360241	0.28150521	0	0.05982708	0.14188438	0.08970994	0.7085786	0.20906	0.208548125	2.62E-07
678	10	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.08303	0.074578762	7.14E-05
678	10	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.09823	0.095794201	5.93E-06
678	10	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.11411	0.13019352	0.00025868
678	25	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.09304	0.086758156	3.95E-05
678	25	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.1137	0.111489296	4.89E-06
678	25	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.13746	0.151478233	0.00019651
678	50	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.10212	0.097266293	2.36E-05
678	50	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.12956	0.125002232	2.08E-05
678	50	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.16298	0.169827423	4.69E-05
678	75	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.10636	0.103990288	5.62E-06
678	75	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.13813	0.133631287	2.02E-05
678	75	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.17928	0.181546427	5.14E-06
678	100	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.10774	0.109019213	1.64E-06
678	100	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.14308	0.140089006	8.95E-06
678	100	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.19053	0.1903263	4.15E-08
678	120	2	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.1075	0.112329976	2.33E-05
678	120	2.4	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.14549	0.144329929	1.35E-06
678	120	3	0.10523252	0.01704429	0.23308537	0	0.13473745	0.14035942	0.07406436	0.65083877	0.19645	0.196089466	1.30E-07
679	10	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.08273	0.074254036	7.18E-05
679	10	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.0977	0.095166397	6.42E-06
679	10	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.11333	0.128937912	0.00024361
679	25	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.09276	0.086593628	3.80E-05
679	25	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.11316	0.111013031	4.61E-06
679	25	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.1367	0.150413132	0.00018805
679	50	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.10201	0.097274952	2.24E-05
679	50	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.12912	0.124703484	1.95E-05
679	50	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.1623	0.168944168	4.41E-05
679	75	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.10643	0.104108632	5.39E-06
679	75	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.13785	0.133455213	1.93E-05
679	75	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.17873	0.180798836	4.28E-06
679	100	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.10794	0.109229202	1.66E-06
679	100	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.14282	0.140011072	7.89E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
679	100	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.18994	0.189685507	6.48E-08
679	120	2	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.10778	0.112596973	2.32E-05
679	120	2.4	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.14543	0.144326321	1.22E-06
679	120	3	0.03528752	0.08321143	0.23402867	0	0.09329195	0.13753393	0.11383921	0.65533491	0.19595	0.195523	1.82E-07
680	10	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.09237	0.082718563	9.32E-05
680	10	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.10959	0.106423569	1.00E-05
680	10	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.12757	0.144914436	0.00030083
680	25	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.10303	0.096049652	4.87E-05
680	25	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.12629	0.123621063	7.12E-06
680	25	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.15315	0.168338013	0.00023068
680	50	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.11289	0.107536297	2.87E-05
680	50	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.14359	0.138424244	2.67E-05
680	50	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.18107	0.188471031	5.48E-05
680	75	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.11734	0.114866447	6.12E-06
680	75	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.15276	0.147852847	2.41E-05
680	75	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.1987	0.201304207	6.78E-06
680	100	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.11891	0.120352154	2.08E-06
680	100	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.15829	0.154905176	1.15E-05
680	100	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.21094	0.210909605	9.24E-10
680	120	2	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.11866	0.12395517	2.80E-05
680	120	2.4	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.16086	0.159532523	1.76E-06
680	120	3	0.05900347	0.04011032	0.21721943	0	0.09474705	0.14060392	0.06014353	0.7045055	0.2176	0.217203879	1.57E-07
681	10	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.09923	0.088823414	0.0001083
681	10	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.11824	0.114433479	1.45E-05
681	10	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.13803	0.155955124	0.00032131
681	25	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.11004	0.102682724	5.41E-05
681	25	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.13521	0.132306404	8.43E-06
681	25	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.16447	0.180305252	0.00025076
681	50	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.11996	0.114589348	2.88E-05
681	50	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.15304	0.147629147	2.93E-05
681	50	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.19348	0.201174316	5.92E-05
681	75	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.12464	0.122154744	6.18E-06
681	75	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.16255	0.1573666	2.69E-05
681	75	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.21176	0.214446233	7.22E-06
681	100	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.1262	0.12781003	2.59E-06
681	100	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.16818	0.16463397	1.26E-05
681	100	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.22445	0.224353266	9.36E-09
681	120	2	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.12587	0.131521289	3.19E-05
681	120	2.4	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.17078	0.169400589	1.90E-06
681	120	3	0.02833297	0.04678357	0.19264695	0	0.06670652	0.16161055	0.08257947	0.68910345	0.23148	0.230847788	4.00E-07
682	10	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.07831	0.069751167	7.33E-05
682	10	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.0922	0.089191437	9.05E-06
682	10	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.10668	0.120473385	0.00019026
682	25	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.08805	0.081822319	3.88E-05
682	25	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.10704	0.104683037	5.56E-06
682	25	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.12896	0.141424713	0.00015537

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
682	50	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.09706	0.092343445	2.22E-05
682	50	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.12244	0.118135357	1.85E-05
682	50	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.15359	0.159587727	3.60E-05
682	75	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.1014	0.099094861	5.31E-06
682	75	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.13082	0.126767298	1.64E-05
682	75	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.16934	0.171259104	3.68E-06
682	100	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.10293	0.104176464	1.55E-06
682	100	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.13594	0.133258934	7.19E-06
682	100	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.18022	0.180028152	3.68E-08
682	120	2	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.10291	0.107524029	2.13E-05
682	120	2.4	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.13874	0.137528721	1.47E-06
682	120	3	0.05282823	0.10266265	0.20635868	0	0.11128538	0.14181306	0.12802079	0.61888077	0.18624	0.185804669	1.90E-07
683	10	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.08424	0.075076675	8.40E-05
683	10	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.09916	0.095924091	1.05E-05
683	10	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.11466	0.129392529	0.00021705
683	25	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.09468	0.088221588	4.17E-05
683	25	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.11508	0.112727585	5.53E-06
683	25	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.13838	0.152075729	0.00018757
683	50	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.10453	0.099664936	2.37E-05
683	50	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.13163	0.127353249	1.83E-05
683	50	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.16507	0.171806087	4.54E-05
683	75	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.10938	0.107018178	5.58E-06
683	75	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.14093	0.136737111	1.76E-05
683	75	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.18206	0.184487724	5.89E-06
683	100	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.1112	0.112550068	1.82E-06
683	100	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.14664	0.143795214	8.09E-06
683	100	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.19398	0.194015188	1.24E-09
683	120	2	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.11133	0.116194216	2.37E-05
683	120	2.4	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.14955	0.148453951	1.20E-06
683	120	3	0.02853019	0.08585162	0.24764738	0	0.1159039	0.16215014	0.06687828	0.65506768	0.20076	0.200291061	2.20E-07
684	10	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.08668	0.07786932	7.76E-05
684	10	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.10318	0.100340366	8.06E-06
684	10	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.12045	0.136688042	0.00026367
684	25	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.0962	0.089797592	4.10E-05
684	25	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.11835	0.115706406	6.99E-06
684	25	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.14387	0.157695656	0.00019115
684	50	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.10489	0.10001997	2.37E-05
684	50	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.13379	0.128864307	2.43E-05
684	50	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.16925	0.175629196	4.07E-05
684	75	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.10876	0.106510162	5.06E-06
684	75	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.14195	0.137219149	2.24E-05
684	75	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.18481	0.187016258	4.87E-06
684	100	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.10985	0.111357241	2.27E-06
684	100	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.14655	0.143459663	9.55E-06
684	100	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.19578	0.195513258	7.12E-08
684	120	2	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.10934	0.114536309	2.70E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
684	120	2.4	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.14887	0.147548326	1.75E-06
684	120	3	0.05221962	0.03053207	0.2244917	0	0.06241671	0.13961444	0.16757706	0.63039179	0.20153	0.201084836	1.98E-07
685	10	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.09457	0.084861755	9.43E-05
685	10	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.11265	0.109497643	9.94E-06
685	10	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.1315	0.149503899	0.00032414
685	25	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.10507	0.097963371	5.05E-05
685	25	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.1292	0.126409378	7.79E-06
685	25	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.1572	0.1725811	0.00023658
685	50	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.11447	0.109185905	2.79E-05
685	50	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.14621	0.140892162	2.83E-05
685	50	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.18528	0.192359085	5.01E-05
685	75	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.11884	0.116318334	6.36E-06
685	75	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.15522	0.150084076	2.64E-05
685	75	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.20238	0.204918048	6.44E-06
685	100	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.12008	0.121646729	2.45E-06
685	100	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.16033	0.156944456	1.15E-05
685	100	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.21442	0.214288921	1.72E-08
685	120	2	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.11965	0.125138617	3.01E-05
685	120	2.4	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.16248	0.161448407	1.06E-06
685	120	3	0.05018415	0.02398169	0.22500771	0	0.06998679	0.13886431	0.09004558	0.70110332	0.22105	0.220429492	3.85E-07
686	10	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.08901	0.079644489	8.77E-05
686	10	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.10523	0.102072239	9.97E-06
686	10	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.12212	0.138311672	0.00026217
686	25	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.09975	0.093053513	4.48E-05
686	25	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.12177	0.119274063	6.23E-06
686	25	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.14707	0.161609688	0.0002114
686	50	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.10962	0.10464407	2.48E-05
686	50	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.13894	0.134137859	2.31E-05
686	50	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.17469	0.181760025	5.00E-05
686	75	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.11439	0.112052155	5.47E-06
686	75	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.14836	0.143653056	2.22E-05
686	75	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.19248	0.194653816	4.73E-06
686	100	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.11613	0.11762229	2.23E-06
686	100	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.15387	0.150791979	9.47E-06
686	100	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.20454	0.204321995	4.75E-08
686	120	2	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.11607	0.121287004	2.72E-05
686	120	2.4	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.15661	0.155484271	1.27E-06
686	120	3	0.05889074	0.0464543	0.23797332	0	0.11395471	0.14920619	0.04338759	0.6934515	0.21108	0.210669669	1.68E-07
687	10	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.08907	0.079428005	9.30E-05
687	10	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.10538	0.101855755	1.24E-05
687	10	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.12233	0.137986946	0.00024514
687	25	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.09966	0.092750435	4.77E-05
687	25	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.12157	0.118936348	6.94E-06
687	25	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.14681	0.161150742	0.00020566
687	50	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.10937	0.104284706	2.59E-05
687	50	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.13863	0.13371788	2.41E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
687	50	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.17416	0.181175518	4.92E-05
687	75	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.11418	0.111668256	6.31E-06
687	75	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.14795	0.143173904	2.28E-05
687	75	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.19174	0.193984159	5.04E-06
687	100	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.11581	0.117208805	1.96E-06
687	100	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.15331	0.150263758	9.28E-06
687	100	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.20369	0.203590279	9.94E-09
687	120	2	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.11579	0.120850428	2.56E-05
687	120	2.4	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.15627	0.154932237	1.79E-06
687	120	3	0.07663121	0.04359065	0.20057362	0	0.0903262	0.15602071	0.09217446	0.66147863	0.21025	0.20991017	1.15E-07
688	10	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.08691	0.077349758	9.14E-05
688	10	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.1023	0.098911572	1.15E-05
688	10	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.11829	0.133570671	0.0002335
688	25	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.09777	0.090983925	4.61E-05
688	25	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.11878	0.116355858	5.88E-06
688	25	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.14295	0.157167435	0.00020214
688	50	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.10803	0.102860241	2.67E-05
688	50	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.13615	0.131531391	2.13E-05
688	50	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.17057	0.177685795	5.06E-05
688	75	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.1131	0.110481923	6.85E-06
688	75	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.14586	0.141297709	2.08E-05
688	75	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.18816	0.190872561	7.36E-06
688	100	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.11494	0.116230297	1.66E-06
688	100	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.15172	0.148642292	9.47E-06
688	100	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.20081	0.200793304	2.79E-10
688	120	2	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.11517	0.12001516	2.35E-05
688	120	2.4	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.15471	0.153478185	1.52E-06
688	120	3	0.03760444	0.08100302	0.2414336	0	0.07095508	0.14660072	0.08365428	0.69878993	0.2079	0.207326794	3.29E-07
689	10	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.08656	0.077587891	8.05E-05
689	10	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.10283	0.099929047	8.42E-06
689	10	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.1198	0.13616848	0.00026793
689	25	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.09647	0.089849548	4.38E-05
689	25	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.11841	0.115749702	7.08E-06
689	25	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.1437	0.157712975	0.00019636
689	50	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.10544	0.100387993	2.55E-05
689	50	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.13428	0.129305935	2.47E-05
689	50	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.16963	0.176196384	4.31E-05
689	75	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.10949	0.107101885	5.70E-06
689	75	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.14262	0.137940763	2.19E-05
689	75	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.18577	0.187965902	4.82E-06
689	100	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.11082	0.112110605	1.67E-06
689	100	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.14767	0.14439271	1.07E-05
689	100	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.19706	0.196760206	8.99E-08
689	120	2	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.1103	0.11540405	2.61E-05
689	120	2.4	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.14978	0.148630746	1.32E-06
689	120	3	0.05116745	0.03271764	0.24787772	0	0.1250694	0.1436744	0.07612328	0.65513291	0.20281	0.202526259	8.05E-08

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
690	10	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.08519	0.075119972	0.00010141
690	10	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.10007	0.095621014	1.98E-05
690	10	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.11551	0.128504944	0.00016887
690	25	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.09583	0.088931656	4.76E-05
690	25	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.11616	0.113247147	8.48E-06
690	25	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.13946	0.152153664	0.00016113
690	50	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.10618	0.101041775	2.64E-05
690	50	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.13332	0.128660812	2.17E-05
690	50	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.16649	0.172866859	4.07E-05
690	75	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.11133	0.108859736	6.10E-06
690	75	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.14297	0.138613307	1.90E-05
690	75	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.18382	0.186231143	5.81E-06
690	100	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.11345	0.114758205	1.71E-06
690	100	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.14902	0.146111593	8.46E-06
690	100	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.19616	0.196307755	2.18E-08
690	120	2	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.11387	0.118651311	2.29E-05
690	120	2.4	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.15239	0.15106078	1.77E-06
690	120	3	0.05361278	0.06448504	0.2464621	0	0.05408914	0.16448951	0.12004589	0.66137546	0.20352	0.202962836	3.10E-07
691	10	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.08296	0.073799419	8.39E-05
691	10	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.09735	0.093975735	1.14E-05
691	10	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.11224	0.126405048	0.00020065
691	25	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.09373	0.087295036	4.14E-05
691	25	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.11351	0.111194878	5.36E-06
691	25	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.1363	0.149564514	0.00017595
691	50	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.10403	0.099110737	2.42E-05
691	50	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.13057	0.126266499	1.85E-05
691	50	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.16325	0.169801445	4.29E-05
691	75	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.10903	0.106738192	5.25E-06
691	75	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.14012	0.13598952	1.71E-05
691	75	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.18054	0.182859764	5.38E-06
691	100	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.11119	0.112487288	1.68E-06
691	100	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.14592	0.143310289	6.81E-06
691	100	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.19266	0.192711954	2.70E-09
691	120	2	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.11155	0.11628081	2.24E-05
691	120	2.4	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.14932	0.148145461	1.38E-06
691	120	3	0.10570742	0.03713912	0.24835543	0	0.09829902	0.14988629	0.06600069	0.685814	0.19979	0.199215857	3.30E-07
692	10	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.09309	0.083606148	8.99E-05
692	10	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.11079	0.107679176	9.68E-06
692	10	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.12917	0.14662466	0.00030467
692	25	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.10341	0.096638489	4.59E-05
692	25	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.12706	0.124469681	6.71E-06
692	25	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.1544	0.169524345	0.00022875
692	50	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.11297	0.107835045	2.64E-05
692	50	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.14399	0.138857212	2.63E-05
692	50	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.18195	0.189142132	5.17E-05
692	75	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.11728	0.114953041	5.41E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
692	75	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.15288	0.148005829	2.38E-05
692	75	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.19907	0.20161883	6.50E-06
692	100	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.11874	0.12026556	2.33E-06
692	100	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.15809	0.154844561	1.05E-05
692	100	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.211	0.210929089	5.03E-09
692	120	2	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.11834	0.123751314	2.93E-05
692	120	2.4	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.16059	0.159332275	1.58E-06
692	120	3	0.03001478	0.04327138	0.22613056	0	0.07229302	0.14885691	0.100577	0.67827307	0.21748	0.217028888	2.04E-07
693	10	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.09426	0.084017467	0.00010491
693	10	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.11121	0.107570934	1.32E-05
693	10	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.12887	0.145477295	0.0002758
693	25	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.10581	0.098578186	5.23E-05
693	25	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.12886	0.126227531	6.93E-06
693	25	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.15526	0.170762634	0.00024033
693	50	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.11667	0.111259823	2.93E-05
693	50	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.14748	0.142450848	2.53E-05
693	50	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.18504	0.192714119	5.89E-05
693	75	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.12208	0.119392408	7.22E-06
693	75	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.15785	0.152860845	2.49E-05
693	75	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.20419	0.206794243	6.78E-06
693	100	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.124	0.125504475	2.26E-06
693	100	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.16398	0.160683136	1.09E-05
693	100	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.21753	0.217378149	2.31E-08
693	120	2	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.12417	0.129531439	2.87E-05
693	120	2.4	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.16709	0.165830406	1.59E-06
693	120	3	0.04508668	0.0671673	0.22200076	0	0.07476367	0.14900364	0.0341725	0.74206019	0.22501	0.224338833	4.50E-07
694	10	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.07772	0.06916666	7.32E-05
694	10	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.09098	0.088000774	8.88E-06
694	10	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.10474	0.118070412	0.0001777
694	25	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.088	0.082012825	3.58E-05
694	25	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.10653	0.104345322	4.77E-06
694	25	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.12753	0.140047874	0.0001567
694	50	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.09794	0.093300304	2.15E-05
694	50	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.12259	0.118706875	1.51E-05
694	50	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.15306	0.159314957	3.91E-05
694	75	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.10273	0.100592931	4.57E-06
694	75	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.13188	0.127976723	1.52E-05
694	75	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.16958	0.17176712	4.78E-06
694	100	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.10491	0.106103172	1.42E-06
694	100	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.13761	0.134975653	6.94E-06
694	100	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.18099	0.181169024	3.20E-08
694	120	2	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.10522	0.109739383	2.04E-05
694	120	2.4	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.14072	0.139599752	1.25E-06
694	120	3	0.08796726	0.04589293	0.28950982	0	0.08597999	0.14345741	0.1015976	0.66896501	0.18815	0.187370571	6.08E-07
695	10	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.10037	0.089581108	0.0001164
695	10	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.11927	0.115017986	1.81E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
695	10	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.13885	0.156171608	0.00030004
695	25	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.11173	0.104198112	5.67E-05
695	25	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.13695	0.133821793	9.79E-06
695	25	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.16582	0.181716728	0.00025271
695	50	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.12236	0.116823463	3.07E-05
695	50	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.15542	0.15003212	2.90E-05
695	50	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.19585	0.20370285	6.17E-05
695	75	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.1273	0.12488533	5.83E-06
695	75	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.1657	0.160374285	2.84E-05
695	75	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.21504	0.217739677	7.29E-06
695	100	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.12918	0.130918741	3.02E-06
695	100	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.17174	0.16810854	1.32E-05
695	100	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.2284	0.228245649	2.38E-08
695	120	2	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.1291	0.1348804	3.34E-05
695	120	2.4	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.17454	0.173190864	1.82E-06
695	120	3	0.04682116	0.05638022	0.16465803	0	0.04703246	0.15842696	0.08309666	0.71144391	0.23563	0.235137781	2.42E-07
696	10	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.08213	0.072846889	8.62E-05
696	10	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.09643	0.092850018	1.28E-05
696	10	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.11126	0.124868011	0.00018518
696	25	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.09257	0.086108704	4.17E-05
696	25	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.11225	0.109757423	6.21E-06
696	25	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.13479	0.147598839	0.00016407
696	50	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.10262	0.097720909	2.40E-05
696	50	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.1289	0.124534626	1.91E-05
696	50	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.16117	0.167472076	3.97E-05
696	75	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.10745	0.105191053	5.10E-06
696	75	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.1382	0.134061368	1.71E-05
696	75	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.17805	0.180299479	5.06E-06
696	100	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.10959	0.110839844	1.56E-06
696	100	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.14393	0.141247196	7.20E-06
696	100	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.18995	0.189962606	1.59E-10
696	120	2	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.10989	0.114566978	2.19E-05
696	120	2.4	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.14712	0.145986032	1.29E-06
696	120	3	0.06540312	0.06441864	0.25329804	0	0.10524475	0.1584077	0.07738389	0.65896367	0.19693	0.196338423	3.50E-07
697	10	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.09198	0.081636143	0.000107
697	10	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.10841	0.104388618	1.62E-05
697	10	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.1255	0.141039371	0.00024147
697	25	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.1033	0.096040993	5.27E-05
697	25	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.12561	0.122841721	7.66E-06
697	25	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.15122	0.165991325	0.00021819
697	50	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.11404	0.108597069	2.96E-05
697	50	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.14391	0.138922157	2.49E-05
697	50	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.18027	0.187709007	5.53E-05
697	75	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.11936	0.116676254	7.20E-06
697	75	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.15405	0.149249891	2.30E-05
697	75	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.19893	0.201676559	7.54E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
697	100	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.12127	0.122757292	2.21E-06
697	100	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.16015	0.15702239	9.78E-06
697	100	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.21223	0.212178202	2.68E-09
697	120	2	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.12155	0.126764051	2.72E-05
697	120	2.4	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.16337	0.162141156	1.51E-06
697	120	3	0.05401163	0.0566879	0.2326128	0	0.07308923	0.15500216	0.05248948	0.71941913	0.21969	0.219092703	3.57E-07
698	10	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.08695	0.076765251	0.00010373
698	10	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.10185	0.097612667	1.80E-05
698	10	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.11732	0.13086462	0.00018346
698	25	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.09836	0.091356277	4.91E-05
698	25	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.11895	0.116182671	7.66E-06
698	25	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.14244	0.155790596	0.00017824
698	50	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.10935	0.104211102	2.64E-05
698	50	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.13696	0.132514229	1.98E-05
698	50	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.17094	0.177707443	4.58E-05
698	75	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.11488	0.112539965	5.48E-06
698	75	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.1475	0.143090197	1.94E-05
698	75	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.18948	0.191894366	5.83E-06
698	100	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.11743	0.118825941	1.95E-06
698	100	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.15405	0.151077738	8.83E-06
698	100	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.20245	0.202613935	2.69E-08
698	120	2	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.11795	0.122988208	2.54E-05
698	120	2.4	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.15753	0.156359227	1.37E-06
698	120	3	0.07949614	0.06178383	0.24226992	0	0.07911938	0.15797099	0.04691378	0.71599585	0.21039	0.209697294	4.80E-07
699	10	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.0825	0.07310667	8.82E-05
699	10	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.0969	0.093304634	1.29E-05
699	10	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.11182	0.125712299	0.000193
699	25	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.09298	0.086368484	4.37E-05
699	25	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.11278	0.110233688	6.48E-06
699	25	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.13547	0.148542709	0.0001709
699	50	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.10299	0.097959042	2.53E-05
699	50	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.12943	0.12502821	1.94E-05
699	50	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.16201	0.168480892	4.19E-05
699	75	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.10786	0.105421969	5.94E-06
699	75	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.13875	0.134563611	1.75E-05
699	75	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.17895	0.18133283	5.68E-06
699	100	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.10992	0.111058493	1.30E-06
699	100	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.14446	0.141749439	7.35E-06
699	100	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.19089	0.191016884	1.61E-08
699	120	2	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.11026	0.114783462	2.05E-05
699	120	2.4	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.14762	0.146492966	1.27E-06
699	120	3	0.06940227	0.08917644	0.20751809	0	0.10515058	0.15261621	0.08369111	0.6585421	0.19796	0.197406411	3.06E-07
700	10	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.0892	0.079666138	9.09E-05
700	10	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.10544	0.102007294	1.18E-05
700	10	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.12235	0.13807354	0.00024723
700	25	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.09988	0.093070831	4.64E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
700	25	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.12177	0.119248085	6.36E-06
700	25	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.14697	0.161410522	0.00020853
700	50	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.10977	0.104722004	2.55E-05
700	50	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.13891	0.134159508	2.26E-05
700	50	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.17457	0.181608486	4.95E-05
700	75	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.1146	0.112167613	5.92E-06
700	75	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.14836	0.143699239	2.17E-05
700	75	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.19223	0.194526812	5.28E-06
700	100	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.11644	0.117763004	1.75E-06
700	100	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.15387	0.150856924	9.08E-06
700	100	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.20434	0.204215918	1.54E-08
700	120	2	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.11624	0.121440347	2.70E-05
700	120	2.4	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.15686	0.155567257	1.67E-06
700	120	3	0.04894338	0.07221801	0.20037635	0	0.10451479	0.15955492	0.07056759	0.6653627	0.21111	0.210581271	2.80E-07
701	10	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.09069	0.080120754	0.00011171
701	10	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.10647	0.101963997	2.03E-05
701	10	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.12287	0.136904526	0.00019697
701	25	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.10206	0.094967232	5.03E-05
701	25	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.12373	0.120867386	8.19E-06
701	25	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.14847	0.162285118	0.00019086
701	50	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.11331	0.107951946	2.87E-05
701	50	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.14208	0.137406769	2.18E-05
701	50	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.17747	0.184505043	4.95E-05
701	75	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.11883	0.116355858	6.12E-06
701	75	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.15268	0.148089536	2.11E-05
701	75	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.19628	0.198853607	6.62E-06
701	100	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.12124	0.122698841	2.13E-06
701	100	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.15913	0.156147795	8.89E-06
701	100	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.20967	0.209673481	1.21E-11
701	120	2	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.12174	0.126883117	2.65E-05
701	120	2.4	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.1628	0.161466448	1.78E-06
701	120	3	0.10538741	0.02493424	0.22683076	0	0.05288841	0.16499487	0.07397426	0.70814246	0.21755	0.216812404	5.44E-07
702	10	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.08306	0.074448872	7.42E-05
702	10	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.09878	0.095880795	8.41E-06
702	10	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.11517	0.130583191	0.00023757
702	25	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.09235	0.086048088	3.97E-05
702	25	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.1133	0.110796547	6.27E-06
702	25	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.13749	0.150924034	0.00018047
702	50	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.1007	0.095989037	2.22E-05
702	50	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.12825	0.123590755	2.17E-05
702	50	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.16183	0.168346672	4.25E-05
702	75	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.10453	0.102295939	4.99E-06
702	75	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.13617	0.131726227	1.97E-05
702	75	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.17728	0.179433543	4.64E-06
702	100	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.10563	0.107021065	1.94E-06
702	100	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.1408	0.137798605	9.01E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
702	100	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.18781	0.187709007	1.02E-08
702	120	2	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.10519	0.110123642	2.43E-05
702	120	2.4	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.14299	0.141784437	1.45E-06
702	120	3	0.06450706	0.02337314	0.229252	0	0.12938978	0.1639144	0.12968252	0.5770133	0.19339	0.193134459	6.53E-08
703	10	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.07573	0.067391491	6.95E-05
703	10	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.08911	0.086117363	8.96E-06
703	10	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.10309	0.116251945	0.00017324
703	25	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.08514	0.079111938	3.63E-05
703	25	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.10345	0.101115379	5.45E-06
703	25	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.12462	0.136488876	0.00014087
703	50	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.09385	0.089312668	2.06E-05
703	50	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.11836	0.114165039	1.76E-05
703	50	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.14838	0.154093361	3.26E-05
703	75	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.09804	0.095876465	4.68E-06
703	75	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.12634	0.122541529	1.44E-05
703	75	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.16356	0.165396716	3.37E-06
703	100	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.09957	0.100801477	1.52E-06
703	100	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.13132	0.128831835	6.19E-06
703	100	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.174	0.173899488	1.01E-08
703	120	2	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.0997	0.104051264	1.89E-05
703	120	2.4	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.13406	0.132980752	1.16E-06
703	120	3	0.05747266	0.04271171	0.29898654	0	0.10463837	0.14550516	0.14072645	0.60913002	0.17981	0.179495962	9.86E-08
704	10	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.09156	0.081657791	9.81E-05
704	10	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.10861	0.104929829	1.35E-05
704	10	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.12639	0.142511463	0.0002599
704	25	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.10213	0.095053825	5.01E-05
704	25	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.1251	0.122157631	8.66E-06
704	25	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.15138	0.165974007	0.00021299
704	50	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.1119	0.106648712	2.76E-05
704	50	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.14217	0.137038746	2.63E-05
704	50	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.17904	0.186184959	5.11E-05
704	75	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.1165	0.114040922	6.05E-06
704	75	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.15152	0.146542397	2.48E-05
704	75	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.19651	0.199107615	6.75E-06
704	100	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.11801	0.119587965	2.49E-06
704	100	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.15697	0.153656063	1.10E-05
704	100	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.20874	0.208770742	9.45E-10
704	120	2	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.11776	0.123229949	2.99E-05
704	120	2.4	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.15954	0.158336449	1.45E-06
704	120	3	0.05541574	0.03181552	0.23154512	0	0.07480774	0.15011825	0.0911543	0.68391971	0.21545	0.215123828	1.06E-07
705	10	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.08513	0.075877666	8.56E-05
705	10	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.10008	0.096919918	9.99E-06
705	10	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.11564	0.130669785	0.00022589
705	25	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.09588	0.089355965	4.26E-05
705	25	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.11643	0.114139061	5.25E-06
705	25	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.13994	0.153928833	0.00019569

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
705	50	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.10613	0.101115379	2.51E-05
705	50	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.13353	0.129154396	1.91E-05
705	50	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.16728	0.174165764	4.74E-05
705	75	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.11111	0.10866923	5.96E-06
705	75	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.14305	0.13879804	1.81E-05
705	75	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.18465	0.187195218	6.48E-06
705	100	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.11299	0.114366369	1.89E-06
705	100	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.149	0.146063967	8.62E-06
705	100	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.19707	0.196989679	6.45E-09
705	120	2	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.11325	0.118120925	2.37E-05
705	120	2.4	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.15212	0.150851512	1.61E-06
705	120	3	0.06998958	0.03097076	0.28678111	0	0.0633036	0.14176432	0.08838069	0.70655139	0.20408	0.203440905	4.08E-07
706	10	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.07708	0.069404793	5.89E-05
706	10	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.09135	0.089342976	4.03E-06
706	10	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.10629	0.121664047	0.00023636
706	25	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.0862	0.08031559	3.46E-05
706	25	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.10549	0.103427429	4.25E-06
706	25	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.12774	0.140861855	0.00017218
706	50	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.09438	0.089715328	2.18E-05
706	50	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.11981	0.115524559	1.84E-05
706	50	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.15105	0.157349281	3.97E-05
706	75	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.09808	0.095694618	5.69E-06
706	75	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.12749	0.123222733	1.82E-05
706	75	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.1658	0.16783577	4.14E-06
706	100	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.09909	0.100169344	1.16E-06
706	100	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.13183	0.128976879	8.14E-06
706	100	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.17585	0.175678988	2.92E-08
706	120	2	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.0987	0.10310595	1.94E-05
706	120	2.4	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.13411	0.132755248	1.84E-06
706	120	3	0.05052536	0.02378306	0.29877364	0	0.16499539	0.15096898	0.09685949	0.58717613	0.18095	0.180818319	1.73E-08
707	10	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.07651	0.068105888	7.06E-05
707	10	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.09004	0.087134838	8.44E-06
707	10	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.10414	0.117810631	0.00018689
707	25	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.08615	0.079977875	3.81E-05
707	25	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.10471	0.102353668	5.55E-06
707	25	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.12611	0.138402596	0.00015111
707	50	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.09507	0.090295506	2.28E-05
707	50	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.11987	0.115580845	1.84E-05
707	50	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.15034	0.156292839	3.54E-05
707	75	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.09927	0.096932907	5.46E-06
707	75	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.12808	0.124082896	1.60E-05
707	75	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.1658	0.1677867	3.95E-06
707	100	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.10085	0.101931524	1.17E-06
707	100	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.1332	0.130470619	7.45E-06
707	100	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.17638	0.176428022	2.31E-09
707	120	2	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.1008	0.10522569	1.96E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
707	120	2.4	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.13582	0.134685564	1.29E-06
707	120	3	0.08553535	0.05784595	0.24424445	0	0.11141349	0.13692441	0.12811755	0.62354455	0.18237	0.182119028	6.30E-08
708	10	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.09244	0.081895924	0.00011118
708	10	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.10901	0.104691696	1.86E-05
708	10	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.12624	0.141385746	0.00022939
708	25	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.10369	0.09635273	5.38E-05
708	25	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.12614	0.123205414	8.61E-06
708	25	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.15187	0.166389656	0.00021082
708	50	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.1144	0.108956432	2.96E-05
708	50	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.14437	0.139333477	2.54E-05
708	50	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.18095	0.188185272	5.23E-05
708	75	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.11969	0.117063039	6.90E-06
708	75	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.15447	0.149691518	2.28E-05
708	75	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.1995	0.202175916	7.16E-06
708	100	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.12168	0.123159952	2.19E-06
708	100	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.16073	0.157483501	1.05E-05
708	100	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.21285	0.212695599	2.38E-08
708	120	2	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.12187	0.127180783	2.82E-05
708	120	2.4	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.16393	0.162613813	1.73E-06
708	120	3	0.04092546	0.0615596	0.23482933	0	0.07633974	0.16247565	0.05316829	0.70801633	0.2202	0.219624893	3.31E-07
709	10	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.08832	0.07786932	0.00010922
709	10	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.10328	0.098824978	1.98E-05
709	10	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.11877	0.132206821	0.00018055
709	25	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.09998	0.092984238	4.89E-05
709	25	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.12085	0.118009796	8.07E-06
709	25	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.14438	0.157886162	0.00018242
709	50	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.11164	0.106345634	2.80E-05
709	50	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.13943	0.13494318	2.01E-05
709	50	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.17344	0.180543385	5.05E-05
709	75	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.11739	0.114996338	5.73E-06
709	75	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.15037	0.145921809	1.98E-05
709	75	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.19277	0.195242653	6.11E-06
709	100	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.11997	0.121547146	2.49E-06
709	100	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.15732	0.154229746	9.55E-06
709	100	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.20614	0.206352615	4.52E-08
709	120	2	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.1209	0.125881879	2.48E-05
709	120	2.4	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.16096	0.159723751	1.53E-06
709	120	3	0.09296143	0.05875317	0.23246227	0	0.0538069	0.15864531	0.055447	0.73210079	0.21444	0.213704054	5.42E-07
710	10	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.0848	0.075184917	9.24E-05
710	10	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.0992	0.09553442	1.34E-05
710	10	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.11414	0.128028679	0.0001929
710	25	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.09609	0.089468536	4.38E-05
710	25	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.11614	0.113714752	5.88E-06
710	25	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.13894	0.152422104	0.00018177
710	50	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.10697	0.102067909	2.40E-05
710	50	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.13394	0.129721584	1.78E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
710	50	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.16692	0.173871346	4.83E-05
710	75	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.11255	0.110213483	5.46E-06
710	75	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.14436	0.140070966	1.84E-05
710	75	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.18533	0.187766736	5.94E-06
710	100	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.11501	0.116366682	1.84E-06
710	100	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.15091	0.147897587	9.07E-06
710	100	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.19809	0.198262606	2.98E-08
710	120	2	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.11571	0.12044452	2.24E-05
710	120	2.4	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.15433	0.153072278	1.58E-06
710	120	3	0.09097617	0.03677563	0.28155722	0	0.0484535	0.14615367	0.07598188	0.72941096	0.20587	0.205194426	4.56E-07
711	10	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.07859	0.07011919	7.18E-05
711	10	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.09211	0.089364624	7.54E-06
711	10	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.10611	0.120191956	0.0001983
711	25	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.08901	0.082922058	3.71E-05
711	25	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.10777	0.105696182	4.30E-06
711	25	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.12925	0.142178078	0.00016714
711	50	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.09889	0.094148922	2.25E-05
711	50	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.12405	0.11999279	1.65E-05
711	50	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.15508	0.161423512	4.02E-05
711	75	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.10363	0.101386706	5.03E-06
711	75	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.13319	0.129220785	1.58E-05
711	75	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.1716	0.173825162	4.95E-06
711	100	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.10573	0.106847878	1.25E-06
711	100	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.13887	0.13617281	7.27E-06
711	100	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.1832	0.183182325	3.12E-10
711	120	2	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.10601	0.110450172	1.97E-05
711	120	2.4	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.14187	0.140768766	1.21E-06
711	120	3	0.06999704	0.09076576	0.24455633	0	0.11881798	0.13988312	0.06775095	0.67354795	0.18992	0.18936042	3.13E-07
712	10	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.09701	0.086377144	0.00011306
712	10	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.11506	0.11075325	1.85E-05
712	10	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.13378	0.150110054	0.00026667
712	25	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.1082	0.100769005	5.52E-05
712	25	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.13232	0.129215012	9.64E-06
712	25	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.16001	0.175126953	0.00022852
712	50	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.11861	0.113225498	2.90E-05
712	50	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.15043	0.145182877	2.75E-05
712	50	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.1894	0.196762371	5.42E-05
712	75	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.12367	0.121182009	6.19E-06
712	75	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.1606	0.155386492	2.72E-05
712	75	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.20814	0.21058993	6.00E-06
712	100	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.12551	0.127149754	2.69E-06
712	100	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.16654	0.163031988	1.23E-05
712	100	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.22105	0.220952301	9.55E-09
712	120	2	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.12543	0.131073888	3.19E-05
712	120	2.4	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.1695	0.168056583	2.08E-06
712	120	3	0.08929656	0.01771134	0.1867428	0	0.07832816	0.16441686	0.06229497	0.69496002	0.22842	0.227759282	4.37E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
713	10	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.08357	0.07447052	8.28E-05
713	10	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.09831	0.095058155	1.06E-05
713	10	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.11359	0.128136921	0.00021161
713	25	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.09402	0.087598114	4.12E-05
713	25	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.11422	0.111861649	5.56E-06
713	25	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.13731	0.150768166	0.00018112
713	50	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.10388	0.09906311	2.32E-05
713	50	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.13078	0.126500301	1.83E-05
713	50	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.16386	0.170502853	4.41E-05
713	75	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.10873	0.106443774	5.23E-06
713	75	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.14005	0.135905813	1.72E-05
713	75	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.18088	0.18318882	5.33E-06
713	100	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.11059	0.111991539	1.96E-06
713	100	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.14581	0.142979069	8.01E-06
713	100	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.19271	0.192737932	7.80E-10
713	120	2	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.11081	0.115651202	2.34E-05
713	120	2.4	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.14881	0.147640332	1.37E-06
713	120	3	0.08123693	0.02892904	0.26988175	0	0.07823822	0.15058352	0.09998814	0.67119012	0.19956	0.199028238	2.83E-07
714	10	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.08635	0.077176571	8.42E-05
714	10	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.10184	0.098868275	8.83E-06
714	10	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.118	0.133678913	0.00024583
714	25	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.09688	0.090360451	4.25E-05
714	25	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.11791	0.115723724	4.78E-06
714	25	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.14219	0.156500664	0.0002048
714	50	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.10677	0.101803799	2.47E-05
714	50	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.13488	0.130358047	2.04E-05
714	50	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.16914	0.176295967	5.12E-05
714	75	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.11156	0.109142609	5.84E-06
714	75	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.14408	0.139727478	1.89E-05
714	75	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.18643	0.18898482	6.53E-06
714	100	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.11326	0.114645634	1.92E-06
714	100	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.14962	0.146761045	8.17E-06
714	100	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.19861	0.198507233	1.06E-08
714	120	2	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.11328	0.118265247	2.49E-05
714	120	2.4	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.15257	0.151399938	1.37E-06
714	120	3	0.06294899	0.05323732	0.23383414	0	0.06309704	0.14495937	0.11410277	0.67784082	0.20511	0.204770478	1.15E-07
715	10	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.08533	0.075726128	9.22E-05
715	10	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.10075	0.096833324	1.53E-05
715	10	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.11677	0.130778027	0.00019622
715	25	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.09555	0.088775787	4.59E-05
715	25	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.11632	0.113567543	7.58E-06
715	25	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.14025	0.153409271	0.00017317
715	50	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.10512	0.100128212	2.49E-05
715	50	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.13276	0.128080635	2.19E-05
715	50	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.16657	0.173027058	4.17E-05
715	75	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.10981	0.107410736	5.76E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
715	75	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.14173	0.137383677	1.89E-05
715	75	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.18341	0.185596123	4.78E-06
715	100	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.11147	0.112881289	1.99E-06
715	100	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.14734	0.144373226	8.80E-06
715	100	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.19505	0.195045652	1.89E-11
715	120	2	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.11152	0.116484666	2.46E-05
715	120	2.4	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.15031	0.148980729	1.77E-06
715	120	3	0.02053883	0.0662248	0.25921127	0	0.059872	0.16112579	0.13824671	0.64075549	0.20155	0.201268848	7.90E-08
716	10	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.08775	0.078691959	8.20E-05
716	10	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.10365	0.100924873	7.43E-06
716	10	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.12027	0.136817932	0.00027383
716	25	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.09839	0.091875839	4.24E-05
716	25	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.12011	0.117845268	5.13E-06
716	25	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.14501	0.159782562	0.00021823
716	50	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.1082	0.10328022	2.42E-05
716	50	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.13711	0.132483921	2.14E-05
716	50	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.17245	0.179616833	5.14E-05
716	75	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.11294	0.11057429	5.60E-06
716	75	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.14645	0.14183459	2.13E-05
716	75	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.19005	0.19229847	5.06E-06
716	100	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.11462	0.116050615	2.05E-06
716	100	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.15194	0.148847952	9.56E-06
716	100	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.2019	0.20181078	7.96E-09
716	120	2	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.11455	0.119650745	2.60E-05
716	120	2.4	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.15458	0.153467361	1.24E-06
716	120	3	0.04845038	0.06403895	0.23588092	0	0.09835401	0.13815095	0.06192169	0.70157335	0.20838	0.208064644	9.94E-08
717	10	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.08779	0.078107452	9.38E-05
717	10	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.10339	0.099820805	1.27E-05
717	10	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.11966	0.134891224	0.00023199
717	25	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.09872	0.091858521	4.71E-05
717	25	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.12004	0.117481575	6.55E-06
717	25	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.14458	0.158743439	0.0002006
717	50	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.10909	0.103847408	2.75E-05
717	50	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.13764	0.132834625	2.31E-05
717	50	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.17243	0.179499931	5.00E-05
717	75	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.11418	0.111561457	6.86E-06
717	75	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.14728	0.142706299	2.09E-05
717	75	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.19025	0.192838236	6.70E-06
717	100	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.116	0.117371168	1.88E-06
717	100	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.15338	0.150131702	1.06E-05
717	100	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.203	0.202871552	1.65E-08
717	120	2	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.11616	0.121196802	2.54E-05
717	120	2.4	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.15624	0.155024242	1.48E-06
717	120	3	0.10444357	0.05762459	0.17916001	0	0.08048185	0.1417411	0.08070977	0.69706728	0.20989	0.209484418	1.64E-07
718	10	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.08885	0.079146576	9.42E-05
718	10	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.10494	0.101466084	1.21E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
718	10	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.12171	0.137445736	0.00024761
718	25	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.09961	0.092672501	4.81E-05
718	25	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.12146	0.118815117	7.00E-06
718	25	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.14656	0.160977554	0.00020787
718	50	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.10968	0.104414597	2.77E-05
718	50	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.13882	0.133865089	2.46E-05
718	50	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.17436	0.181357365	4.90E-05
718	75	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.11457	0.111945356	6.89E-06
718	75	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.1483	0.143505847	2.30E-05
718	75	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.19218	0.194431559	5.07E-06
718	100	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.11618	0.117591982	1.99E-06
718	100	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.15389	0.150746517	9.88E-06
718	100	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.20431	0.204241896	4.64E-09
718	120	2	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.11628	0.121314065	2.53E-05
718	120	2.4	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.15676	0.155509528	1.56E-06
718	120	3	0.05002268	0.05522442	0.24086129	0	0.08375147	0.14528313	0.07124037	0.69972504	0.21108	0.210694925	1.48E-07
719	10	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.09101	0.08139801	9.24E-05
719	10	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.10781	0.104496861	1.10E-05
719	10	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.12528	0.141797066	0.00027281
719	25	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.10174	0.094880638	4.71E-05
719	25	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.12443	0.121802597	6.90E-06
719	25	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.15047	0.165272598	0.00021912
719	50	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.11166	0.106527481	2.63E-05
719	50	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.14168	0.136744328	2.44E-05
719	50	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.17833	0.185548496	5.21E-05
719	75	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.11638	0.113962987	5.84E-06
719	75	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.15112	0.146294161	2.33E-05
719	75	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.19619	0.198515892	5.41E-06
719	100	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.11802	0.119544668	2.32E-06
719	100	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.15674	0.153452568	1.08E-05
719	100	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.20843	0.208225203	4.19E-08
719	120	2	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.11807	0.123213712	2.65E-05
719	120	2.4	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.15943	0.158157849	1.62E-06
719	120	3	0.06676811	0.06766503	0.17089777	0	0.07191207	0.13995903	0.09845456	0.68967434	0.21515	0.214606071	2.96E-07
720	10	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.08575	0.077154922	7.39E-05
720	10	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.10186	0.09947443	5.69E-06
720	10	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.1187	0.135648918	0.00028727
720	25	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.09557	0.089182777	4.08E-05
720	25	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.11735	0.114953041	5.75E-06
720	25	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.14241	0.156777763	0.00020643
720	50	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.10447	0.099491749	2.48E-05
720	50	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.13303	0.128236504	2.30E-05
720	50	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.16807	0.174880161	4.64E-05
720	75	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.10848	0.106051216	5.90E-06
720	75	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.14132	0.136682269	2.15E-05
720	75	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.18404	0.186384125	5.49E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
720	100	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.10973	0.110950251	1.49E-06
720	100	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.14624	0.142985563	1.06E-05
720	100	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.19523	0.194978542	6.32E-08
720	120	2	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.1092	0.114159266	2.46E-05
720	120	2.4	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.14832	0.14712077	1.44E-06
720	120	3	0.03486351	0.04205367	0.25934245	0	0.10822203	0.13774618	0.09582657	0.65820522	0.20106	0.200612179	2.01E-07
721	10	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.08117	0.072197437	8.05E-05
721	10	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.09529	0.09213562	9.95E-06
721	10	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.11	0.124045372	0.00019727
721	25	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.0916	0.085251427	4.03E-05
721	25	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.11109	0.108752937	5.46E-06
721	25	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.13342	0.146447144	0.00016971
721	50	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.10141	0.096651478	2.26E-05
721	50	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.1275	0.123292007	1.77E-05
721	50	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.1596	0.166008644	4.11E-05
721	75	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.10626	0.103987401	5.16E-06
721	75	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.13668	0.132647006	1.63E-05
721	75	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.17639	0.178605131	4.91E-06
721	100	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.10817	0.109523621	1.83E-06
721	100	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.14238	0.139699335	7.19E-06
721	100	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.18813	0.188094349	1.27E-09
721	120	2	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.10848	0.113177872	2.21E-05
721	120	2.4	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.14538	0.144353382	1.05E-06
721	120	3	0.07715917	0.0613913	0.25059694	0	0.10883675	0.14746246	0.07548304	0.66821775	0.19497	0.19435579	3.77E-07
722	10	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.08465	0.075661182	8.08E-05
722	10	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.10005	0.097049809	9.00E-06
722	10	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.1161	0.131622314	0.00024094
722	25	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.09484	0.0883255	4.24E-05
722	25	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.11583	0.113316422	6.32E-06
722	25	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.13989	0.153651733	0.00018939
722	50	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.1042	0.099279594	2.42E-05
722	50	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.13204	0.127366238	2.18E-05
722	50	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.16605	0.172693672	4.41E-05
722	75	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.10876	0.106299451	6.05E-06
722	75	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.14091	0.136358986	2.07E-05
722	75	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.1829	0.184880282	3.92E-06
722	100	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.11026	0.111556406	1.68E-06
722	100	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.14611	0.143098135	9.07E-06
722	100	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.19428	0.194013023	7.13E-08
722	120	2	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.11012	0.115014378	2.40E-05
722	120	2.4	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.14879	0.14753209	1.58E-06
722	120	3	0.073564	0.05797004	0.21029823	0	0.09842975	0.13854689	0.10110332	0.66192005	0.2005	0.200009632	2.40E-07
723	10	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.07865	0.069253254	8.83E-05
723	10	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.09162	0.087870884	1.41E-05
723	10	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10517	0.117485905	0.00015168
723	25	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.08945	0.08302597	4.13E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
723	25	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10797	0.10532383	7.00E-06
723	25	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.12869	0.140853195	0.00014794
723	50	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10018	0.095227013	2.45E-05
723	50	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.1248	0.120785122	1.61E-05
723	50	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.15514	0.161510105	4.06E-05
723	75	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10543	0.103161875	5.14E-06
723	75	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.13499	0.130842972	1.72E-05
723	75	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.17282	0.174959539	4.58E-06
723	100	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10789	0.109170752	1.64E-06
723	100	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.14123	0.138461046	7.67E-06
723	100	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.18486	0.185148001	8.29E-08
723	120	2	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.10875	0.113156223	1.94E-05
723	120	2.4	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.14457	0.143510898	1.12E-06
723	120	3	0.03615039	0.06784972	0.3519082	0	0.06160837	0.14344587	0.07741625	0.71752951	0.19246	0.191895088	3.19E-07
724	10	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.07777	0.068841934	7.97E-05
724	10	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.09069	0.087372971	1.10E-05
724	10	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.10422	0.116749859	0.000157
724	25	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.08821	0.082116737	3.71E-05
724	25	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.10651	0.104189453	5.38E-06
724	25	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.12696	0.139285851	0.00015193
724	50	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.09855	0.093824196	2.23E-05
724	50	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.12288	0.119005623	1.50E-05
724	50	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.1526	0.15913744	4.27E-05
724	75	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.10365	0.101409798	5.02E-06
724	75	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.1326	0.128634834	1.57E-05
724	75	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.16972	0.172000923	5.20E-06
724	100	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.10592	0.107150955	1.52E-06
724	100	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.1388	0.135908699	8.36E-06
724	100	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.18148	0.181738377	6.68E-08
724	120	2	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.10661	0.110948086	1.88E-05
724	120	2.4	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.14184	0.140721862	1.25E-06
724	120	3	0.09354729	0.04951025	0.28439781	0	0.08268045	0.16046899	0.10029955	0.656551	0.18882	0.188169758	4.23E-07
725	10	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.10442	0.093434525	0.00012068
725	10	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.12414	0.119975471	1.73E-05
725	10	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.14461	0.162990856	0.00033786
725	25	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.11609	0.108501816	5.76E-05
725	25	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.14238	0.139363785	9.10E-06
725	25	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.17247	0.189310989	0.00028362
725	50	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.12706	0.121460552	3.14E-05
725	50	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.16156	0.156028728	3.06E-05
725	50	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.20361	0.211968212	6.99E-05
725	75	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.1322	0.129731687	6.09E-06
725	75	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.17219	0.16665521	3.06E-05
725	75	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.22344	0.226393267	8.72E-06
725	100	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.1342	0.135915194	2.94E-06
725	100	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.17846	0.174598732	1.49E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
725	100	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.23732	0.237182112	1.90E-08
725	120	2	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.13407	0.1399786	3.49E-05
725	120	2.4	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.18135	0.179813472	2.36E-06
725	120	3	0.05338345	0.03430663	0.17814583	0	0.0418247	0.16325382	0.06127019	0.73365129	0.24491	0.244258976	4.24E-07
726	10	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.09006	0.080077457	9.97E-05
726	10	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.10625	0.102483559	1.42E-05
726	10	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.1231	0.138528156	0.00023803
726	25	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.10098	0.093971405	4.91E-05
726	25	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.12287	0.120235252	6.94E-06
726	25	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.14805	0.162510262	0.0002091
726	50	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.11126	0.106007919	2.76E-05
726	50	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.14047	0.135635929	2.34E-05
726	50	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.17614	0.183336029	5.18E-05
726	75	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.11633	0.113726298	6.78E-06
726	75	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.15016	0.145514819	2.16E-05
726	75	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.19412	0.196694539	6.63E-06
726	100	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.11817	0.119531679	1.85E-06
726	100	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.15621	0.152939501	1.07E-05
726	100	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.20685	0.206729298	1.46E-08
726	120	2	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.11835	0.123358035	2.51E-05
726	120	2.4	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.15917	0.157829515	1.80E-06
726	120	3	0.05865419	0.0620523	0.20925518	0	0.06688903	0.15693304	0.09257928	0.68359865	0.21392	0.213323402	3.56E-07
727	10	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.08979	0.079428005	0.00010737
727	10	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.10542	0.101184654	1.79E-05
727	10	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.12165	0.135930347	0.00020393
727	25	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.10112	0.094075317	4.96E-05
727	25	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.12255	0.119819603	7.46E-06
727	25	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.1471	0.161020851	0.00019379
727	50	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.11225	0.106904163	2.86E-05
727	50	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.14079	0.136151161	2.15E-05
727	50	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.1759	0.182972336	5.00E-05
727	75	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.11773	0.115186844	6.47E-06
727	75	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.15124	0.146692492	2.07E-05
727	75	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.19447	0.197147713	7.17E-06
727	100	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.12008	0.121438904	1.85E-06
727	100	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.15765	0.154645395	9.03E-06
727	100	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.20779	0.207835531	2.07E-09
727	120	2	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.12054	0.125564369	2.52E-05
727	120	2.4	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.16127	0.159891526	1.90E-06
727	120	3	0.05827836	0.08550383	0.20382153	0	0.05003322	0.15766898	0.08435345	0.70794436	0.21556	0.2148875	4.52E-07
728	10	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.10248	0.090858364	0.00013506
728	10	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.12109	0.116165352	2.43E-05
728	10	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.14038	0.156950951	0.0002746
728	25	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.11474	0.106726646	6.42E-05
728	25	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.13969	0.136497536	1.02E-05
728	25	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.16837	0.184479065	0.0002595

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
728	50	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.12645	0.120559978	3.47E-05
728	50	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.15982	0.154210262	3.15E-05
728	50	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.20025	0.208396225	6.64E-05
728	75	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.13235	0.129448814	8.42E-06
728	75	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.17098	0.165584335	2.91E-05
728	75	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.22081	0.223749275	8.64E-06
728	100	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.13442	0.136125183	2.91E-06
728	100	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.17772	0.174122467	1.29E-05
728	100	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.2355	0.235281382	4.78E-08
728	120	2	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.13479	0.140530634	3.30E-05
728	120	2.4	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.18131	0.179748527	2.44E-06
728	120	3	0.04803004	0.08216603	0.14730006	0	0.0286309	0.15975407	0.05895959	0.75265544	0.24371	0.242873478	7.00E-07
729	10	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.08245	0.073691177	7.67E-05
729	10	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.09707	0.094235516	8.03E-06
729	10	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.1123	0.127270985	0.00022413
729	25	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.09272	0.086437759	3.95E-05
729	25	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.11268	0.110545425	4.56E-06
729	25	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.13573	0.149330711	0.00018498
729	50	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.10231	0.097526073	2.29E-05
729	50	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.12901	0.124716473	1.84E-05
729	50	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.16177	0.168463573	4.48E-05
729	75	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.10701	0.104642626	5.60E-06
729	75	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.13795	0.133813133	1.71E-05
729	75	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.17842	0.180743993	5.40E-06
729	100	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.10872	0.109989061	1.61E-06
729	100	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.14352	0.14064537	8.26E-06
729	100	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.19011	0.18997776	1.75E-08
729	120	2	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.10875	0.113513422	2.27E-05
729	120	2.4	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.14641	0.145150765	1.59E-06
729	120	3	0.04472584	0.10265006	0.20663233	0	0.08249617	0.14170868	0.11962674	0.65616842	0.19662	0.196058798	3.15E-07
730	10	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.08965	0.079406357	0.00010493
730	10	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.10522	0.101141357	1.66E-05
730	10	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.12138	0.135908699	0.00021108
730	25	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.10106	0.094075317	4.88E-05
730	25	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.12245	0.119810944	6.96E-06
730	25	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.14691	0.161081467	0.00020083
730	50	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.11224	0.106934471	2.81E-05
730	50	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.14075	0.136194458	2.08E-05
730	50	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.17589	0.183097897	5.20E-05
730	75	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.11772	0.1152388	6.16E-06
730	75	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.15135	0.146773313	2.09E-05
730	75	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.1946	0.197309354	7.34E-06
730	100	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.12017	0.121493025	1.75E-06
730	100	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.15774	0.154747143	8.96E-06
730	100	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.20792	0.208030367	1.22E-08
730	120	2	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.12058	0.125631118	2.55E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
730	120	2.4	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.16133	0.160012396	1.74E-06
730	120	3	0.049737	0.07492377	0.24059467	0	0.0886366	0.16448418	0.03130701	0.7155722	0.21567	0.215103984	3.20E-07
731	10	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.09404	0.084233952	9.62E-05
731	10	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.11182	0.108523464	1.09E-05
731	10	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.13035	0.147966862	0.00031035
731	25	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.1047	0.097599678	5.04E-05
731	25	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.12851	0.125759926	7.56E-06
731	25	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.15619	0.171472702	0.00023356
731	50	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.11436	0.109090652	2.78E-05
731	50	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.14585	0.140567436	2.79E-05
731	50	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.18442	0.191653347	5.23E-05
731	75	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.11888	0.116396268	6.17E-06
731	75	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.1549	0.149985936	2.41E-05
731	75	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.20184	0.204499512	7.07E-06
731	100	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.1203	0.121865377	2.45E-06
731	100	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.16031	0.157028885	1.08E-05
731	100	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.21416	0.21410058	3.53E-09
731	120	2	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.11994	0.125452518	3.04E-05
731	120	2.4	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.16286	0.161654067	1.45E-06
731	120	3	0.04445598	0.04342262	0.21647907	0	0.10148881	0.14297701	0.0513086	0.70422557	0.22085	0.220397019	2.05E-07
732	10	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.0924	0.083108234	8.63E-05
732	10	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.11021	0.107376099	8.03E-06
732	10	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.12881	0.14690609	0.00032747
732	25	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.10253	0.095651321	4.73E-05
732	25	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.12624	0.123603745	6.95E-06
732	25	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.15372	0.169074059	0.00023575
732	50	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.11156	0.106354294	2.71E-05
732	50	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.1425	0.137437077	2.56E-05
732	50	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.18093	0.188020744	5.03E-05
732	75	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.11553	0.113146121	5.68E-06
732	75	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.15128	0.146207568	2.57E-05
732	75	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.19738	0.200019735	6.97E-06
732	100	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.11659	0.118213291	2.64E-06
732	100	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.15599	0.152744665	1.05E-05
732	100	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.20904	0.208959084	6.55E-09
732	120	2	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.11613	0.121534157	2.92E-05
732	120	2.4	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.15807	0.157032132	1.08E-06
732	120	3	0.08544088	0.02973498	0.15866616	0	0.11768596	0.14184866	0.08249679	0.6579686	0.21531	0.214815338	2.45E-07
733	10	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.09079	0.081701088	8.26E-05
733	10	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.10813	0.105427742	7.30E-06
733	10	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.1262	0.143983555	0.00031625
733	25	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.10096	0.094222527	4.54E-05
733	25	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.12416	0.121603432	6.54E-06
733	25	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.151	0.166086578	0.0002276
733	50	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.11002	0.104955807	2.56E-05
733	50	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.14049	0.135428104	2.56E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
733	50	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.17801	0.184994297	4.88E-05
733	75	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.11419	0.111763509	5.89E-06
733	75	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.1492	0.144218801	2.48E-05
733	75	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.19456	0.196997617	5.94E-06
733	100	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.11533	0.116849442	2.31E-06
733	100	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.15403	0.150776825	1.06E-05
733	100	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.20603	0.20595645	5.41E-09
733	120	2	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.1148	0.120182935	2.90E-05
733	120	2.4	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.15612	0.155074755	1.09E-06
733	120	3	0.05341329	0.03987812	0.20914287	0	0.11951223	0.14107006	0.06726856	0.67214915	0.21237	0.211818838	3.04E-07
734	10	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.09124	0.081766033	8.98E-05
734	10	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.10855	0.10518961	1.13E-05
734	10	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.12656	0.143139267	0.00027487
734	25	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.10141	0.09457756	4.67E-05
734	25	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.12443	0.121698685	7.46E-06
734	25	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.15105	0.165627632	0.00021251
734	50	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.11071	0.1055966	2.61E-05
734	50	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.14096	0.135869732	2.59E-05
734	50	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.17793	0.184916363	4.88E-05
734	75	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.11495	0.11260924	5.48E-06
734	75	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.14978	0.144885572	2.40E-05
734	75	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.19492	0.197185237	5.13E-06
734	100	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.11636	0.117845268	2.21E-06
734	100	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.15487	0.151621113	1.06E-05
734	100	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.20653	0.20635478	3.07E-08
734	120	2	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.11605	0.121281592	2.74E-05
734	120	2.4	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.15743	0.156041718	1.93E-06
734	120	3	0.07176119	0.01156285	0.21675467	0	0.09861349	0.16339123	0.09742937	0.64056591	0.21277	0.21236546	1.64E-07
735	10	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.08462	0.075877666	7.64E-05
735	10	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.09998	0.097266293	7.36E-06
735	10	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.11597	0.131752205	0.00024908
735	25	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.09484	0.088524666	3.99E-05
735	25	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.11573	0.113480949	5.06E-06
735	25	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.1398	0.153764305	0.000195
735	50	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.10432	0.099483089	2.34E-05
735	50	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.13208	0.127535095	2.07E-05
735	50	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.16598	0.172801914	4.65E-05
735	75	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.10892	0.106504389	5.84E-06
735	75	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.14107	0.1365264	2.06E-05
735	75	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.18287	0.184975535	4.43E-06
735	100	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.1105	0.111764231	1.60E-06
735	100	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.14622	0.143264828	8.73E-06
735	100	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.19415	0.194108276	1.74E-09
735	120	2	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.11037	0.115223646	2.36E-05
735	120	2.4	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.14886	0.147703473	1.34E-06
735	120	3	0.06849728	0.05054154	0.23135743	0	0.12376996	0.14855036	0.07004803	0.65763165	0.20053	0.200110658	1.76E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
736	10	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.08977	0.08031559	8.94E-05
736	10	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.10609	0.10287323	1.03E-05
736	10	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.12304	0.139329147	0.00026534
736	25	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.10062	0.093858833	4.57E-05
736	25	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.1227	0.120287209	5.82E-06
736	25	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.14804	0.162917252	0.00022133
736	50	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.11074	0.105600929	2.64E-05
736	50	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.14016	0.135358829	2.31E-05
736	50	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.17608	0.18332304	5.25E-05
736	75	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.11566	0.113117256	6.47E-06
736	75	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.14971	0.14500103	2.22E-05
736	75	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.19402	0.196391462	5.62E-06
736	100	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.11734	0.118773985	2.06E-06
736	100	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.15534	0.152233763	9.65E-06
736	100	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.20626	0.206190252	4.86E-09
736	120	2	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.11736	0.122495707	2.64E-05
736	120	2.4	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.15822	0.156994247	1.50E-06
736	120	3	0.04558555	0.03833926	0.26687674	0	0.06020283	0.14439895	0.08625431	0.7091439	0.21307	0.212625241	1.98E-07
737	10	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.08524	0.075336456	9.81E-05
737	10	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.09973	0.095707607	1.62E-05
737	10	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.11474	0.128158569	0.00018006
737	25	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.09645	0.089762955	4.47E-05
737	25	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.11662	0.114000511	6.86E-06
737	25	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.13944	0.152681885	0.00017535
737	50	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.10755	0.102444592	2.61E-05
737	50	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.13441	0.130102596	1.86E-05
737	50	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.16735	0.174269676	4.79E-05
737	75	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.11297	0.11066377	5.32E-06
737	75	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.14489	0.140544345	1.89E-05
737	75	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.18579	0.188254547	6.07E-06
737	100	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.11547	0.116873255	1.97E-06
737	100	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.15139	0.148434467	8.74E-06
737	100	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.19854	0.198823299	8.03E-08
737	120	2	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.11616	0.120987535	2.33E-05
737	120	2.4	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.15476	0.153649569	1.23E-06
737	120	3	0.06848763	0.05567489	0.27486779	0	0.07281284	0.1621553	0.05842148	0.70661038	0.20643	0.205809601	3.85E-07
738	10	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.06808	0.060399055	5.90E-05
738	10	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.07897	0.076440525	6.40E-06
738	10	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.09038	0.101899052	0.00013269
738	25	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.07795	0.072522163	2.95E-05
738	25	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.09357	0.091797905	3.14E-06
738	25	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.11124	0.122374115	0.00012397
738	50	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.0875	0.08330307	1.76E-05
738	50	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.10888	0.105414753	1.20E-05
738	50	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.13476	0.140532799	3.33E-05
738	75	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.09236	0.09032004	4.16E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
738	75	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.11769	0.114280497	1.16E-05
738	75	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.15025	0.152367261	4.48E-06
738	100	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.09465	0.095640497	9.81E-07
738	100	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.12354	0.121010265	6.40E-06
738	100	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.16136	0.161341248	3.52E-10
738	120	2	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.09537	0.099171352	1.45E-05
738	120	2.4	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.12615	0.125474167	4.57E-07
738	120	3	0.14169664	0.05397593	0.29493129	0	0.1365742	0.147607	0.08511544	0.63070336	0.16772	0.167291673	1.83E-07
739	10	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.08996	0.079731083	0.00010463
739	10	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.106	0.101963997	1.63E-05
739	10	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.12272	0.137857056	0.00022913
739	25	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.10108	0.093832855	5.25E-05
739	25	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.12291	0.120062065	8.11E-06
739	25	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.14801	0.162345734	0.00020551
739	50	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.11158	0.106155128	2.94E-05
739	50	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.14087	0.135848083	2.52E-05
739	50	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.17649	0.183691063	5.19E-05
739	75	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.11683	0.114084218	7.54E-06
739	75	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.15076	0.145996857	2.27E-05
739	75	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.1947	0.197407494	7.33E-06
739	100	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.11871	0.120049076	1.79E-06
739	100	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.15673	0.15363225	9.60E-06
739	100	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.2077	0.207725124	6.31E-10
739	120	2	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.11893	0.123980427	2.55E-05
739	120	2.4	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.15983	0.158662979	1.36E-06
739	120	3	0.04120989	0.0730822	0.23455035	0	0.07904584	0.15078953	0.05730094	0.71286369	0.21497	0.214526693	1.97E-07
740	10	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.10082	0.089927483	0.00011865
740	10	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.12006	0.115970516	1.67E-05
740	10	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.14006	0.158358097	0.00033482
740	25	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.11198	0.104172134	6.10E-05
740	25	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.13769	0.134375992	1.10E-05
740	25	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.16734	0.183483238	0.0002606
740	50	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.12219	0.116416473	3.33E-05
740	50	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.15594	0.150179329	3.32E-05
740	50	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.19744	0.2050667	5.82E-05
740	75	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.12697	0.124207013	7.63E-06
740	75	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.16574	0.160244395	3.02E-05
740	75	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.21589	0.21879612	8.45E-06
740	100	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.12852	0.130039816	2.31E-06
740	100	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.1715	0.167757835	1.40E-05
740	100	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.229	0.22904664	2.18E-09
740	120	2	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.12825	0.133866533	3.15E-05
740	120	2.4	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.17386	0.172682126	1.39E-06
740	120	3	0.02333511	0.0550832	0.19745543	0	0.05860583	0.14599783	0.06149913	0.73389722	0.23643	0.235770996	4.34E-07
741	10	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.09419	0.083952522	0.00010481
741	10	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.1112	0.107419395	1.43E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
741	10	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.12884	0.145109272	0.00026469
741	25	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.10561	0.098456955	5.12E-05
741	25	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.12855	0.125985069	6.58E-06
741	25	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.15489	0.170217094	0.00023492
741	50	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.11638	0.111082306	2.81E-05
741	50	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.14701	0.142117462	2.39E-05
741	50	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.1844	0.192030029	5.82E-05
741	75	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.12173	0.119181697	6.49E-06
741	75	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.15724	0.152459628	2.29E-05
741	75	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.20328	0.2060149	7.48E-06
741	100	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.12362	0.125266342	2.71E-06
741	100	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.1633	0.160228519	9.43E-06
741	100	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.21666	0.216516542	2.06E-08
741	120	2	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.12384	0.129269854	2.95E-05
741	120	2.4	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.16666	0.165343316	1.73E-06
741	120	3	0.08402989	0.04739793	0.1848104	0	0.05358494	0.15329751	0.07859277	0.71452478	0.22412	0.223427796	4.79E-07
742	10	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.08437	0.074925137	8.92E-05
742	10	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.09923	0.095729256	1.23E-05
742	10	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.11471	0.129132748	0.00020802
742	25	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.09499	0.088316841	4.45E-05
742	25	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.11535	0.112831497	6.34E-06
742	25	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.13876	0.152214279	0.00018102
742	50	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.105	0.099989662	2.51E-05
742	50	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.13222	0.127734261	2.01E-05
742	50	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.16567	0.17231266	4.41E-05
742	75	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.1099	0.107491557	5.80E-06
742	75	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.1416	0.137323062	1.83E-05
742	75	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.18287	0.185246862	5.65E-06
742	100	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.11168	0.113149729	2.16E-06
742	100	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.14741	0.144539919	8.24E-06
742	100	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.19502	0.194982872	1.38E-09
742	120	2	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.11187	0.116881553	2.51E-05
742	120	2.4	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.15034	0.149296435	1.09E-06
742	120	3	0.04645713	0.04621852	0.29417478	0	0.09672845	0.15045585	0.06380003	0.68901567	0.20182	0.201402346	1.74E-07
743	10	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.08357	0.074492168	8.24E-05
743	10	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.0983	0.095274639	9.15E-06
743	10	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.1137	0.12869978	0.00022499
743	25	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.09414	0.087598114	4.28E-05
743	25	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.11442	0.112060814	5.57E-06
743	25	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.13777	0.15138298	0.00018531
743	50	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.10412	0.099028473	2.59E-05
743	50	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.13124	0.126677818	2.08E-05
743	50	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.1645	0.171143646	4.41E-05
743	75	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.10889	0.106374499	6.33E-06
743	75	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.14045	0.13607034	1.92E-05
743	75	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.18166	0.183841159	4.76E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
743	100	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.11073	0.111904945	1.38E-06
743	100	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.14621	0.143134937	9.46E-06
743	100	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.19367	0.193398209	7.39E-08
743	120	2	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.11078	0.115548372	2.27E-05
743	120	2.4	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.14898	0.147797283	1.40E-06
743	120	3	0.05750724	0.02444382	0.31975748	0	0.09714096	0.14060044	0.05745552	0.70480308	0.2002	0.199688514	2.62E-07
744	10	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.0827	0.073994255	7.58E-05
744	10	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.09787	0.095079803	7.79E-06
744	10	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.11372	0.129176044	0.00023889
744	25	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.09256	0.086134682	4.13E-05
744	25	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.11313	0.110701294	5.90E-06
744	25	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.13688	0.15043045	0.00018361
744	50	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.10153	0.09662117	2.41E-05
744	50	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.1288	0.124179592	2.13E-05
744	50	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.1621	0.168745003	4.42E-05
744	75	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.10578	0.103317744	6.06E-06
744	75	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.13732	0.132794215	2.05E-05
744	75	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.17829	0.180449575	4.66E-06
744	100	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.10711	0.108343782	1.52E-06
744	100	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.14213	0.139242554	8.34E-06
744	100	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.18928	0.189215736	4.13E-09
744	120	2	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.10696	0.111648051	2.20E-05
744	120	2.4	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.14472	0.143480229	1.54E-06
744	120	3	0.04753444	0.03992917	0.27193361	0	0.09633241	0.13979881	0.11447807	0.64939071	0.19519	0.194976377	4.56E-08
745	10	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.08338	0.074297333	8.25E-05
745	10	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.0982	0.095079803	9.74E-06
745	10	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.11369	0.128548241	0.00022077
745	25	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.09375	0.087199783	4.29E-05
745	25	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.11406	0.111645164	5.83E-06
745	25	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.13746	0.150958672	0.00018221
745	50	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.10346	0.098456955	2.50E-05
745	50	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.13061	0.126024036	2.10E-05
745	50	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.16381	0.170403271	4.35E-05
745	75	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.10816	0.10568175	6.14E-06
745	75	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.13955	0.135262133	1.84E-05
745	75	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.1807	0.182903061	4.85E-06
745	100	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.10986	0.111112614	1.57E-06
745	100	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.14517	0.142208385	8.77E-06
745	100	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.19247	0.192291975	3.17E-08
745	120	2	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.10984	0.114687848	2.35E-05
745	120	2.4	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.14795	0.146783415	1.36E-06
745	120	3	0.06316985	0.07865558	0.21754633	0	0.10689034	0.14253447	0.08248756	0.66808763	0.19876	0.198472595	8.26E-08
746	10	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.09009	0.080488777	9.22E-05
746	10	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.10685	0.103436089	1.17E-05
746	10	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.12437	0.140563107	0.00026222
746	25	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.10054	0.093642349	4.76E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
746	25	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.12312	0.120365143	7.59E-06
746	25	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.14927	0.163540726	0.00020365
746	50	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.11015	0.104994774	2.66E-05
746	50	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.14007	0.13493885	2.63E-05
746	50	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.17644	0.183370667	4.80E-05
746	75	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.11449	0.112236888	5.08E-06
746	75	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.149	0.144239006	2.27E-05
746	75	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.19366	0.19601045	5.52E-06
746	100	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.11606	0.117659092	2.56E-06
746	100	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.15442	0.151201134	1.04E-05
746	100	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.20572	0.20547369	6.07E-08
746	120	2	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.11583	0.121222059	2.91E-05
746	120	2.4	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.15704	0.155771112	1.61E-06
746	120	3	0.06246313	0.07290625	0.16077455	0	0.08562871	0.13738071	0.10246617	0.67452441	0.21206	0.211688948	1.38E-07
747	10	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.08613	0.076938438	8.45E-05
747	10	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.10196	0.098651791	1.09E-05
747	10	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.11842	0.133700562	0.0002335
747	25	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.09624	0.08969368	4.29E-05
747	25	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.11757	0.114996338	6.62E-06
747	25	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.14209	0.15586853	0.00018985
747	50	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.10555	0.10069973	2.35E-05
747	50	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.13383	0.129115429	2.22E-05
747	50	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.16824	0.175014381	4.59E-05
747	75	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.11007	0.107739792	5.43E-06
747	75	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.14268	0.138137042	2.06E-05
747	75	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.18515	0.187247175	4.40E-06
747	100	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.11154	0.113015509	2.18E-06
747	100	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.14782	0.144903612	8.51E-06
747	100	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.19664	0.196409502	5.31E-08
747	120	2	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.11146	0.116482862	2.52E-05
747	120	2.4	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.15048	0.149357772	1.26E-06
747	120	3	0.04500724	0.02611432	0.27636247	0	0.10785575	0.16159426	0.08638105	0.64416894	0.20292	0.20243245	2.38E-07
748	10	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.08154	0.072933483	7.41E-05
748	10	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.09612	0.093304634	7.93E-06
748	10	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.11136	0.126123619	0.00021796
748	25	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.09155	0.08534668	3.85E-05
748	25	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.11141	0.109229202	4.76E-06
748	25	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.13435	0.147668114	0.00017737
748	50	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.10085	0.096131916	2.23E-05
748	50	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.12742	0.123023567	1.93E-05
748	50	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.15992	0.166316051	4.09E-05
748	75	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.10536	0.103046417	5.35E-06
748	75	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.13603	0.131856117	1.74E-05
748	75	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.17616	0.178261642	4.42E-06
748	100	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.10689	0.10823554	1.81E-06
748	100	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.14134	0.138493519	8.10E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
748	100	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.18745	0.187234907	4.63E-08
748	120	2	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.10689	0.111649855	2.27E-05
748	120	2.4	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.14415	0.142865054	1.65E-06
748	120	3	0.04513807	0.09975393	0.20314588	0	0.11443981	0.1480802	0.10515265	0.63232733	0.19362	0.193130851	2.39E-07
749	10	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.0976	0.088087368	9.05E-05
749	10	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.11699	0.114173698	7.93E-06
749	10	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.1374	0.156777763	0.0003755
749	25	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.10764	0.100639114	4.90E-05
749	25	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.13312	0.130444641	7.16E-06
749	25	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.16288	0.179127579	0.00026398
749	50	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.11674	0.11129446	2.97E-05
749	50	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.14964	0.144247665	2.91E-05
749	50	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.19068	0.198095913	5.50E-05
749	75	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.12071	0.118015569	7.26E-06
749	75	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.15825	0.152958984	2.80E-05
749	75	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.20752	0.21005305	6.42E-06
749	100	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.12118	0.123010578	3.35E-06
749	100	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.16312	0.159429693	1.36E-05
749	100	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.21893	0.218934669	2.18E-11
749	120	2	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.12063	0.126278766	3.19E-05
749	120	2.4	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.16491	0.163656545	1.57E-06
749	120	3	0.0384633	0.03548381	0.17189159	0	0.10104567	0.1490273	0.08644279	0.66348424	0.2254	0.224739329	4.36E-07
750	10	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.09834	0.088303852	0.00010072
750	10	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.11733	0.113935566	1.15E-05
750	10	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.13714	0.155652046	0.0003427
750	25	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.10895	0.101747513	5.19E-05
750	25	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.13417	0.131301918	8.23E-06
750	25	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.16334	0.179361382	0.00025668
750	50	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.11857	0.113238487	2.84E-05
750	50	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.15156	0.146139736	2.94E-05
750	50	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.19205	0.199611301	5.72E-05
750	75	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.12309	0.120532557	6.54E-06
750	75	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.16078	0.155542361	2.74E-05
750	75	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.20961	0.212460353	8.12E-06
750	100	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.12429	0.125974245	2.84E-06
750	100	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.16609	0.162555723	1.25E-05
750	100	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.22215	0.222036886	1.28E-08
750	120	2	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.12386	0.129538655	3.22E-05
750	120	2.4	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.16827	0.16713833	1.28E-06
750	120	3	0.03889817	0.02571576	0.21091964	0	0.08553061	0.1591481	0.06847206	0.68684923	0.22895	0.228305904	4.15E-07
751	10	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.07537	0.066806984	7.33E-05
751	10	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.08786	0.084818459	9.25E-06
751	10	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.10095	0.113480949	0.00015702
751	25	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.0856	0.079692116	3.49E-05
751	25	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.10337	0.101184654	4.78E-06
751	25	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.12332	0.135432434	0.00014671

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
751	50	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.09562	0.091061859	2.08E-05
751	50	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.1193	0.115624142	1.35E-05
751	50	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.14847	0.15478178	3.98E-05
751	75	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.10048	0.098433863	4.19E-06
751	75	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.12879	0.124980583	1.45E-05
751	75	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.16504	0.167327754	5.23E-06
751	100	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.10282	0.104014101	1.43E-06
751	100	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.13471	0.132061777	7.01E-06
751	100	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.17643	0.176813364	1.47E-07
751	120	2	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.10347	0.107706237	1.79E-05
751	120	2.4	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.13761	0.136747575	7.44E-07
751	120	3	0.05737509	0.09330187	0.28799512	0	0.0784639	0.14250403	0.11204987	0.6669822	0.18348	0.183089598	1.52E-07
752	10	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.09781	0.086442089	0.00012923
752	10	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.11544	0.110536766	2.40E-05
752	10	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.13373	0.149287415	0.00024203
752	25	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.1097	0.101834106	6.19E-05
752	25	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.13346	0.130210838	1.06E-05
752	25	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.16076	0.175871658	0.00022836
752	50	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.12102	0.1152388	3.34E-05
752	50	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.1528	0.147365036	2.95E-05
752	50	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.19143	0.199052773	5.81E-05
752	75	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.12669	0.123875071	7.92E-06
752	75	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.16348	0.158402837	2.58E-05
752	75	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.21125	0.213967082	7.38E-06
752	100	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.12873	0.130366707	2.68E-06
752	100	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.16999	0.166707888	1.08E-05
752	100	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.22535	0.22517807	2.96E-08
752	120	2	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.12898	0.134653091	3.22E-05
752	120	2.4	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.17361	0.172180605	2.04E-06
752	120	3	0.0528084	0.02508153	0.25963405	0	0.03965884	0.1593537	0.04534563	0.75564182	0.23319	0.23256162	3.95E-07
753	10	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.09484	0.084212303	0.00011295
753	10	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.11217	0.107917309	1.81E-05
753	10	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.13016	0.146234989	0.00025841
753	25	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.10613	0.098638802	5.61E-05
753	25	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.12949	0.126461334	9.17E-06
753	25	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.15627	0.171316833	0.00022641
753	50	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.11671	0.111181889	3.06E-05
753	50	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.14776	0.142524452	2.74E-05
753	50	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.18563	0.193099461	5.58E-05
753	75	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.1219	0.11921922	7.19E-06
753	75	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.15791	0.152829094	2.58E-05
753	75	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.20457	0.207059797	6.20E-06
753	100	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.12376	0.125257683	2.24E-06
753	100	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.16397	0.160566235	1.16E-05
753	100	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.21772	0.217536182	3.38E-08
753	120	2	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.12377	0.129235578	2.99E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
753	120	2.4	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.16684	0.165655414	1.40E-06
753	120	3	0.05212388	0.08790953	0.15210482	0	0.05492202	0.14600869	0.08692136	0.71214794	0.22488	0.224429035	2.03E-07
754	10	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.09285	0.082610321	0.00010485
754	10	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.10987	0.106098843	1.42E-05
754	10	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.12758	0.144005203	0.00026979
754	25	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.1039	0.096603851	5.32E-05
754	25	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.12697	0.12407135	8.40E-06
754	25	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.1534	0.168407288	0.00022522
754	50	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.11417	0.10871397	2.98E-05
754	50	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.14475	0.139623566	2.63E-05
754	50	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.18222	0.189536133	5.35E-05
754	75	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.11906	0.11646843	6.72E-06
754	75	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.15461	0.14957606	2.53E-05
754	75	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.20063	0.203056285	5.89E-06
754	100	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.1209	0.122298346	1.96E-06
754	100	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.1605	0.157048368	1.19E-05
754	100	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.21304	0.213193512	2.36E-08
754	120	2	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.12094	0.126132639	2.70E-05
754	120	2.4	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.16326	0.161958949	1.69E-06
754	120	3	0.05934532	0.04960693	0.21719049	0	0.06451933	0.13958829	0.07148655	0.72440583	0.22016	0.219859417	9.03E-08
755	10	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.08309	0.073366451	9.45E-05
755	10	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.09689	0.093066502	1.46E-05
755	10	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.11133	0.124521637	0.00017402
755	25	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.0944	0.087797279	4.36E-05
755	25	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.11399	0.111411362	6.65E-06
755	25	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.13593	0.149096909	0.00017337
755	50	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.10566	0.100569839	2.59E-05
755	50	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.13179	0.127639008	1.72E-05
755	50	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.16388	0.170810261	4.80E-05
755	75	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.11112	0.108882828	5.00E-06
755	75	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.14238	0.138183225	1.76E-05
755	75	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.18242	0.18491492	6.22E-06
755	100	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.11378	0.11516736	1.92E-06
755	100	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.14899	0.146165714	7.98E-06
755	100	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.19506	0.195597687	2.89E-07
755	120	2	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.11454	0.119338648	2.30E-05
755	120	2.4	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.15255	0.151452255	1.21E-06
755	120	3	0.08775483	0.06502049	0.26920224	0	0.05962945	0.14445179	0.06078828	0.73513048	0.20319	0.202668778	2.72E-07
756	10	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.08882	0.079276466	9.11E-05
756	10	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.10525	0.101855755	1.15E-05
756	10	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.12237	0.138333321	0.00025483
756	25	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.09928	0.092386742	4.75E-05
756	25	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.12147	0.118702545	7.66E-06
756	25	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.14702	0.161211357	0.00020139
756	50	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.10889	0.103704529	2.69E-05
756	50	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.13829	0.133241615	2.55E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
756	50	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.17401	0.180976353	4.85E-05
756	75	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.11338	0.11094087	5.95E-06
756	75	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.14733	0.142530225	2.30E-05
756	75	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.1913	0.19360892	5.33E-06
756	100	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.1149	0.116362352	2.14E-06
756	100	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.15272	0.14949091	1.04E-05
756	100	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.20322	0.203068552	2.29E-08
756	120	2	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.11475	0.119926763	2.68E-05
756	120	2.4	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.15533	0.154073517	1.58E-06
756	120	3	0.06089717	0.03347957	0.24060672	0	0.09420788	0.14544587	0.07875317	0.68159307	0.20965	0.209285975	1.33E-07
757	10	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.08648	0.076851845	9.27E-05
757	10	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.10154	0.097807503	1.39E-05
757	10	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.11712	0.131254292	0.00019978
757	25	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.0974	0.090862694	4.27E-05
757	25	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.11798	0.115619812	5.57E-06
757	25	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.14152	0.155219078	0.00018766
757	50	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.10805	0.103115692	2.43E-05
757	50	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.1355	0.131228313	1.82E-05
757	50	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.16916	0.176166077	4.91E-05
757	75	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.11335	0.111027463	5.39E-06
757	75	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.14554	0.141283277	1.81E-05
757	75	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.18701	0.189666023	7.05E-06
757	100	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.1156	0.116992321	1.94E-06
757	100	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.15177	0.148860941	8.46E-06
757	100	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.19969	0.199845104	2.41E-08
757	120	2	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.11606	0.120928001	2.37E-05
757	120	2.4	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.15513	0.153860641	1.61E-06
757	120	3	0.01766814	0.05489646	0.31351999	0	0.03584456	0.16329801	0.10724911	0.69360832	0.20723	0.206561883	4.46E-07
758	10	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.08505	0.075206566	9.69E-05
758	10	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.09988	0.095924091	1.56E-05
758	10	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.11532	0.129089451	0.0001896
758	25	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.09579	0.088922997	4.72E-05
758	25	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.11615	0.113454971	7.26E-06
758	25	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.1395	0.15275116	0.00017559
758	50	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.10618	0.100955181	2.73E-05
758	50	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.13336	0.128795033	2.08E-05
758	50	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.16688	0.173421059	4.28E-05
758	75	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.11116	0.1087183	5.96E-06
758	75	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.14299	0.138685468	1.85E-05
758	75	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.18431	0.186747818	5.94E-06
758	100	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.1134	0.114572029	1.37E-06
758	100	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.14884	0.146141901	7.28E-06
758	100	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.19663	0.196786184	2.44E-08
758	120	2	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.11367	0.118436631	2.27E-05
758	120	2.4	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.15221	0.15106078	1.32E-06
758	120	3	0.07533667	0.04051297	0.26406879	0	0.09805229	0.16131487	0.06172457	0.67890827	0.20392	0.203408432	2.62E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
759	10	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.08826	0.07786932	0.00010797
759	10	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.10351	0.099149704	1.90E-05
759	10	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.11937	0.133202648	0.00019134
759	25	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.09952	0.09240406	5.06E-05
759	25	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.12051	0.117672081	8.05E-06
759	25	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.14446	0.158068008	0.00018518
759	50	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.11049	0.105172291	2.83E-05
759	50	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.13851	0.133917046	2.11E-05
759	50	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.17286	0.179876614	4.92E-05
759	75	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.11596	0.11342322	6.44E-06
759	75	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.1489	0.144409307	2.02E-05
759	75	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.1914	0.193989932	6.71E-06
759	100	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.11836	0.119644251	1.65E-06
759	100	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.15543	0.152329016	9.62E-06
759	100	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.20447	0.204629402	2.54E-08
759	120	2	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.11888	0.123762139	2.38E-05
759	120	2.4	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.15892	0.157560714	1.85E-06
759	120	3	0.05224275	0.06062949	0.26126944	0	0.05941932	0.16425965	0.07050726	0.70581376	0.21222	0.211651063	3.24E-07
760	10	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.08446	0.075877666	7.37E-05
760	10	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.09964	0.097266293	5.63E-06
760	10	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.11552	0.131622314	0.00025928
760	25	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.09479	0.088628578	3.80E-05
760	25	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.11552	0.113567543	3.81E-06
760	25	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.13936	0.15370369	0.00020574
760	50	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.10442	0.099638958	2.29E-05
760	50	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.13194	0.127651997	1.84E-05
760	50	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.1658	0.172797585	4.90E-05
760	75	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.10905	0.106689123	5.57E-06
760	75	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.14102	0.136682269	1.88E-05
760	75	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.1827	0.185018832	5.38E-06
760	100	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.1107	0.11197855	1.63E-06
760	100	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.14637	0.143451004	8.52E-06
760	100	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.19442	0.194181881	5.67E-08
760	120	2	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.11062	0.115458171	2.34E-05
760	120	2.4	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.14918	0.147898308	1.64E-06
760	120	3	0.03838227	0.06313107	0.26236381	0	0.08448089	0.14091992	0.09688103	0.67771816	0.20067	0.200206272	2.15E-07
761	10	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.09198	0.081982517	9.99E-05
761	10	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.10861	0.105016422	1.29E-05
761	10	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.12591	0.142100143	0.00026212
761	25	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.10313	0.096040993	5.03E-05
761	25	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.12567	0.123040886	6.91E-06
761	25	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.15151	0.166536865	0.00022581
761	50	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.11364	0.108255024	2.90E-05
761	50	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.1436	0.138675365	2.43E-05
761	50	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.18024	0.187717667	5.59E-05
761	75	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.11884	0.116078758	7.62E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
761	75	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.15356	0.148698578	2.36E-05
761	75	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.19875	0.201275342	6.38E-06
761	100	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.12058	0.121962795	1.91E-06
761	100	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.1594	0.156227894	1.01E-05
761	100	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.21157	0.21145731	1.27E-08
761	120	2	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.12065	0.12583317	2.69E-05
761	120	2.4	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.16254	0.16118141	1.85E-06
761	120	3	0.02056288	0.04697059	0.28517167	0	0.08008552	0.15672289	0.04319927	0.71999232	0.21873	0.218158213	3.27E-07
762	10	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.09391	0.083627796	0.00010572
762	10	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.11127	0.107376099	1.52E-05
762	10	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.12939	0.145715427	0.00026652
762	25	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.10493	0.097608337	5.36E-05
762	25	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.12837	0.125326958	9.26E-06
762	25	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.15529	0.170113182	0.00021973
762	50	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.11514	0.109696808	2.96E-05
762	50	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.1462	0.140844536	2.87E-05
762	50	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.18406	0.19119873	5.10E-05
762	75	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.11996	0.117418073	6.46E-06
762	75	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.15596	0.150773938	2.69E-05
762	75	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.20228	0.204675585	5.74E-06
762	100	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.12166	0.123220568	2.44E-06
762	100	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.16177	0.158215218	1.26E-05
762	100	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.21495	0.214778175	2.95E-08
762	120	2	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.12159	0.127031048	2.96E-05
762	120	2.4	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.16445	0.163102706	1.82E-06
762	120	3	0.06834401	0.06664105	0.15932643	0	0.08040958	0.14265662	0.07212251	0.70481128	0.22196	0.221414495	2.98E-07
763	10	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.09467	0.08438549	0.00010577
763	10	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.1123	0.108350277	1.56E-05
763	10	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.13059	0.147144222	0.00027404
763	25	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.10557	0.098301086	5.28E-05
763	25	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.12917	0.12625351	8.51E-06
763	25	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.15623	0.171429405	0.00023102
763	50	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.11575	0.110320282	2.95E-05
763	50	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.14685	0.141675835	2.68E-05
763	50	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.18479	0.192350426	5.72E-05
763	75	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.12063	0.117983818	7.00E-06
763	75	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.15659	0.15153019	2.56E-05
763	75	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.2032	0.205732028	6.41E-06
763	100	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.12231	0.123740129	2.05E-06
763	100	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.16233	0.158907967	1.17E-05
763	100	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.21576	0.215748024	1.43E-10
763	120	2	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.12223	0.127519941	2.80E-05
763	120	2.4	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.16515	0.163755767	1.94E-06
763	120	3	0.05026916	0.05854439	0.18150953	0	0.08958631	0.1644377	0.06976791	0.67620808	0.22281	0.22232012	2.40E-07
764	10	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.09071	0.080748558	9.92E-05
764	10	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.107	0.103544331	1.19E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
764	10	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.12408	0.140303326	0.0002632
764	25	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.10185	0.094733429	5.06E-05
764	25	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.12424	0.121447563	7.80E-06
764	25	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.14979	0.16457119	0.00021848
764	50	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.1123	0.106865196	2.95E-05
764	50	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.14209	0.136999779	2.59E-05
764	50	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.17849	0.18563942	5.11E-05
764	75	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.11739	0.114641304	7.56E-06
764	75	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.15203	0.146978251	2.55E-05
764	75	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.19684	0.199153798	5.35E-06
764	100	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.1191	0.120488539	1.93E-06
764	100	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.15782	0.154465714	1.13E-05
764	100	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.20968	0.209303293	1.42E-07
764	120	2	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.11913	0.124335821	2.71E-05
764	120	2.4	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.1606	0.159397221	1.45E-06
764	120	3	0.04425999	0.04667397	0.27158792	0	0.0784167	0.13539981	0.03964855	0.74653494	0.21667	0.215971724	4.88E-07
765	10	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.09449	0.084645271	9.69E-05
765	10	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.1121	0.108804893	1.09E-05
765	10	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.13044	0.14785862	0.00030341
765	25	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.10543	0.098396339	4.95E-05
765	25	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.12916	0.126461334	7.28E-06
765	25	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.15649	0.171871033	0.00023658
765	50	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.11551	0.110246677	2.77E-05
765	50	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.14683	0.141693153	2.64E-05
765	50	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.18504	0.19255825	5.65E-05
765	75	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.12019	0.117799085	5.72E-06
765	75	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.15649	0.151403186	2.59E-05
765	75	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.20329	0.20574646	6.03E-06
765	100	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.12177	0.12346303	2.87E-06
765	100	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.16211	0.158669834	1.18E-05
765	100	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.21578	0.215618134	2.62E-08
765	120	2	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.12174	0.127182587	2.96E-05
765	120	2.4	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.16479	0.163443669	1.81E-06
765	120	3	0.05204564	0.05142199	0.20121615	0	0.06444179	0.14020297	0.0801469	0.71520833	0.2226	0.222096419	2.54E-07
766	10	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.08212	0.072392273	9.46E-05
766	10	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.09578	0.091789246	1.59E-05
766	10	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.11004	0.12285471	0.00016422
766	25	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.09316	0.086593628	4.31E-05
766	25	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.11252	0.109852676	7.11E-06
766	25	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.13417	0.146984024	0.0001642
766	50	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.10422	0.099154034	2.57E-05
766	50	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.12996	0.125803223	1.73E-05
766	50	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.16155	0.168325024	4.59E-05
766	75	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.10963	0.107321256	5.33E-06
766	75	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.14038	0.13616848	1.77E-05
766	75	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.17977	0.18218722	5.84E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
766	100	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.11216	0.113498268	1.79E-06
766	100	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.14697	0.144011698	8.75E-06
766	100	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.19218	0.192683811	2.54E-07
766	120	2	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.11302	0.117597755	2.10E-05
766	120	2.4	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.15028	0.149206233	1.15E-06
766	120	3	0.08920563	0.06616802	0.25972692	0	0.07536136	0.15590764	0.06553316	0.70319784	0.20025	0.199630785	3.83E-07
767	10	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.08547	0.076094151	8.79E-05
767	10	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.10064	0.097158051	1.21E-05
767	10	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.11638	0.131037807	0.00021485
767	25	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.096	0.089433899	4.31E-05
767	25	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.11668	0.114208336	6.11E-06
767	25	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.14037	0.154050064	0.00018714
767	50	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.10597	0.101028786	2.44E-05
767	50	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.1335	0.129046154	1.98E-05
767	50	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.1673	0.174048862	4.55E-05
767	75	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.11088	0.108478724	5.77E-06
767	75	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.14286	0.13857001	1.84E-05
767	75	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.18454	0.186906573	5.60E-06
767	100	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.11274	0.114091434	1.83E-06
767	100	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.1487	0.145734911	8.79E-06
767	100	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.1967	0.196567535	1.75E-08
767	120	2	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.11291	0.11779259	2.38E-05
767	120	2.4	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.15169	0.150451016	1.54E-06
767	120	3	0.03743376	0.0570503	0.27282168	0	0.10448727	0.16425279	0.0667397	0.66452024	0.20361	0.202933971	4.57E-07
768	10	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.0891	0.079622841	8.98E-05
768	10	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.10555	0.102245426	1.09E-05
768	10	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.12265	0.138766289	0.00025973
768	25	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.09953	0.092741776	4.61E-05
768	25	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.12172	0.119118195	6.77E-06
768	25	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.1472	0.161670303	0.00020939
768	50	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.10919	0.104081211	2.61E-05
768	50	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.13854	0.133670254	2.37E-05
768	50	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.17431	0.181461277	5.11E-05
768	75	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.11375	0.111330541	5.85E-06
768	75	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.14772	0.142968966	2.26E-05
768	75	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.19165	0.194096731	5.99E-06
768	100	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.11531	0.116762848	2.11E-06
768	100	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.1531	0.149936867	1.00E-05
768	100	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.20361	0.203559971	2.50E-09
768	120	2	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.11523	0.12033267	2.60E-05
768	120	2.4	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.15573	0.154520917	1.46E-06
768	120	3	0.02435635	0.04531101	0.26968331	0	0.08929551	0.153244	0.07941746	0.67804302	0.21008	0.209774868	9.31E-08
769	10	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.09067	0.080293941	0.00010766
769	10	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.10633	0.102245426	1.67E-05
769	10	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.12259	0.1372509	0.00021494
769	25	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.10232	0.095278969	4.96E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
769	25	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.12392	0.121274376	7.00E-06
769	25	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.14858	0.162847977	0.00020358
769	50	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.11374	0.108410892	2.84E-05
769	50	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.14256	0.137973957	2.10E-05
769	50	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.17811	0.185288715	5.15E-05
769	75	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.11941	0.116895625	6.32E-06
769	75	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.15347	0.148767853	2.21E-05
769	75	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.19718	0.199783045	6.78E-06
769	100	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.12187	0.123292007	2.02E-06
769	100	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.15995	0.156916313	9.20E-06
769	100	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.21081	0.210729923	6.41E-09
769	120	2	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.12243	0.127528961	2.60E-05
769	120	2.4	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.16372	0.162298107	2.02E-06
769	120	3	0.07183259	0.05395314	0.24684549	0	0.04378918	0.15126967	0.05890426	0.74603688	0.21883	0.217952553	7.70E-07
770	10	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.08852	0.079298115	8.50E-05
770	10	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.10491	0.101725864	1.01E-05
770	10	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.12197	0.137900352	0.00025378
770	25	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.0988	0.092222214	4.33E-05
770	25	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.12072	0.118321533	5.75E-06
770	25	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.14604	0.160423355	0.00020688
770	50	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.10818	0.103371143	2.31E-05
770	50	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.13728	0.132613811	2.18E-05
770	50	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.1727	0.179820328	5.07E-05
770	75	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.1128	0.110487696	5.35E-06
770	75	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.14623	0.141742223	2.01E-05
770	75	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.18977	0.192197444	5.89E-06
770	100	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.11431	0.115816813	2.27E-06
770	100	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.15156	0.148570852	8.94E-06
770	100	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.20158	0.20146224	1.39E-08
770	120	2	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.11422	0.119320607	2.60E-05
770	120	2.4	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.15427	0.153063258	1.46E-06
770	120	3	0.04335021	0.07971113	0.17313353	0	0.10180697	0.16273614	0.10712558	0.62833131	0.20789	0.207545082	1.19E-07
771	10	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.07607	0.06700182	8.22E-05
771	10	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.08848	0.084731865	1.40E-05
771	10	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.10145	0.112918091	0.00013152
771	25	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.08666	0.080419502	3.89E-05
771	25	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.10426	0.101721535	6.44E-06
771	25	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.124	0.135579643	0.00013409
771	50	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.09704	0.092313137	2.23E-05
771	50	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.12078	0.116767178	1.61E-05
771	50	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.14962	0.155647717	3.63E-05
771	75	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.10229	0.100053164	5.00E-06
771	75	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.13045	0.126571019	1.50E-05
771	75	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.16649	0.168710365	4.93E-06
771	100	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.10478	0.10593215	1.33E-06
771	100	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.1368	0.13399931	7.84E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
771	100	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.17848	0.178618841	1.93E-08
771	120	2	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.10567	0.109829585	1.73E-05
771	120	2.4	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.13992	0.138925044	9.90E-07
771	120	3	0.09907003	0.07395527	0.26444879	0	0.08756875	0.16202051	0.09653186	0.65387888	0.18589	0.185187689	4.93E-07
772	10	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.08784	0.078605366	8.53E-05
772	10	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.10393	0.100816631	9.69E-06
772	10	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.12069	0.136623096	0.00025386
772	25	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.09838	0.091693993	4.47E-05
772	25	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.12017	0.117637444	6.41E-06
772	25	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.14523	0.159470825	0.0002028
772	50	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.10803	0.103024769	2.51E-05
772	50	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.13694	0.132172184	2.27E-05
772	50	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.17227	0.179196854	4.80E-05
772	75	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.1126	0.110276985	5.40E-06
772	75	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.14611	0.141462237	2.16E-05
772	75	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.18961	0.191799113	4.79E-06
772	100	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.11421	0.115715065	2.27E-06
772	100	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.15152	0.148427973	9.56E-06
772	100	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.2015	0.201245756	6.46E-08
772	120	2	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.11415	0.119295351	2.65E-05
772	120	2.4	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.1542	0.153012745	1.41E-06
772	120	3	0.02620969	0.04562329	0.2827351	0	0.0723656	0.1407932	0.09019642	0.69664479	0.20786	0.207451272	1.67E-07
773	10	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.07876	0.070097542	7.50E-05
773	10	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.09247	0.089451218	9.11E-06
773	10	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.10672	0.120473385	0.00018916
773	25	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.08893	0.082705574	3.87E-05
773	25	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.10785	0.105540314	5.33E-06
773	25	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.12952	0.142195396	0.00016067
773	50	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.09849	0.093715954	2.28E-05
773	50	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.12381	0.11959446	1.78E-05
773	50	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.15494	0.161142082	3.85E-05
773	75	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.10317	0.100809415	5.57E-06
773	75	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.13269	0.128649267	1.63E-05
773	75	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.17121	0.173337351	4.53E-06
773	100	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.10505	0.106155128	1.22E-06
773	100	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.13819	0.135469236	7.40E-06
773	100	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.18247	0.182530708	3.69E-09
773	120	2	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.10535	0.109687066	1.88E-05
773	120	2.4	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.14104	0.139973187	1.14E-06
773	120	3	0.054851	0.07022391	0.27734433	0	0.10939963	0.1451729	0.08801992	0.65740755	0.18926	0.18859551	4.42E-07
774	10	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.08559	0.075856018	9.48E-05
774	10	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.10019	0.096400356	1.44E-05
774	10	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.11536	0.129089451	0.0001885
774	25	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.09677	0.090178604	4.34E-05
774	25	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.11703	0.114572029	6.04E-06
774	25	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.13997	0.153469887	0.00018225

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
774	50	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.10776	0.102756329	2.50E-05
774	50	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.13481	0.130539894	1.82E-05
774	50	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.16789	0.174867172	4.87E-05
774	75	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.11315	0.110888913	5.11E-06
774	75	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.1452	0.140870514	1.87E-05
774	75	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.18633	0.188719266	5.71E-06
774	100	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.11565	0.117033453	1.91E-06
774	100	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.15168	0.148674765	9.03E-06
774	100	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.19905	0.199171839	1.48E-08
774	120	2	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.11633	0.121101189	2.28E-05
774	120	2.4	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.15513	0.153829972	1.69E-06
774	120	3	0.03122889	0.12406872	0.21530767	0	0.08621297	0.16450122	0.05896411	0.69032169	0.20691	0.206080206	6.89E-07
775	10	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.07841	0.069491386	7.95E-05
775	10	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.09181	0.088477039	1.11E-05
775	10	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.10577	0.118871403	0.00017165
775	25	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.08867	0.082445793	3.87E-05
775	25	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.10735	0.104986115	5.59E-06
775	25	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.12858	0.141026382	0.00015491
775	50	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.0986	0.093824196	2.28E-05
775	50	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.12346	0.11945591	1.60E-05
775	50	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.15417	0.160457993	3.95E-05
775	75	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.10341	0.101158676	5.07E-06
775	75	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.1327	0.128799362	1.52E-05
775	75	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.17069	0.173025614	5.46E-06
775	100	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.10558	0.106707163	1.27E-06
775	100	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.13852	0.135854578	7.10E-06
775	100	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.18208	0.18250906	1.84E-07
775	120	2	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.10593	0.110374403	1.98E-05
775	120	2.4	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.14165	0.140512594	1.29E-06
775	120	3	0.09184555	0.05485968	0.26126079	0	0.1077069	0.15362867	0.08744239	0.65122204	0.18927	0.188774109	2.46E-07
776	10	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.08194	0.073539639	7.06E-05
776	10	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.09688	0.094452	5.90E-06
776	10	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.11252	0.128180218	0.00024524
776	25	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.09179	0.085641098	3.78E-05
776	25	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.11217	0.109956589	4.90E-06
776	25	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.13565	0.149235458	0.00018456
776	50	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.10076	0.096045322	2.22E-05
776	50	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.1278	0.123335304	1.99E-05
776	50	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.16088	0.167402802	4.25E-05
776	75	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.10503	0.102708702	5.39E-06
776	75	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.13629	0.131879209	1.95E-05
776	75	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.17695	0.179009234	4.24E-06
776	100	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.10634	0.10770299	1.86E-06
776	100	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.14116	0.1382792	8.30E-06
776	100	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.18796	0.187696018	6.97E-08
776	120	2	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.1062	0.110984166	2.29E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
776	120	2.4	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.14372	0.142489815	1.51E-06
776	120	3	0.0558412	0.06631874	0.22965953	0	0.14518258	0.14367516	0.07257232	0.63856993	0.19383	0.193405064	1.81E-07
777	10	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.09182	0.081982517	9.68E-05
777	10	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.10875	0.105232906	1.24E-05
777	10	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.12638	0.142857838	0.00027152
777	25	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.10264	0.095608025	4.94E-05
777	25	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.12554	0.122737808	7.85E-06
777	25	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.15179	0.166649437	0.0002208
777	50	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.11268	0.107397747	2.79E-05
777	50	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.14291	0.137887363	2.52E-05
777	50	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.17997	0.187189445	5.21E-05
777	75	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.11741	0.114944382	6.08E-06
777	75	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.15254	0.147564201	2.48E-05
777	75	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.19799	0.200319926	5.43E-06
777	100	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.1191	0.120590286	2.22E-06
777	100	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.15821	0.154814253	1.15E-05
777	100	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.21011	0.210154076	1.94E-09
777	120	2	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.1191	0.124301545	2.71E-05
777	120	2.4	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.16091	0.159581232	1.77E-06
777	120	3	0.02855381	0.09779888	0.17576451	0	0.08473734	0.14384399	0.07676928	0.69464939	0.21714	0.21661396	2.77E-07
778	10	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.09428	0.08466692	9.24E-05
778	10	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.11252	0.109454346	9.40E-06
778	10	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.13162	0.14976368	0.00032919
778	25	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.10453	0.09743515	5.03E-05
778	25	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.12872	0.125950432	7.67E-06
778	25	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.15685	0.172355957	0.00024043
778	50	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.11366	0.108345947	2.82E-05
778	50	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.14529	0.140039215	2.76E-05
778	50	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.18452	0.191631699	5.06E-05
778	75	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.11773	0.115261892	6.09E-06
778	75	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.15411	0.148967018	2.65E-05
778	75	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.20114	0.203852946	7.36E-06
778	100	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.11874	0.120417099	2.81E-06
778	100	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.15896	0.155623903	1.11E-05
778	100	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.21302	0.21295105	4.75E-09
778	120	2	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.11828	0.123794611	3.04E-05
778	120	2.4	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.16092	0.159981728	8.80E-07
778	120	3	0.04141839	0.04227183	0.19389822	0	0.07761775	0.13911418	0.10414607	0.67912199	0.21948	0.218908691	3.26E-07
779	10	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.08483	0.074708652	0.00010244
779	10	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.09887	0.094755077	1.69E-05
779	10	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.11351	0.126578236	0.00017078
779	25	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.09633	0.089563789	4.58E-05
779	25	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.11626	0.113541565	7.39E-06
779	25	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.13857	0.151712036	0.00017271
779	50	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.10785	0.102700043	2.65E-05
779	50	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.13441	0.130180531	1.79E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
779	50	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.16711	0.173962269	4.70E-05
779	75	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.11355	0.111238174	5.34E-06
779	75	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.1454	0.140994631	1.94E-05
779	75	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.18602	0.188421961	5.77E-06
779	100	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.11632	0.117702389	1.91E-06
779	100	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.15221	0.149194326	9.09E-06
779	100	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.19903	0.199375334	1.19E-07
779	120	2	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.11731	0.121990577	2.19E-05
779	120	2.4	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.15584	0.154623747	1.48E-06
779	120	3	0.04556789	0.11425086	0.24591402	0	0.05242446	0.15124192	0.06013142	0.7362022	0.20742	0.206628633	6.26E-07
780	10	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.07804	0.069837761	6.73E-05
780	10	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.09181	0.089191437	6.86E-06
780	10	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.10615	0.120278549	0.00019962
780	25	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.08774	0.081891594	3.42E-05
780	25	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.10662	0.104605103	4.06E-06
780	25	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.12831	0.141069679	0.00016281
780	50	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.09681	0.092378082	1.96E-05
780	50	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.12197	0.117988148	1.59E-05
780	50	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.1529	0.159120121	3.87E-05
780	75	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.10132	0.099106407	4.90E-06
780	75	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.13041	0.126576792	1.47E-05
780	75	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.1687	0.170699132	4.00E-06
780	100	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.10296	0.104156981	1.43E-06
780	100	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.13569	0.133022966	7.11E-06
780	100	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.17943	0.179396019	1.15E-09
780	120	2	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.10307	0.107487949	1.95E-05
780	120	2.4	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.13844	0.137276157	1.35E-06
780	120	3	0.05210082	0.06659015	0.26408638	0	0.05331245	0.13992734	0.17822008	0.62854013	0.18555	0.185126352	1.79E-07
781	10	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.10126	0.090598583	0.00011367
781	10	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.1205	0.11659832	1.52E-05
781	10	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.14047	0.158617878	0.00032935
781	25	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.11249	0.10504673	5.54E-05
781	25	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.13818	0.135189972	8.94E-06
781	25	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.16778	0.183950844	0.0002615
781	50	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.12287	0.117481575	2.90E-05
781	50	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.1566	0.151175156	2.94E-05
781	50	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.19779	0.205716152	6.28E-05
781	75	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.12788	0.125399119	6.15E-06
781	75	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.16661	0.16135568	2.76E-05
781	75	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.21682	0.219578349	7.61E-06
781	100	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.12954	0.131323566	3.18E-06
781	100	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.17257	0.168967981	1.30E-05
781	100	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.22994	0.22993639	1.30E-11
781	120	2	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.12928	0.135208734	3.51E-05
781	120	2.4	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.17524	0.173959382	1.64E-06
781	120	3	0.03888427	0.01432416	0.241557	0	0.05625926	0.15693351	0.05227173	0.7345355	0.2374	0.236728938	4.50E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
782	10	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.08141	0.072738647	7.52E-05
782	10	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.09637	0.093347931	9.13E-06
782	10	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.112	0.126556587	0.00021189
782	25	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.091	0.08466259	4.02E-05
782	25	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.11109	0.108631706	6.04E-06
782	25	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.13434	0.147295761	0.00016785
782	50	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.09969	0.094949913	2.25E-05
782	50	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.1263	0.121824245	2.00E-05
782	50	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.15883	0.165198994	4.06E-05
782	75	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.1038	0.101519483	5.20E-06
782	75	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.13462	0.130245476	1.91E-05
782	75	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.17459	0.176613477	4.09E-06
782	100	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.1051	0.106440887	1.80E-06
782	100	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.1392	0.136549492	7.03E-06
782	100	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.18537	0.185171814	3.93E-08
782	120	2	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.10498	0.109674438	2.20E-05
782	120	2.4	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.1418	0.140692997	1.23E-06
782	120	3	0.07161311	0.02831201	0.24211212	0	0.09549791	0.15610088	0.15172729	0.59667391	0.19105	0.190791019	6.71E-08
783	10	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.08194	0.073214912	7.61E-05
783	10	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.0967	0.093737602	8.78E-06
783	10	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.11208	0.126816368	0.00021716
783	25	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.09187	0.085606461	3.92E-05
783	25	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.11187	0.109601555	5.15E-06
783	25	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.13497	0.14826561	0.00017677
783	50	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.10103	0.096339741	2.20E-05
783	50	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.12777	0.123343964	1.96E-05
783	50	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.16045	0.166848602	4.09E-05
783	75	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.10559	0.103205172	5.69E-06
783	75	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.13636	0.132136103	1.78E-05
783	75	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.17665	0.178749453	4.41E-06
783	100	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.1071	0.108363266	1.60E-06
783	100	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.14158	0.138733816	8.10E-06
783	100	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.18791	0.187678699	5.35E-08
783	120	2	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.10706	0.111758097	2.21E-05
783	120	2.4	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.14441	0.14306891	1.80E-06
783	120	3	0.06849545	0.03920475	0.25420643	0	0.05886529	0.14271399	0.15703554	0.64138518	0.19402	0.193551191	2.20E-07
784	10	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.08613	0.076743603	8.81E-05
784	10	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.10158	0.098218822	1.13E-05
784	10	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.11769	0.132596493	0.0002222
784	25	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.0966	0.089936142	4.44E-05
784	25	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.11755	0.115074272	6.13E-06
784	25	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.14169	0.155409584	0.00018823
784	50	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.10636	0.101396809	2.46E-05
784	50	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.13439	0.129712925	2.19E-05
784	50	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.16855	0.175204887	4.43E-05
784	75	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.11119	0.108741391	6.00E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
784	75	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.14351	0.139098231	1.95E-05
784	75	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.18575	0.187899513	4.62E-06
784	100	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.11293	0.114264622	1.78E-06
784	100	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.14925	0.14615056	9.61E-06
784	100	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.19778	0.197433472	1.20E-07
784	120	2	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.11291	0.117902637	2.49E-05
784	120	2.4	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.15219	0.150790175	1.96E-06
784	120	3	0.05705158	0.03149829	0.27266423	0	0.09495635	0.16071543	0.08048344	0.66384478	0.20432	0.203700686	3.84E-07
785	10	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.09085	0.080986691	9.73E-05
785	10	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.10706	0.103630924	1.18E-05
785	10	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.12402	0.140151787	0.00026023
785	25	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.1021	0.095088463	4.92E-05
785	25	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.12419	0.121707344	6.16E-06
785	25	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.14965	0.164597168	0.00022342
785	50	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.1127	0.10735878	2.85E-05
785	50	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.14223	0.137411098	2.32E-05
785	50	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.17847	0.185821266	5.40E-05
785	75	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.11791	0.115233027	7.17E-06
785	75	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.15224	0.147483381	2.26E-05
785	75	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.19687	0.199456876	6.69E-06
785	100	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.11976	0.12115098	1.93E-06
785	100	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.15814	0.15505455	9.52E-06
785	100	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.2099	0.209699459	4.02E-08
785	120	2	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.11993	0.125048415	2.62E-05
785	120	2.4	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.16135	0.160039457	1.72E-06
785	120	3	0.06079796	0.06015762	0.22609418	0	0.07864523	0.14492042	0.05040833	0.72602603	0.21715	0.216438969	5.06E-07
786	10	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.08736	0.077674484	9.38E-05
786	10	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.10263	0.099106407	1.24E-05
786	10	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.11855	0.133505726	0.00022367
786	25	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.0985	0.091711311	4.61E-05
786	25	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.11957	0.117039948	6.40E-06
786	25	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.1436	0.157704315	0.00019893
786	50	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.10919	0.103981628	2.71E-05
786	50	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.13731	0.132722054	2.10E-05
786	50	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.17188	0.178846149	4.85E-05
786	75	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.11431	0.111904945	5.78E-06
786	75	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.14717	0.142818871	1.89E-05
786	75	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.18992	0.192457225	6.44E-06
786	100	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.11644	0.117871246	2.05E-06
786	100	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.15333	0.15043045	8.41E-06
786	100	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.20282	0.202709188	1.23E-08
786	120	2	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.11676	0.121806566	2.55E-05
786	120	2.4	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.15663	0.15544819	1.40E-06
786	120	3	0.08120098	0.05008748	0.24293941	0	0.09357569	0.1471895	0.04114341	0.71809141	0.20999	0.20947179	2.69E-07
787	10	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.08614	0.077241516	7.92E-05
787	10	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.10229	0.099301243	8.93E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
787	10	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.11915	0.135042763	0.00025258
787	25	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.09597	0.089494514	4.19E-05
787	25	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.11762	0.11510891	6.31E-06
787	25	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.1426	0.156500664	0.00019323
787	50	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.10494	0.100041618	2.40E-05
787	50	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.13346	0.128665142	2.30E-05
787	50	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.16831	0.174949436	4.41E-05
787	75	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.10904	0.106767057	5.17E-06
787	75	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.14189	0.13729997	2.11E-05
787	75	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.18469	0.186690089	4.00E-06
787	100	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.11035	0.111798868	2.10E-06
787	100	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.14689	0.143756247	9.82E-06
787	100	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.19571	0.195472126	5.66E-08
787	120	2	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.10999	0.115100972	2.61E-05
787	120	2.4	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.14922	0.147995726	1.50E-06
787	120	3	0.05361947	0.03331966	0.23690469	0	0.12240314	0.15749173	0.09389716	0.62620797	0.20157	0.201230963	1.15E-07
788	10	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.08207	0.072868538	8.47E-05
788	10	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.09644	0.093001556	1.18E-05
788	10	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.11138	0.125257683	0.00019259
788	25	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.09245	0.085996132	4.17E-05
788	25	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.11218	0.109740105	5.95E-06
788	25	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.13478	0.147823982	0.00017015
788	50	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.1023	0.09743948	2.36E-05
788	50	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.12861	0.124357109	1.81E-05
788	50	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.16108	0.167515373	4.14E-05
788	75	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.1071	0.104812927	5.23E-06
788	75	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.13778	0.133761177	1.62E-05
788	75	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.17787	0.180195567	5.41E-06
788	100	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.10904	0.110374403	1.78E-06
788	100	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.14349	0.140846701	6.99E-06
788	100	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.18957	0.189750452	3.26E-08
788	120	2	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.10931	0.114038396	2.24E-05
788	120	2.4	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.14648	0.1455242	9.14E-07
788	120	3	0.06067421	0.03207683	0.30359078	0	0.07150782	0.14922848	0.10635258	0.67291112	0.19639	0.196040757	1.22E-07
789	10	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.08692	0.077501297	8.87E-05
789	10	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.10253	0.09934454	1.01E-05
789	10	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.11886	0.134458256	0.00024331
789	25	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.09753	0.09078476	4.55E-05
789	25	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.11886	0.116355858	6.27E-06
789	25	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.1434	0.157522469	0.00019944
789	50	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.10744	0.10232336	2.62E-05
789	50	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.13586	0.131124401	2.24E-05
789	50	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.17064	0.177525597	4.74E-05
789	75	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.11232	0.10971124	6.81E-06
789	75	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.14522	0.140593414	2.14E-05
789	75	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.1881	0.190352999	5.08E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
789	100	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.11399	0.115271273	1.64E-06
789	100	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.1507	0.147707081	8.96E-06
789	100	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.20016	0.199983654	3.11E-08
789	120	2	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.11395	0.118930936	2.48E-05
789	120	2.4	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.15362	0.152377725	1.54E-06
789	120	3	0.02363542	0.09780798	0.2233424	0	0.07319189	0.13731736	0.09413437	0.69535638	0.20672	0.206318339	1.61E-07
790	10	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.08321	0.074275684	7.98E-05
790	10	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.09821	0.095166397	9.26E-06
790	10	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.11389	0.128764725	0.00022126
790	25	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.0933	0.086879387	4.12E-05
790	25	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.11373	0.111290131	5.95E-06
790	25	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.13729	0.150646935	0.00017841
790	50	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.10264	0.097790184	2.35E-05
790	50	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.12982	0.125279331	2.06E-05
790	50	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.16316	0.169576302	4.12E-05
790	75	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.10715	0.104798495	5.53E-06
790	75	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.13866	0.134246101	1.95E-05
790	75	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.17964	0.181705182	4.26E-06
790	100	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.10872	0.110051842	1.77E-06
790	100	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.1438	0.140970097	8.01E-06
790	100	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.19115	0.190806894	1.18E-07
790	120	2	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.10861	0.11350801	2.40E-05
790	120	2.4	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.14647	0.145397917	1.15E-06
790	120	3	0.05878741	0.0359159	0.27267272	0	0.10500583	0.14823822	0.0917881	0.65496785	0.19726	0.196791236	2.20E-07
791	10	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.08742	0.077717781	9.41E-05
791	10	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.10231	0.098608494	1.37E-05
791	10	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11777	0.131947041	0.00020099
791	25	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.09884	0.092360764	4.20E-05
791	25	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11951	0.117230453	5.20E-06
791	25	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.14284	0.156873016	0.00019693
791	50	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11018	0.105245895	2.43E-05
791	50	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.13773	0.13357933	1.72E-05
791	50	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.17132	0.178746567	5.52E-05
791	75	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11579	0.113587748	4.85E-06
791	75	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.14841	0.144161072	1.81E-05
791	75	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.19029	0.192907511	6.85E-06
791	100	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11832	0.119882383	2.44E-06
791	100	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.15512	0.152151499	8.81E-06
791	100	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.20331	0.203598938	8.35E-08
791	120	2	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.11917	0.12404898	2.38E-05
791	120	2.4	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.1587	0.157432628	1.61E-06
791	120	3	0.09719449	0.04707671	0.23694858	0	0.05559692	0.16385542	0.07130595	0.7092417	0.21145	0.210662452	6.20E-07
792	10	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.0853	0.075509644	9.59E-05
792	10	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.10018	0.096053982	1.70E-05
792	10	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.11558	0.129002857	0.00018017
792	25	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.09604	0.089312668	4.53E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
792	25	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.11632	0.113680115	6.97E-06
792	25	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.13961	0.152655907	0.0001702
792	50	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.10644	0.101427116	2.51E-05
792	50	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.13363	0.129093781	2.06E-05
792	50	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.16681	0.173364773	4.30E-05
792	75	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.11167	0.109246521	5.87E-06
792	75	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.14337	0.139046275	1.87E-05
792	75	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.18426	0.186718953	6.05E-06
792	100	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.11386	0.115143547	1.65E-06
792	100	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.14952	0.146540232	8.88E-06
792	100	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.19674	0.196792679	2.78E-09
792	120	2	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.11428	0.119037374	2.26E-05
792	120	2.4	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.15278	0.151488336	1.67E-06
792	120	3	0.06025798	0.04573147	0.26935008	0	0.05245826	0.164577	0.11244666	0.67051808	0.20412	0.203440905	4.61E-07
793	10	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.08392	0.073886013	0.00010068
793	10	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.09808	0.093845844	1.79E-05
793	10	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.11278	0.125604057	0.00016446
793	25	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.09509	0.088282204	4.63E-05
793	25	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.11494	0.112095451	8.09E-06
793	25	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.13721	0.15002346	0.00016418
793	50	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.10613	0.10096817	2.66E-05
793	50	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.13261	0.128188877	1.95E-05
793	50	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.16495	0.171589603	4.41E-05
793	75	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.11155	0.109206111	5.49E-06
793	75	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.14311	0.138636398	2.00E-05
793	75	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.18333	0.185578804	5.06E-06
793	100	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.11403	0.115442295	1.99E-06
793	100	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.14946	0.146542397	8.51E-06
793	100	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.19583	0.196156216	1.06E-07
793	120	2	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.11486	0.119569564	2.22E-05
793	120	2.4	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.15297	0.151773373	1.43E-06
793	120	3	0.06596042	0.04897201	0.30025514	0	0.07943412	0.16146726	0.0491911	0.70990752	0.20379	0.203159475	3.98E-07
794	10	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.09178	0.081441307	0.00010689
794	10	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.10803	0.103934002	1.68E-05
794	10	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.12487	0.140000248	0.00022892
794	25	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.10321	0.096040993	5.14E-05
794	25	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.12527	0.122599258	7.13E-06
794	25	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.15055	0.165177345	0.00021396
794	50	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.1141	0.108813553	2.79E-05
794	50	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.14368	0.138865871	2.32E-05
794	50	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.1798	0.187111511	5.35E-05
794	75	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.11949	0.117019742	6.10E-06
794	75	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.15395	0.149339371	2.13E-05
794	75	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.19843	0.201229159	7.84E-06
794	100	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.12171	0.123201084	2.22E-06
794	100	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.16017	0.15722805	8.66E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
794	100	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.21185	0.211862135	1.47E-10
794	120	2	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.12204	0.127280005	2.75E-05
794	120	2.4	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.1637	0.162427998	1.62E-06
794	120	3	0.0649533	0.0431703	0.24263196	0	0.06488047	0.16167195	0.05813791	0.71530967	0.21943	0.218869003	3.15E-07
795	10	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.09098	0.081203175	9.56E-05
795	10	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.10794	0.104323673	1.31E-05
795	10	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.12556	0.141667175	0.00025944
795	25	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.10144	0.094473648	4.85E-05
795	25	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.12414	0.121386948	7.58E-06
795	25	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.15027	0.164882927	0.00021354
795	50	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.11112	0.105921326	2.70E-05
795	50	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.14106	0.136107864	2.45E-05
795	50	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.17749	0.184881725	5.46E-05
795	75	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.11569	0.113250033	5.95E-06
795	75	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.15033	0.145500387	2.33E-05
795	75	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.19496	0.197649956	7.24E-06
795	100	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.1173	0.118737183	2.07E-06
795	100	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.15572	0.152539005	1.01E-05
795	100	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.20712	0.207205563	7.32E-09
795	120	2	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.11712	0.122338756	2.72E-05
795	120	2.4	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.1584	0.157160219	1.54E-06
795	120	3	0.0439781	0.05343352	0.20765177	0	0.0813112	0.15955112	0.10188532	0.65725236	0.21373	0.213476745	6.41E-08
796	10	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.08214	0.073149967	8.08E-05
796	10	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.09664	0.093607712	9.19E-06
796	10	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.11177	0.126599884	0.00021993
796	25	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.0926	0.086074066	4.26E-05
796	25	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.1126	0.110199051	5.76E-06
796	25	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.13562	0.14907093	0.00018093
796	50	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.10238	0.097365875	2.51E-05
796	50	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.12917	0.124655857	2.04E-05
796	50	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.16199	0.168623772	4.40E-05
796	75	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.10715	0.104619535	6.40E-06
796	75	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.13811	0.133943024	1.74E-05
796	75	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.17891	0.181202939	5.26E-06
796	100	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.10883	0.110084314	1.57E-06
796	100	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.14384	0.140933294	8.45E-06
796	100	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.19074	0.190664015	5.77E-09
796	120	2	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.10883	0.113686609	2.36E-05
796	120	2.4	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.14655	0.145540436	1.02E-06
796	120	3	0.0492323	0.05017655	0.30229723	0	0.12128418	0.13741144	0.04221299	0.69909139	0.19716	0.196899478	6.79E-08
797	10	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.0975	0.087437916	0.00010125
797	10	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.11645	0.112983036	1.20E-05
797	10	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.13627	0.154569626	0.00033488
797	25	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.10795	0.100639114	5.34E-05
797	25	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.13297	0.13005497	8.50E-06
797	25	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.16205	0.177941246	0.00025253

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
797	50	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.11738	0.111926594	2.97E-05
797	50	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.15014	0.144641666	3.02E-05
797	50	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.19047	0.197892418	5.51E-05
797	75	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.12166	0.119083557	6.64E-06
797	75	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.15922	0.15388265	2.85E-05
797	75	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.2077	0.210532201	8.02E-06
797	100	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.1228	0.124424219	2.64E-06
797	100	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.16423	0.160771894	1.20E-05
797	100	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.21991	0.21994998	1.60E-09
797	120	2	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.12228	0.127920437	3.18E-05
797	120	2.4	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.16636	0.165289195	1.15E-06
797	120	3	0.02927405	0.04466199	0.19016519	0	0.10009186	0.15816435	0.06836194	0.67338185	0.22664	0.226117611	2.73E-07
798	10	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.08916	0.079817677	8.73E-05
798	10	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.10534	0.102223778	9.71E-06
798	10	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.12215	0.138333321	0.0002619
798	25	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.09989	0.093261337	4.39E-05
798	25	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.12173	0.119464569	5.13E-06
798	25	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.14686	0.161678963	0.0002196
798	50	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.10991	0.104903851	2.51E-05
798	50	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.13898	0.134380322	2.12E-05
798	50	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.17456	0.181868267	5.34E-05
798	75	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.11484	0.112361005	6.15E-06
798	75	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.14852	0.143924383	2.11E-05
798	75	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.19233	0.194798139	6.09E-06
798	100	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.11662	0.11795784	1.79E-06
798	100	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.15416	0.151086397	9.45E-06
798	100	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.2046	0.204490852	1.19E-08
798	120	2	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.11653	0.121638791	2.61E-05
798	120	2.4	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.15709	0.155799977	1.66E-06
798	120	3	0.03096854	0.07335238	0.23065145	0	0.10589303	0.16004919	0.05727518	0.6767826	0.2113	0.210866308	1.88E-07
799	10	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.08952	0.07990427	9.25E-05
799	10	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.10593	0.102440262	1.22E-05
799	10	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.12297	0.138917828	0.00025433
799	25	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.10023	0.093295975	4.81E-05
799	25	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.12238	0.119689713	7.24E-06
799	25	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.14787	0.162302437	0.0002083
799	50	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.11004	0.104903851	2.64E-05
799	50	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.13951	0.134596806	2.41E-05
799	50	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.17544	0.18250906	5.00E-05
799	75	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.11483	0.112352346	6.14E-06
799	75	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.14886	0.144132207	2.24E-05
799	75	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.19316	0.195441818	5.21E-06
799	100	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.11649	0.117931862	2.08E-06
799	100	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.15441	0.151283398	9.78E-06
799	100	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.20527	0.20513814	1.74E-08
799	120	2	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.11641	0.121599102	2.69E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
799	120	2.4	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.15716	0.155989401	1.37E-06
799	120	3	0.07351362	0.0132379	0.26027509	0	0.05818626	0.14065954	0.09851075	0.70264344	0.21177	0.21151576	6.46E-08
800	10	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.09667	0.086095715	0.00011182
800	10	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.11467	0.110666656	1.60E-05
800	10	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.13342	0.150391483	0.00028803
800	25	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.10781	0.100310059	5.62E-05
800	25	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.13198	0.128946571	9.20E-06
800	25	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.15972	0.175230865	0.00024059
800	50	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.11821	0.112602024	3.14E-05
800	50	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.15007	0.144719601	2.86E-05
800	50	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.18898	0.196649799	5.88E-05
800	75	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.12301	0.12044885	6.56E-06
800	75	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.1601	0.154794769	2.81E-05
800	75	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.20761	0.210330149	7.40E-06
800	100	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.12482	0.126331444	2.28E-06
800	100	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.16592	0.162339239	1.28E-05
800	100	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.22053	0.220579948	2.49E-09
800	120	2	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.12476	0.130195324	2.95E-05
800	120	2.4	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.16878	0.167293477	2.21E-06
800	120	3	0.08584042	0.0433208	0.15035167	0	0.0754115	0.15313623	0.07339566	0.69805661	0.22772	0.227311881	1.67E-07
801	10	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.08697	0.078605366	7.00E-05
801	10	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.10338	0.101249599	4.54E-06
801	10	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.12049	0.137965298	0.00030539
801	25	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.09689	0.090672188	3.87E-05
801	25	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.11895	0.116823463	4.52E-06
801	25	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.14446	0.159228363	0.0002181
801	50	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.10586	0.101007137	2.36E-05
801	50	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.13486	0.130141563	2.23E-05
801	50	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.17041	0.177391376	4.87E-05
801	75	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.10986	0.10757815	5.21E-06
801	75	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.14318	0.138601761	2.10E-05
801	75	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.18654	0.188924205	5.68E-06
801	100	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.11106	0.112476463	2.01E-06
801	100	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.14804	0.144912271	9.78E-06
801	100	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.19779	0.19752223	7.17E-08
801	120	2	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.11062	0.115692695	2.57E-05
801	120	2.4	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.15032	0.149049282	1.61E-06
801	120	3	0.03357624	0.01539131	0.29486792	0	0.10756896	0.14242801	0.08349818	0.66650485	0.20357	0.203159475	1.69E-07
802	10	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.0751	0.065984344	8.31E-05
802	10	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.0874	0.083584499	1.46E-05
802	10	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.10028	0.111510944	0.00012613
802	25	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.0855	0.079189873	3.98E-05
802	25	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.103	0.100327377	7.14E-06
802	25	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.12262	0.133899727	0.00012723
802	50	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.0957	0.090923309	2.28E-05
802	50	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.11919	0.115178185	1.61E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
802	50	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.14787	0.153746986	3.45E-05
802	75	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.10086	0.098563754	5.27E-06
802	75	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.12867	0.124859352	1.45E-05
802	75	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.16448	0.166669642	4.79E-06
802	100	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.10325	0.104364805	1.24E-06
802	100	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.13495	0.132193832	7.60E-06
802	100	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.1762	0.176473484	7.48E-08
802	120	2	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.10405	0.108207758	1.73E-05
802	120	2.4	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.138	0.137054261	8.94E-07
802	120	3	0.07762269	0.13126036	0.21148089	0	0.08642157	0.15085216	0.11508806	0.64763821	0.18353	0.182970532	3.13E-07
803	10	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.09209	0.082610321	8.99E-05
803	10	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.1097	0.106661701	9.23E-06
803	10	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.12811	0.145715427	0.00030995
803	25	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.10224	0.095278969	4.85E-05
803	25	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.12575	0.12298893	7.62E-06
803	25	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.15302	0.168052254	0.00022597
803	50	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.11132	0.106107502	2.72E-05
803	50	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.1422	0.136969471	2.74E-05
803	50	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.18016	0.187150478	4.89E-05
803	75	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.11559	0.112990252	6.76E-06
803	75	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.15102	0.145843875	2.68E-05
803	75	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.1968	0.199280802	6.15E-06
803	100	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.11675	0.118124533	1.89E-06
803	100	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.15587	0.152463236	1.16E-05
803	100	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.20846	0.20832695	1.77E-08
803	120	2	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.11622	0.121489056	2.78E-05
803	120	2.4	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.15807	0.156804824	1.60E-06
803	120	3	0.03246872	0.03462814	0.23622103	0	0.09800607	0.14665102	0.08192875	0.67341416	0.21479	0.214250676	2.91E-07
804	10	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.08586	0.076635361	8.51E-05
804	10	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.10102	0.097937393	9.50E-06
804	10	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.11684	0.132271767	0.00023814
804	25	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.0967	0.090152626	4.29E-05
804	25	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.11753	0.115247459	5.21E-06
804	25	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.14156	0.155660706	0.00019883
804	50	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.10696	0.101929359	2.53E-05
804	50	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.13486	0.130310421	2.07E-05
804	50	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.16897	0.17598856	4.93E-05
804	75	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.11189	0.109500529	5.71E-06
804	75	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.14433	0.139998805	1.88E-05
804	75	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.18662	0.1890743	6.02E-06
804	100	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.1138	0.115199833	1.96E-06
804	100	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.15036	0.147280607	9.48E-06
804	100	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.19909	0.198909893	3.24E-08
804	120	2	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.11391	0.118957996	2.55E-05
804	120	2.4	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.15312	0.152080059	1.08E-06
804	120	3	0.06832558	0.0692681	0.23108169	0	0.09115259	0.13656173	0.06128682	0.71099887	0.20586	0.205391065	2.20E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
805	10	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.08938	0.079882622	9.02E-05
805	10	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.10591	0.102656746	1.06E-05
805	10	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.12322	0.139523983	0.00026582
805	25	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.09987	0.092984238	4.74E-05
805	25	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.12228	0.119542503	7.49E-06
805	25	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.14808	0.162466965	0.00020698
805	50	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.10959	0.104306355	2.79E-05
805	50	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.13921	0.134098892	2.61E-05
805	50	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.17536	0.182275257	4.78E-05
805	75	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.11401	0.111544139	6.08E-06
805	75	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.14826	0.143393275	2.37E-05
805	75	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.19261	0.194916484	5.32E-06
805	100	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.11556	0.116968508	1.98E-06
805	100	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.15374	0.150354681	1.15E-05
805	100	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.20453	0.20438694	2.05E-08
805	120	2	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.11535	0.120536526	2.69E-05
805	120	2.4	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.15629	0.154937649	1.83E-06
805	120	3	0.01546795	0.04559708	0.28723592	0	0.09398075	0.14070168	0.06022814	0.70508943	0.21104	0.210606527	1.88E-07
806	10	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.09026	0.080272293	9.98E-05
806	10	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.10659	0.102721691	1.50E-05
806	10	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.12356	0.13902607	0.0002392
806	25	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.10115	0.094066658	5.02E-05
806	25	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.12316	0.120460396	7.29E-06
806	25	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.14848	0.162995186	0.00021069
806	50	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.11138	0.106072865	2.82E-05
806	50	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.14066	0.135835094	2.33E-05
806	50	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.17663	0.183790646	5.13E-05
806	75	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.11637	0.113769595	6.76E-06
806	75	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.15028	0.145693779	2.10E-05
806	75	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.19456	0.19713328	6.62E-06
806	100	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.1181	0.119559822	2.13E-06
806	100	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.15616	0.153097534	9.38E-06
806	100	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.20723	0.207149277	6.52E-09
806	120	2	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.11828	0.123367055	2.59E-05
806	120	2.4	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.15932	0.157972034	1.82E-06
806	120	3	0.04677705	0.03121404	0.27105076	0	0.06737923	0.15872644	0.08010111	0.69379322	0.21419	0.213741938	2.01E-07
807	10	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.08626	0.076830196	8.89E-05
807	10	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.10137	0.09811058	1.06E-05
807	10	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.1171	0.132336712	0.00023216
807	25	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.09726	0.090568275	4.48E-05
807	25	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.11803	0.115680428	5.52E-06
807	25	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.1419	0.156050377	0.00020023
807	50	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.10772	0.102557163	2.67E-05
807	50	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.13555	0.13100317	2.07E-05
807	50	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.1698	0.176741924	4.82E-05
807	75	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.11274	0.110285645	6.02E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
807	75	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.14529	0.140879173	1.95E-05
807	75	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.18748	0.190058581	6.65E-06
807	100	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.11475	0.116106901	1.84E-06
807	100	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.1513	0.148308907	8.95E-06
807	100	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.20017	0.200081072	7.91E-09
807	120	2	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.11505	0.119946607	2.40E-05
807	120	2.4	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.15442	0.153209384	1.47E-06
807	120	3	0.05878281	0.05145174	0.27474481	0	0.07654784	0.14095336	0.06060336	0.72189544	0.20731	0.20668997	3.84E-07
808	10	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.07889	0.069383144	9.04E-05
808	10	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.09175	0.087719345	1.62E-05
808	10	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10521	0.116923046	0.0001372
808	25	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.08985	0.083381004	4.18E-05
808	25	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10816	0.105479698	7.18E-06
808	25	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.12861	0.140610733	0.00014402
808	50	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10073	0.095837498	2.39E-05
808	50	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.12544	0.121244068	1.76E-05
808	50	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.15541	0.161614017	3.85E-05
808	75	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10619	0.103952764	5.01E-06
808	75	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.13552	0.131501083	1.62E-05
808	75	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.17297	0.17530014	5.43E-06
808	100	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10884	0.110105963	1.60E-06
808	100	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.14216	0.13929451	8.21E-06
808	100	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.18541	0.185684881	7.56E-08
808	120	2	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.10985	0.114193543	1.89E-05
808	120	2.4	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.1454	0.144458016	8.87E-07
808	120	3	0.06739806	0.04932227	0.33741597	0	0.06360442	0.15861252	0.07691877	0.70086428	0.19333	0.1925716	5.75E-07
809	10	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.09226	0.082502079	9.52E-05
809	10	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.10942	0.105968952	1.19E-05
809	10	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.1273	0.143832016	0.00027331
809	25	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.10293	0.096006355	4.79E-05
809	25	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.12604	0.123300667	7.50E-06
809	25	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.15254	0.167411461	0.00022116
809	50	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.11283	0.10763588	2.70E-05
809	50	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.14325	0.138242397	2.51E-05
809	50	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.18045	0.187696018	5.25E-05
809	75	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.11749	0.115056953	5.92E-06
809	75	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.15276	0.147777799	2.48E-05
809	75	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.19805	0.200646095	6.74E-06
809	100	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.119	0.120624924	2.64E-06
809	100	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.15827	0.154916	1.12E-05
809	100	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.21042	0.210344582	5.69E-09
809	120	2	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.11888	0.124285309	2.92E-05
809	120	2.4	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.16095	0.159606489	1.81E-06
809	120	3	0.04843341	0.03611624	0.23420022	0	0.125179	0.16474141	0.03357438	0.67650522	0.21706	0.216711378	1.22E-07
810	10	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.08506	0.076245689	7.77E-05
810	10	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.10071	0.097872448	8.05E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
810	10	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.11707	0.132834625	0.00024852
810	25	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.09509	0.088680534	4.11E-05
810	25	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.11616	0.113835983	5.40E-06
810	25	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.14052	0.154543648	0.00019666
810	50	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.10421	0.099400826	2.31E-05
810	50	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.13215	0.127617359	2.05E-05
810	50	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.16633	0.173243542	4.78E-05
810	75	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.1086	0.106247495	5.53E-06
810	75	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.14087	0.136410942	1.99E-05
810	75	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.18285	0.185177587	5.42E-06
810	100	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.10997	0.111376724	1.98E-06
810	100	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.14593	0.142987728	8.66E-06
810	100	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.19422	0.194112606	1.15E-08
810	120	2	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.10988	0.114747381	2.37E-05
810	120	2.4	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.14854	0.14731741	1.49E-06
810	120	3	0.03794995	0.04024514	0.26787265	0	0.11516931	0.15756887	0.08819438	0.63906745	0.20027	0.19997716	8.58E-08
811	10	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.0779	0.068950176	8.01E-05
811	10	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.09092	0.087524509	1.15E-05
811	10	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.10451	0.117117882	0.00015896
811	25	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.08845	0.082272606	3.82E-05
811	25	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.10684	0.104414597	5.88E-06
811	25	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.12758	0.139779434	0.00014883
811	50	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.09874	0.094006042	2.24E-05
811	50	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.12333	0.119326019	1.60E-05
811	50	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.15361	0.159752254	3.77E-05
811	75	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.10375	0.101608963	4.58E-06
811	75	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.13305	0.128998528	1.64E-05
811	75	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.17068	0.172696559	4.07E-06
811	100	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.10615	0.107369604	1.49E-06
811	100	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.13903	0.136311359	7.39E-06
811	100	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.18234	0.182485247	2.11E-08
811	120	2	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.10675	0.11118261	1.96E-05
811	120	2.4	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.14218	0.141147614	1.07E-06
811	120	3	0.08828886	0.07010351	0.27028575	0	0.06529299	0.13867902	0.10733979	0.6886882	0.18968	0.188965336	5.11E-07
812	10	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.08465	0.075942612	7.58E-05
812	10	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.10067	0.097915745	7.59E-06
812	10	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.11737	0.133397484	0.00025688
812	25	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.09424	0.087797279	4.15E-05
812	25	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.11572	0.113143234	6.64E-06
812	25	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.14055	0.154197273	0.00018625
812	50	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.10279	0.097941723	2.35E-05
812	50	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.13101	0.126201553	2.31E-05
812	50	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.16566	0.171996593	4.02E-05
812	75	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.10666	0.104394391	5.13E-06
812	75	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.13908	0.134502996	2.09E-05
812	75	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.18111	0.183324483	4.90E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
812	100	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.10775	0.109216213	2.15E-06
812	100	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.1438	0.140703821	9.59E-06
812	100	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.1919	0.191778908	1.47E-08
812	120	2	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.10727	0.112378685	2.61E-05
812	120	2.4	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.14599	0.144771918	1.48E-06
812	120	3	0.03985327	0.04493195	0.23826185	0	0.13047653	0.14824686	0.09941946	0.62185714	0.19764	0.197321622	1.01E-07
813	10	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.09214	0.082307243	9.67E-05
813	10	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.10958	0.105839062	1.40E-05
813	10	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.12769	0.14391861	0.00026337
813	25	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.10254	0.095460815	5.01E-05
813	25	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.12572	0.122763786	8.74E-06
813	25	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.15256	0.166961174	0.00020739
813	50	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.11199	0.106795921	2.70E-05
813	50	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.14259	0.137328835	2.77E-05
813	50	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.17977	0.186782455	4.92E-05
813	75	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.11637	0.114012057	5.56E-06
813	75	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.1516	0.146608785	2.49E-05
813	75	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.1971	0.199399147	5.29E-06
813	100	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.11783	0.119412613	2.50E-06
813	100	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.15691	0.153547821	1.13E-05
813	100	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.20912	0.208835688	8.08E-08
813	120	2	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.11759	0.122955736	2.88E-05
813	120	2.4	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.15941	0.158107336	1.70E-06
813	120	3	0.04272798	0.03746798	0.22104572	0	0.08238139	0.15744862	0.0986679	0.66150209	0.21536	0.21502641	1.11E-07
814	10	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.08396	0.074513817	8.92E-05
814	10	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.09869	0.095252991	1.18E-05
814	10	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.11408	0.128504944	0.00020808
814	25	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.0946	0.087892532	4.50E-05
814	25	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.11491	0.112320595	6.71E-06
814	25	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.1382	0.151582146	0.00017908
814	50	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.10468	0.099565353	2.62E-05
814	50	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.1318	0.127245007	2.07E-05
814	50	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.16513	0.171728153	4.35E-05
814	75	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.10956	0.107070134	6.20E-06
814	75	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.1412	0.136846797	1.90E-05
814	75	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.18231	0.184692663	5.68E-06
814	100	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.11142	0.112736244	1.73E-06
814	100	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.14702	0.144076643	8.66E-06
814	100	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.19452	0.194454651	4.27E-09
814	120	2	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.11161	0.116472038	2.36E-05
814	120	2.4	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.14985	0.148840014	1.02E-06
814	120	3	0.04100341	0.03192045	0.33054598	0	0.06409798	0.13758695	0.08512528	0.71318979	0.20137	0.200890001	2.30E-07
815	10	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.09671	0.08616066	0.00011129
815	10	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.11457	0.110471821	1.68E-05
815	10	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.1332	0.149785328	0.00027507
815	25	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.10797	0.100604477	5.43E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
815	25	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.13201	0.129033165	8.86E-06
815	25	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.15959	0.174945107	0.00023578
815	50	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.11851	0.113095608	2.93E-05
815	50	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.1503	0.145065975	2.74E-05
815	50	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.18923	0.196684437	5.56E-05
815	75	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.12359	0.121092529	6.24E-06
815	75	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.16049	0.155320104	2.67E-05
815	75	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.20799	0.210587044	6.74E-06
815	100	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.12539	0.127091303	2.89E-06
815	100	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.16651	0.16300601	1.23E-05
815	100	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.22102	0.221006422	1.84E-10
815	120	2	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.1254	0.131037807	3.18E-05
815	120	2.4	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.16942	0.168058387	1.85E-06
815	120	3	0.04886054	0.02822361	0.24084843	0	0.05533433	0.15344658	0.06295261	0.72826647	0.22835	0.227845875	2.54E-07
816	10	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.09702	0.086961651	0.00010117
816	10	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.11483	0.111489296	1.12E-05
816	10	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.13333	0.151040936	0.00031368
816	25	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.10842	0.101427116	4.89E-05
816	25	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.13246	0.130072289	5.70E-06
816	25	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.15988	0.176226692	0.00026721
816	50	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.11923	0.113948555	2.79E-05
816	50	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.15106	0.146113758	2.45E-05
816	50	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.1898	0.19800066	6.73E-05
816	75	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.12446	0.121958466	6.26E-06
816	75	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.16139	0.156376546	2.51E-05
816	75	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.2091	0.211911926	7.91E-06
816	100	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.12633	0.127959404	2.65E-06
816	100	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.16751	0.164066782	1.19E-05
816	100	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.2224	0.222333469	4.43E-09
816	120	2	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.12637	0.131907352	3.07E-05
816	120	2.4	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.17052	0.169119159	1.96E-06
816	120	3	0.04922495	0.04310594	0.2228546	0	0.0614105	0.15522143	0.05155176	0.73181631	0.22976	0.229179056	3.37E-07
817	10	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.07779	0.069967651	6.12E-05
817	10	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.09184	0.089775944	4.26E-06
817	10	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.1066	0.121793938	0.00023086
817	25	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.08724	0.081441307	3.36E-05
817	25	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.10651	0.104544487	3.86E-06
817	25	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.1287	0.141814384	0.00017199
817	50	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.09584	0.091360607	2.01E-05
817	50	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.12141	0.117269421	1.71E-05
817	50	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.15265	0.159081154	4.14E-05
817	75	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.09999	0.097694931	5.27E-06
817	75	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.12955	0.125387573	1.73E-05
817	75	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.16807	0.170101636	4.13E-06
817	100	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.10119	0.102444592	1.57E-06
817	100	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.13412	0.131470776	7.02E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
817	100	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.17851	0.178365555	2.09E-08
817	120	2	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.10104	0.105570261	2.05E-05
817	120	2.4	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.13656	0.135472123	1.18E-06
817	120	3	0.04455732	0.06006671	0.27443779	0	0.13181183	0.13749058	0.10630439	0.62439321	0.18411	0.183791367	1.02E-07
818	10	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.09144	0.081614494	9.65E-05
818	10	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.10832	0.104734993	1.29E-05
818	10	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.1259	0.142121792	0.00026315
818	25	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.10222	0.095201035	4.93E-05
818	25	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.12503	0.122200928	8.00E-06
818	25	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.15121	0.165809479	0.00021314
818	50	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.11218	0.10695179	2.73E-05
818	50	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.14232	0.137272549	2.55E-05
818	50	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.1792	0.186258564	4.98E-05
818	75	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.1169	0.114453684	5.98E-06
818	75	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.15183	0.146908976	2.42E-05
818	75	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.19711	0.199338531	4.97E-06
818	100	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.11855	0.120088043	2.37E-06
818	100	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.15748	0.154134493	1.12E-05
818	100	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.2092	0.209138765	3.75E-09
818	120	2	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.11855	0.123792807	2.75E-05
818	120	2.4	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.16018	0.158883071	1.68E-06
818	120	3	0.07847219	0.04184757	0.19564518	0	0.09230829	0.14622808	0.06926852	0.69219511	0.21615	0.215578445	3.27E-07
819	10	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.0871	0.078085804	8.13E-05
819	10	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.10323	0.100405312	7.98E-06
819	10	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.12004	0.136471558	0.00027
819	25	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.0973	0.090750122	4.29E-05
819	25	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.11908	0.116676254	5.78E-06
819	25	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.14421	0.158613548	0.00020746
819	50	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.10671	0.101669579	2.54E-05
819	50	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.13552	0.130704422	2.32E-05
819	50	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.17059	0.177677135	5.02E-05
819	75	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.11106	0.108637479	5.87E-06
819	75	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.14426	0.13965243	2.12E-05
819	75	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.18746	0.189836324	5.65E-06
819	100	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.11238	0.113857632	2.18E-06
819	100	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.14948	0.146349726	9.80E-06
819	100	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.19911	0.19894453	2.74E-08
819	120	2	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.11227	0.117287461	2.52E-05
819	120	2.4	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.15203	0.150746878	1.65E-06
819	120	3	0.02206573	0.03707048	0.29145515	0	0.09505046	0.14720616	0.08321242	0.67453096	0.20538	0.204920212	2.11E-07
820	10	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.08417	0.074622059	9.12E-05
820	10	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.09878	0.095058155	1.39E-05
820	10	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.11394	0.12774725	0.00019064
820	25	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.09488	0.088299522	4.33E-05
820	25	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.11498	0.112485123	6.22E-06
820	25	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.13797	0.151166496	0.00017415

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
820	50	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.10531	0.10029707	2.51E-05
820	50	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.13213	0.127734261	1.93E-05
820	50	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.16508	0.171671867	4.35E-05
820	75	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.11036	0.108025551	5.45E-06
820	75	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.14182	0.13757707	1.80E-05
820	75	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.18241	0.184886055	6.13E-06
820	100	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.1126	0.113857632	1.58E-06
820	100	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.14782	0.1449967	7.97E-06
820	100	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.19473	0.194855146	1.57E-08
820	120	2	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.11292	0.117707801	2.29E-05
820	120	2.4	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.15105	0.149891766	1.34E-06
820	120	3	0.04895068	0.07468504	0.2553454	0	0.06328843	0.15396278	0.10112448	0.68162431	0.202	0.201436623	3.17E-07
821	10	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.09168	0.082718563	8.03E-05
821	10	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.10923	0.106661701	6.60E-06
821	10	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.12759	0.145607185	0.00032462
821	25	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.10168	0.095149078	4.27E-05
821	25	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.1251	0.122729149	5.62E-06
821	25	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.1522	0.16755867	0.00023589
821	50	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.11075	0.105791435	2.46E-05
821	50	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.14149	0.136467228	2.52E-05
821	50	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.17908	0.186301861	5.22E-05
821	75	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.11501	0.112539965	6.10E-06
821	75	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.15008	0.145171331	2.41E-05
821	75	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.19556	0.19818395	6.89E-06
821	100	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.11611	0.117574663	2.15E-06
821	100	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.15494	0.151662245	1.07E-05
821	100	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.20716	0.207036705	1.52E-08
821	120	2	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.11561	0.120877488	2.77E-05
821	120	2.4	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.15732	0.155915435	1.97E-06
821	120	3	0.04193733	0.02573136	0.23095783	0	0.10731691	0.15615282	0.08463907	0.65189121	0.21331	0.212829097	2.31E-07
822	10	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.09077	0.080921745	9.70E-05
822	10	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.10721	0.103565979	1.33E-05
822	10	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.12425	0.140021896	0.00024875
822	25	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.1017	0.094768066	4.81E-05
822	25	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.12382	0.121317673	6.26E-06
822	25	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.14924	0.164042969	0.00021913
822	50	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.11197	0.106787262	2.69E-05
822	50	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.1414	0.136696701	2.21E-05
822	50	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.17753	0.184860077	5.37E-05
822	75	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.117	0.114505641	6.22E-06
822	75	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.15111	0.146562602	2.07E-05
822	75	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.19548	0.198207041	7.44E-06
822	100	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.11878	0.120295868	2.30E-06
822	100	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.15699	0.1539678	9.13E-06
822	100	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.20831	0.208220873	7.94E-09
822	120	2	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.11892	0.124106709	2.69E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
822	120	2.4	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.1602	0.158841578	1.85E-06
822	120	3	0.05210043	0.07163612	0.19502385	0	0.07664087	0.16009506	0.08571193	0.67755213	0.21534	0.214813534	2.77E-07
823	10	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.07958	0.070335674	8.55E-05
823	10	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.0932	0.089494514	1.37E-05
823	10	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10733	0.120105362	0.00016321
823	25	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.08997	0.083562851	4.11E-05
823	25	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10888	0.106328316	6.51E-06
823	25	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.13034	0.142706299	0.00015293
823	50	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10007	0.095188046	2.38E-05
823	50	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.12528	0.121109848	1.74E-05
823	50	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.15629	0.16253191	3.90E-05
823	75	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10498	0.102697156	5.21E-06
823	75	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.13476	0.130675557	1.67E-05
823	75	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.17302	0.175375188	5.55E-06
823	100	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10713	0.10837842	1.56E-06
823	100	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.14069	0.137891693	7.83E-06
823	100	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.18469	0.185065737	1.41E-07
823	120	2	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.10765	0.11213514	2.01E-05
823	120	2.4	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.14368	0.142664806	1.03E-06
823	120	3	0.0869542	0.04302224	0.27879688	0	0.11409031	0.16380173	0.07124278	0.65086518	0.19199	0.191472944	2.67E-07
824	10	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.08405	0.074405575	9.30E-05
824	10	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.09851	0.094776726	1.39E-05
824	10	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.11355	0.12733593	0.00019005
824	25	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.09504	0.0883255	4.51E-05
824	25	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.1151	0.112502441	6.75E-06
824	25	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.13795	0.151192474	0.00017536
824	50	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.10574	0.100543861	2.70E-05
824	50	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.13251	0.128067646	1.97E-05
824	50	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.16544	0.172139473	4.49E-05
824	75	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.11092	0.108446973	6.12E-06
824	75	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.14248	0.138125496	1.90E-05
824	75	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.18315	0.185668284	6.34E-06
824	100	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.11327	0.114413996	1.31E-06
824	100	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.14864	0.145724087	8.50E-06
824	100	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.19582	0.195881281	3.76E-09
824	120	2	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.11362	0.118359057	2.25E-05
824	120	2.4	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.15199	0.15074327	1.55E-06
824	120	3	0.06418785	0.05839815	0.27790535	0	0.11581285	0.15857898	0.02520483	0.70040335	0.20322	0.202627285	3.51E-07
825	10	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.10543	0.094408703	0.00012147
825	10	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.12656	0.122421741	1.71E-05
825	10	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.1488	0.168208122	0.00037668
825	25	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.11595	0.108051529	6.24E-05
825	25	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.14362	0.140125809	1.22E-05
825	25	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.17587	0.192540932	0.00027792
825	50	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.12549	0.119637756	3.42E-05
825	50	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.1612	0.155149803	3.66E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
825	50	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.20557	0.213189182	5.81E-05
825	75	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.12979	0.126963577	7.99E-06
825	75	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.17045	0.164637578	3.38E-05
825	75	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.22374	0.226217194	6.14E-06
825	100	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.13045	0.132408152	3.83E-06
825	100	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.17556	0.171689186	1.50E-05
825	100	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.236	0.235898361	1.03E-08
825	120	2	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.1299	0.135968232	3.68E-05
825	120	2.4	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.17757	0.176299214	1.61E-06
825	120	3	0.03620181	0.02906722	0.15150723	0	0.06344923	0.15401455	0.08922362	0.6933126	0.24283	0.242222222	3.69E-07
826	10	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.0873	0.077349758	9.90E-05
826	10	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.10271	0.098846626	1.49E-05
826	10	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.11873	0.133397484	0.00021514
826	25	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.09828	0.091295662	4.88E-05
826	25	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.11934	0.116632957	7.33E-06
826	25	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.14361	0.157401237	0.0001902
826	50	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.1087	0.103449078	2.76E-05
826	50	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.13696	0.132176514	2.29E-05
826	50	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.1716	0.178361225	4.57E-05
826	75	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.11384	0.111275698	6.58E-06
826	75	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.14675	0.142183851	2.08E-05
826	75	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.1893	0.191851069	6.51E-06
826	100	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.11571	0.117172003	2.14E-06
826	100	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.15274	0.149713888	9.16E-06
826	100	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.20212	0.20201211	1.16E-08
826	120	2	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.11591	0.121063304	2.66E-05
826	120	2.4	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.15572	0.154679672	1.08E-06
826	120	3	0.06573466	0.07824889	0.21028766	0	0.08382696	0.14535054	0.06840688	0.70241562	0.20929	0.208703272	3.44E-07
827	10	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.08353	0.074254036	8.60E-05
827	10	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.09799	0.094646835	1.12E-05
827	10	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.11297	0.127206039	0.00020266
827	25	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.09433	0.087875214	4.17E-05
827	25	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.11424	0.111965561	5.17E-06
827	25	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.13707	0.150560341	0.00018199
827	50	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.10474	0.099794827	2.45E-05
827	50	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.13141	0.127158413	1.81E-05
827	50	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.16418	0.170983448	4.63E-05
827	75	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.10977	0.107482897	5.23E-06
827	75	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.14115	0.136956482	1.76E-05
827	75	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.18159	0.184147123	6.54E-06
827	100	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.11205	0.113286114	1.53E-06
827	100	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.14714	0.144338589	7.85E-06
827	100	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.1939	0.194080133	3.24E-08
827	120	2	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.11241	0.117117882	2.22E-05
827	120	2.4	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.15037	0.149213449	1.34E-06
827	120	3	0.06397402	0.07192976	0.25091421	0	0.0559108	0.14351547	0.10363146	0.69694227	0.20126	0.200635632	3.90E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
828	10	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.09026	0.080380535	9.76E-05
828	10	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.1064	0.102916527	1.21E-05
828	10	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.12324	0.139242554	0.00025608
828	25	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.10142	0.094369736	4.97E-05
828	25	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.12336	0.120858727	6.26E-06
828	25	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.14862	0.163514748	0.00022185
828	50	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.11191	0.106553459	2.87E-05
828	50	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.14129	0.136458569	2.33E-05
828	50	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.17719	0.184626274	5.53E-05
828	75	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.11711	0.114381523	7.44E-06
828	75	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.15117	0.146473122	2.21E-05
828	75	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.1954	0.198172404	7.69E-06
828	100	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.11888	0.120263395	1.91E-06
828	100	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.15703	0.153995943	9.21E-06
828	100	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.2084	0.208348598	2.64E-09
828	120	2	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.1192	0.124140986	2.44E-05
828	120	2.4	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.16023	0.15894982	1.64E-06
828	120	3	0.0511556	0.04596905	0.26017737	0	0.08465945	0.15230641	0.04565357	0.71738056	0.21563	0.215051667	3.34E-07
829	10	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.08381	0.074730301	8.24E-05
829	10	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.09829	0.095274639	9.09E-06
829	10	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.11331	0.128180218	0.00022112
829	25	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.09478	0.088386116	4.09E-05
829	25	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.11484	0.112701607	4.57E-06
829	25	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.13773	0.151668739	0.00019429
829	50	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.10536	0.100357685	2.50E-05
829	50	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.13221	0.127950745	1.81E-05
829	50	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.16525	0.172195759	4.82E-05
829	75	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.11042	0.108074621	5.50E-06
829	75	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.14192	0.137793554	1.70E-05
829	75	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.18289	0.185443141	6.52E-06
829	100	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.11265	0.113896599	1.55E-06
829	100	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.14788	0.145213184	7.11E-06
829	100	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.19536	0.195430994	5.04E-09
829	120	2	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.11299	0.117740273	2.26E-05
829	120	2.4	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.15129	0.15010825	1.40E-06
829	120	3	0.05770794	0.06714791	0.27607653	0	0.07009097	0.13751325	0.07049297	0.72190281	0.20259	0.20202113	3.24E-07
830	10	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.09047	0.081203175	8.59E-05
830	10	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.10735	0.104475212	8.26E-06
830	10	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.12497	0.142208385	0.00029716
830	25	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.10092	0.09417057	4.56E-05
830	25	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.12366	0.121179123	6.15E-06
830	25	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.14999	0.164969521	0.00022439
830	50	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.11048	0.105332489	2.65E-05
830	50	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.14054	0.135557995	2.48E-05
830	50	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.17723	0.184531021	5.33E-05
830	75	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.11482	0.112450485	5.61E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
830	75	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.14956	0.144715271	2.35E-05
830	75	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.19446	0.196991844	6.41E-06
830	100	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.11638	0.117780323	1.96E-06
830	100	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.15486	0.151558332	1.09E-05
830	100	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.20649	0.206307154	3.34E-08
830	120	2	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.11605	0.121277984	2.73E-05
830	120	2.4	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.15737	0.156057954	1.72E-06
830	120	3	0.02935215	0.05759471	0.23470546	0	0.11070304	0.14644729	0.05712794	0.68572173	0.21278	0.212417777	1.31E-07
831	10	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.10478	0.093824196	0.00012003
831	10	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.12531	0.12149086	1.46E-05
831	10	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.14672	0.166584492	0.0003946
831	25	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.11608	0.10804287	6.46E-05
831	25	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.14308	0.139909325	1.01E-05
831	25	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.17451	0.191830864	0.00030001
831	50	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.12632	0.120209274	3.73E-05
831	50	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.1616	0.155630398	3.56E-05
831	50	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.20511	0.213397007	6.87E-05
831	75	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.13082	0.127904561	8.50E-06
831	75	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.1714	0.165607427	3.36E-05
831	75	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.22397	0.227060038	9.55E-06
831	100	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.13214	0.133657265	2.30E-06
831	100	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.17696	0.173035717	1.54E-05
831	100	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.23732	0.237244892	5.64E-09
831	120	2	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.13164	0.137424088	3.35E-05
831	120	2.4	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.1792	0.177901196	1.69E-06
831	120	3	0.04111188	0.0291553	0.18559481	0	0.05429604	0.14260502	0.0569878	0.74611114	0.24436	0.243908993	2.03E-07
832	10	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.09853	0.087264729	0.00012691
832	10	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.11675	0.111943913	2.31E-05
832	10	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.13562	0.15179863	0.00026175
832	25	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.11002	0.102154503	6.19E-05
832	25	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.13443	0.131085434	1.12E-05
832	25	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.16238	0.177768059	0.00023679
832	50	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.12082	0.115091591	3.28E-05
832	50	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.1531	0.147663784	2.96E-05
832	50	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.19256	0.200256424	5.92E-05
832	75	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.12614	0.123372828	7.66E-06
832	75	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.1636	0.158284492	2.83E-05
832	75	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.21188	0.214656944	7.71E-06
832	100	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.12799	0.129589529	2.56E-06
832	100	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.16981	0.166257601	1.26E-05
832	100	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.22527	0.225463829	3.76E-08
832	120	2	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.12804	0.133686129	3.19E-05
832	120	2.4	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.17282	0.171502288	1.74E-06
832	120	3	0.07531855	0.04899767	0.15939688	0	0.07272259	0.1601295	0.05392994	0.71321796	0.23292	0.23257064	1.22E-07
833	10	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.1004	0.09010067	0.00010608
833	10	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.11964	0.11605711	1.28E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
833	10	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.13965	0.158293152	0.00034757
833	25	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.11143	0.104076881	5.41E-05
833	25	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.13702	0.134150848	8.23E-06
833	25	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.16661	0.182946358	0.00026688
833	50	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.12148	0.116078758	2.92E-05
833	50	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.15509	0.14962513	2.99E-05
833	50	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.19637	0.204057884	5.91E-05
833	75	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.12619	0.123707657	6.16E-06
833	75	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.16466	0.15945062	2.71E-05
833	75	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.21469	0.217482783	7.80E-06
833	100	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.12763	0.129409847	3.17E-06
833	100	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.17031	0.166794481	1.24E-05
833	100	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.22765	0.227496614	2.35E-08
833	120	2	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.12732	0.133148527	3.40E-05
833	120	2.4	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.17272	0.171605118	1.24E-06
833	120	3	0.04325455	0.0245867	0.21357258	0	0.05714203	0.14952861	0.06948202	0.72384734	0.23484	0.234058968	6.10E-07
834	10	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.08746	0.078627014	7.80E-05
834	10	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.10375	0.101098061	7.03E-06
834	10	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.12079	0.137467384	0.00027814
834	25	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.09754	0.091105156	4.14E-05
834	25	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.11945	0.117169838	5.20E-06
834	25	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.14477	0.159340935	0.00021231
834	50	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.10674	0.101834106	2.41E-05
834	50	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.13568	0.130981522	2.21E-05
834	50	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.17106	0.178140411	5.01E-05
834	75	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.11096	0.108683662	5.18E-06
834	75	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.14442	0.139782321	2.15E-05
834	75	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.18776	0.19011631	5.55E-06
834	100	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.11236	0.113805676	2.09E-06
834	100	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.14958	0.146362715	1.04E-05
834	100	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.19918	0.199070091	1.21E-08
834	120	2	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.11214	0.117168395	2.53E-05
834	120	2.4	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.15194	0.150678325	1.59E-06
834	120	3	0.04205635	0.04021138	0.24706753	0	0.06985846	0.14211501	0.12560585	0.66242067	0.20535	0.204936449	1.71E-07
835	10	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.09844	0.088173962	0.00010539
835	10	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.11711	0.113480949	1.32E-05
835	10	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.13649	0.154483032	0.00032375
835	25	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.10948	0.102163162	5.35E-05
835	25	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.13444	0.131518402	8.54E-06
835	25	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.16325	0.179075623	0.00025045
835	50	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.11955	0.114221325	2.84E-05
835	50	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.15246	0.147022991	2.96E-05
835	50	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.19254	0.200200138	5.87E-05
835	75	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.12428	0.121886304	5.73E-06
835	75	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.16209	0.156901881	2.69E-05
835	75	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.21095	0.213643799	7.26E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
835	100	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.12601	0.127628183	2.62E-06
835	100	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.16788	0.164281101	1.30E-05
835	100	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.22385	0.22368866	2.60E-08
835	120	2	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.12568	0.131391398	3.26E-05
835	120	2.4	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.17065	0.169122767	2.33E-06
835	120	3	0.04028635	0.03517172	0.21676195	0	0.08072555	0.15364776	0.04848329	0.71714339	0.23087	0.230272301	3.57E-07
836	10	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.08841	0.078973389	8.90E-05
836	10	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.10455	0.101184654	1.13E-05
836	10	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.12132	0.137056065	0.00024762
836	25	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.09898	0.092230873	4.56E-05
836	25	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.12073	0.118200302	6.40E-06
836	25	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.14578	0.16008564	0.00020465
836	50	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.10871	0.103708858	2.50E-05
836	50	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.13772	0.13290823	2.32E-05
836	50	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.17303	0.179993515	4.85E-05
836	75	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.11357	0.111062101	6.29E-06
836	75	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.14703	0.142316628	2.22E-05
836	75	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.19051	0.192742984	4.99E-06
836	100	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.11524	0.116572342	1.78E-06
836	100	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.15244	0.149376173	9.39E-06
836	100	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.2024	0.202302198	9.57E-09
836	120	2	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.11511	0.120195564	2.59E-05
836	120	2.4	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.15528	0.154017591	1.59E-06
836	120	3	0.04236341	0.06528108	0.22249714	0	0.09343512	0.15610263	0.0838115	0.66665075	0.20904	0.208584205	2.08E-07
837	10	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.09488	0.084623623	0.00010519
837	10	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.11276	0.108913136	1.48E-05
837	10	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.13133	0.148204994	0.00028477
837	25	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.10564	0.098283768	5.41E-05
837	25	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.12959	0.126487312	9.63E-06
837	25	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.15727	0.172148132	0.00022136
837	50	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.11554	0.110051842	3.01E-05
837	50	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.1471	0.141615219	3.01E-05
837	50	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.18562	0.192766075	5.11E-05
837	75	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.12004	0.11755085	6.20E-06
837	75	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.15639	0.151267522	2.62E-05
837	75	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.20346	0.205893669	5.92E-06
837	100	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.12174	0.123166447	2.03E-06
837	100	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.16204	0.158487988	1.26E-05
837	100	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.21591	0.215722046	3.53E-08
837	120	2	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.12139	0.126857861	2.99E-05
837	120	2.4	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.16461	0.163230793	1.90E-06
837	120	3	0.08392348	0.03193368	0.17078353	0	0.08245833	0.14644487	0.08006817	0.69102862	0.22259	0.222170385	1.76E-07
838	10	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.10707	0.096248817	0.0001171
838	10	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.12864	0.124976254	1.34E-05
838	10	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.15144	0.171996593	0.00042257
838	25	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.11763	0.10980938	6.12E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
838	25	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.14583	0.142602386	1.04E-05
838	25	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.17882	0.196273117	0.00030461
838	50	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.12711	0.121304684	3.37E-05
838	50	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.16355	0.157535458	3.62E-05
838	50	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.20879	0.216808796	6.43E-05
838	75	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.13131	0.1285569	7.58E-06
838	75	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.17281	0.166938082	3.45E-05
838	75	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.22702	0.229761759	7.52E-06
838	100	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.132	0.133940859	3.77E-06
838	100	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.17793	0.173918972	1.61E-05
838	100	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.23925	0.239366436	1.36E-08
838	120	2	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.13138	0.13745656	3.69E-05
838	120	2.4	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.17994	0.178483899	2.12E-06
838	120	3	0.0422389	0.01758338	0.15254308	0	0.09685537	0.16339348	0.0502516	0.68949954	0.24626	0.24563365	3.92E-07
839	10	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.09113	0.081722736	8.85E-05
839	10	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.10777	0.104713345	9.34E-06
839	10	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.12507	0.141818714	0.00028052
839	25	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.10201	0.095330925	4.46E-05
839	25	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.12443	0.122192268	5.01E-06
839	25	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.15018	0.165463104	0.00023357
839	50	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.1121	0.107116318	2.48E-05
839	50	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.14194	0.137285538	2.17E-05
839	50	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.17838	0.185886211	5.63E-05
839	75	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.11704	0.114649963	5.71E-06
839	75	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.15162	0.146932068	2.20E-05
839	75	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.19649	0.19895752	6.09E-06
839	100	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.11882	0.120302362	2.20E-06
839	100	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.1573	0.154158306	9.87E-06
839	100	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.20888	0.208746929	1.77E-08
839	120	2	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.11876	0.12402192	2.77E-05
839	120	2.4	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.16014	0.158906523	1.52E-06
839	120	3	0.05332695	0.04321579	0.23524025	0	0.08173739	0.15563775	0.07082951	0.69179535	0.2157	0.215183361	2.67E-07
840	10	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.09525	0.084883404	0.00010747
840	10	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.11272	0.108826542	1.52E-05
840	10	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.13086	0.147533894	0.00027802
840	25	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.10655	0.099288254	5.27E-05
840	25	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.13016	0.12733593	7.98E-06
840	25	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.15712	0.172615738	0.00024012
840	50	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.1172	0.111766396	2.95E-05
840	50	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.14849	0.143351421	2.64E-05
840	50	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.18667	0.19433342	5.87E-05
840	75	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.12233	0.119767647	6.57E-06
840	75	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.1587	0.153608437	2.59E-05
840	75	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.20566	0.20823747	6.64E-06
840	100	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.12416	0.12577075	2.59E-06
840	100	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.16466	0.16130228	1.13E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
840	100	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.21864	0.218664064	5.79E-10
840	120	2	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.12414	0.129722667	3.12E-05
840	120	2.4	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.16765	0.1663644	1.65E-06
840	120	3	0.07901828	0.0312211	0.20877846	0	0.05930012	0.14660716	0.0643707	0.72972202	0.22592	0.225520476	1.60E-07
841	10	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.09011	0.081073284	8.17E-05
841	10	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.1073	0.104475212	7.98E-06
841	10	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.12524	0.14242487	0.00029532
841	25	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.1	0.093469162	4.27E-05
841	25	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.12296	0.120451736	6.29E-06
841	25	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.14946	0.164242134	0.00021851
841	50	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.10903	0.104085541	2.44E-05
841	50	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.13911	0.134142189	2.47E-05
841	50	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.17591	0.182881413	4.86E-05
841	75	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.11316	0.110825411	5.45E-06
841	75	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.14756	0.142824643	2.24E-05
841	75	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.19221	0.194711545	6.26E-06
841	100	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.1144	0.115860109	2.13E-06
841	100	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.15247	0.149300404	1.00E-05
841	100	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.20366	0.203542652	1.38E-08
841	120	2	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.1139	0.119160048	2.77E-05
841	120	2.4	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.15488	0.153550347	1.77E-06
841	120	3	0.05017127	0.03492443	0.2092369	0	0.09279598	0.15280518	0.11554811	0.63885073	0.20966	0.209325663	1.12E-07
842	10	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.10327	0.092590237	0.00011406
842	10	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.12404	0.120430088	1.30E-05
842	10	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.14601	0.166043282	0.00040133
842	25	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.11362	0.105756798	6.18E-05
842	25	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.14088	0.137562637	1.10E-05
842	25	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.17298	0.189674683	0.00027871
842	50	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.12275	0.116931705	3.39E-05
842	50	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.15802	0.152084389	3.52E-05
842	50	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.20184	0.2096908	6.16E-05
842	75	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.12678	0.123987643	7.80E-06
842	75	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.16712	0.161245995	3.45E-05
842	75	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.21972	0.22232914	6.81E-06
842	100	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.12741	0.129228001	3.31E-06
842	100	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.17197	0.168047924	1.54E-05
842	100	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.23156	0.231709394	2.23E-08
842	120	2	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.12671	0.132652418	3.53E-05
842	120	2.4	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.17369	0.172498115	1.42E-06
842	120	3	0.02550935	0.03583637	0.16996637	0	0.08687935	0.13978084	0.06507731	0.7082625	0.23835	0.237833007	2.67E-07
843	10	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.08059	0.071937656	7.49E-05
843	10	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.09457	0.091810894	7.61E-06
843	10	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.10905	0.123634052	0.00021269
843	25	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.09114	0.084957008	3.82E-05
843	25	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.11044	0.108397903	4.17E-06
843	25	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.13258	0.146031494	0.00018094

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
843	50	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.10112	0.096318092	2.31E-05
843	50	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.12702	0.122910995	1.69E-05
843	50	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.15889	0.165558357	4.45E-05
843	75	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.10594	0.103643913	5.27E-06
843	75	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.13619	0.132248675	1.55E-05
843	75	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.1757	0.178154844	6.03E-06
843	100	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.10799	0.109164257	1.38E-06
843	100	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.14185	0.139285851	6.57E-06
843	100	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.18745	0.187641897	3.68E-08
843	120	2	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.10832	0.112809849	2.02E-05
843	120	2.4	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.14499	0.143933042	1.12E-06
843	120	3	0.06461823	0.04090932	0.31131282	0	0.1122794	0.14485899	0.05286271	0.6899989	0.1944	0.193895761	2.54E-07
844	10	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.08798	0.078518772	8.95E-05
844	10	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.10402	0.100600147	1.17E-05
844	10	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.12073	0.136190128	0.00023902
844	25	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.09845	0.091676674	4.59E-05
844	25	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.12002	0.117455597	6.58E-06
844	25	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.14488	0.159055176	0.00020094
844	50	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.10813	0.103072395	2.56E-05
844	50	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.13681	0.132072601	2.24E-05
844	50	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.17189	0.178824501	4.81E-05
844	75	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.11284	0.110366465	6.12E-06
844	75	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.14604	0.141416054	2.14E-05
844	75	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.18917	0.191470057	5.29E-06
844	100	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.11455	0.115840626	1.67E-06
844	100	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.15153	0.148423643	9.65E-06
844	100	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.20118	0.200953503	5.13E-08
844	120	2	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.11444	0.119439673	2.50E-05
844	120	2.4	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.15439	0.153038001	1.83E-06
844	120	3	0.08775586	0.04452172	0.18459189	0	0.07705124	0.15595348	0.11970715	0.64728813	0.20754	0.207191491	1.21E-07
845	10	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.08264	0.073972607	7.51E-05
845	10	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.09746	0.094798374	7.08E-06
845	10	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.113	0.128331757	0.00023506
845	25	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.0928	0.086507034	3.96E-05
845	25	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.11313	0.110865822	5.13E-06
845	25	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.13651	0.150127373	0.00018543
845	50	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.10217	0.097378864	2.30E-05
845	50	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.12923	0.124798737	1.96E-05
845	50	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.16242	0.168991795	4.32E-05
845	75	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.10677	0.104348208	5.87E-06
845	75	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.1381	0.133714994	1.92E-05
845	75	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.179	0.181075935	4.31E-06
845	100	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.10828	0.109579906	1.69E-06
845	100	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.14323	0.140413733	7.93E-06
845	100	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.1904	0.190146618	6.42E-08
845	120	2	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.10825	0.113022725	2.28E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
845	120	2.4	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.14595	0.144826039	1.26E-06
845	120	3	0.070458	0.03342335	0.27310675	0	0.09243329	0.13514458	0.09706376	0.67535836	0.19654	0.196114723	1.81E-07
846	10	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.09197	0.081506252	0.00010949
846	10	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.10826	0.104085541	1.74E-05
846	10	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.12517	0.140324974	0.00022967
846	25	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.10341	0.096153564	5.27E-05
846	25	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.12556	0.122789764	7.67E-06
846	25	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.15096	0.16552372	0.0002121
846	50	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.11438	0.108926125	2.97E-05
846	50	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.14405	0.139086685	2.46E-05
846	50	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.18028	0.187496853	5.21E-05
846	75	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.11973	0.117149633	6.66E-06
846	75	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.15432	0.149581833	2.25E-05
846	75	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.19895	0.201659241	7.34E-06
846	100	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.12196	0.123343964	1.92E-06
846	100	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.16055	0.157481337	9.42E-06
846	100	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.21237	0.212310257	3.57E-09
846	120	2	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.12224	0.12742974	2.69E-05
846	120	2.4	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.16399	0.162689583	1.69E-06
846	120	3	0.08538267	0.0494136	0.20384283	0	0.06286195	0.15655069	0.06580568	0.71478168	0.21986	0.219329031	2.82E-07
847	10	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.08596	0.076137447	9.65E-05
847	10	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.10117	0.097417831	1.41E-05
847	10	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.11698	0.131557369	0.0002125
847	25	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.09676	0.089788933	4.86E-05
847	25	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.11755	0.114840469	7.34E-06
847	25	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.14145	0.155097847	0.00018626
847	50	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.10695	0.101691227	2.77E-05
847	50	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.1348	0.130041981	2.26E-05
847	50	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.16887	0.175642185	4.59E-05
847	75	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.11201	0.109336001	7.15E-06
847	75	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.14438	0.139828504	2.07E-05
847	75	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.18634	0.188869362	6.40E-06
847	100	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.11383	0.115102415	1.62E-06
847	100	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.15029	0.147196178	9.57E-06
847	100	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.19886	0.19881897	1.68E-09
847	120	2	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.11392	0.118909287	2.49E-05
847	120	2.4	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.15316	0.152052999	1.23E-06
847	120	3	0.08067451	0.05367413	0.22968804	0	0.06807154	0.14094371	0.09321156	0.69777318	0.20583	0.205380241	2.02E-07
848	10	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.08584	0.076418877	8.88E-05
848	10	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.10117	0.097807503	1.13E-05
848	10	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.11717	0.132271767	0.00022806
848	25	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.09635	0.089633064	4.51E-05
848	25	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.11727	0.114736557	6.42E-06
848	25	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.14127	0.155184441	0.00019361
848	50	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.10623	0.10111105	2.62E-05
848	50	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.13415	0.129453144	2.21E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
848	50	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.16821	0.175087986	4.73E-05
848	75	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.1111	0.108470065	6.92E-06
848	75	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.14334	0.138884633	1.99E-05
848	75	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.18547	0.187856216	5.69E-06
848	100	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.11281	0.114015665	1.45E-06
848	100	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.14905	0.145970879	9.48E-06
848	100	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.19756	0.197446461	1.29E-08
848	120	2	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.11283	0.117668112	2.34E-05
848	120	2.4	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.15192	0.150638636	1.64E-06
848	120	3	0.02662592	0.08282118	0.24420537	0	0.11509306	0.15882222	0.06015828	0.66592644	0.20417	0.203751198	1.75E-07
849	10	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.08723	0.077782726	8.93E-05
849	10	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.10314	0.099929047	1.03E-05
849	10	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.11973	0.135583973	0.00025135
849	25	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.09776	0.090905991	4.70E-05
849	25	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.11945	0.116762848	7.22E-06
849	25	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.14429	0.158431702	0.00019999
849	50	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.10748	0.102280064	2.70E-05
849	50	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.13625	0.131332226	2.42E-05
849	50	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.17142	0.178222675	4.63E-05
849	75	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.11209	0.109561145	6.40E-06
849	75	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.14545	0.140656916	2.30E-05
849	75	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.18871	0.190895653	4.78E-06
849	100	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.11369	0.115020151	1.77E-06
849	100	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.15078	0.147661619	9.72E-06
849	100	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.20051	0.200397139	1.27E-08
849	120	2	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.1136	0.118611622	2.51E-05
849	120	2.4	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.15351	0.152265875	1.55E-06
849	120	3	0.0834449	0.03900553	0.2226377	0	0.09630856	0.13558861	0.07521555	0.69288729	0.20704	0.206637653	1.62E-07
850	10	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.08387	0.075033379	7.81E-05
850	10	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.09921	0.096313763	8.39E-06
850	10	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.11521	0.130648136	0.00023834
850	25	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.09391	0.087476883	4.14E-05
850	25	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.11472	0.112294617	5.88E-06
850	25	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.13869	0.152326851	0.00018596
850	50	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.10311	0.098244801	2.37E-05
850	50	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.13068	0.126097641	2.10E-05
850	50	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.16441	0.171052723	4.41E-05
850	75	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.10745	0.105121778	5.42E-06
850	75	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.13935	0.134918645	1.96E-05
850	75	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.18092	0.183021406	4.42E-06
850	100	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.10884	0.110281315	2.08E-06
850	100	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.1444	0.14153079	8.23E-06
850	100	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.19212	0.191999722	1.45E-08
850	120	2	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.1088	0.113675785	2.38E-05
850	120	2.4	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.14705	0.14587779	1.37E-06
850	120	3	0.05272447	0.04791472	0.25163117	0	0.13669668	0.15159317	0.06636476	0.64534538	0.19821	0.197891696	1.01E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
851	10	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.07973	0.070855236	7.88E-05
851	10	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.09354	0.090360451	1.01E-05
851	10	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10786	0.121577454	0.00018817
851	25	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.09016	0.083839951	3.99E-05
851	25	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10922	0.106908493	5.34E-06
851	25	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.13114	0.143849335	0.00016153
851	50	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10002	0.095209694	2.31E-05
851	50	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.12561	0.121391277	1.78E-05
851	50	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.15708	0.163324242	3.90E-05
851	75	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10484	0.102544174	5.27E-06
851	75	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.13475	0.130721741	1.62E-05
851	75	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.17368	0.175880318	4.84E-06
851	100	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10685	0.108075342	1.50E-06
851	100	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.14027	0.137761803	6.29E-06
851	100	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.1853	0.185353661	2.88E-09
851	120	2	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.10711	0.111725624	2.13E-05
851	120	2.4	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.14339	0.142414045	9.52E-07
851	120	3	0.08726415	0.08295615	0.21843475	0	0.0945588	0.13770002	0.09785908	0.66988211	0.19217	0.191608246	3.16E-07
852	10	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.08686	0.076851845	0.00010016
852	10	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.10189	0.097785854	1.68E-05
852	10	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.11752	0.13140583	0.00019282
852	25	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.09799	0.091087837	4.76E-05
852	25	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.11868	0.115966187	7.36E-06
852	25	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.14237	0.155842552	0.00018151
852	50	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.10883	0.103609276	2.73E-05
852	50	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.13647	0.131912403	2.08E-05
852	50	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.17047	0.177244167	4.59E-05
852	75	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.11408	0.111691348	5.71E-06
852	75	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.14667	0.142206942	1.99E-05
852	75	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.18868	0.191071726	5.72E-06
852	100	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.11646	0.117791147	1.77E-06
852	100	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.15285	0.149971504	8.29E-06
852	100	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.20142	0.201507702	7.69E-09
852	120	2	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.11686	0.121819194	2.46E-05
852	120	2.4	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.15633	0.155098208	1.52E-06
852	120	3	0.06218517	0.06237415	0.25348096	0	0.07291413	0.15637005	0.06404769	0.70666812	0.20895	0.208396586	3.06E-07
853	10	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.08542	0.076353931	8.22E-05
853	10	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.10078	0.097785854	8.96E-06
853	10	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.11684	0.132293415	0.00023881
853	25	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.09584	0.089355965	4.20E-05
853	25	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.11677	0.114459457	5.34E-06
853	25	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.14089	0.154872704	0.00019552
853	50	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.10556	0.100630455	2.43E-05
853	50	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.13342	0.128890285	2.05E-05
853	50	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.16763	0.174416885	4.61E-05
853	75	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.11025	0.107863909	5.69E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
853	75	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.14259	0.138139928	1.98E-05
853	75	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.1847	0.186946983	5.05E-06
853	100	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.11196	0.113292608	1.78E-06
853	100	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.14795	0.145087624	8.19E-06
853	100	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.19653	0.196348886	3.28E-08
853	120	2	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.11183	0.116863513	2.53E-05
853	120	2.4	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.15083	0.149655437	1.38E-06
853	120	3	0.05428818	0.07391516	0.21870068	0	0.07329714	0.13769682	0.1108753	0.67813074	0.20296	0.20253528	1.80E-07
854	10	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.09071	0.080532074	0.00010359
854	10	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.10702	0.103111362	1.53E-05
854	10	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.12403	0.139394093	0.00023606
854	25	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1018	0.094594879	5.19E-05
854	25	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1239	0.121109848	7.78E-06
854	25	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.14928	0.163765869	0.00020984
854	50	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.11222	0.106843548	2.89E-05
854	50	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1417	0.136770306	2.43E-05
854	50	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.17772	0.184946671	5.22E-05
854	75	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.11738	0.114713465	7.11E-06
854	75	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1515	0.146833928	2.18E-05
854	75	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.19593	0.198544757	6.84E-06
854	100	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.11913	0.120627089	2.24E-06
854	100	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1573	0.154392109	8.46E-06
854	100	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.20885	0.208770742	6.28E-09
854	120	2	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.11937	0.124521637	2.65E-05
854	120	2.4	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.1606	0.15937016	1.51E-06
854	120	3	0.0725052	0.03800599	0.23147889	0	0.06228387	0.15120693	0.08116293	0.70534627	0.216	0.215504479	2.46E-07
855	10	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.09974	0.089732647	0.00010015
855	10	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.11952	0.116360188	9.98E-06
855	10	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.14023	0.159765244	0.00038163
855	25	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.11017	0.102769318	5.48E-05
855	25	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.13614	0.133258934	8.30E-06
855	25	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.16654	0.183015633	0.00027145
855	50	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.11946	0.113870621	3.12E-05
855	50	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.15327	0.147629147	3.18E-05
855	50	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.19535	0.202745991	5.47E-05
855	75	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.12357	0.120881818	7.23E-06
855	75	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.16223	0.156702716	3.06E-05
855	75	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.21268	0.215208257	6.39E-06
855	100	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.12431	0.126099806	3.20E-06
855	100	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.16717	0.163456297	1.38E-05
855	100	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.22456	0.224480991	6.24E-09
855	120	2	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.12378	0.129513399	3.29E-05
855	120	2.4	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.16903	0.16787618	1.33E-06
855	120	3	0.04638298	0.03518794	0.16484142	0	0.09172245	0.13985707	0.07202424	0.69639625	0.23123	0.230539298	4.77E-07
856	10	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.08681	0.076678658	0.00010264
856	10	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.10148	0.097309589	1.74E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
856	10	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.11669	0.130236816	0.00018352
856	25	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.0983	0.091486168	4.64E-05
856	25	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.11884	0.116122055	7.39E-06
856	25	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.14186	0.155426903	0.00018406
856	50	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.10975	0.104553146	2.70E-05
856	50	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.13706	0.132683086	1.92E-05
856	50	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.17048	0.177603531	5.07E-05
856	75	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.11538	0.113019117	5.57E-06
856	75	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.14781	0.143427912	1.92E-05
856	75	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.18948	0.19198096	6.25E-06
856	100	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.11794	0.119410448	2.16E-06
856	100	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.15462	0.151551838	9.41E-06
856	100	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.20253	0.202858562	1.08E-07
856	120	2	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.11883	0.123648485	2.32E-05
856	120	2.4	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.15826	0.156927498	1.78E-06
856	120	3	0.1493916	0.03432583	0.19568424	0	0.08236067	0.16331208	0.04737677	0.70695048	0.21077	0.210049081	5.20E-07
857	10	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.08544	0.075942612	9.02E-05
857	10	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.10045	0.097006512	1.19E-05
857	10	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.11605	0.13086462	0.00021947
857	25	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.09617	0.089459877	4.50E-05
857	25	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.11681	0.114303589	6.28E-06
857	25	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.14034	0.154205933	0.00019226
857	50	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.10642	0.101253929	2.67E-05
857	50	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.13387	0.12937088	2.02E-05
857	50	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.16779	0.174559765	4.58E-05
857	75	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.11139	0.108842417	6.49E-06
857	75	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.14344	0.139078026	1.90E-05
857	75	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.18512	0.187657051	6.44E-06
857	100	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.11338	0.114565535	1.41E-06
857	100	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.14932	0.146380033	8.64E-06
857	100	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.1975	0.197507076	5.01E-11
857	120	2	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.11359	0.118337409	2.25E-05
857	120	2.4	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.15249	0.15119067	1.69E-06
857	120	3	0.0681634	0.08879811	0.19476656	0	0.10172111	0.15145866	0.07053554	0.67628468	0.20457	0.204003763	3.21E-07
858	10	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.08962	0.079925919	9.40E-05
858	10	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.10593	0.102548504	1.14E-05
858	10	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.12289	0.138939476	0.00025759
858	25	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.10042	0.093469162	4.83E-05
858	25	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.12249	0.119897537	6.72E-06
858	25	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.14782	0.162492943	0.0002153
858	50	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.11042	0.105219917	2.70E-05
858	50	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.13982	0.13494318	2.38E-05
858	50	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.17575	0.182872753	5.07E-05
858	75	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.11533	0.112730471	6.76E-06
858	75	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.1494	0.144576721	2.33E-05
858	75	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.19368	0.195935402	5.09E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
858	100	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.11706	0.118375654	1.73E-06
858	100	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.15503	0.15179863	1.04E-05
858	100	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.20579	0.205724812	4.25E-09
858	120	2	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.117	0.122091603	2.59E-05
858	120	2.4	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.15774	0.156548651	1.42E-06
858	120	3	0.03288846	0.05140387	0.26337471	0	0.08003523	0.14847813	0.06957314	0.70191351	0.21256	0.212165213	1.56E-07
859	10	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.08828	0.078995037	8.62E-05
859	10	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.10469	0.101357841	1.11E-05
859	10	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.12177	0.137467384	0.00024641
859	25	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.09847	0.091815224	4.43E-05
859	25	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.12039	0.117810631	6.65E-06
859	25	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.14573	0.159825859	0.00019869
859	50	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.10772	0.102847252	2.37E-05
859	50	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.13676	0.131990337	2.27E-05
859	50	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.172	0.179071293	5.00E-05
859	75	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.11216	0.109901746	5.10E-06
859	75	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.14562	0.141029269	2.11E-05
859	75	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.18897	0.191343053	5.63E-06
859	100	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.11375	0.115178185	2.04E-06
859	100	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.15087	0.147800169	9.42E-06
859	100	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.20076	0.200527029	5.43E-08
859	120	2	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.11351	0.118645899	2.64E-05
859	120	2.4	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.15357	0.152244226	1.76E-06
859	120	3	0.05947793	0.0290068	0.23010734	0	0.08845192	0.16299524	0.11389095	0.63466189	0.20695	0.206552863	1.58E-07
860	10	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.07918	0.070097542	8.25E-05
860	10	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.09298	0.089364624	1.31E-05
860	10	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.10728	0.120235252	0.00016784
860	25	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.08919	0.082826805	4.05E-05
860	25	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.10816	0.105600929	6.55E-06
860	25	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.12983	0.142082825	0.00015013
860	50	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.09877	0.093958416	2.32E-05
860	50	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.12408	0.119789295	1.84E-05
860	50	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.15506	0.161181049	3.75E-05
860	75	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.10342	0.101138471	5.21E-06
860	75	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.13302	0.128935026	1.67E-05
860	75	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.1713	0.17349322	4.81E-06
860	100	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.10543	0.106551294	1.26E-06
860	100	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.13862	0.1358286	7.79E-06
860	100	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.18258	0.182766676	3.48E-08
860	120	2	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.10571	0.11012725	1.95E-05
860	120	2.4	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.14169	0.140380899	1.71E-06
860	120	3	0.05152323	0.09085384	0.23537938	0	0.11108537	0.16143184	0.10642907	0.62105372	0.18941	0.188878743	2.82E-07
861	10	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.08514	0.076635361	7.23E-05
861	10	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.10105	0.098608494	5.96E-06
861	10	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.11768	0.134198475	0.00027286
861	25	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.09492	0.088628578	3.96E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
861	25	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.11634	0.114087105	5.08E-06
861	25	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.14105	0.155297012	0.00020298
861	50	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.10386	0.098946209	2.41E-05
861	50	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.13201	0.127370567	2.15E-05
861	50	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.16661	0.173386421	4.59E-05
861	75	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.10789	0.105511449	5.66E-06
861	75	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.14041	0.135819219	2.11E-05
861	75	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.18269	0.184886055	4.82E-06
861	100	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.10913	0.110426359	1.68E-06
861	100	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.14538	0.142130451	1.06E-05
861	100	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.1937	0.193486967	4.54E-08
861	120	2	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.10877	0.113648725	2.38E-05
861	120	2.4	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.14772	0.146272874	2.09E-06
861	120	3	0.09189028	0.03098595	0.19434809	0	0.09436042	0.13990838	0.13330786	0.63242334	0.19959	0.199123851	2.17E-07
862	10	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.0981	0.087697697	0.00010821
862	10	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.11665	0.112809849	1.47E-05
862	10	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.13595	0.153552151	0.00030984
862	25	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.10912	0.101738853	5.45E-05
862	25	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.13395	0.130912247	9.23E-06
862	25	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.16256	0.178183708	0.0002441
862	50	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.11927	0.113844643	2.94E-05
862	50	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.15195	0.146481781	2.99E-05
862	50	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.1917	0.199373169	5.89E-05
862	75	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.12403	0.121551476	6.14E-06
862	75	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.16165	0.156405411	2.75E-05
862	75	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.21018	0.212870229	7.24E-06
862	100	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.12569	0.127320776	2.66E-06
862	100	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.16731	0.163817825	1.22E-05
862	100	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.22289	0.222961273	5.08E-09
862	120	2	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.12542	0.131111773	3.24E-05
862	120	2.4	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.16999	0.168680779	1.71E-06
862	120	3	0.04370756	0.04464978	0.19688748	0	0.06851166	0.151372	0.06791509	0.71220126	0.23	0.229584964	1.72E-07
863	10	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.09796	0.087849236	0.00010223
863	10	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.11687	0.113437653	1.18E-05
863	10	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.13656	0.155219078	0.00034816
863	25	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.10873	0.101262589	5.58E-05
863	25	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.13372	0.130834312	8.33E-06
863	25	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.1629	0.178989029	0.00025886
863	50	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.11831	0.112766552	3.07E-05
863	50	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.15117	0.145706768	2.98E-05
863	50	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.19178	0.199299564	5.65E-05
863	75	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.1227	0.120070724	6.91E-06
863	75	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.16031	0.155132484	2.68E-05
863	75	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.20918	0.212194799	9.09E-06
863	100	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.12396	0.125523958	2.45E-06
863	100	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.16564	0.162168217	1.21E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
863	100	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.22198	0.221813908	2.76E-08
863	120	2	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.12344	0.129094863	3.20E-05
863	120	2.4	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.16785	0.166775719	1.15E-06
863	120	3	0.02553758	0.0453711	0.20863909	0	0.05528835	0.13874729	0.09071933	0.71524504	0.2286	0.228116481	2.34E-07
864	10	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.09294	0.082783508	0.00010315
864	10	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.10986	0.105990601	1.50E-05
864	10	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.12741	0.143334103	0.00025358
864	25	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.10401	0.096880951	5.08E-05
864	25	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.12674	0.124045372	7.26E-06
864	25	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.15283	0.167801132	0.00022413
864	50	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.1144	0.109107971	2.80E-05
864	50	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.14461	0.139684181	2.43E-05
864	50	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.1817	0.188973274	5.29E-05
864	75	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.11958	0.116936035	6.99E-06
864	75	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.15454	0.149720383	2.32E-05
864	75	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.19995	0.202528063	6.65E-06
864	100	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.12135	0.122817907	2.15E-06
864	100	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.16045	0.157241039	1.03E-05
864	100	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.21285	0.212704258	2.12E-08
864	120	2	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.12144	0.126690086	2.76E-05
864	120	2.4	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.16377	0.162188061	2.50E-06
864	120	3	0.04271278	0.05165197	0.22908502	0	0.0617352	0.16266994	0.082501	0.69309386	0.21995	0.219392172	3.11E-07
865	10	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.08843	0.079384708	8.18E-05
865	10	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.10493	0.102202129	7.44E-06
865	10	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.12219	0.139220905	0.00029005
865	25	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.09861	0.092040367	4.32E-05
865	25	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.12095	0.118477402	6.11E-06
865	25	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.14671	0.161375885	0.00021509
865	50	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.10797	0.102899208	2.57E-05
865	50	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.13739	0.132457943	2.43E-05
865	50	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.17346	0.180396175	4.81E-05
865	75	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.11218	0.109815152	5.59E-06
865	75	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.1461	0.141361211	2.25E-05
865	75	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.1902	0.192506294	5.32E-06
865	100	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.11364	0.114992008	1.83E-06
865	100	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.15129	0.148020983	1.07E-05
865	100	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.20181	0.201566153	5.95E-08
865	120	2	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.11323	0.11839153	2.66E-05
865	120	2.4	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.15363	0.152388549	1.54E-06
865	120	3	0.07524965	0.02727164	0.22415907	0	0.1208953	0.14120664	0.06407406	0.67382401	0.20789	0.207510805	1.44E-07
866	10	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.084	0.074427223	9.16E-05
866	10	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.09858	0.094863319	1.38E-05
866	10	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.11368	0.127595711	0.00019365
866	25	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.0949	0.088160973	4.54E-05
866	25	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.11497	0.112363892	6.79E-06
866	25	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.13803	0.151166496	0.00017257

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
866	50	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.10533	0.100188828	2.64E-05
866	50	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.13223	0.127708282	2.04E-05
866	50	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.1654	0.171810417	4.11E-05
866	75	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.11032	0.107956276	5.59E-06
866	75	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.14184	0.137611707	1.79E-05
866	75	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.18288	0.185122744	5.03E-06
866	100	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.11256	0.1138165	1.58E-06
866	100	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.14773	0.145076799	7.04E-06
866	100	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.1953	0.195171213	1.66E-08
866	120	2	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.11292	0.117689761	2.28E-05
866	120	2.4	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.15111	0.15000542	1.22E-06
866	120	3	0.04041556	0.10676004	0.23020043	0	0.09684552	0.1470982	0.0602091	0.69584718	0.20244	0.201804646	4.04E-07
867	10	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.08178	0.073669529	6.58E-05
867	10	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.09741	0.095014858	5.74E-06
867	10	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.11384	0.129760551	0.00025346
867	25	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.0907	0.084653931	3.66E-05
867	25	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.11169	0.10925518	5.93E-06
867	25	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.13588	0.149166183	0.00017652
867	50	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.09873	0.094049339	2.19E-05
867	50	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.12604	0.121369629	2.18E-05
867	50	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.15973	0.165740204	3.61E-05
867	75	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.10227	0.100009867	5.11E-06
867	75	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.13352	0.129056257	1.99E-05
867	75	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.17419	0.176232465	4.17E-06
867	100	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.10307	0.104457893	1.93E-06
867	100	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.13777	0.134787312	8.90E-06
867	100	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.18427	0.184056921	4.54E-08
867	120	2	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.10247	0.107370687	2.40E-05
867	120	2.4	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.13989	0.13853898	1.83E-06
867	120	3	0.07242032	0.0321964	0.20204083	0	0.15351944	0.15109359	0.12408719	0.57129978	0.18953	0.189176408	1.25E-07
868	10	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.10073	0.09010067	0.00011298
868	10	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.12015	0.116251945	1.52E-05
868	10	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.14034	0.158812714	0.00034124
868	25	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.11171	0.104076881	5.83E-05
868	25	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.13747	0.134324036	9.90E-06
868	25	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.16723	0.183526535	0.00026558
868	50	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.12173	0.116078758	3.19E-05
868	50	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.15542	0.149819965	3.14E-05
868	50	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.19699	0.204677029	5.91E-05
868	75	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.12634	0.123707657	6.93E-06
868	75	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.16505	0.159658445	2.91E-05
868	75	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.21523	0.218132235	8.42E-06
868	100	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.12772	0.129409847	2.86E-06
868	100	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.17065	0.167010965	1.32E-05
868	100	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.22824	0.22816988	4.92E-09
868	120	2	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.12742	0.133148527	3.28E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
868	120	2.4	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.17281	0.171830622	9.59E-07
868	120	3	0.04702431	0.04561962	0.16449967	0	0.04691157	0.14407716	0.09412988	0.7148814	0.23529	0.234746305	2.96E-07
869	10	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.08433	0.076159096	6.68E-05
869	10	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.10042	0.098132229	5.23E-06
869	10	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.11722	0.133765507	0.00027375
869	25	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.09364	0.087615433	3.63E-05
869	25	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.11504	0.112900772	4.58E-06
869	25	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.13979	0.153902855	0.00019917
869	50	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.10199	0.097391853	2.11E-05
869	50	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.12997	0.125491486	2.01E-05
869	50	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.16441	0.171065712	4.43E-05
869	75	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.10574	0.103594844	4.60E-06
869	75	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.138	0.133475418	2.05E-05
869	75	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.17964	0.181947645	5.33E-06
869	100	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.10679	0.108220387	2.05E-06
869	100	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.14256	0.139435225	9.76E-06
869	100	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.1902	0.190068684	1.72E-08
869	120	2	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.10628	0.111249359	2.47E-05
869	120	2.4	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.14465	0.143330495	1.74E-06
869	120	3	0.04955511	0.0504605	0.19625177	0	0.10996787	0.15479103	0.15097294	0.58426816	0.19579	0.195378677	1.69E-07
870	10	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.09041	0.079947567	0.00010946
870	10	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.10623	0.102050591	1.75E-05
870	10	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.12273	0.137445736	0.00021655
870	25	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.10182	0.094525604	5.32E-05
870	25	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.12359	0.12067688	8.49E-06
870	25	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.1484	0.162553558	0.00020032
870	50	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.11286	0.107306824	3.08E-05
870	50	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.14186	0.136947823	2.41E-05
870	50	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.17752	0.184496384	4.87E-05
870	75	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.11825	0.115544764	7.32E-06
870	75	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.15217	0.147445857	2.23E-05
870	75	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.19615	0.198657328	6.29E-06
870	100	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.12042	0.121754971	1.78E-06
870	100	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.15842	0.155361958	9.35E-06
870	100	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.20949	0.209320612	2.87E-08
870	120	2	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.12077	0.125849406	2.58E-05
870	120	2.4	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.1619	0.160584275	1.73E-06
870	120	3	0.10874966	0.03246051	0.21589142	0	0.07830091	0.15263829	0.04595389	0.72310691	0.21702	0.216354179	4.43E-07
871	10	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.08155	0.07215414	8.83E-05
871	10	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.09519	0.091551113	1.32E-05
871	10	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.1094	0.122529984	0.0001724
871	25	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.09253	0.086134682	4.09E-05
871	25	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.11175	0.109315796	5.93E-06
871	25	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.13335	0.146282616	0.00016725
871	50	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.10335	0.098469944	2.38E-05
871	50	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.12903	0.124963264	1.65E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
871	50	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.16055	0.167225285	4.46E-05
871	75	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.1087	0.106466866	4.99E-06
871	75	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.13929	0.135112038	1.75E-05
871	75	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.17857	0.180807495	5.01E-06
871	100	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.11124	0.112521925	1.64E-06
871	100	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.14565	0.142795057	8.15E-06
871	100	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.19083	0.191088324	6.67E-08
871	120	2	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.11194	0.116529767	2.11E-05
871	120	2.4	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.14904	0.147874856	1.36E-06
871	120	3	0.05982376	0.0948535	0.25672689	0	0.07413432	0.15213326	0.07337593	0.70035649	0.1986	0.197886284	5.09E-07
872	10	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.08934	0.079947567	8.82E-05
872	10	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.10572	0.102526855	1.02E-05
872	10	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.12274	0.139004421	0.00026453
872	25	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.09995	0.093166084	4.60E-05
872	25	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.12202	0.119525185	6.22E-06
872	25	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.14743	0.162077293	0.00021454
872	50	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.10964	0.104609432	2.53E-05
872	50	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.139	0.134207134	2.30E-05
872	50	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.17484	0.181980839	5.10E-05
872	75	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.1144	0.111925151	6.12E-06
872	75	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.14838	0.143583781	2.30E-05
872	75	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.19246	0.194705772	5.04E-06
872	100	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.11615	0.1174123	1.59E-06
872	100	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.15381	0.150614462	1.02E-05
872	100	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.20446	0.204235401	5.04E-08
872	120	2	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.11598	0.121018203	2.54E-05
872	120	2.4	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.15664	0.155231706	1.98E-06
872	120	3	0.02814489	0.06598967	0.23658307	0	0.07447592	0.14970499	0.0943493	0.68146978	0.21091	0.210487461	1.79E-07
873	10	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.08718	0.077436352	9.49E-05
873	10	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.10259	0.099041462	1.26E-05
873	10	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.11873	0.133830452	0.00022802
873	25	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.09813	0.091200409	4.80E-05
873	25	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.11928	0.116667595	6.82E-06
873	25	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.14366	0.157695656	0.000197
873	50	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.1085	0.103197956	2.81E-05
873	50	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.13677	0.132033634	2.24E-05
873	50	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.17149	0.178465137	4.87E-05
873	75	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.11349	0.110929324	6.56E-06
873	75	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.14642	0.141929843	2.02E-05
873	75	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.18935	0.191839523	6.20E-06
873	100	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.11537	0.116749859	1.90E-06
873	100	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.15247	0.149367514	9.63E-06
873	100	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.20197	0.201888714	6.61E-09
873	120	2	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.11556	0.120587039	2.53E-05
873	120	2.4	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.15535	0.15427196	1.16E-06
873	120	3	0.08008054	0.05953863	0.22187671	0	0.08823695	0.13842128	0.0593967	0.71394507	0.20894	0.20851926	1.77E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
874	10	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.08825	0.078930092	8.69E-05
874	10	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.10459	0.10150938	9.49E-06
874	10	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.12167	0.138051891	0.00026837
874	25	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.0986	0.091815224	4.60E-05
874	25	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.1207	0.118105049	6.73E-06
874	25	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.14618	0.160665817	0.00020984
874	50	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.10814	0.102942505	2.70E-05
874	50	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.13738	0.132405987	2.47E-05
874	50	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.17303	0.180145054	5.06E-05
874	75	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.1125	0.110037409	6.06E-06
874	75	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.14632	0.141537285	2.29E-05
874	75	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.1901	0.192569796	6.10E-06
874	100	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.11392	0.115353537	2.06E-06
874	100	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.15162	0.148376017	1.05E-05
874	100	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.2018	0.20187789	6.07E-09
874	120	2	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.11374	0.11884795	2.61E-05
874	120	2.4	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.15416	0.152868422	1.67E-06
874	120	3	0.05940579	0.06180439	0.19906704	0	0.09137323	0.13583276	0.09386506	0.67892896	0.20832	0.207990678	1.08E-07
875	10	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.09388	0.083909225	9.94E-05
875	10	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.1114	0.107917309	1.21E-05
875	10	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.12967	0.146862793	0.00029559
875	25	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.10473	0.097565041	5.13E-05
875	25	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.12836	0.125500145	8.18E-06
875	25	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.15562	0.17081459	0.00023088
875	50	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.11474	0.109346104	2.91E-05
875	50	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.14597	0.140671349	2.81E-05
875	50	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.18403	0.191432533	5.48E-05
875	75	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.1193	0.116855214	5.98E-06
875	75	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.15537	0.15034097	2.53E-05
875	75	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.20204	0.204583219	6.47E-06
875	100	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.12096	0.122484522	2.32E-06
875	100	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.161	0.157574425	1.17E-05
875	100	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.21448	0.214427471	2.76E-09
875	120	2	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.12073	0.126184956	2.98E-05
875	120	2.4	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.16366	0.162326972	1.78E-06
875	120	3	0.03871919	0.03443332	0.25154411	0	0.06882903	0.13889727	0.06684733	0.72542636	0.22121	0.220889521	1.03E-07
876	10	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.0833	0.073994255	8.66E-05
876	10	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.09754	0.093997383	1.26E-05
876	10	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.11234	0.125928783	0.00018466
876	25	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.09412	0.08778862	4.01E-05
876	25	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.11386	0.111558571	5.30E-06
876	25	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.13627	0.149460602	0.00017399
876	50	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.10476	0.099920387	2.34E-05
876	50	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.13106	0.126954918	1.69E-05
876	50	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.1634	0.170104523	4.50E-05
876	75	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.10995	0.107759997	4.80E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
876	75	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.14113	0.136910299	1.78E-05
876	75	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.18118	0.183448601	5.15E-06
876	100	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.11227	0.113680115	1.99E-06
876	100	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.14735	0.144420853	8.58E-06
876	100	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.19343	0.193517275	7.62E-09
876	120	2	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.11283	0.117590539	2.27E-05
876	120	2.4	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.15063	0.149384832	1.55E-06
876	120	3	0.07297243	0.04980352	0.27547695	0	0.04929009	0.15483764	0.1064483	0.68942398	0.20099	0.200170191	6.72E-07
877	10	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.07853	0.069859409	7.52E-05
877	10	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.09207	0.089083195	8.92E-06
877	10	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.10609	0.119802284	0.00018803
877	25	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.08889	0.082670937	3.87E-05
877	25	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.10765	0.105410423	5.02E-06
877	25	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.12916	0.141831703	0.00016057
877	50	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.09869	0.09390646	2.29E-05
877	50	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.1239	0.119711361	1.75E-05
877	50	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.15489	0.161081467	3.83E-05
877	75	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.10341	0.101141357	5.15E-06
877	75	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.13294	0.128940798	1.60E-05
877	75	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.17137	0.173507652	4.57E-06
877	100	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.10552	0.106609745	1.19E-06
877	100	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.13857	0.135902205	7.12E-06
877	100	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.18285	0.182874918	6.21E-10
877	120	2	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.10577	0.110215648	1.98E-05
877	120	2.4	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.14161	0.140503573	1.22E-06
877	120	3	0.03432972	0.09627402	0.28245932	0	0.13979207	0.14844529	0.0427382	0.66902444	0.1896	0.189057342	2.94E-07
878	10	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.08377	0.074990082	7.71E-05
878	10	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.09899	0.096183872	7.87E-06
878	10	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.11485	0.130431652	0.00024279
878	25	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.09388	0.087468224	4.11E-05
878	25	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.11456	0.112234001	5.41E-06
878	25	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.13839	0.152231598	0.00019159
878	50	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.1032	0.098279438	2.42E-05
878	50	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.13068	0.12611063	2.09E-05
878	50	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.1643	0.171048393	4.55E-05
878	75	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.10771	0.105205485	6.27E-06
878	75	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.1395	0.134993693	2.03E-05
878	75	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.18086	0.18309068	4.98E-06
878	100	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.10927	0.110398216	1.27E-06
878	100	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.14456	0.141647692	8.48E-06
878	100	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.19216	0.192118788	1.70E-09
878	120	2	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.10904	0.113812892	2.28E-05
878	120	2.4	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.14719	0.146029329	1.35E-06
878	120	3	0.05594904	0.07924473	0.20289384	0	0.07900765	0.13603636	0.13057573	0.65438026	0.19834	0.198054059	8.18E-08
879	10	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.09183	0.081960869	9.74E-05
879	10	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.10861	0.105081367	1.25E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
879	10	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.12605	0.142316628	0.0002646
879	25	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.10284	0.09580719	4.95E-05
879	25	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.12543	0.122841721	6.70E-06
879	25	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.15141	0.166398315	0.00022465
879	50	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.11299	0.107813396	2.68E-05
879	50	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.14315	0.138220749	2.43E-05
879	50	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.17984	0.187232742	5.47E-05
879	75	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.11797	0.115504354	6.08E-06
879	75	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.15288	0.148072217	2.31E-05
879	75	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.19815	0.200582593	5.92E-06
879	100	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.11983	0.121267881	2.07E-06
879	100	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.15864	0.155455046	1.01E-05
879	100	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.21068	0.210587044	8.64E-09
879	120	2	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.11979	0.125061043	2.78E-05
879	120	2.4	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.16144	0.160310062	1.28E-06
879	120	3	0.03839096	0.02863117	0.27984472	0	0.04168938	0.14498635	0.09281259	0.72051168	0.21764	0.217165995	2.25E-07
880	10	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.09442	0.08317318	0.00012649
880	10	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.11084	0.105839062	2.50E-05
880	10	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.12789	0.14214344	0.00020316
880	25	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.10631	0.098734055	5.74E-05
880	25	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.12882	0.125681992	9.85E-06
880	25	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.15452	0.168805618	0.00020408
880	50	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.11804	0.112415848	3.16E-05
880	50	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.14805	0.143087311	2.46E-05
880	50	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.18492	0.192203217	5.30E-05
880	75	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.1239	0.121259944	6.97E-06
880	75	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.15927	0.154344482	2.43E-05
880	75	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.20452	0.207316691	7.82E-06
880	100	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.12647	0.127929096	2.13E-06
880	100	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.16598	0.162837152	9.88E-06
880	100	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.21872	0.21872035	1.23E-13
880	120	2	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.12701	0.13234032	2.84E-05
880	120	2.4	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.16993	0.168446255	2.20E-06
880	120	3	0.08386073	0.0337865	0.23685112	0	0.03997199	0.16459613	0.0514535	0.74397838	0.22707	0.226252913	6.68E-07
881	10	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.08886	0.079752731	8.29E-05
881	10	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.10557	0.102656746	8.49E-06
881	10	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.12297	0.139718819	0.00028052
881	25	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.09899	0.092395401	4.35E-05
881	25	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.12132	0.118901711	5.85E-06
881	25	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.14715	0.161800194	0.00021463
881	50	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.10817	0.103232594	2.44E-05
881	50	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.13769	0.132838955	2.35E-05
881	50	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.17361	0.180768528	5.12E-05
881	75	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.11243	0.110144208	5.22E-06
881	75	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.1464	0.141710472	2.20E-05
881	75	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.19039	0.192846896	6.04E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
881	100	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.11389	0.11530158	1.99E-06
881	100	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.15166	0.148341379	1.10E-05
881	100	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.20198	0.201871395	1.18E-08
881	120	2	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.1136	0.118689195	2.59E-05
881	120	2.4	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.15398	0.152691627	1.66E-06
881	120	3	0.05997313	0.05937468	0.17521202	0	0.07151083	0.14300089	0.1380583	0.64742998	0.20819	0.207788626	1.61E-07
882	10	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.07237	0.064100933	6.84E-05
882	10	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.08405	0.080900097	9.92E-06
882	10	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.09613	0.107505989	0.00012941
882	25	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.08257	0.076990395	3.11E-05
882	25	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.09912	0.097192688	3.71E-06
882	25	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.11767	0.129171715	0.00013229
882	50	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.09259	0.088438072	1.72E-05
882	50	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.11515	0.111623516	1.24E-05
882	50	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.14239	0.148365192	3.57E-05
882	75	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.0978	0.095888011	3.66E-06
882	75	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.12456	0.121037687	1.24E-05
882	75	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.15871	0.160876528	4.69E-06
882	100	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.10051	0.101548347	1.08E-06
882	100	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.13077	0.128171558	6.75E-06
882	100	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.17049	0.170370798	1.42E-08
882	120	2	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.10138	0.10530146	1.54E-05
882	120	2.4	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.1337	0.132903179	6.35E-07
882	120	3	0.0345326	0.10989367	0.32062466	0	0.0655804	0.16206771	0.13276771	0.63958418	0.17713	0.176661825	2.19E-07
883	10	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.08846	0.078518772	9.88E-05
883	10	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.10419	0.100535202	1.34E-05
883	10	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.12066	0.136038589	0.0002365
883	25	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.09954	0.092386742	5.12E-05
883	25	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.1211	0.118330193	7.67E-06
883	25	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.14589	0.160128937	0.00020275
883	50	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.10992	0.104488201	2.95E-05
883	50	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.13873	0.133821793	2.41E-05
883	50	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.17408	0.181106243	4.94E-05
883	75	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.11502	0.112265752	7.59E-06
883	75	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.14852	0.143791606	2.24E-05
883	75	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.19211	0.194598974	6.19E-06
883	100	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.11681	0.118120203	1.72E-06
883	100	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.15426	0.151283398	8.86E-06
883	100	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.20488	0.204741974	1.91E-08
883	120	2	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.11692	0.121981557	2.56E-05
883	120	2.4	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.15742	0.156222121	1.43E-06
883	120	3	0.07630003	0.05023466	0.23445843	0	0.07665466	0.13573229	0.06108198	0.72653107	0.21191	0.211420147	2.40E-07
884	10	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.08477	0.074513817	0.00010519
884	10	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.09909	0.094625187	1.99E-05
884	10	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.11396	0.126708126	0.00016251
884	25	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.09595	0.088974953	4.87E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
884	25	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.116	0.113004684	8.97E-06
884	25	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.13846	0.151357002	0.00016633
884	50	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.10703	0.101751842	2.79E-05
884	50	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.13376	0.129223671	2.06E-05
884	50	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.16629	0.173057365	4.58E-05
884	75	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.11253	0.110037409	6.21E-06
884	75	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.14421	0.13974191	2.00E-05
884	75	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.18488	0.187149035	5.15E-06
884	100	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.115	0.116299572	1.69E-06
884	100	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.1507	0.147700586	9.00E-06
884	100	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.19739	0.197812319	1.78E-07
884	120	2	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.11584	0.12045354	2.13E-05
884	120	2.4	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.15423	0.152967644	1.59E-06
884	120	3	0.05824173	0.06823143	0.27326579	0	0.05015481	0.16025871	0.08397744	0.70560904	0.2055	0.204866091	4.02E-07
885	10	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.08201	0.072132492	9.76E-05
885	10	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.09519	0.091118145	1.66E-05
885	10	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.10896	0.121339321	0.00015325
885	25	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.09373	0.087043915	4.47E-05
885	25	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.11261	0.110008545	6.77E-06
885	25	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.13365	0.146481781	0.00016465
885	50	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.10534	0.100344696	2.50E-05
885	50	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.13103	0.126833687	1.76E-05
885	50	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.16202	0.168879223	4.70E-05
885	75	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.11143	0.109041583	5.70E-06
885	75	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.14196	0.137822418	1.71E-05
885	75	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.18084	0.183509216	7.12E-06
885	100	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.11433	0.115654449	1.75E-06
885	100	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.14919	0.146170044	9.12E-06
885	100	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.19438	0.194625673	6.04E-08
885	120	2	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.11564	0.120038613	1.93E-05
885	120	2.4	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.15272	0.151708428	1.02E-06
885	120	3	0.09369541	0.09144279	0.25391206	0	0.05438569	0.14991097	0.04923015	0.74647319	0.20276	0.201999482	5.78E-07
886	10	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.08884	0.079666138	8.42E-05
886	10	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.10543	0.102548504	8.30E-06
886	10	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.12274	0.139632225	0.00028535
886	25	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.09908	0.092386742	4.48E-05
886	25	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.12148	0.118936348	6.47E-06
886	25	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.14735	0.161964722	0.00021359
886	50	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.10846	0.103336506	2.63E-05
886	50	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.138	0.133020802	2.48E-05
886	50	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.17411	0.18114954	4.96E-05
886	75	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.11268	0.110314509	5.60E-06
886	75	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.14676	0.142002004	2.26E-05
886	75	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.19101	0.193372231	5.58E-06
886	100	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.11417	0.115537548	1.87E-06
886	100	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.15199	0.148718061	1.07E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
886	100	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.2027	0.202516518	3.37E-08
886	120	2	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.1138	0.118965213	2.67E-05
886	120	2.4	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.15444	0.153117379	1.75E-06
886	120	3	0.06198546	0.0393619	0.22121209	0	0.10181185	0.13947935	0.08206632	0.67664248	0.20884	0.208512044	1.08E-07
887	10	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.08506	0.07555294	9.04E-05
887	10	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.10004	0.096508598	1.25E-05
887	10	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.11561	0.130215168	0.00021331
887	25	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.0958	0.089070206	4.53E-05
887	25	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.11632	0.113766708	6.52E-06
887	25	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.13986	0.153539162	0.00018712
887	50	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.10599	0.100842609	2.65E-05
887	50	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.13342	0.128842659	2.10E-05
887	50	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.1671	0.173845367	4.55E-05
887	75	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.11094	0.108415222	6.37E-06
887	75	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.14289	0.138526713	1.90E-05
887	75	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.18445	0.186923892	6.12E-06
887	100	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.11284	0.114128237	1.66E-06
887	100	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.14879	0.145823669	8.80E-06
887	100	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.19682	0.19677103	2.40E-09
887	120	2	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.11299	0.117900832	2.41E-05
887	120	2.4	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.1518	0.150635028	1.36E-06
887	120	3	0.0655801	0.05965822	0.24759528	0	0.07092937	0.14213525	0.09098314	0.69595225	0.20381	0.203256893	3.06E-07
888	10	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.08571	0.076007557	9.41E-05
888	10	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.10066	0.096919918	1.40E-05
888	10	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.1162	0.130345058	0.00020008
888	25	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.0965	0.089814911	4.47E-05
888	25	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.11701	0.114502754	6.29E-06
888	25	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.14054	0.154050064	0.00018252
888	50	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.10701	0.101877403	2.63E-05
888	50	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.13439	0.129860134	2.05E-05
888	50	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.16806	0.174737282	4.46E-05
888	75	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.11204	0.109650625	5.71E-06
888	75	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.14413	0.139767888	1.90E-05
888	75	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.18561	0.188061155	6.01E-06
888	100	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.11427	0.11550724	1.53E-06
888	100	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.15003	0.147228651	7.85E-06
888	100	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.19812	0.198098078	4.81E-10
888	120	2	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.11461	0.11937112	2.27E-05
888	120	2.4	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.15346	0.152150416	1.72E-06
888	120	3	0.06937487	0.06235317	0.23550895	0	0.06719626	0.15537791	0.09453728	0.68288855	0.20545	0.204718161	5.36E-07
889	10	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.08267	0.073409748	8.58E-05
889	10	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.09701	0.09349947	1.23E-05
889	10	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.11184	0.125669003	0.00019124
889	25	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.09339	0.086879387	4.24E-05
889	25	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.11311	0.110666656	5.97E-06
889	25	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.13577	0.148767853	0.00016894

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
889	50	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.10365	0.098695087	2.46E-05
889	50	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.13008	0.12570364	1.92E-05
889	50	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.1626	0.168970146	4.06E-05
889	75	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.10865	0.10631677	5.44E-06
889	75	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.13964	0.135409342	1.79E-05
889	75	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.17977	0.182016919	5.05E-06
889	100	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.11081	0.112062979	1.57E-06
889	100	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.14551	0.142723618	7.76E-06
889	100	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.19187	0.191852512	3.06E-10
889	120	2	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.11116	0.115855058	2.20E-05
889	120	2.4	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.14879	0.147555542	1.52E-06
889	120	3	0.03482034	0.07885351	0.28270403	0	0.07596336	0.14782978	0.08446154	0.69174532	0.19904	0.198348117	4.79E-07
890	10	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.08518	0.075509644	9.35E-05
890	10	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.09943	0.095859146	1.28E-05
890	10	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.11429	0.128310108	0.00019656
890	25	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.0968	0.090178604	4.38E-05
890	25	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.11689	0.114502754	5.70E-06
890	25	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.13958	0.153279381	0.00018767
890	50	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.10821	0.103146	2.56E-05
890	50	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.13518	0.130951214	1.79E-05
890	50	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.16813	0.175326118	5.18E-05
890	75	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.11394	0.111558571	5.67E-06
890	75	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.1459	0.141626765	1.83E-05
890	75	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.18717	0.189625613	6.03E-06
890	100	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.11649	0.117925367	2.06E-06
890	100	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.15274	0.149703064	9.22E-06
890	100	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.20022	0.2004426	4.96E-08
890	120	2	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.11731	0.122140312	2.33E-05
890	120	2.4	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.15623	0.155049499	1.39E-06
890	120	3	0.11683777	0.08977108	0.18460189	0	0.07834477	0.1412827	0.03993116	0.74044137	0.20833	0.207593791	5.42E-07
891	10	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.0739	0.065854454	6.47E-05
891	10	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.08679	0.084060764	7.45E-06
891	10	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.10019	0.113329411	0.00017264
891	25	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.08345	0.07759655	3.43E-05
891	25	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.10126	0.09907177	4.79E-06
891	25	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.12165	0.133562012	0.0001419
891	50	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.09237	0.087853565	2.04E-05
891	50	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.11612	0.112164726	1.56E-05
891	50	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.14539	0.151201134	3.38E-05
891	75	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.09663	0.094441897	4.79E-06
891	75	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.12431	0.120584513	1.39E-05
891	75	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.16068	0.162556445	3.52E-06
891	100	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.09839	0.099413815	1.05E-06
891	100	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.1295	0.12692461	6.63E-06
891	100	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.17099	0.171106844	1.37E-08
891	120	2	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.09847	0.102694631	1.78E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
891	120	2.4	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.13207	0.131113577	9.15E-07
891	120	3	0.07238217	0.04015859	0.31216209	0	0.14057934	0.14633431	0.09438201	0.61870434	0.17711	0.176741203	1.36E-07
892	10	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.08113	0.07202425	8.29E-05
892	10	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.09544	0.091919136	1.24E-05
892	10	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.1103	0.123828888	0.00018303
892	25	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.09112	0.084775162	4.03E-05
892	25	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.1107	0.108190079	6.30E-06
892	25	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.13313	0.145745735	0.00015916
892	50	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.10065	0.095872135	2.28E-05
892	50	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.12663	0.122348137	1.83E-05
892	50	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.15858	0.164817982	3.89E-05
892	75	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.1053	0.103014666	5.22E-06
892	75	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.13556	0.1314549	1.69E-05
892	75	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.17507	0.177083969	4.06E-06
892	100	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.10712	0.108391409	1.62E-06
892	100	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.14106	0.138307343	7.58E-06
892	100	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.18626	0.18631485	3.01E-09
892	120	2	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.10735	0.111933088	2.10E-05
892	120	2.4	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.14403	0.142818149	1.47E-06
892	120	3	0.04479097	0.06326217	0.26569008	0	0.05861778	0.15257753	0.15119056	0.63761413	0.19285	0.192398413	2.04E-07
893	10	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.08927	0.07990427	8.77E-05
893	10	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.10541	0.102267075	9.88E-06
893	10	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.1222	0.138398266	0.00026238
893	25	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.1001	0.093434525	4.44E-05
893	25	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.12192	0.119655075	5.13E-06
893	25	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.147	0.161912766	0.00022239
893	50	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.11022	0.10518961	2.53E-05
893	50	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.13925	0.134718037	2.05E-05
893	50	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.17488	0.182270927	5.46E-05
893	75	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.11522	0.112733358	6.18E-06
893	75	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.14886	0.144357351	2.03E-05
893	75	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.1927	0.195320587	6.87E-06
893	100	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.11696	0.118386478	2.03E-06
893	100	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.15456	0.15158864	8.83E-06
893	100	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.20512	0.205103502	2.72E-10
893	120	2	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.11693	0.122102427	2.68E-05
893	120	2.4	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.15771	0.156350207	1.85E-06
893	120	3	0.05810725	0.05318182	0.22740173	0	0.08329572	0.15379869	0.07639294	0.68651265	0.212	0.211539213	2.12E-07
894	10	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.08451	0.075184917	8.70E-05
894	10	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.09953	0.096097279	1.18E-05
894	10	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.11514	0.129652309	0.00021061
894	25	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.09495	0.088360138	4.34E-05
894	25	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.11542	0.11292675	6.22E-06
894	25	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.13891	0.152404785	0.00018211
894	50	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.10479	0.099825134	2.46E-05
894	50	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.13203	0.127574062	1.99E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
894	50	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.16552	0.17217411	4.43E-05
894	75	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.1096	0.10717982	5.86E-06
894	75	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.14124	0.13698246	1.81E-05
894	75	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.18255	0.184877396	5.42E-06
894	100	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.11135	0.112723255	1.89E-06
894	100	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.14697	0.144057159	8.48E-06
894	100	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.19451	0.194420013	8.10E-09
894	120	2	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.11153	0.11637462	2.35E-05
894	120	2.4	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.14989	0.14871734	1.38E-06
894	120	3	0.05909285	0.07079494	0.22408417	0	0.08026868	0.15121373	0.10825731	0.66026028	0.20123	0.200709597	2.71E-07
895	10	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.08309	0.074189091	7.92E-05
895	10	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.0979	0.094971561	8.58E-06
895	10	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.11339	0.12841835	0.00022585
895	25	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.09336	0.086991959	4.06E-05
895	25	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.11361	0.111342087	5.14E-06
895	25	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.13693	0.150551682	0.00018555
895	50	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.10298	0.098093262	2.39E-05
895	50	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.13004	0.125547771	2.02E-05
895	50	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.16317	0.169762478	4.35E-05
895	75	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.10763	0.105214144	5.84E-06
895	75	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.13889	0.134655978	1.79E-05
895	75	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.17989	0.182083308	4.81E-06
895	100	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.1093	0.110564909	1.60E-06
895	100	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.14441	0.141498318	8.48E-06
895	100	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.19143	0.191330786	9.84E-09
895	120	2	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.1093	0.114085301	2.29E-05
895	120	2.4	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.14724	0.146009485	1.51E-06
895	120	3	0.07488916	0.01350793	0.29635753	0	0.11626393	0.1525088	0.06566648	0.66556078	0.19788	0.197415431	2.16E-07
896	10	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.09094	0.08072691	0.00010431
896	10	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.10726	0.103176308	1.67E-05
896	10	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.12422	0.139307499	0.00022763
896	25	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.10202	0.09485466	5.13E-05
896	25	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.12405	0.121257057	7.80E-06
896	25	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.14941	0.163722572	0.00020485
896	50	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.11249	0.107142296	2.86E-05
896	50	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.14193	0.136969471	2.46E-05
896	50	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.17783	0.184933681	5.05E-05
896	75	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.11764	0.115033862	6.79E-06
896	75	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.15179	0.147053299	2.24E-05
896	75	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.1961	0.19854187	5.96E-06
896	100	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.11958	0.120964804	1.92E-06
896	100	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.158	0.154630241	1.14E-05
896	100	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.20897	0.208779402	3.63E-08
896	120	2	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.11977	0.124873424	2.60E-05
896	120	2.4	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.16101	0.159622725	1.92E-06
896	120	3	0.04897992	0.07877665	0.19487636	0	0.06015602	0.15802297	0.09426655	0.68755446	0.21619	0.215520716	4.48E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
897	10	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.08294	0.073842716	8.28E-05
897	10	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.09771	0.094365406	1.12E-05
897	10	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.11305	0.12746582	0.00020782
897	25	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.09314	0.086662903	4.20E-05
897	25	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.11323	0.110805206	5.88E-06
897	25	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.13635	0.149633789	0.00017646
897	50	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.10268	0.097833481	2.35E-05
897	50	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.12951	0.125084496	1.96E-05
897	50	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.16237	0.16891386	4.28E-05
897	75	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.10732	0.105000547	5.38E-06
897	75	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.13842	0.134243215	1.74E-05
897	75	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.17903	0.181292419	5.12E-06
897	100	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.10909	0.110391722	1.69E-06
897	100	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.14397	0.14112813	8.08E-06
897	100	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.19062	0.19059041	8.76E-10
897	120	2	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.10907	0.113940978	2.37E-05
897	120	2.4	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.14688	0.145666718	1.47E-06
897	120	3	0.03542355	0.0372875	0.30913912	0	0.07564495	0.15399673	0.11236385	0.65799447	0.19717	0.19671727	2.05E-07
898	10	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.10001	0.089321327	0.00011425
898	10	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.11926	0.115321064	1.55E-05
898	10	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.13929	0.157513809	0.00033211
898	25	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.11094	0.103245583	5.92E-05
898	25	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.13651	0.133293571	1.03E-05
898	25	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.16607	0.182089081	0.00025661
898	50	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.12091	0.115182514	3.28E-05
898	50	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.15443	0.148685589	3.30E-05
898	50	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.19566	0.203127003	5.58E-05
898	75	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.12545	0.122758013	7.25E-06
898	75	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.16392	0.158460566	2.98E-05
898	75	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.21371	0.216492729	7.74E-06
898	100	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.12683	0.12842701	2.55E-06
898	100	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.16949	0.165761852	1.39E-05
898	100	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.22672	0.226468315	6.33E-08
898	120	2	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.12653	0.13214368	3.15E-05
898	120	2.4	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.17155	0.170551562	9.97E-07
898	120	3	0.04569713	0.03851822	0.1842356	0	0.09664799	0.15507094	0.04171765	0.70656342	0.23366	0.233001804	4.33E-07
899	10	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.09291	0.083064938	9.69E-05
899	10	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.11042	0.106899834	1.24E-05
899	10	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.12861	0.145585537	0.00028817
899	25	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.10344	0.096326752	5.06E-05
899	25	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.12689	0.123993416	8.39E-06
899	25	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.15402	0.168883553	0.00022093
899	50	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.11309	0.107735462	2.87E-05
899	50	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.14406	0.138697014	2.88E-05
899	50	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.18176	0.18889534	5.09E-05
899	75	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.11749	0.11501077	6.15E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
899	75	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.15311	0.148054899	2.56E-05
899	75	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.19913	0.201644808	6.32E-06
899	100	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.11906	0.120453901	1.94E-06
899	100	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.15853	0.155052385	1.21E-05
899	100	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.21137	0.211171551	3.94E-08
899	120	2	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.11878	0.12402192	2.75E-05
899	120	2.4	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.16109	0.159649785	2.07E-06
899	120	3	0.03460539	0.03604637	0.24278184	0	0.06935843	0.14590894	0.09053487	0.69419776	0.21777	0.217416755	1.25E-07
900	10	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.08757	0.077393055	0.00010357
900	10	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.10283	0.098608494	1.78E-05
900	10	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.11867	0.132509899	0.00019154
900	25	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.09863	0.091642036	4.88E-05
900	25	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.11954	0.116762848	7.71E-06
900	25	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.14348	0.156942291	0.00018123
900	50	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.10942	0.104141827	2.79E-05
900	50	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.13733	0.132657108	2.18E-05
900	50	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.17158	0.178330917	4.56E-05
900	75	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.1147	0.11220225	6.24E-06
900	75	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.14741	0.14291701	2.02E-05
900	75	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.18968	0.192128169	5.99E-06
900	100	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.11701	0.118278236	1.61E-06
900	100	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.15348	0.150655594	7.98E-06
900	100	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.20246	0.202529507	4.83E-09
900	120	2	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.11741	0.122295459	2.39E-05
900	120	2.4	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.15701	0.1557657	1.55E-06
900	120	3	0.11722565	0.07326157	0.14105318	0	0.08969371	0.16025633	0.0790015	0.67104845	0.21006	0.209392413	4.46E-07
901	10	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.09358	0.083562851	0.00010034
901	10	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.11133	0.107679176	1.33E-05
901	10	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.12981	0.146797848	0.00028859
901	25	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.10416	0.096828995	5.37E-05
901	25	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.12786	0.124816055	9.27E-06
901	25	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.15545	0.170199776	0.00021756
901	50	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.11363	0.108263683	2.88E-05
901	50	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.14499	0.139545631	2.96E-05
901	50	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.18345	0.190285168	4.67E-05
901	75	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.11807	0.115547651	6.36E-06
901	75	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.1539	0.148912175	2.49E-05
901	75	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.20063	0.20307649	5.99E-06
901	100	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.1195	0.120990782	2.22E-06
901	100	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.15936	0.155920486	1.18E-05
901	100	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.21276	0.212628489	1.73E-08
901	120	2	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.11909	0.124559522	2.99E-05
901	120	2.4	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.1617	0.160521134	1.39E-06
901	120	3	0.04478303	0.02922197	0.23608546	0	0.10398742	0.14638029	0.05229267	0.69733962	0.21935	0.218887043	2.14E-07
902	10	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.08286	0.073149967	9.43E-05
902	10	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.0968	0.092893314	1.53E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
902	10	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.11129	0.124283504	0.00016883
902	25	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.09399	0.087407608	4.33E-05
902	25	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.1136	0.110969734	6.92E-06
902	25	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.1356	0.148525391	0.00016707
902	50	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.10501	0.099981003	2.53E-05
902	50	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.13112	0.126937599	1.75E-05
902	50	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.16317	0.169896698	4.52E-05
902	75	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.11039	0.108152555	5.01E-06
902	75	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.14155	0.137297084	1.81E-05
902	75	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.18146	0.183760338	5.29E-06
902	100	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.11291	0.114331732	2.02E-06
902	100	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.14794	0.145133085	7.88E-06
902	100	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.19383	0.194253321	1.79E-07
902	120	2	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.11365	0.118425806	2.28E-05
902	120	2.4	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.15133	0.150321126	1.02E-06
902	120	3	0.07907287	0.08461438	0.24028466	0	0.03856338	0.1409255	0.10166103	0.71885008	0.20183	0.201196686	4.01E-07
903	10	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.08554	0.076224041	8.68E-05
903	10	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.10077	0.097374535	1.15E-05
903	10	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.11658	0.13127594	0.00021597
903	25	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.096	0.089485855	4.24E-05
903	25	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.11672	0.11429493	5.88E-06
903	25	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.14037	0.154127998	0.00018928
903	50	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.10588	0.101020126	2.36E-05
903	50	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.13337	0.129015846	1.90E-05
903	50	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.1672	0.173983917	4.60E-05
903	75	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.11075	0.108409449	5.48E-06
903	75	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.14274	0.138463211	1.83E-05
903	75	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.18445	0.186727613	5.19E-06
903	100	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.11259	0.113976698	1.92E-06
903	100	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.14852	0.145566053	8.73E-06
903	100	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.19641	0.196303425	1.14E-08
903	120	2	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.11271	0.117646464	2.44E-05
903	120	2.4	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.15156	0.150236336	1.75E-06
903	120	3	0.08162041	0.05967306	0.19788819	0	0.10236731	0.16464444	0.09253138	0.64045688	0.20322	0.202611049	3.71E-07
904	10	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.08694	0.077089977	9.70E-05
904	10	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.10231	0.098630142	1.35E-05
904	10	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.11842	0.133332539	0.00022238
904	25	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.09785	0.090836716	4.92E-05
904	25	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.11895	0.116234627	7.37E-06
904	25	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.14326	0.157115479	0.00019197
904	50	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.10815	0.102812614	2.85E-05
904	50	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.13638	0.131557369	2.33E-05
904	50	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.17097	0.177833004	4.71E-05
904	75	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.1131	0.110513674	6.69E-06
904	75	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.146	0.14141894	2.10E-05
904	75	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.18877	0.191161207	5.72E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
904	100	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.115	0.116319056	1.74E-06
904	100	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.15189	0.148841457	9.29E-06
904	100	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.20127	0.201191635	6.14E-09
904	120	2	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.11516	0.120148659	2.49E-05
904	120	2.4	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.15479	0.153732554	1.12E-06
904	120	3	0.04124861	0.08491072	0.23669205	0	0.07791896	0.13711871	0.06933981	0.71562252	0.20822	0.207801255	1.75E-07
905	10	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.08712	0.077955914	8.40E-05
905	10	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.10332	0.100058937	1.06E-05
905	10	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.12019	0.135843754	0.00024504
905	25	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.09721	0.090568275	4.41E-05
905	25	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.11892	0.116312561	6.80E-06
905	25	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.14397	0.15791214	0.00019438
905	50	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.10637	0.101461754	2.41E-05
905	50	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.13514	0.130297432	2.35E-05
905	50	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.17006	0.176915112	4.70E-05
905	75	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.11076	0.108418109	5.48E-06
905	75	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.14387	0.139228121	2.15E-05
905	75	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.18681	0.189031003	4.93E-06
905	100	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.11218	0.113628159	2.10E-06
905	100	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.14897	0.145910263	9.36E-06
905	100	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.19843	0.198100243	1.09E-07
905	120	2	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.1119	0.117051133	2.65E-05
905	120	2.4	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.15152	0.150301282	1.49E-06
905	120	3	0.05907891	0.03951086	0.22098175	0	0.10642725	0.15912707	0.10232875	0.63211694	0.20453	0.204054276	2.26E-07
906	10	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.08707	0.077068329	0.00010003
906	10	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.1024	0.098327065	1.66E-05
906	10	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.11829	0.132336712	0.00019731
906	25	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.09785	0.090957947	4.75E-05
906	25	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.11873	0.116018143	7.35E-06
906	25	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.14269	0.156171608	0.00018175
906	50	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.1082	0.103081055	2.62E-05
906	50	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.13602	0.131470776	2.07E-05
906	50	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.17031	0.176980057	4.45E-05
906	75	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.11332	0.110886027	5.92E-06
906	75	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.14572	0.141424713	1.84E-05
906	75	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.1879	0.190367432	6.09E-06
906	100	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.11543	0.116767178	1.79E-06
906	100	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.15178	0.148912897	8.22E-06
906	100	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.20039	0.200459919	4.89E-09
906	120	2	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.11579	0.12065018	2.36E-05
906	120	2.4	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.15517	0.153855228	1.73E-06
906	120	3	0.0468014	0.03621549	0.2891073	0	0.05830444	0.16376466	0.09610917	0.68182173	0.20772	0.207113918	3.67E-07
907	10	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.08358	0.074362278	8.50E-05
907	10	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.09808	0.094820023	1.06E-05
907	10	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.11313	0.127639008	0.00021051
907	25	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.09447	0.087901192	4.31E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
907	25	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.11452	0.11211277	5.79E-06
907	25	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.13743	0.150958672	0.00018302
907	50	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.10488	0.099760189	2.62E-05
907	50	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.13164	0.127240677	1.94E-05
907	50	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.16473	0.171347141	4.38E-05
907	75	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.10986	0.107396304	6.07E-06
907	75	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.1412	0.137005552	1.76E-05
907	75	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.18207	0.184502157	5.92E-06
907	100	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.11198	0.113167048	1.41E-06
907	100	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.14717	0.144355907	7.92E-06
907	100	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.19451	0.194407024	1.06E-08
907	120	2	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.11232	0.116973559	2.17E-05
907	120	2.4	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.15037	0.149208037	1.35E-06
907	120	3	0.1121167	0.07460782	0.18227632	0	0.10410197	0.14178301	0.06443556	0.68967946	0.20151	0.200942318	3.22E-07
908	10	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.08074	0.071309853	8.89E-05
908	10	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.09403	0.09051199	1.24E-05
908	10	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.10796	0.121036243	0.00017099
908	25	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.09197	0.08547657	4.22E-05
908	25	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.11099	0.108475838	6.32E-06
908	25	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.1323	0.145104942	0.00016397
908	50	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.10306	0.098023987	2.54E-05
908	50	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.12847	0.124391747	1.66E-05
908	50	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.1598	0.166411304	4.37E-05
908	75	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.10842	0.106186879	4.99E-06
908	75	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.13887	0.134739685	1.71E-05
908	75	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.17802	0.180264842	5.04E-06
908	100	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.111	0.112370386	1.88E-06
908	100	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.14538	0.142578573	7.85E-06
908	100	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.19039	0.190754938	1.33E-07
908	120	2	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.11181	0.11646843	2.17E-05
908	120	2.4	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.14876	0.147772026	9.76E-07
908	120	3	0.08458769	0.06130344	0.30077735	0	0.0689165	0.13554883	0.04935073	0.74618394	0.19837	0.197702273	4.46E-07
909	10	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.08211	0.073821068	6.87E-05
909	10	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.09761	0.095079803	6.40E-06
909	10	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.1138	0.129500771	0.00024651
909	25	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.09143	0.085277405	3.79E-05
909	25	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.11222	0.109826698	5.73E-06
909	25	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.13622	0.14962513	0.0001797
909	50	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.0998	0.095097122	2.21E-05
909	50	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.127	0.122456379	2.06E-05
909	50	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.1606	0.166835613	3.89E-05
909	75	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.10355	0.10132609	4.95E-06
909	75	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.13497	0.130487938	2.01E-05
909	75	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.17565	0.177770945	4.50E-06
909	100	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.1046	0.105988436	1.93E-06
909	100	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.1396	0.136488876	9.68E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
909	100	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.18613	0.185938168	3.68E-08
909	120	2	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.10416	0.109048438	2.39E-05
909	120	2.4	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.14169	0.140420588	1.61E-06
909	120	3	0.04292425	0.04120028	0.24808248	0	0.14149674	0.15198077	0.10655602	0.59996646	0.19173	0.19129254	1.91E-07
910	10	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.08444	0.075119972	8.69E-05
910	10	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.09943	0.096097279	1.11E-05
910	10	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.11514	0.129890442	0.00021758
910	25	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.0949	0.088238907	4.44E-05
910	25	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.11541	0.112909431	6.25E-06
910	25	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.13906	0.152638588	0.00018438
910	50	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.1047	0.099660606	2.54E-05
910	50	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.13214	0.127543755	2.11E-05
910	50	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.16573	0.172412243	4.47E-05
910	75	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.1095	0.106997973	6.26E-06
910	75	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.14121	0.136936277	1.83E-05
910	75	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.18275	0.185111198	5.58E-06
910	100	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.11116	0.112526255	1.87E-06
910	100	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.14694	0.143998709	8.65E-06
910	100	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.1947	0.194662476	1.41E-09
910	120	2	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.11124	0.116170764	2.43E-05
910	120	2.4	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.14979	0.148654199	1.29E-06
910	120	3	0.04370725	0.02842348	0.31432515	0	0.08999793	0.15006426	0.07576619	0.68417163	0.2013	0.200954946	1.19E-07
911	10	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.07925	0.070270729	8.06E-05
911	10	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.09283	0.089407921	1.17E-05
911	10	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.10696	0.120062065	0.00017166
911	25	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.08955	0.083346367	3.85E-05
911	25	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.10843	0.106059875	5.62E-06
911	25	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.12986	0.142377243	0.00015668
911	50	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.09958	0.094815693	2.27E-05
911	50	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.12467	0.120642242	1.62E-05
911	50	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.15567	0.161947403	3.94E-05
911	75	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.10443	0.102229551	4.84E-06
911	75	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.13399	0.130060743	1.54E-05
911	75	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.17229	0.174595846	5.32E-06
911	100	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.1066	0.107815561	1.48E-06
911	100	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.13986	0.137170801	7.23E-06
911	100	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.18386	0.18414135	7.92E-08
911	120	2	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.10696	0.111507336	2.07E-05
911	120	2.4	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.14301	0.141862011	1.32E-06
911	120	3	0.06885238	0.05778521	0.28148721	0	0.09035085	0.15508569	0.09790261	0.65666084	0.19107	0.190444644	3.91E-07
912	10	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.09067	0.080575371	0.0001019
912	10	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.10687	0.102981472	1.51E-05
912	10	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.12373	0.139134312	0.00023729
912	25	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.10178	0.094672813	5.05E-05
912	25	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.12375	0.121057892	7.25E-06
912	25	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.14903	0.163532066	0.00021031

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
912	50	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.11228	0.10694313	2.85E-05
912	50	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.14167	0.136761646	2.41E-05
912	50	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.17751	0.184747505	5.24E-05
912	75	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.11749	0.114828924	7.08E-06
912	75	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.1516	0.146842588	2.26E-05
912	75	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.19577	0.198374456	6.78E-06
912	100	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.11943	0.120756979	1.76E-06
912	100	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.15776	0.154424582	1.11E-05
912	100	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.20881	0.208612709	3.89E-08
912	120	2	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.11953	0.124664156	2.64E-05
912	120	2.4	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.16091	0.159418869	2.22E-06
912	120	3	0.05783761	0.03820308	0.25572011	0	0.07645286	0.15917886	0.05922468	0.70514359	0.21604	0.215352941	4.72E-07
913	10	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.08766	0.078258991	8.84E-05
913	10	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.10358	0.100340366	1.05E-05
913	10	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.12017	0.136016941	0.00025113
913	25	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.09826	0.091477509	4.60E-05
913	25	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.11989	0.117317047	6.62E-06
913	25	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.14471	0.159046516	0.00020554
913	50	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.10808	0.102942505	2.64E-05
913	50	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.13679	0.132029305	2.27E-05
913	50	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.17198	0.178967381	4.88E-05
913	75	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.11284	0.110279872	6.55E-06
913	75	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.14619	0.141436259	2.26E-05
913	75	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.18956	0.191718292	4.66E-06
913	100	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.1145	0.115790834	1.67E-06
913	100	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.15164	0.148499413	9.86E-06
913	100	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.20133	0.201291218	1.50E-09
913	120	2	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.11449	0.119416221	2.43E-05
913	120	2.4	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.15439	0.153142635	1.56E-06
913	120	3	0.04278437	0.0636715	0.23827599	0	0.08237596	0.14249256	0.08518596	0.68994552	0.20793	0.207586575	1.18E-07
914	10	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.08603	0.076288986	9.49E-05
914	10	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.10126	0.097677612	1.28E-05
914	10	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.11722	0.132098579	0.00022137
914	25	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.09684	0.089849548	4.89E-05
914	25	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.11776	0.115039635	7.40E-06
914	25	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.14184	0.155574112	0.00018863
914	50	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.107	0.101669579	2.84E-05
914	50	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.13495	0.130154552	2.30E-05
914	50	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.16935	0.176023197	4.45E-05
914	75	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.11192	0.10926384	7.06E-06
914	75	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.14444	0.139886233	2.07E-05
914	75	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.18687	0.18917244	5.30E-06
914	100	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.11369	0.114989843	1.69E-06
914	100	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.15016	0.147202673	8.75E-06
914	100	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.19922	0.199070091	2.25E-08
914	120	2	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.11386	0.118763161	2.40E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
914	120	2.4	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.15316	0.15202233	1.29E-06
914	120	3	0.0754265	0.04079881	0.26017298	0	0.08767682	0.13734424	0.06185661	0.71312234	0.20599	0.205593117	1.58E-07
915	10	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.08518	0.075314808	9.73E-05
915	10	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.09996	0.095837498	1.70E-05
915	10	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.11529	0.128656483	0.00017866
915	25	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.09602	0.089217415	4.63E-05
915	25	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.11628	0.113567543	7.36E-06
915	25	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.13939	0.152482719	0.00017142
915	50	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.10651	0.101435776	2.57E-05
915	50	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.1335	0.129119759	1.92E-05
915	50	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.16672	0.173377762	4.43E-05
915	75	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.11177	0.109336001	5.92E-06
915	75	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.14353	0.13915596	1.91E-05
915	75	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.1843	0.18686039	6.56E-06
915	100	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.11399	0.115292921	1.70E-06
915	100	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.14972	0.146728573	8.95E-06
915	100	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.19681	0.197032976	4.97E-08
915	120	2	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.11446	0.119226797	2.27E-05
915	120	2.4	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.15296	0.151730076	1.51E-06
915	120	3	0.07373847	0.0495589	0.25155572	0	0.03546836	0.1574276	0.12764925	0.67945479	0.20429	0.203745786	2.96E-07
916	10	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.0749	0.06713171	6.03E-05
916	10	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.088	0.085727692	5.16E-06
916	10	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.10166	0.115732384	0.00019803
916	25	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.0846	0.078869476	3.28E-05
916	25	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.10272	0.100777664	3.77E-06
916	25	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.12348	0.136012611	0.00015707
916	50	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.0935	0.089109173	1.93E-05
916	50	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.11773	0.113857632	1.50E-05
916	50	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.14758	0.153651733	3.69E-05
916	75	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.09786	0.095691732	4.70E-06
916	75	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.12591	0.12226443	1.33E-05
916	75	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.16304	0.164992612	3.81E-06
916	100	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.09951	0.100630455	1.26E-06
916	100	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.13106	0.128580713	6.15E-06
916	100	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.17349	0.173509817	3.93E-10
916	120	2	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.09961	0.103892509	1.83E-05
916	120	2.4	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.1337	0.132748032	9.06E-07
916	120	3	0.05479221	0.05273796	0.31481524	0	0.12918632	0.13836991	0.09478453	0.63765924	0.17943	0.179126136	9.23E-08
917	10	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.0893	0.079796028	9.03E-05
917	10	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.10514	0.102050591	9.54E-06
917	10	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.12172	0.137878704	0.0002611
917	25	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.10048	0.093746262	4.53E-05
917	25	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.12216	0.119914856	5.04E-06
917	25	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.14713	0.162016678	0.00022161
917	50	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.11104	0.105912666	2.63E-05
917	50	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.14006	0.135462742	2.11E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
917	50	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.17565	0.183015633	5.43E-05
917	75	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.11619	0.113720525	6.10E-06
917	75	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.15001	0.145451317	2.08E-05
917	75	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.19382	0.196512693	7.25E-06
917	100	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.11814	0.11959446	2.12E-06
917	100	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.15599	0.15295682	9.20E-06
917	100	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.20679	0.206647034	2.04E-08
917	120	2	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.11831	0.123462669	2.65E-05
917	120	2.4	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.1591	0.157898068	1.44E-06
917	120	3	0.07537534	0.06254785	0.21391541	0	0.07116255	0.13813375	0.06465323	0.72605047	0.21401	0.213319794	4.76E-07
918	10	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.08403	0.075098324	7.98E-05
918	10	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.09933	0.096357059	8.84E-06
918	10	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.11529	0.130756378	0.00023921
918	25	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.09414	0.087624092	4.25E-05
918	25	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.11496	0.112476463	6.17E-06
918	25	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.13888	0.152621269	0.00018882
918	50	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.10343	0.098482933	2.45E-05
918	50	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.13106	0.126409378	2.16E-05
918	50	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.16479	0.171533318	4.55E-05
918	75	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.10792	0.105433515	6.18E-06
918	75	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.1398	0.135334295	1.99E-05
918	75	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.1815	0.18363622	4.56E-06
918	100	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.10936	0.110651503	1.67E-06
918	100	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.14494	0.142024374	8.50E-06
918	100	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.19282	0.192716284	1.08E-08
918	120	2	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.10924	0.114083497	2.35E-05
918	120	2.4	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.14757	0.146420805	1.32E-06
918	120	3	0.10307252	0.0246324	0.22143295	0	0.10177544	0.13979292	0.10227883	0.65615282	0.19897	0.198680059	8.41E-08
919	10	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.08802	0.078107452	9.83E-05
919	10	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.10334	0.099690914	1.33E-05
919	10	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.11931	0.134414959	0.00022816
919	25	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.09943	0.092395401	4.95E-05
919	25	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.12066	0.117975159	7.21E-06
919	25	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.14485	0.159098473	0.00020302
919	50	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.1104	0.104921169	3.00E-05
919	50	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.13875	0.13399065	2.27E-05
919	50	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.17358	0.180712242	5.09E-05
919	75	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.11565	0.113004684	7.00E-06
919	75	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.14882	0.144322713	2.02E-05
919	75	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.19195	0.194653816	7.31E-06
919	100	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.11781	0.119100876	1.67E-06
919	100	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.15521	0.152108202	9.62E-06
919	100	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.20513	0.205155458	6.48E-10
919	120	2	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.11807	0.123127119	2.56E-05
919	120	2.4	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.15838	0.157246812	1.28E-06
919	120	3	0.09823762	0.06685529	0.20200054	0	0.0895302	0.13802532	0.03601382	0.73643067	0.21252	0.212084031	1.90E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
920	10	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.0851	0.076288986	7.76E-05
920	10	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.10097	0.098175526	7.81E-06
920	10	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.11757	0.133592319	0.00025671
920	25	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.09494	0.088507347	4.14E-05
920	25	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.11637	0.113887939	6.16E-06
920	25	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.14107	0.154976616	0.00019339
920	50	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.10396	0.099006824	2.45E-05
920	50	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.13212	0.127396545	2.23E-05
920	50	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.16676	0.173364773	4.36E-05
920	75	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.108	0.105701955	5.28E-06
920	75	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.14056	0.136003952	2.08E-05
920	75	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.18287	0.185082334	4.89E-06
920	100	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.10928	0.110714283	2.06E-06
920	100	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.14562	0.142442188	1.01E-05
920	100	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.19393	0.193839836	8.13E-09
920	120	2	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.10892	0.114005923	2.59E-05
920	120	2.4	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.14786	0.146675173	1.40E-06
920	120	3	0.05109878	0.04984944	0.23009596	0	0.17919807	0.15861482	0.03333169	0.62885542	0.19983	0.199587488	5.88E-08
921	10	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.08132	0.072348976	8.05E-05
921	10	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.0956	0.092308807	1.08E-05
921	10	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.11044	0.124305153	0.00019224
921	25	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.09147	0.085216789	3.91E-05
921	25	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.11108	0.1087183	5.58E-06
921	25	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.13348	0.146421165	0.00016747
921	50	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.10117	0.096430664	2.25E-05
921	50	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.12722	0.123023567	1.76E-05
921	50	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.15924	0.165696907	4.17E-05
921	75	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.10584	0.103649686	4.80E-06
921	75	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.13627	0.13222847	1.63E-05
921	75	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.17583	0.178100001	5.15E-06
921	100	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.10781	0.109088488	1.63E-06
921	100	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.14185	0.13916029	7.23E-06
921	100	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.18726	0.187440567	3.26E-08
921	120	2	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.10805	0.112674546	2.14E-05
921	120	2.4	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.14481	0.143734598	1.16E-06
921	120	3	0.03782957	0.06611677	0.27884678	0	0.09397864	0.15870667	0.10274894	0.64456575	0.19426	0.193596292	4.41E-07
922	10	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.08505	0.075791073	8.57E-05
922	10	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.10023	0.096941566	1.08E-05
922	10	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.11606	0.130972862	0.00022239
922	25	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.09557	0.088931656	4.41E-05
922	25	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.11624	0.113784027	6.03E-06
922	25	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.14006	0.153729668	0.00018686
922	50	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.10538	0.100375004	2.50E-05
922	50	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.13304	0.12842268	2.13E-05
922	50	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.16682	0.173516312	4.48E-05
922	75	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.11022	0.107722473	6.24E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
922	75	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.14215	0.137810872	1.88E-05
922	75	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.18395	0.186210938	5.11E-06
922	100	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.11192	0.113249311	1.77E-06
922	100	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.14784	0.144868975	8.83E-06
922	100	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.19598	0.19575572	5.03E-08
922	120	2	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.11195	0.116885161	2.44E-05
922	120	2.4	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.15073	0.149511115	1.49E-06
922	120	3	0.02406728	0.06203411	0.28554367	0	0.12303834	0.16025313	0.04665845	0.67005008	0.20261	0.202044582	3.20E-07
923	10	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.08892	0.079839325	8.25E-05
923	10	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.10574	0.102786636	8.72E-06
923	10	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.12323	0.139956951	0.00027979
923	25	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.09893	0.092360764	4.32E-05
923	25	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.12148	0.11891037	6.60E-06
923	25	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.14755	0.161895447	0.00020579
923	50	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.10808	0.103107033	2.47E-05
923	50	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.13769	0.132722054	2.47E-05
923	50	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.17397	0.180720901	4.56E-05
923	75	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.11226	0.109942156	5.37E-06
923	75	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.14623	0.141519966	2.22E-05
923	75	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.19041	0.1926968	5.23E-06
923	100	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.11363	0.115050459	2.02E-06
923	100	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.15136	0.148088093	1.07E-05
923	100	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.20192	0.201641922	7.73E-08
923	120	2	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.11312	0.118402354	2.79E-05
923	120	2.4	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.15364	0.152399373	1.54E-06
923	120	3	0.08324794	0.02228428	0.20054124	0	0.13527245	0.15477753	0.06947757	0.64047245	0.20793	0.207501785	1.83E-07
924	10	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.08739	0.078172398	8.50E-05
924	10	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.10329	0.100383663	8.45E-06
924	10	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.11988	0.13616848	0.00026531
924	25	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.09797	0.091287003	4.47E-05
924	25	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.11966	0.117204475	6.03E-06
924	25	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.1445	0.159037857	0.00021135
924	50	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.10769	0.102630768	2.56E-05
924	50	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.13652	0.131747875	2.28E-05
924	50	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.17171	0.178772545	4.99E-05
924	75	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.11237	0.109887314	6.16E-06
924	75	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.1458	0.141055247	2.25E-05
924	75	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.18915	0.191415215	5.13E-06
924	100	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.11399	0.115331888	1.80E-06
924	100	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.15115	0.148036137	9.70E-06
924	100	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.20104	0.200890722	2.23E-08
924	120	2	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.11391	0.118916504	2.51E-05
924	120	2.4	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.15388	0.152619465	1.59E-06
924	120	3	0.06016088	0.02743491	0.27470154	0	0.08086581	0.13533942	0.07672524	0.70706953	0.20745	0.207117526	1.11E-07
925	10	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.08618	0.077176571	8.11E-05
925	10	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.10204	0.098976517	9.38E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
925	10	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.11853	0.134176826	0.00024482
925	25	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.09631	0.089814911	4.22E-05
925	25	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.11758	0.115195503	5.69E-06
925	25	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.14217	0.156188927	0.00019653
925	50	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.10555	0.100725708	2.33E-05
925	50	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.13382	0.129176044	2.16E-05
925	50	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.16819	0.175161591	4.86E-05
925	75	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.11009	0.107690722	5.76E-06
925	75	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.14266	0.138119723	2.06E-05
925	75	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.18505	0.187278926	4.97E-06
925	100	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.11163	0.112907267	1.63E-06
925	100	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.14773	0.144812689	8.51E-06
925	100	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.19654	0.196353216	3.49E-08
925	120	2	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.11144	0.116336735	2.40E-05
925	120	2.4	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.15045	0.149213449	1.53E-06
925	120	3	0.07941616	0.01506148	0.24143828	0	0.06071416	0.15102345	0.14477309	0.6434893	0.20278	0.202311579	2.19E-07
926	10	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.08731	0.077025032	0.00010578
926	10	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.10231	0.098002338	1.86E-05
926	10	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.11785	0.131535721	0.0001873
926	25	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.09871	0.091633377	5.01E-05
926	25	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.11936	0.11659832	7.63E-06
926	25	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.14296	0.156492004	0.00018312
926	50	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.1097	0.104492531	2.71E-05
926	50	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.13741	0.132938538	2.00E-05
926	50	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.17148	0.178417511	4.81E-05
926	75	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.11523	0.112805519	5.88E-06
926	75	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.14794	0.143508733	1.96E-05
926	75	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.19003	0.192613093	6.67E-06
926	100	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.11773	0.119079227	1.82E-06
926	100	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.15445	0.151495552	8.73E-06
926	100	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.20307	0.203336992	7.13E-08
926	120	2	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.11828	0.123235361	2.46E-05
926	120	2.4	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.15795	0.156774155	1.38E-06
926	120	3	0.09046324	0.02341366	0.28011171	0	0.0693526	0.1603586	0.05100503	0.71928377	0.21101	0.210417104	3.52E-07
927	10	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.09224	0.082393837	9.69E-05
927	10	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.109	0.105471039	1.25E-05
927	10	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.12642	0.14268465	0.00026454
927	25	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.10327	0.09634407	4.80E-05
927	25	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.12589	0.12338726	6.26E-06
927	25	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.15187	0.166935196	0.00022696
927	50	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.11366	0.108467178	2.70E-05
927	50	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.14373	0.138900509	2.33E-05
927	50	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.18048	0.18793848	5.56E-05
927	75	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.11875	0.116228854	6.36E-06
927	75	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.15357	0.148845787	2.23E-05
927	75	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.19885	0.201396573	6.49E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
927	100	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.12062	0.122064543	2.09E-06
927	100	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.15946	0.156305828	9.95E-06
927	100	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.21156	0.211485453	5.56E-09
927	120	2	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.12063	0.125901723	2.78E-05
927	120	2.4	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.1625	0.161213883	1.65E-06
927	120	3	0.04944984	0.04906809	0.23157926	0	0.05469585	0.15294855	0.08766502	0.70469058	0.21865	0.218114916	2.86E-07
928	10	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.08739	0.078735256	7.49E-05
928	10	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.10451	0.101985645	6.37E-06
928	10	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.12249	0.140000248	0.00030661
928	25	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.09665	0.090117989	4.27E-05
928	25	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.11928	0.116780167	6.25E-06
928	25	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.14583	0.160258827	0.00020819
928	50	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.10489	0.099825134	2.57E-05
928	50	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.13417	0.129336243	2.34E-05
928	50	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.17086	0.177486629	4.39E-05
928	75	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.10844	0.105955963	6.17E-06
928	75	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.14198	0.137262446	2.23E-05
928	75	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.18581	0.188367119	6.54E-06
928	100	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.10894	0.110515118	2.48E-06
928	100	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.14654	0.143158751	1.14E-05
928	100	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.1965	0.196461458	1.49E-09
928	120	2	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.10837	0.11349899	2.63E-05
928	120	2.4	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.14799	0.14701794	9.45E-07
928	120	3	0.01662877	0.03611125	0.24733115	0	0.13188716	0.14461233	0.09950076	0.62399975	0.2023	0.201750525	3.02E-07
929	10	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.08601	0.076288986	9.45E-05
929	10	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.10087	0.097114754	1.41E-05
929	10	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.11631	0.130518246	0.00020187
929	25	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.09722	0.090473022	4.55E-05
929	25	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.11777	0.115221481	6.49E-06
929	25	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.14126	0.154864044	0.00018507
929	50	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.1081	0.102946835	2.66E-05
929	50	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.13556	0.131107082	1.98E-05
929	50	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.16939	0.176213703	4.66E-05
929	75	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.1134	0.111010145	5.71E-06
929	75	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.1457	0.14137853	1.87E-05
929	75	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.18756	0.190018171	6.04E-06
929	100	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.11569	0.117100563	1.99E-06
929	100	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.15189	0.149125051	7.64E-06
929	100	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.2004	0.200436106	1.30E-09
929	120	2	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.11616	0.121122837	2.46E-05
929	120	2.4	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.1554	0.154241292	1.34E-06
929	120	3	0.0515328	0.06753588	0.27528463	0	0.07031607	0.14483793	0.05479518	0.73005082	0.20785	0.207314165	2.87E-07
930	10	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.09682	0.086658573	0.00010325
930	10	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.11516	0.111467648	1.36E-05
930	10	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.13423	0.151668739	0.00030411
930	25	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.10764	0.10042263	5.21E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
930	25	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.13216	0.129197693	8.78E-06
930	25	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.16042	0.175828362	0.00023742
930	50	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.11763	0.112264309	2.88E-05
930	50	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.14988	0.144442501	2.96E-05
930	50	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.18914	0.196576195	5.53E-05
930	75	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.12225	0.119802284	5.99E-06
930	75	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.15928	0.15415109	2.63E-05
930	75	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.20723	0.209793269	6.57E-06
930	100	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.12387	0.125450354	2.50E-06
930	100	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.16494	0.161406193	1.25E-05
930	100	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.21986	0.219664221	3.83E-08
930	120	2	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.12358	0.129158004	3.11E-05
930	120	2.4	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.16756	0.16616776	1.94E-06
930	120	3	0.0536068	0.03063233	0.20567208	0	0.0732365	0.15350101	0.07420695	0.69905554	0.22663	0.226133847	2.46E-07
931	10	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.0776	0.069513035	6.54E-05
931	10	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.09157	0.089083195	6.18E-06
931	10	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.10615	0.120516682	0.0002064
931	25	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.08696	0.081120911	3.41E-05
931	25	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.10595	0.103921013	4.12E-06
931	25	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.1279	0.140636711	0.00016222
931	50	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.0956	0.091139793	1.99E-05
931	50	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.1209	0.116741199	1.73E-05
931	50	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.15186	0.158007393	3.78E-05
931	75	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.09979	0.097553495	5.00E-06
931	75	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.12903	0.124957492	1.66E-05
931	75	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.1671	0.169117355	4.07E-06
931	100	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.10106	0.102364492	1.70E-06
931	100	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.13376	0.131117907	6.98E-06
931	100	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.17763	0.177458487	2.94E-08
931	120	2	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.10095	0.10553418	2.10E-05
931	120	2.4	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.13649	0.135169045	1.74E-06
931	120	3	0.07334342	0.02413802	0.28126089	0	0.10574244	0.14964256	0.14378611	0.60082888	0.1833	0.182938059	1.31E-07
932	10	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.09181	0.081852627	9.91E-05
932	10	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.10866	0.104929829	1.39E-05
932	10	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.12619	0.142165089	0.0002552
932	25	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.10259	0.095547409	4.96E-05
932	25	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.12521	0.122486687	7.42E-06
932	25	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.15124	0.165999985	0.00021786
932	50	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.11261	0.107397747	2.72E-05
932	50	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.14265	0.137675209	2.47E-05
932	50	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.17933	0.186574631	5.25E-05
932	75	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.11747	0.1149617	6.29E-06
932	75	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.15232	0.147388128	2.43E-05
932	75	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.19741	0.199739749	5.43E-06
932	100	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.11931	0.120648737	1.79E-06
932	100	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.1579	0.154671373	1.04E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
932	100	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.20972	0.209606371	1.29E-08
932	120	2	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.1192	0.124386334	2.69E-05
932	120	2.4	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.16077	0.15946397	1.71E-06
932	120	3	0.04084747	0.06195274	0.21017242	0	0.06627091	0.15717898	0.09751851	0.6790316	0.21653	0.216085378	1.98E-07
933	10	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.09035	0.080553722	9.60E-05
933	10	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.10684	0.103133011	1.37E-05
933	10	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.12397	0.139588928	0.00024395
933	25	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.10111	0.094153252	4.84E-05
933	25	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.12324	0.120598946	6.98E-06
933	25	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.14873	0.163237648	0.00021047
933	50	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.11112	0.105951633	2.67E-05
933	50	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.14054	0.135713863	2.33E-05
933	50	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.1766	0.183682404	5.02E-05
933	75	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.11606	0.113495382	6.58E-06
933	75	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.15013	0.145393588	2.24E-05
933	75	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.19437	0.196792679	5.87E-06
933	100	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.11785	0.119170151	1.74E-06
933	100	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.15576	0.152651577	9.66E-06
933	100	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.20675	0.206614561	1.83E-08
933	120	2	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.11773	0.12289981	2.67E-05
933	120	2.4	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.15877	0.157427216	1.80E-06
933	120	3	0.0543056	0.05562935	0.21100812	0	0.09383692	0.1645043	0.07586598	0.6657928	0.21351	0.213078054	1.87E-07
934	10	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.07942	0.070443916	8.06E-05
934	10	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.09286	0.089624405	1.05E-05
934	10	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.10684	0.120213604	0.00017885
934	25	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.09013	0.083813972	3.99E-05
934	25	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.10896	0.106631393	5.42E-06
934	25	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.13032	0.143069992	0.00016256
934	50	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.10043	0.095590706	2.34E-05
934	50	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.12561	0.121603432	1.61E-05
934	50	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.15665	0.163168373	4.25E-05
934	75	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.10553	0.103219604	5.34E-06
934	75	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.13535	0.131299032	1.64E-05
934	75	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.17392	0.176180509	5.11E-06
934	100	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.10776	0.108984575	1.50E-06
934	100	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.1413	0.138623409	7.16E-06
934	100	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.1859	0.186007442	1.15E-08
934	120	2	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.1082	0.112797221	2.11E-05
934	120	2.4	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.14448	0.143462189	1.04E-06
934	120	3	0.07441428	0.07938511	0.2653722	0	0.11897739	0.14828232	0.04501562	0.68772468	0.19302	0.192510263	2.60E-07
935	10	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.08986	0.079990864	9.74E-05
935	10	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.10577	0.102180481	1.29E-05
935	10	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.12231	0.137857056	0.00024171
935	25	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.10109	0.094161911	4.80E-05
935	25	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.12278	0.120295868	6.17E-06
935	25	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.14771	0.162319756	0.00021344

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
935	50	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.11177	0.106501503	2.78E-05
935	50	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.14085	0.136081886	2.27E-05
935	50	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.17629	0.183613129	5.36E-05
935	75	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.11707	0.114450798	6.86E-06
935	75	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.15083	0.146233546	2.11E-05
935	75	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.19471	0.197303581	6.73E-06
935	100	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.119	0.120430088	2.05E-06
935	100	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.15693	0.153863888	9.40E-06
935	100	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.20779	0.207606058	3.38E-08
935	120	2	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.11923	0.124370098	2.64E-05
935	120	2.4	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.16009	0.158893895	1.43E-06
935	120	3	0.0839724	0.03572129	0.23815394	0	0.07237236	0.15105266	0.06002598	0.716549	0.2151	0.21439139	5.02E-07
936	10	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.09811	0.08711319	0.00012093
936	10	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.11631	0.111900616	1.94E-05
936	10	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.13527	0.151950169	0.00027823
936	25	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.10947	0.101764832	5.94E-05
936	25	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.13405	0.130721741	1.11E-05
936	25	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.16214	0.177516937	0.00023645
936	50	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.12017	0.114442139	3.28E-05
936	50	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.1525	0.146992683	3.03E-05
936	50	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.19205	0.199611301	5.72E-05
936	75	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.12513	0.122547302	6.67E-06
936	75	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.1627	0.157398351	2.81E-05
936	75	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.21109	0.213744825	7.05E-06
936	100	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.12698	0.12862401	2.70E-06
936	100	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.16888	0.165198994	1.35E-05
936	100	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.2244	0.224335947	4.10E-09
936	120	2	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.12706	0.132623553	3.10E-05
936	120	2.4	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.17173	0.170327862	1.97E-06
936	120	3	0.04746997	0.03288456	0.23192438	0	0.0646287	0.15094837	0.04402419	0.74039873	0.23158	0.231295188	8.11E-08
937	10	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.09418	0.084298897	9.76E-05
937	10	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.11163	0.108047199	1.28E-05
937	10	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.12975	0.14636488	0.00027605
937	25	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.10512	0.098136559	4.88E-05
937	25	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.12847	0.125846519	6.88E-06
937	25	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.15531	0.170502853	0.00023082
937	50	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.11528	0.110121117	2.66E-05
937	50	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.14617	0.14119091	2.48E-05
937	50	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.18386	0.191311302	5.55E-05
937	75	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.12014	0.117773107	5.60E-06
937	75	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.15596	0.150999082	2.46E-05
937	75	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.20223	0.204606311	5.65E-06
937	100	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.12194	0.123510656	2.47E-06
937	100	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.16175	0.158342943	1.16E-05
937	100	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.21476	0.214555197	4.19E-08
937	120	2	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.12185	0.127274593	2.94E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
937	120	2.4	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.16449	0.163169456	1.74E-06
937	120	3	0.03342963	0.04858246	0.22876294	0	0.06202129	0.16056964	0.08657798	0.6908311	0.22166	0.22108616	3.29E-07
938	10	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.07716	0.068538857	7.43E-05
938	10	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.09017	0.086918354	1.06E-05
938	10	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.10366	0.116165352	0.00015638
938	25	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.08734	0.081475945	3.44E-05
938	25	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.10548	0.103332176	4.61E-06
938	25	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.12592	0.138125496	0.00014897
938	50	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.09732	0.092867336	1.98E-05
938	50	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.12148	0.117771664	1.38E-05
938	50	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.15106	0.157409897	4.03E-05
938	75	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.10225	0.100226351	4.10E-06
938	75	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.13094	0.127105014	1.47E-05
938	75	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.16773	0.169899584	4.71E-06
938	100	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.10447	0.105802259	1.77E-06
938	100	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.13689	0.134161673	7.44E-06
938	100	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.17902	0.179333239	9.81E-08
938	120	2	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.10511	0.109485014	1.91E-05
938	120	2.4	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.13979	0.138822214	9.37E-07
938	120	3	0.04778468	0.08527299	0.27868242	0	0.07169293	0.1648003	0.13461227	0.6288945	0.18622	0.185568341	4.25E-07
939	10	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.08086	0.072673702	6.70E-05
939	10	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.09585	0.093456173	5.73E-06
939	10	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.11154	0.127227688	0.0002461
939	25	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.09036	0.084212303	3.78E-05
939	25	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.11062	0.108371925	5.05E-06
939	25	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.13401	0.147494926	0.00018184
939	50	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.09898	0.094157581	2.33E-05
939	50	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.12568	0.121170464	2.03E-05
939	50	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.1584	0.164900246	4.23E-05
939	75	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.10288	0.100497678	5.68E-06
939	75	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.13364	0.12932181	1.86E-05
939	75	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.174	0.176004435	4.02E-06
939	100	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.10399	0.105243731	1.57E-06
939	100	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.13841	0.135419445	8.94E-06
939	100	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.18459	0.184312372	7.71E-08
939	120	2	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.10367	0.108359297	2.20E-05
939	120	2.4	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.14065	0.139421153	1.51E-06
939	120	3	0.06061929	0.0382058	0.25240447	0	0.11303652	0.13822426	0.1253388	0.62340041	0.19022	0.189759111	2.12E-07
940	10	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.09196	0.081549549	0.00010838
940	10	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.1081	0.104172134	1.54E-05
940	10	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.12488	0.140368271	0.00023989
940	25	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.10363	0.096370049	5.27E-05
940	25	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.12576	0.123058205	7.30E-06
940	25	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.15111	0.165904732	0.00021888
940	50	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.11491	0.109337444	3.11E-05
940	50	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.14452	0.139601917	2.42E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
940	50	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.18079	0.18821558	5.51E-05
940	75	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.12044	0.117695173	7.53E-06
940	75	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.15502	0.150268809	2.26E-05
940	75	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.19985	0.202594452	7.53E-06
940	100	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.1226	0.123984756	1.92E-06
940	100	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.16159	0.158301811	1.08E-05
940	100	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.21354	0.213422985	1.37E-08
940	120	2	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.12293	0.128140529	2.71E-05
940	120	2.4	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.16487	0.16360062	1.61E-06
940	120	3	0.14622605	0.03914684	0.14844261	0	0.06298604	0.14220717	0.06073484	0.73407195	0.22107	0.220557578	2.63E-07
941	10	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.09964	0.088780117	0.00011794
941	10	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.11825	0.11402216	1.79E-05
941	10	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.13761	0.15478611	0.00029502
941	25	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.11105	0.103453407	5.77E-05
941	25	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.13605	0.132869263	1.01E-05
941	25	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.16467	0.180391846	0.00024718
941	50	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.12181	0.116130714	3.23E-05
941	50	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.15465	0.149144535	3.03E-05
941	50	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.19478	0.202494869	5.95E-05
941	75	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.12677	0.124235878	6.42E-06
941	75	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.16487	0.1595401	2.84E-05
941	75	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.21392	0.216616847	7.27E-06
941	100	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.12857	0.130308256	3.02E-06
941	100	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.17109	0.167331362	1.41E-05
941	100	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.22745	0.227187042	6.91E-08
941	120	2	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.12854	0.134297697	3.32E-05
941	120	2.4	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.17386	0.172447602	1.99E-06
941	120	3	0.04954197	0.0328822	0.21579139	0	0.07241078	0.15874199	0.0381898	0.73065743	0.23459	0.23413113	2.11E-07
942	10	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.09111	0.08180933	8.65E-05
942	10	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.10834	0.105384445	8.74E-06
942	10	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.12626	0.143528938	0.00029822
942	25	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.10135	0.094664154	4.47E-05
942	25	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.12443	0.121906509	6.37E-06
942	25	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.15108	0.166051941	0.00022416
942	50	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.11078	0.105683193	2.60E-05
942	50	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.14113	0.136086216	2.54E-05
942	50	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.17819	0.18536665	5.15E-05
942	75	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.11507	0.112692947	5.65E-06
942	75	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.1499	0.145107829	2.30E-05
942	75	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.19502	0.197649956	6.92E-06
942	100	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.1165	0.117934027	2.06E-06
942	100	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.15512	0.151846256	1.07E-05
942	100	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.20702	0.206824551	3.82E-08
942	120	2	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.11609	0.121371794	2.79E-05
942	120	2.4	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.15761	0.156265418	1.81E-06
942	120	3	0.01574439	0.08614247	0.18714218	0	0.06748471	0.14153507	0.12285901	0.66812121	0.21315	0.212839921	9.61E-08

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
943	10	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.0842	0.074946785	8.56E-05
943	10	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.09915	0.095924091	1.04E-05
943	10	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.11477	0.129717255	0.00022342
943	25	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.09468	0.088039742	4.41E-05
943	25	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.11517	0.112727585	5.97E-06
943	25	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.13874	0.152439423	0.00018767
943	50	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.1045	0.0994701	2.53E-05
943	50	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.13192	0.127353249	2.09E-05
943	50	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.1654	0.172213078	4.64E-05
943	75	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.10931	0.106798808	6.31E-06
943	75	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.141	0.136737111	1.82E-05
943	75	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.18253	0.184912033	5.67E-06
943	100	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.11103	0.112324924	1.68E-06
943	100	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.14673	0.143795214	8.61E-06
943	100	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.19446	0.194465475	3.00E-11
943	120	2	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.11104	0.115966908	2.43E-05
943	120	2.4	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.14948	0.148450343	1.06E-06
943	120	3	0.09184003	0.060238	0.204577	0	0.10882599	0.14353264	0.07574114	0.67190023	0.20103	0.200756502	7.48E-08
944	10	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.09394	0.08371439	0.00010456
944	10	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.1109	0.107202911	1.37E-05
944	10	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.12856	0.145022678	0.00027102
944	25	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.1054	0.098205833	5.18E-05
944	25	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.12846	0.125768585	7.24E-06
944	25	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.15483	0.170165138	0.00023517
944	50	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.1162	0.110805206	2.91E-05
944	50	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.1469	0.141900978	2.50E-05
944	50	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.18438	0.191978073	5.77E-05
944	75	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.12154	0.118893051	7.01E-06
944	75	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.15717	0.15224603	2.42E-05
944	75	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.20335	0.205983149	6.93E-06
944	100	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.1234	0.124965429	2.45E-06
944	100	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.16331	0.16001853	1.08E-05
944	100	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.21666	0.216501389	2.52E-08
944	120	2	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.12354	0.128970385	2.95E-05
944	120	2.4	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.16631	0.165135852	1.38E-06
944	120	3	0.05591802	0.05761941	0.2192561	0	0.05708812	0.14376868	0.05816286	0.74098034	0.224	0.223422384	3.34E-07
945	10	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.08695	0.077284813	9.34E-05
945	10	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.10241	0.098868275	1.25E-05
945	10	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.11854	0.133570671	0.00022592
945	25	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.0978	0.090905991	4.75E-05
945	25	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.11891	0.116338539	6.61E-06
945	25	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.14324	0.157202072	0.00019494
945	50	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.10802	0.102808285	2.72E-05
945	50	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.13629	0.131535721	2.26E-05
945	50	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.17087	0.177768059	4.76E-05
945	75	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.11295	0.1104444	6.28E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
945	75	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.14584	0.141317914	2.04E-05
945	75	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.18854	0.190976473	5.94E-06
945	100	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.11478	0.116202154	2.02E-06
945	100	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.15166	0.148666105	8.96E-06
945	100	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.20098	0.200912371	4.57E-09
945	120	2	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.11494	0.119991708	2.55E-05
945	120	2.4	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.15458	0.153512462	1.14E-06
945	120	3	0.05579599	0.05051614	0.26359025	0	0.07504364	0.14099941	0.07307771	0.71087925	0.20793	0.207462096	2.19E-07
946	10	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.10146	0.090576935	0.00011844
946	10	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.12093	0.116749859	1.75E-05
946	10	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.14116	0.15926733	0.00032788
946	25	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.11256	0.104804268	6.02E-05
946	25	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.13833	0.135120697	1.03E-05
946	25	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.1682	0.184357834	0.00026108
946	50	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.12268	0.117044277	3.18E-05
946	50	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.15654	0.150902386	3.18E-05
946	50	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.19804	0.20588068	6.15E-05
946	75	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.12749	0.124833374	7.06E-06
946	75	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.16646	0.160942917	3.04E-05
946	75	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.21663	0.219572576	8.66E-06
946	100	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.12902	0.13065896	2.69E-06
946	100	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.17208	0.168441925	1.32E-05
946	100	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.22981	0.229795675	2.05E-10
946	120	2	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.12883	0.134476296	3.19E-05
946	120	2.4	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.1745	0.173356835	1.31E-06
946	120	3	0.04936118	0.02438417	0.19617363	0	0.07128927	0.16178337	0.0587796	0.70814777	0.23711	0.236496218	3.77E-07
947	10	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.10343	0.092417049	0.00012129
947	10	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.12314	0.119001293	1.71E-05
947	10	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.14358	0.162211514	0.00034713
947	25	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.11489	0.107116318	6.04E-05
947	25	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.14117	0.137986946	1.01E-05
947	25	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.17142	0.188064041	0.00027702
947	50	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.12546	0.119776306	3.23E-05
947	50	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.15992	0.154279537	3.18E-05
947	50	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.20219	0.210257988	6.51E-05
947	75	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.13041	0.127829514	6.66E-06
947	75	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.17024	0.164646238	3.13E-05
947	75	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.22155	0.224387182	8.05E-06
947	100	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.1322	0.133849936	2.72E-06
947	100	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.17616	0.172394924	1.42E-05
947	100	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.23494	0.234935007	2.49E-11
947	120	2	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.13196	0.137802935	3.41E-05
947	120	2.4	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.17862	0.17747364	1.31E-06
947	120	3	0.07170688	0.02661498	0.16422384	0	0.03807547	0.14737577	0.07500626	0.7395425	0.24259	0.241856003	5.39E-07
948	10	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.09441	0.08438549	0.00010049
948	10	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.11125	0.108025551	1.04E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
948	10	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.12883	0.146105099	0.00029843
948	25	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.10615	0.099106407	4.96E-05
948	25	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.12914	0.126851006	5.24E-06
948	25	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.15552	0.171550636	0.00025698
948	50	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.11724	0.111878967	2.87E-05
948	50	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.14806	0.143204212	2.36E-05
948	50	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.18559	0.19364933	6.50E-05
948	75	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.12273	0.120088043	6.98E-06
948	75	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.15853	0.153706576	2.33E-05
948	75	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.20505	0.207853572	7.86E-06
948	100	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.12469	0.12625351	2.44E-06
948	100	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.1648	0.161592369	1.03E-05
948	100	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.21851	0.218521185	1.25E-10
948	120	2	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.12496	0.13031439	2.87E-05
948	120	2.4	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.16834	0.166786544	2.41E-06
948	120	3	0.04609357	0.07860796	0.21227289	0	0.07215659	0.14434689	0.02692882	0.7565677	0.22623	0.225538516	4.78E-07
949	10	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.09145	0.081419659	0.00010061
949	10	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.10837	0.104496861	1.50E-05
949	10	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.12601	0.141862011	0.00025129
949	25	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.10218	0.094975891	5.19E-05
949	25	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.12502	0.121958466	9.37E-06
949	25	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.15123	0.165575676	0.0002058
949	50	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.11204	0.106730976	2.82E-05
949	50	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.14228	0.137043076	2.74E-05
949	50	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.17917	0.18604641	4.73E-05
949	75	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.11678	0.114234314	6.48E-06
949	75	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.15176	0.146689606	2.57E-05
949	75	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.19682	0.199145139	5.41E-06
949	100	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.11831	0.119869394	2.43E-06
949	100	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.15734	0.153920174	1.17E-05
949	100	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.20912	0.208961248	2.52E-08
949	120	2	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.11831	0.123574519	2.77E-05
949	120	2.4	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.16001	0.158670195	1.80E-06
949	120	3	0.04829859	0.05207303	0.2205839	0	0.0721324	0.1431048	0.08568938	0.69907342	0.21583	0.215403454	1.82E-07
950	10	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.08526	0.075791073	8.97E-05
950	10	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.10021	0.096790028	1.17E-05
950	10	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.11578	0.130648136	0.00022106
950	25	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.09609	0.089390602	4.49E-05
950	25	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.1167	0.114208336	6.21E-06
950	25	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.14031	0.154127998	0.00019094
950	50	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.10643	0.101275578	2.66E-05
950	50	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.13397	0.129383869	2.10E-05
950	50	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.16784	0.174611721	4.59E-05
950	75	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.11139	0.108914579	6.13E-06
950	75	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.14358	0.139167506	1.95E-05
950	75	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.18524	0.187801374	6.56E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
950	100	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.11335	0.114678106	1.76E-06
950	100	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.14952	0.146529408	8.94E-06
950	100	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.19778	0.197736549	1.89E-09
950	120	2	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.11356	0.118483535	2.42E-05
950	120	2.4	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.15258	0.151381898	1.44E-06
950	120	3	0.07480359	0.075183	0.21813767	0	0.07451797	0.13504702	0.08285972	0.70757529	0.20483	0.204277976	3.05E-07
951	10	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.08089	0.072630405	6.82E-05
951	10	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.09572	0.09321804	6.26E-06
951	10	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.11124	0.126491642	0.00023261
951	25	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.09046	0.084368172	3.71E-05
951	25	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.1105	0.108293991	4.87E-06
951	25	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.13366	0.146940727	0.00017638
951	50	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.09912	0.094482307	2.15E-05
951	50	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.12564	0.121287365	1.89E-05
951	50	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.15817	0.164562531	4.09E-05
951	75	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.10327	0.100936419	5.45E-06
951	75	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.13393	0.129567159	1.90E-05
951	75	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.17382	0.175796611	3.91E-06
951	100	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.10456	0.105767622	1.46E-06
951	100	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.13856	0.13576582	7.81E-06
951	100	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.18449	0.184210625	7.81E-08
951	120	2	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.10437	0.108945608	2.09E-05
951	120	2.4	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.14108	0.139836081	1.55E-06
951	120	3	0.04542518	0.05276015	0.25074996	0	0.12505975	0.15411322	0.11563517	0.60519186	0.19027	0.189730247	2.91E-07
952	10	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.09009	0.079990864	0.00010199
952	10	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.10562	0.101812458	1.45E-05
952	10	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.12176	0.136731339	0.00022414
952	25	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.1018	0.094932594	4.72E-05
952	25	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.12325	0.120824089	5.89E-06
952	25	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.14778	0.162293777	0.00021065
952	50	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.11325	0.108029881	2.72E-05
952	50	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.14192	0.137515011	1.94E-05
952	50	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.17726	0.184695549	5.53E-05
952	75	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.11899	0.116497294	6.21E-06
952	75	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.15286	0.148294474	2.08E-05
952	75	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.1964	0.199171117	7.68E-06
952	100	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.1214	0.122885017	2.21E-06
952	100	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.15928	0.156431389	8.11E-06
952	100	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.21006	0.210099955	1.60E-09
952	120	2	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.12196	0.12711223	2.65E-05
952	120	2.4	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.16305	0.161801998	1.56E-06
952	120	3	0.064205	0.08066085	0.22470558	0	0.04401824	0.14498657	0.05959582	0.75139937	0.21811	0.217312121	6.37E-07
953	10	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.08517	0.075856018	8.68E-05
953	10	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.09999	0.096833324	9.96E-06
953	10	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.1154	0.130539894	0.00022922
953	25	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.09621	0.089581108	4.39E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
953	25	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.11672	0.114372864	5.51E-06
953	25	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.14006	0.154162636	0.00019888
953	50	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.10674	0.101604633	2.64E-05
953	50	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.13411	0.129695606	1.95E-05
953	50	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.16787	0.174823875	4.84E-05
953	75	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.1118	0.109338888	6.06E-06
953	75	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.14388	0.139577382	1.85E-05
953	75	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.18562	0.18813043	6.30E-06
953	100	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.11388	0.11517169	1.67E-06
953	100	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.14994	0.147014332	8.56E-06
953	100	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.19822	0.198152199	4.60E-09
953	120	2	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.11425	0.119019334	2.27E-05
953	120	2.4	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.15321	0.151921304	1.66E-06
953	120	3	0.04667896	0.14528898	0.15436758	0	0.10468577	0.13957376	0.05760224	0.69813823	0.20529	0.204763261	2.77E-07
954	10	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.08057	0.071677876	7.91E-05
954	10	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.09451	0.091291332	1.04E-05
954	10	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.10896	0.122703171	0.00018887
954	25	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.09102	0.084766502	3.91E-05
954	25	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.11027	0.107982254	5.23E-06
954	25	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.13229	0.14513958	0.00016511
954	50	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.10101	0.096240158	2.28E-05
954	50	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.12681	0.122590599	1.78E-05
954	50	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.15841	0.164766026	4.04E-05
954	75	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.10588	0.103629481	5.06E-06
954	75	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.13608	0.132009099	1.66E-05
954	75	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.17515	0.177436117	5.23E-06
954	100	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.10801	0.109214048	1.45E-06
954	100	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.14191	0.139112663	7.83E-06
954	100	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.18698	0.186988115	6.59E-11
954	120	2	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.10838	0.112903659	2.05E-05
954	120	2.4	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.14503	0.143801347	1.51E-06
954	120	3	0.04927301	0.03648235	0.33175568	0	0.08378409	0.15073966	0.08570603	0.67977021	0.19396	0.193293214	4.45E-07
955	10	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.08975	0.080120754	9.27E-05
955	10	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.10627	0.102938175	1.11E-05
955	10	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.12353	0.139827061	0.00026559
955	25	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.10036	0.093408546	4.83E-05
955	25	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.12275	0.120018768	7.46E-06
955	25	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.14853	0.163064461	0.00021125
955	50	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.11016	0.104903851	2.76E-05
955	50	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.13975	0.134787312	2.46E-05
955	50	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.17599	0.183115215	5.08E-05
955	75	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.11471	0.112248433	6.06E-06
955	75	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.14907	0.144215914	2.36E-05
955	75	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.19353	0.195926743	5.74E-06
955	100	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.11637	0.11775651	1.92E-06
955	100	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.1546	0.151287727	1.10E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
955	100	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.20543	0.205527811	9.57E-09
955	120	2	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.11631	0.121377206	2.57E-05
955	120	2.4	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.15721	0.15593528	1.62E-06
955	120	3	0.05762455	0.04867913	0.22334974	0	0.08872268	0.14209074	0.07588666	0.69329992	0.21219	0.211836878	1.25E-07
956	10	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.09593	0.085251427	0.00011403
956	10	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.11329	0.10912962	1.73E-05
956	10	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.13133	0.147728729	0.00026892
956	25	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.10755	0.100067596	5.60E-05
956	25	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.1311	0.12814991	8.70E-06
956	25	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.15805	0.173438377	0.0002368
956	50	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.11854	0.112944069	3.13E-05
956	50	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.1499	0.144654655	2.75E-05
956	50	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.18819	0.195749226	5.71E-05
956	75	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.12395	0.121219533	7.46E-06
956	75	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.16031	0.155247943	2.56E-05
956	75	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.20748	0.210073255	6.72E-06
956	100	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.12587	0.127433348	2.44E-06
956	100	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.16659	0.163200846	1.15E-05
956	100	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.22106	0.2208354	5.04E-08
956	120	2	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.12605	0.131528505	3.00E-05
956	120	2.4	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.16968	0.168437235	1.54E-06
956	120	3	0.07327412	0.0337318	0.22385834	0	0.04833241	0.14586223	0.05474699	0.75105836	0.22861	0.227918037	4.79E-07
957	10	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.08515	0.075899315	8.56E-05
957	10	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.10031	0.097136402	1.01E-05
957	10	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.11615	0.131232643	0.00022749
957	25	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.09566	0.089070206	4.34E-05
957	25	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.11634	0.113991852	5.51E-06
957	25	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.14017	0.154032745	0.00019218
957	50	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.10552	0.100535202	2.48E-05
957	50	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.13316	0.128634834	2.05E-05
957	50	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.16701	0.173823719	4.64E-05
957	75	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.11035	0.107889887	6.05E-06
957	75	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.14229	0.138030243	1.81E-05
957	75	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.1841	0.186531334	5.91E-06
957	100	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.11206	0.113418169	1.84E-06
957	100	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.14799	0.145089788	8.41E-06
957	100	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.19616	0.196078281	6.68E-09
957	120	2	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.11212	0.117061957	2.44E-05
957	120	2.4	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.15088	0.149747443	1.28E-06
957	120	3	0.10328122	0.03258659	0.21989648	0	0.13037239	0.15915173	0.05312128	0.6573546	0.20279	0.202354876	1.89E-07
958	10	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.09164	0.081246471	0.00010803
958	10	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.10795	0.103739166	1.77E-05
958	10	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.12488	0.139956951	0.00022731
958	25	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.10288	0.095651321	5.23E-05
958	25	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.12503	0.122192268	8.05E-06
958	25	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.15039	0.16483963	0.00020879

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
958	50	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.11362	0.108233376	2.90E-05
958	50	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.1432	0.138268375	2.43E-05
958	50	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.17938	0.186509686	5.08E-05
958	75	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.11894	0.11632988	6.81E-06
958	75	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.15329	0.148597552	2.20E-05
958	75	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.19779	0.200455589	7.11E-06
958	100	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.12094	0.122421741	2.20E-06
958	100	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.15948	0.156372938	9.65E-06
958	100	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.21105	0.210944242	1.12E-08
958	120	2	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.12125	0.126435717	2.69E-05
958	120	2.4	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.16288	0.161497116	1.91E-06
958	120	3	0.05186759	0.0434253	0.25285259	0	0.06711925	0.16489202	0.06319327	0.70479546	0.21837	0.217853332	2.67E-07
959	10	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.08715	0.07786932	8.61E-05
959	10	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.10305	0.099972343	9.47E-06
959	10	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.11963	0.135562325	0.00025384
959	25	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.09766	0.090949287	4.50E-05
959	25	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.11934	0.116762848	6.64E-06
959	25	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.14415	0.158405724	0.00020323
959	50	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.10737	0.102288723	2.58E-05
959	50	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.1361	0.131301918	2.30E-05
959	50	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.17125	0.178131752	4.74E-05
959	75	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.11195	0.109546712	5.78E-06
959	75	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.14532	0.14060496	2.22E-05
959	75	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.18854	0.190771535	4.98E-06
959	100	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.11356	0.114992008	2.05E-06
959	100	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.15062	0.14758585	9.21E-06
959	100	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.20025	0.200247765	5.00E-12
959	120	2	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.11347	0.118570129	2.60E-05
959	120	2.4	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.15332	0.152172065	1.32E-06
959	120	3	0.07668048	0.03484737	0.23832504	0	0.09648705	0.13686117	0.07300527	0.6936465	0.20677	0.206473486	8.79E-08
960	10	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.08833	0.078713608	9.25E-05
960	10	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.10423	0.10083828	1.15E-05
960	10	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.12081	0.136384964	0.00024258
960	25	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.09913	0.092282829	4.69E-05
960	25	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.12073	0.118174324	6.53E-06
960	25	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.14557	0.159877815	0.00020471
960	50	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.10921	0.104037914	2.68E-05
960	50	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.13804	0.133224297	2.32E-05
960	50	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.17329	0.180253296	4.85E-05
960	75	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.11416	0.11156723	6.72E-06
960	75	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.14754	0.142873713	2.18E-05
960	75	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.19101	0.193317388	5.32E-06
960	100	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.11589	0.117234783	1.81E-06
960	100	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.15316	0.150116549	9.26E-06
960	100	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.20338	0.203124838	6.51E-08
960	120	2	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.11587	0.120962278	2.59E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
960	120	2.4	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.15624	0.154885332	1.84E-06
960	120	3	0.10470859	0.03958997	0.19144654	0	0.06703703	0.14027658	0.10136861	0.69131778	0.21012	0.209576424	2.95E-07
961	10	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.09495	0.085467911	8.99E-05
961	10	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.11348	0.110536766	8.66E-06
961	10	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.13297	0.151408958	0.00034
961	25	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.10504	0.098041306	4.90E-05
961	25	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.12959	0.126816368	7.69E-06
961	25	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.15823	0.173732796	0.00024034
961	50	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.11419	0.108744278	2.97E-05
961	50	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.14604	0.140684338	2.87E-05
961	50	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.1857	0.192740097	4.96E-05
961	75	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.11816	0.115521673	6.96E-06
961	75	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.15468	0.149449056	2.74E-05
961	75	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.20234	0.20475352	5.83E-06
961	100	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.11898	0.120572968	2.54E-06
961	100	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.15972	0.155976772	1.40E-05
961	100	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.214	0.21369359	9.39E-08
961	120	2	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.11843	0.123881205	2.97E-05
961	120	2.4	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.16144	0.160241508	1.44E-06
961	120	3	0.03636434	0.01919185	0.22868679	0	0.08640682	0.14471774	0.09073239	0.67814305	0.2202	0.219538299	4.38E-07
962	10	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.0913	0.081159878	0.00010282
962	10	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.10757	0.10382576	1.40E-05
962	10	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.12453	0.140260029	0.00024743
962	25	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.10257	0.095486794	5.02E-05
962	25	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.12472	0.122105675	6.83E-06
962	25	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.15014	0.164952202	0.0002194
962	50	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.1133	0.107925968	2.89E-05
962	50	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.14293	0.138025913	2.41E-05
962	50	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.17904	0.1864534	5.50E-05
962	75	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.11864	0.115928663	7.35E-06
962	75	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.15298	0.14825695	2.23E-05
962	75	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.19756	0.200265083	7.32E-06
962	100	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.12051	0.121949806	2.07E-06
962	100	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.15913	0.155948629	1.01E-05
962	100	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.21081	0.210651989	2.50E-08
962	120	2	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.12075	0.125917959	2.67E-05
962	120	2.4	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.16232	0.161013635	1.71E-06
962	120	3	0.05006279	0.07119991	0.21989901	0	0.06854056	0.15125426	0.0618882	0.71831697	0.21817	0.217494329	4.57E-07
963	10	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.08713	0.078020859	8.30E-05
963	10	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.1033	0.100275421	9.15E-06
963	10	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.12021	0.136384964	0.00026163
963	25	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.09725	0.090620232	4.40E-05
963	25	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.11907	0.116520386	6.50E-06
963	25	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.14427	0.158474998	0.00020178
963	50	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.10656	0.101496391	2.56E-05
963	50	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.13541	0.130505257	2.41E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
963	50	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.17053	0.177490959	4.85E-05
963	75	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.11089	0.1084412	6.00E-06
963	75	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.14406	0.139435946	2.14E-05
963	75	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.18731	0.189625613	5.36E-06
963	100	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.11227	0.113636818	1.87E-06
963	100	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.14922	0.146111593	9.66E-06
963	100	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.19895	0.198706398	5.93E-08
963	120	2	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.11204	0.117052937	2.51E-05
963	120	2.4	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.15187	0.150503333	1.87E-06
963	120	3	0.03663677	0.02991624	0.27709818	0	0.08010746	0.14492309	0.10622374	0.6687457	0.20511	0.204667648	1.96E-07
964	10	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.08339	0.073886013	9.03E-05
964	10	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.0974	0.093694305	1.37E-05
964	10	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.11194	0.125257683	0.00017736
964	25	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.09448	0.088074379	4.10E-05
964	25	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.11412	0.111714439	5.79E-06
964	25	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.13619	0.149399986	0.0001745
964	50	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.10546	0.100617466	2.35E-05
964	50	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.13166	0.127626019	1.63E-05
964	50	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.16375	0.170667381	4.79E-05
964	75	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.11099	0.108741391	5.06E-06
964	75	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.14207	0.137926331	1.72E-05
964	75	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.18209	0.18445886	5.61E-06
964	100	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.11341	0.114883766	2.17E-06
964	100	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.14853	0.145719757	7.90E-06
964	100	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.19451	0.194885454	1.41E-07
964	120	2	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.11427	0.118956192	2.20E-05
964	120	2.4	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.15204	0.150876768	1.35E-06
964	120	3	0.08966949	0.0395255	0.28232532	0	0.05982621	0.16104533	0.0794117	0.69971676	0.20248	0.201781193	4.88E-07
965	10	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.08309	0.074080849	8.12E-05
965	10	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.09783	0.094863319	8.80E-06
965	10	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.11328	0.128310108	0.0002259
965	25	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.09348	0.08697464	4.23E-05
965	25	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.11372	0.111350746	5.61E-06
965	25	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.13709	0.150629616	0.00018332
965	50	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.10316	0.098179855	2.48E-05
965	50	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.13026	0.12569931	2.08E-05
965	50	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.16341	0.17000927	4.36E-05
965	75	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.10786	0.105370013	6.20E-06
965	75	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.13919	0.13489844	1.84E-05
965	75	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.18035	0.182455661	4.43E-06
965	100	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.10958	0.110777063	1.43E-06
965	100	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.14484	0.14181222	9.17E-06
965	100	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.19204	0.191809216	5.33E-08
965	120	2	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.10957	0.114336061	2.27E-05
965	120	2.4	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.14752	0.146370292	1.32E-06
965	120	3	0.08510943	0.05228923	0.23356354	0	0.09857558	0.13544787	0.08495378	0.68102277	0.1984	0.197962054	1.92E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
966	10	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.08102	0.070833588	0.00010376
966	10	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.09353	0.089104843	1.96E-05
966	10	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.10662	0.117940521	0.00012815
966	25	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.09299	0.086281891	4.50E-05
966	25	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.11122	0.108605728	6.83E-06
966	25	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.13158	0.1437714	0.00014863
966	50	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.1051	0.100210476	2.39E-05
966	50	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.13009	0.12611496	1.58E-05
966	50	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.16029	0.166982822	4.48E-05
966	75	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.11166	0.109359093	5.29E-06
966	75	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.14171	0.137608821	1.68E-05
966	75	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.17983	0.182224744	5.73E-06
966	100	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.11511	0.116336374	1.50E-06
966	100	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.14926	0.146380033	8.29E-06
966	100	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.19382	0.193844166	5.84E-10
966	120	2	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.11651	0.120980318	2.00E-05
966	120	2.4	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.1532	0.152220774	9.59E-07
966	120	3	0.15229021	0.05538465	0.26027749	0	0.04447065	0.155278	0.03721146	0.7630399	0.20215	0.201577338	3.28E-07
967	10	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.08901	0.07882185	0.0001038
967	10	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.1048	0.100730038	1.66E-05
967	10	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.12115	0.135908699	0.00021782
967	25	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.10003	0.092914963	5.06E-05
967	25	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.12149	0.118711205	7.72E-06
967	25	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.14609	0.160163574	0.00019807
967	50	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.11051	0.10518961	2.83E-05
967	50	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.13913	0.134393311	2.24E-05
967	50	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.17435	0.181314068	4.85E-05
967	75	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.11568	0.113088392	6.72E-06
967	75	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.14898	0.144475695	2.03E-05
967	75	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.19232	0.194930916	6.82E-06
967	100	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.11771	0.119033766	1.75E-06
967	100	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.15509	0.152069235	9.13E-06
967	100	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.20521	0.205174942	1.23E-09
967	120	2	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.11795	0.122953931	2.50E-05
967	120	2.4	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.15841	0.157073625	1.79E-06
967	120	3	0.02417749	0.06530624	0.27090332	0	0.0871441	0.16490549	0.05357788	0.69437253	0.21242	0.211928884	2.41E-07
968	10	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.09025	0.080077457	0.00010348
968	10	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.10629	0.102245426	1.64E-05
968	10	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.12295	0.137857056	0.00022222
968	25	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.10133	0.094283142	4.97E-05
968	25	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.12312	0.12039978	7.40E-06
968	25	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.14809	0.162345734	0.00020323
968	50	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.11188	0.106666031	2.72E-05
968	50	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.14094	0.136224766	2.22E-05
968	50	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.17658	0.183691063	5.06E-05
968	75	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.1171	0.114635531	6.07E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
968	75	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.15089	0.146398074	2.02E-05
968	75	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.1947	0.19741038	7.35E-06
968	100	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.11912	0.120631418	2.28E-06
968	100	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.15702	0.154052229	8.81E-06
968	100	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.20774	0.207733784	3.86E-11
968	120	2	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.11936	0.124588386	2.73E-05
968	120	2.4	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.16038	0.159095947	1.65E-06
968	120	3	0.08958992	0.04449145	0.20051694	0	0.06191529	0.15945437	0.09152525	0.68710509	0.21505	0.214535713	2.64E-07
969	10	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.08697	0.077154922	9.63E-05
969	10	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.10205	0.098305416	1.40E-05
969	10	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.11774	0.132206821	0.00020929
969	25	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.09811	0.091295662	4.64E-05
969	25	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.1189	0.116355858	6.47E-06
969	25	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.14265	0.156500664	0.00019184
969	50	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.10896	0.103700199	2.77E-05
969	50	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.13669	0.132154865	2.06E-05
969	50	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.17084	0.177763729	4.79E-05
969	75	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.11428	0.111700007	6.66E-06
969	75	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.14684	0.142339719	2.03E-05
969	75	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.18893	0.191472944	6.47E-06
969	100	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.11648	0.117730532	1.56E-06
969	100	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.15287	0.15002779	8.08E-06
969	100	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.20179	0.20180645	2.71E-10
969	120	2	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.11689	0.121716364	2.33E-05
969	120	2.4	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.15648	0.155100012	1.90E-06
969	120	3	0.05024326	0.07361669	0.25333547	0	0.05420068	0.14774835	0.08044795	0.71760302	0.20924	0.208625698	3.77E-07
970	10	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.08992	0.080597019	8.69E-05
970	10	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.10641	0.103501034	8.46E-06
970	10	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.12364	0.140541458	0.00028566
970	25	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.10066	0.093928108	4.53E-05
970	25	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.12312	0.120642242	6.14E-06
970	25	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.14881	0.163826485	0.00022549
970	50	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.11062	0.10545805	2.66E-05
970	50	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.14034	0.135441093	2.40E-05
970	50	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.17669	0.183929195	5.24E-05
970	75	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.11523	0.112828611	5.77E-06
970	75	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.14978	0.144905777	2.38E-05
970	75	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.19432	0.196786906	6.09E-06
970	100	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.1169	0.118356171	2.12E-06
970	100	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.15532	0.15199563	1.11E-05
970	100	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.20644	0.206419725	4.11E-10
970	120	2	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.11677	0.121986969	2.72E-05
970	120	2.4	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.15798	0.156664109	1.73E-06
970	120	3	0.04016187	0.03266554	0.282242	0	0.07712985	0.13519751	0.06321862	0.72445402	0.21318	0.212740699	1.93E-07
971	10	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.08484	0.075379753	8.95E-05
971	10	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.10006	0.096378708	1.36E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
971	10	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.11583	0.130128574	0.00020445
971	25	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.09514	0.088446732	4.48E-05
971	25	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.11572	0.113117256	6.77E-06
971	25	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.13934	0.152759819	0.00018009
971	50	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.1048	0.099816475	2.48E-05
971	50	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.13215	0.127643337	2.03E-05
971	50	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.16571	0.172386265	4.46E-05
971	75	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.10957	0.107110545	6.05E-06
971	75	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.14126	0.136965141	1.84E-05
971	75	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.18262	0.18499574	5.64E-06
971	100	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.11134	0.112593365	1.57E-06
971	100	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.14694	0.143974895	8.79E-06
971	100	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.19439	0.194465475	5.70E-09
971	120	2	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.11129	0.116208649	2.42E-05
971	120	2.4	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.14992	0.148583841	1.79E-06
971	120	3	0.0442726	0.03369613	0.28657816	0	0.07075427	0.16246546	0.11742461	0.64935566	0.20099	0.200695165	8.69E-08
972	10	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.08771	0.078648663	8.21E-05
972	10	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.10384	0.101076412	7.64E-06
972	10	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.1207	0.137380791	0.00027825
972	25	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.09817	0.091529465	4.41E-05
972	25	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.12016	0.117672081	6.19E-06
972	25	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.14532	0.159921112	0.00021319
972	50	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.10785	0.102665405	2.69E-05
972	50	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.13692	0.131973019	2.45E-05
972	50	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.17244	0.179361382	4.79E-05
972	75	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.11223	0.109780515	6.00E-06
972	75	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.14589	0.141104317	2.29E-05
972	75	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.18956	0.191790454	4.97E-06
972	100	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.11373	0.115106745	1.90E-06
972	100	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.15126	0.147945213	1.10E-05
972	100	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.20122	0.201092052	1.64E-08
972	120	2	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.11351	0.11860621	2.60E-05
972	120	2.4	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.15378	0.152437258	1.80E-06
972	120	3	0.07970364	0.04758931	0.20667697	0	0.13313847	0.139671	0.04265882	0.68453172	0.20775	0.207200511	3.02E-07
973	10	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.09675	0.086463737	0.00010581
973	10	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.11524	0.11170578	1.25E-05
973	10	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.13453	0.152729511	0.00033122
973	25	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.10754	0.099955025	5.75E-05
973	25	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.13224	0.129128418	9.68E-06
973	25	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.16091	0.176616364	0.00024669
973	50	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.11725	0.111549911	3.25E-05
973	50	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.1497	0.144100456	3.14E-05
973	50	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.18979	0.197078438	5.31E-05
973	75	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.12164	0.118921916	7.39E-06
973	75	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.15889	0.153614209	2.78E-05
973	75	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.20741	0.210081914	7.14E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
973	100	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.12289	0.124428549	2.37E-06
973	100	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.16432	0.160717773	1.30E-05
973	100	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.21992	0.219789782	1.70E-08
973	120	2	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.12252	0.128037699	3.04E-05
973	120	2.4	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.16639	0.165379397	1.02E-06
973	120	3	0.03719905	0.05302	0.19471834	0	0.08975171	0.13783806	0.05536627	0.71704396	0.22668	0.226151888	2.79E-07
974	10	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.081	0.07202425	8.06E-05
974	10	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.09504	0.091702652	1.11E-05
974	10	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.10961	0.123114491	0.00018237
974	25	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.09136	0.085164833	3.84E-05
974	25	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.11068	0.108406563	5.17E-06
974	25	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.13275	0.14554657	0.00016375
974	50	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.10132	0.096660137	2.17E-05
974	50	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.12712	0.123019238	1.68E-05
974	50	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.15873	0.165177345	4.16E-05
974	75	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.10622	0.104056676	4.68E-06
974	75	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.13648	0.132439181	1.63E-05
974	75	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.17556	0.177834447	5.17E-06
974	100	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.10829	0.109647017	1.84E-06
974	100	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.14235	0.139541302	7.89E-06
974	100	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.18721	0.187371292	2.60E-08
974	120	2	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.10868	0.113338431	2.17E-05
974	120	2.4	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.14541	0.144228903	1.39E-06
974	120	3	0.04520017	0.02613779	0.34083231	0	0.08937385	0.1639682	0.08668957	0.65996837	0.19428	0.193659433	3.85E-07
975	10	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.09053	0.081571198	8.03E-05
975	10	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.10809	0.105427742	7.09E-06
975	10	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.1265	0.144351578	0.00031868
975	25	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.10023	0.093555756	4.45E-05
975	25	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.12357	0.120971298	6.75E-06
975	25	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.15067	0.165679588	0.00022529
975	50	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.10886	0.103786793	2.57E-05
975	50	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.13924	0.134211464	2.53E-05
975	50	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.177	0.183812294	4.64E-05
975	75	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.11278	0.110251007	6.40E-06
975	75	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.14745	0.142585068	2.37E-05
975	75	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.19279	0.19527729	6.19E-06
975	100	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.11352	0.115078602	2.43E-06
975	100	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.15228	0.14881115	1.20E-05
975	100	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.20389	0.203808928	6.57E-09
975	120	2	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.11304	0.118238187	2.70E-05
975	120	2.4	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.15409	0.152888266	1.44E-06
975	120	3	0.02096623	0.03484023	0.24022893	0	0.11626291	0.15045005	0.08917959	0.64410744	0.20981	0.209390608	1.76E-07
976	10	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.08438	0.075033379	8.74E-05
976	10	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.09935	0.09607563	1.07E-05
976	10	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.11502	0.129890442	0.00022113
976	25	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.09491	0.088204269	4.50E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
976	25	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.11546	0.112918091	6.46E-06
976	25	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.1391	0.152664566	0.000184
976	50	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.10477	0.099656277	2.62E-05
976	50	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.13227	0.127569733	2.21E-05
976	50	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.16586	0.172490177	4.40E-05
976	75	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.10957	0.107009519	6.56E-06
976	75	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.14138	0.136979574	1.94E-05
976	75	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.18299	0.18522377	4.99E-06
976	100	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.11129	0.112543573	1.57E-06
976	100	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.14712	0.144054995	9.39E-06
976	100	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.19496	0.194794531	2.74E-08
976	120	2	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.1113	0.116188804	2.39E-05
976	120	2.4	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.1499	0.14871734	1.40E-06
976	120	3	0.06109069	0.04462747	0.27288859	0	0.10287936	0.14448271	0.064281	0.68835693	0.20158	0.201101073	2.29E-07
977	10	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.09361	0.083692741	9.84E-05
977	10	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.11111	0.107397747	1.38E-05
977	10	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.12923	0.145628834	0.00026892
977	25	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.10431	0.097348557	4.85E-05
977	25	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.12767	0.124911308	7.61E-06
977	25	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.15448	0.169446411	0.00022399
977	50	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.11426	0.10912529	2.64E-05
977	50	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.14499	0.140030556	2.46E-05
977	50	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.1825	0.189943123	5.54E-05
977	75	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.11906	0.116635844	5.88E-06
977	75	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.1546	0.149671313	2.43E-05
977	75	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.20062	0.20302742	5.80E-06
977	100	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.12072	0.122265873	2.39E-06
977	100	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.16017	0.15688817	1.08E-05
977	100	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.21291	0.212818995	8.28E-09
977	120	2	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.12062	0.125966668	2.86E-05
977	120	2.4	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.16291	0.161632419	1.63E-06
977	120	3	0.0476126	0.06268901	0.17399818	0	0.07630844	0.16439462	0.09978878	0.65950816	0.21984	0.219246046	3.53E-07
978	10	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.08645	0.077371407	8.24E-05
978	10	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.10243	0.099409485	9.12E-06
978	10	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.11914	0.135151005	0.00025635
978	25	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.09665	0.090031395	4.38E-05
978	25	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.11826	0.115715065	6.48E-06
978	25	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.14319	0.157323303	0.00019975
978	50	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.106	0.10096384	2.54E-05
978	50	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.13465	0.1297822	2.37E-05
978	50	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.16964	0.176438847	4.62E-05
978	75	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.1103	0.107947617	5.53E-06
978	75	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.1434	0.138763402	2.15E-05
978	75	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.18642	0.188644218	4.95E-06
978	100	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.11173	0.113182201	2.11E-06
978	100	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.14858	0.145485954	9.57E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
978	100	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.19788	0.197782011	9.60E-09
978	120	2	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.11149	0.116621772	2.63E-05
978	120	2.4	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.1511	0.149908002	1.42E-06
978	120	3	0.04651343	0.03671085	0.26535542	0	0.12718054	0.1467218	0.05552344	0.67057421	0.20423	0.203787279	1.96E-07
979	10	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.08661	0.077826023	7.72E-05
979	10	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.10295	0.100232124	7.39E-06
979	10	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.11995	0.136428261	0.00027153
979	25	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.09645	0.090005417	4.15E-05
979	25	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.11833	0.115888252	5.96E-06
979	25	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.1436	0.157790909	0.00020138
979	50	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.10535	0.100457268	2.39E-05
979	50	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.13408	0.129331913	2.25E-05
979	50	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.16937	0.176083813	4.51E-05
979	75	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.1094	0.107101885	5.28E-06
979	75	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.14246	0.137874374	2.10E-05
979	75	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.18556	0.187711894	4.63E-06
979	100	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.11069	0.112065144	1.89E-06
979	100	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.14735	0.14425849	9.56E-06
979	100	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.19655	0.196405172	2.10E-08
979	120	2	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.11018	0.115326476	2.65E-05
979	120	2.4	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.14965	0.148448539	1.44E-06
979	120	3	0.04996121	0.03488709	0.23620333	0	0.08335769	0.14297403	0.13047	0.64319829	0.20243	0.202102311	1.07E-07
980	10	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.09212	0.082004166	0.00010233
980	10	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.10865	0.104973125	1.35E-05
980	10	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.12588	0.141991901	0.00025959
980	25	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.1035	0.09634407	5.12E-05
980	25	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.12595	0.123326645	6.88E-06
980	25	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.1518	0.166805305	0.00022516
980	50	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.11416	0.108791904	2.88E-05
980	50	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.14418	0.139277191	2.40E-05
980	50	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.18091	0.188393097	5.60E-05
980	75	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.11942	0.116794599	6.89E-06
980	75	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.15427	0.149524104	2.25E-05
980	75	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.19959	0.20225385	7.10E-06
980	100	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.12126	0.122815742	2.42E-06
980	100	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.1603	0.157223721	9.46E-06
980	100	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.21261	0.212667456	3.30E-09
980	120	2	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.1214	0.126780287	2.89E-05
980	120	2.4	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.16347	0.162292695	1.39E-06
980	120	3	0.04538755	0.07258841	0.22128249	0	0.0660266	0.14311222	0.05712498	0.7337362	0.21997	0.219518455	2.04E-07
981	10	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.08257	0.073041725	9.08E-05
981	10	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.097	0.093174744	1.46E-05
981	10	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.11201	0.125495815	0.00018187
981	25	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.09306	0.08629921	4.57E-05
981	25	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.11291	0.110147095	7.63E-06
981	25	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.13565	0.148360863	0.00016157

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
981	50	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.10301	0.097924404	2.59E-05
981	50	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.12951	0.124967594	2.06E-05
981	50	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.16217	0.168338013	3.80E-05
981	75	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.10788	0.105398877	6.16E-06
981	75	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.13876	0.134511655	1.80E-05
981	75	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.17909	0.181214485	4.51E-06
981	100	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.1098	0.111049833	1.56E-06
981	100	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.14456	0.141710472	8.12E-06
981	100	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.19103	0.190915136	1.32E-08
981	120	2	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.11011	0.11477805	2.18E-05
981	120	2.4	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.14762	0.146460493	1.34E-06
981	120	3	0.06160487	0.10455075	0.19337955	0	0.07920353	0.14205962	0.11191417	0.66682267	0.19794	0.197314405	3.91E-07
982	10	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.07989	0.07148304	7.07E-05
982	10	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.09415	0.091529465	6.87E-06
982	10	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.10906	0.123872185	0.0002194
982	25	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.08971	0.083649445	3.67E-05
982	25	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.10929	0.107185593	4.43E-06
982	25	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.13184	0.145061646	0.00017481
982	50	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.0989	0.094222527	2.19E-05
982	50	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.125	0.120720177	1.83E-05
982	50	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.15695	0.163419495	4.19E-05
982	75	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.10333	0.100999921	5.43E-06
982	75	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.13346	0.129405518	1.64E-05
982	75	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.17293	0.17517025	5.02E-06
982	100	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.10487	0.106098843	1.51E-06
982	100	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.13864	0.135928183	7.35E-06
982	100	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.18405	0.183994141	3.12E-09
982	120	2	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.10479	0.109454346	2.18E-05
982	120	2.4	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.14135	0.140216732	1.28E-06
982	120	3	0.04314014	0.05332587	0.28997451	0	0.10666374	0.14190756	0.10217527	0.64925343	0.19005	0.189800604	6.22E-08
983	10	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.09808	0.088390446	9.39E-05
983	10	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.11765	0.114844799	7.87E-06
983	10	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.13824	0.158098316	0.00039435
983	25	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.10815	0.100924873	5.22E-05
983	25	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.13385	0.131111412	7.50E-06
983	25	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.16415	0.180530396	0.00026832
983	50	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.11704	0.111545582	3.02E-05
983	50	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.15032	0.144901447	2.94E-05
983	50	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.19198	0.199520378	5.69E-05
983	75	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.12099	0.118243599	7.54E-06
983	75	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.15901	0.153594004	2.93E-05
983	75	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.20901	0.211484731	6.12E-06
983	100	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.12158	0.123227062	2.71E-06
983	100	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.16384	0.160055332	1.43E-05
983	100	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.2204	0.220374289	6.61E-10
983	120	2	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.12092	0.126480818	3.09E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
983	120	2.4	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.16563	0.164275328	1.84E-06
983	120	3	0.01254626	0.04594445	0.19693957	0	0.11707458	0.14334434	0.05448528	0.6850958	0.22675	0.226173536	3.32E-07
984	10	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.09141	0.081982517	8.89E-05
984	10	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.10867	0.105535984	9.82E-06
984	10	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.12668	0.143702126	0.00028975
984	25	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.10176	0.094923935	4.67E-05
984	25	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.12491	0.122200928	7.34E-06
984	25	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.15176	0.166432953	0.0002153
984	50	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.11116	0.106033897	2.63E-05
984	50	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.14166	0.136514854	2.65E-05
984	50	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.17907	0.185938168	4.72E-05
984	75	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.11543	0.11311437	5.36E-06
984	75	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.15045	0.145624504	2.33E-05
984	75	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.19605	0.198342705	5.26E-06
984	100	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.11689	0.118408127	2.30E-06
984	100	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.15562	0.152430763	1.02E-05
984	100	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.20776	0.207603893	2.44E-08
984	120	2	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.1165	0.121878727	2.89E-05
984	120	2.4	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.15809	0.15689683	1.42E-06
984	120	3	0.03729956	0.06515451	0.19422822	0	0.09714313	0.14275933	0.08481533	0.6752822	0.21409	0.213678797	1.69E-07
985	10	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.08631	0.077176571	8.34E-05
985	10	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.10223	0.099322891	8.45E-06
985	10	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.11889	0.135194302	0.00026583
985	25	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.09659	0.089866867	4.52E-05
985	25	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.11821	0.115663109	6.49E-06
985	25	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.14317	0.157444534	0.00020376
985	50	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.10604	0.100799313	2.75E-05
985	50	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.13466	0.129743233	2.42E-05
985	50	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.16964	0.176603374	4.85E-05
985	75	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.11029	0.107803294	6.18E-06
985	75	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.14337	0.138737424	2.15E-05
985	75	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.18654	0.188831838	5.25E-06
985	100	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.11176	0.113043652	1.65E-06
985	100	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.14869	0.145466471	1.04E-05
985	100	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.19801	0.197994165	2.51E-10
985	120	2	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.11145	0.11648647	2.54E-05
985	120	2.4	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.15114	0.149897178	1.54E-06
985	120	3	0.04563373	0.05669896	0.24380842	0	0.12854684	0.13759535	0.05093558	0.68292223	0.20434	0.204010979	1.08E-07
986	10	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.08533	0.076462173	7.86E-05
986	10	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.10095	0.098067284	8.31E-06
986	10	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.11723	0.132856274	0.00024418
986	25	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.09542	0.089061546	4.04E-05
986	25	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.11654	0.114216995	5.40E-06
986	25	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.14082	0.154777451	0.00019481
986	50	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.1047	0.099942036	2.26E-05
986	50	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.13271	0.128162899	2.07E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
986	50	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.16681	0.173693829	4.74E-05
986	75	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.10924	0.106896947	5.49E-06
986	75	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.14152	0.137083486	1.97E-05
986	75	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.18361	0.185789515	4.75E-06
986	100	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.11065	0.112110605	2.13E-06
986	100	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.14666	0.143762741	8.39E-06
986	100	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.19505	0.194842157	4.32E-08
986	120	2	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.11059	0.115541156	2.45E-05
986	120	2.4	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.14934	0.148156285	1.40E-06
986	120	3	0.08135024	0.05120616	0.19163799	0	0.13029803	0.15799953	0.08408794	0.62761451	0.2013	0.200792583	2.57E-07
987	10	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.08861	0.078973389	9.29E-05
987	10	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.10474	0.101076412	1.34E-05
987	10	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.12149	0.136752987	0.00023296
987	25	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.0992	0.092343445	4.70E-05
987	25	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.12081	0.118243599	6.59E-06
987	25	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.14575	0.15995575	0.0002018
987	50	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.10899	0.103929672	2.56E-05
987	50	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.1378	0.133081417	2.23E-05
987	50	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.17305	0.180032482	4.88E-05
987	75	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.11381	0.111350746	6.05E-06
987	75	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.14711	0.142585068	2.05E-05
987	75	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.19054	0.192901738	5.58E-06
987	100	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.11553	0.116927376	1.95E-06
987	100	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.15271	0.149720383	8.94E-06
987	100	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.2027	0.202546825	2.35E-08
987	120	2	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.11548	0.120597863	2.62E-05
987	120	2.4	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.15584	0.154410871	2.04E-06
987	120	3	0.06643901	0.02418116	0.24811524	0	0.07623923	0.16344373	0.10043553	0.65988151	0.20946	0.208896303	3.18E-07
988	10	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.09479	0.085251427	9.10E-05
988	10	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.1132	0.11021204	8.93E-06
988	10	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.1325	0.150911045	0.00033897
988	25	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.10497	0.09798069	4.89E-05
988	25	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.12938	0.126703796	7.16E-06
988	25	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.15783	0.173490334	0.00024525
988	50	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.11415	0.108843861	2.82E-05
988	50	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.14599	0.140749283	2.75E-05
988	50	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.18546	0.192727108	5.28E-05
988	75	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.11826	0.115726611	6.42E-06
988	75	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.15477	0.149645335	2.63E-05
988	75	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.20218	0.204903615	7.42E-06
988	100	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.11915	0.120863056	2.93E-06
988	100	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.15968	0.15627552	1.16E-05
988	100	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.21398	0.21397069	8.67E-11
988	120	2	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.11865	0.124225775	3.11E-05
988	120	2.4	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.16161	0.160614944	9.90E-07
988	120	3	0.05347897	0.03657302	0.1794461	0	0.0848258	0.13983142	0.10044477	0.67489801	0.22044	0.219904518	2.87E-07

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
989	10	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.07777	0.069209957	7.33E-05
989	10	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.09128	0.088238907	9.25E-06
989	10	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.10531	0.118719864	0.00017982
989	25	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.08774	0.081692429	3.66E-05
989	25	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.10637	0.104163475	4.87E-06
989	25	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.12774	0.140151787	0.00015405
989	50	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.09722	0.092594566	2.14E-05
989	50	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.12219	0.118066082	1.70E-05
989	50	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.15268	0.158890648	3.86E-05
989	75	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.10184	0.099625969	4.90E-06
989	75	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.13097	0.127029966	1.55E-05
989	75	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.16869	0.17095314	5.12E-06
989	100	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.10376	0.104927664	1.36E-06
989	100	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.13648	0.133782825	7.27E-06
989	100	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.17987	0.180047636	3.16E-08
989	120	2	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.10407	0.108429654	1.90E-05
989	120	2.4	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.13936	0.138244923	1.24E-06
989	120	3	0.08379104	0.06568119	0.24313566	0	0.08543573	0.14492322	0.1329393	0.63670175	0.18657	0.186044606	2.76E-07
990	10	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.09304	0.083043289	9.99E-05
990	10	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.11019	0.106488514	1.37E-05
990	10	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.12803	0.144416523	0.00026852
990	25	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.10393	0.096880951	4.97E-05
990	25	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.12709	0.124279175	7.90E-06
990	25	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.15357	0.1685112	0.00022324
990	50	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.1141	0.10885685	2.75E-05
990	50	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.1447	0.139640884	2.56E-05
990	50	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.18203	0.189345627	5.35E-05
990	75	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.11899	0.116503067	6.18E-06
990	75	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.15437	0.149463488	2.41E-05
990	75	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.20029	0.202655067	5.59E-06
990	100	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.1207	0.122250719	2.40E-06
990	100	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.16018	0.15682539	1.13E-05
990	100	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.21272	0.212632818	7.60E-09
990	120	2	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.12065	0.126026201	2.89E-05
990	120	2.4	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.16302	0.161659479	1.85E-06
990	120	3	0.05524491	0.03430802	0.2330622	0	0.0646661	0.15195553	0.08150429	0.70187409	0.21963	0.219182905	2.00E-07
991	10	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.08637	0.077977562	7.04E-05
991	10	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.10285	0.100535202	5.36E-06
991	10	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.12009	0.137294197	0.00029598
991	25	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.09596	0.089719658	3.89E-05
991	25	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.11805	0.115732384	5.37E-06
991	25	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.14352	0.157998734	0.00020963
991	50	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.10458	0.099764519	2.32E-05
991	50	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.13344	0.12869545	2.25E-05
991	50	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.16906	0.175676823	4.38E-05
991	75	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.10844	0.106134923	5.31E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
991	75	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.14151	0.136901639	2.12E-05
991	75	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.1846	0.186889254	5.24E-06
991	100	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.1094	0.110883141	2.20E-06
991	100	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.14619	0.14302453	1.00E-05
991	100	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.19536	0.195244818	1.33E-08
991	120	2	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.10886	0.113998707	2.64E-05
991	120	2.4	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.14832	0.14703598	1.65E-06
991	120	3	0.05869568	0.03419729	0.21595103	0	0.1377217	0.14758745	0.08962609	0.62506477	0.20109	0.200715009	1.41E-07
992	10	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.07785	0.06970787	6.63E-05
992	10	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.09149	0.088953304	6.43E-06
992	10	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.10569	0.119758987	0.00019794
992	25	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.08761	0.081874275	3.29E-05
992	25	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.10637	0.104475212	3.59E-06
992	25	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.12788	0.140671349	0.00016362
992	50	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.09687	0.092451687	1.95E-05
992	50	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.12183	0.11795351	1.50E-05
992	50	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.15246	0.15885601	4.09E-05
992	75	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.10132	0.099244957	4.31E-06
992	75	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.13042	0.126622976	1.44E-05
992	75	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.16839	0.170531718	4.59E-06
992	100	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.10309	0.104358311	1.61E-06
992	100	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.13571	0.133139868	6.61E-06
992	100	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.17917	0.179309425	1.94E-08
992	120	2	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.10322	0.107729689	2.03E-05
992	120	2.4	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.13852	0.1374295	1.19E-06
992	120	3	0.05626522	0.08120915	0.24194492	0	0.1382669	0.16249152	0.09452434	0.60471725	0.18564	0.185092076	3.00E-07
993	10	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.09236	0.082155704	0.00010413
993	10	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.10979	0.105644226	1.72E-05
993	10	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.12789	0.143658829	0.00024866
993	25	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.1028	0.095495453	5.34E-05
993	25	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.126	0.122807083	1.02E-05
993	25	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.15275	0.16702179	0.00020368
993	50	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.11231	0.106995087	2.82E-05
993	50	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.14295	0.137601604	2.86E-05
993	50	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.18008	0.187146149	4.99E-05
993	75	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.1168	0.114338226	6.06E-06
993	75	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.15203	0.147033094	2.50E-05
993	75	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.1975	0.199982211	6.16E-06
993	100	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.11831	0.119834757	2.32E-06
993	100	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.15745	0.154093361	1.13E-05
993	100	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.20962	0.209582558	1.40E-09
993	120	2	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.11808	0.123448237	2.88E-05
993	120	2.4	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.16003	0.158736944	1.67E-06
993	120	3	0.03055291	0.04348861	0.22841242	0	0.06294119	0.1572673	0.11530369	0.66448782	0.21617	0.215879718	8.43E-08
994	10	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.0861	0.076743603	8.75E-05
994	10	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.10153	0.098218822	1.10E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
994	10	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.11762	0.132574844	0.00022365
994	25	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.09653	0.08996212	4.31E-05
994	25	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.11744	0.115074272	5.60E-06
994	25	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.14147	0.155400925	0.00019407
994	50	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.10636	0.101418457	2.44E-05
994	50	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.13419	0.129717255	2.00E-05
994	50	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.16829	0.17517458	4.74E-05
994	75	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.11118	0.10876737	5.82E-06
994	75	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.14341	0.139101117	1.86E-05
994	75	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.18545	0.187861989	5.82E-06
994	100	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.11289	0.114292765	1.97E-06
994	100	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.14918	0.146152725	9.16E-06
994	100	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.19743	0.197385845	1.95E-09
994	120	2	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.113	0.117931501	2.43E-05
994	120	2.4	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.15214	0.150791979	1.82E-06
994	120	3	0.08510793	0.0403692	0.21557207	0	0.09075237	0.16283226	0.10168378	0.64473159	0.20413	0.203655585	2.25E-07
995	10	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.08519	0.076353931	7.81E-05
995	10	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.10075	0.097915745	8.03E-06
995	10	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.11695	0.13263979	0.00024617
995	25	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.09536	0.088983612	4.07E-05
995	25	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.11632	0.114095764	4.95E-06
995	25	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.14056	0.154612923	0.00019748
995	50	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.10466	0.099898739	2.27E-05
995	50	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.13258	0.128080635	2.02E-05
995	50	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.16667	0.173559608	4.75E-05
995	75	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.10924	0.106876742	5.58E-06
995	75	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.1415	0.13702287	2.00E-05
995	75	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.18334	0.185676943	5.46E-06
995	100	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.11074	0.11210844	1.87E-06
995	100	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.14656	0.143723774	8.04E-06
995	100	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.19482	0.194751234	4.73E-09
995	120	2	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.11062	0.115546568	2.43E-05
995	120	2.4	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.14927	0.148125617	1.31E-06
995	120	3	0.0318749	0.10376969	0.17965159	0	0.1222802	0.15788321	0.0936397	0.62619689	0.20102	0.200715009	9.30E-08
996	10	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.08107	0.072500515	7.34E-05
996	10	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.09557	0.092936611	6.93E-06
996	10	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.11078	0.125885487	0.00022818
996	25	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.0911	0.084827118	3.93E-05
996	25	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.11101	0.108735619	5.17E-06
996	25	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.13391	0.14731308	0.00017964
996	50	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.10034	0.09553009	2.31E-05
996	50	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.12688	0.12244339	1.97E-05
996	50	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.1594	0.165878754	4.20E-05
996	75	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.10486	0.102379646	6.15E-06
996	75	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.13554	0.131229757	1.86E-05
996	75	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.17571	0.177768059	4.24E-06

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
996	100	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.10631	0.107529802	1.49E-06
996	100	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.14064	0.137824583	7.93E-06
996	100	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.18703	0.186700191	1.09E-07
996	120	2	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.10623	0.110917417	2.20E-05
996	120	2.4	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.14329	0.142163285	1.27E-06
996	120	3	0.08120951	0.06336283	0.22019564	0	0.1222805	0.13643957	0.0877265	0.65355344	0.19297	0.1925716	1.59E-07
997	10	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.09369	0.082870102	0.00011707
997	10	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.11053	0.106055546	2.00E-05
997	10	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.12803	0.143377399	0.00023554
997	25	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.1051	0.097521744	5.74E-05
997	25	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.1279	0.124833374	9.40E-06
997	25	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.15397	0.16877964	0.00021933
997	50	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.11591	0.110320282	3.12E-05
997	50	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.14635	0.14119091	2.66E-05
997	50	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.18346	0.190912971	5.55E-05
997	75	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.12128	0.118535131	7.53E-06
997	75	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.15661	0.151706263	2.40E-05
997	75	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.20233	0.205125872	7.82E-06
997	100	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.12323	0.124712143	2.20E-06
997	100	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.16282	0.15961587	1.03E-05
997	100	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.21578	0.215819464	1.56E-09
997	120	2	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.12356	0.128791785	2.74E-05
997	120	2.4	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.16616	0.164823755	1.79E-06
997	120	3	0.07236599	0.05102602	0.20158078	0	0.07858614	0.16165378	0.04973441	0.71002566	0.22325	0.222855918	1.55E-07
998	10	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.08004	0.071136665	7.93E-05
998	10	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.09354	0.090295506	1.05E-05
998	10	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.10757	0.120863056	0.00017671
998	25	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.09067	0.084601974	3.68E-05
998	25	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.10962	0.107384758	5.00E-06
998	25	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.13091	0.143754082	0.00016497
998	50	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.10107	0.096434994	2.15E-05
998	50	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.12634	0.122408752	1.55E-05
998	50	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.15732	0.163865452	4.28E-05
998	75	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.1062	0.104088427	4.46E-06
998	75	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.13621	0.13213899	1.66E-05
998	75	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.17473	0.176879031	4.62E-06
998	100	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.10859	0.109878654	1.66E-06
998	100	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.14232	0.139482851	8.05E-06
998	100	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.18652	0.186713181	3.73E-08
998	120	2	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.10924	0.113706454	1.99E-05
998	120	2.4	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.14555	0.14433895	1.47E-06
998	120	3	0.03095304	0.07558079	0.31773151	0	0.07827686	0.1577997	0.08251232	0.68141112	0.19404	0.193212032	6.86E-07
999	10	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.08144	0.072002602	8.91E-05
999	10	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.09568	0.091919136	1.41E-05
999	10	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.11048	0.12380724	0.00017762
999	25	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.09174	0.085104218	4.40E-05

Draw	Length	Slope	Bunch Grass	Forb	Shrub	Sod	Basal Stem	Rock	Litter	Biocrust	SY (RHEM)	SY (SIBERIA)	SqError
999	25	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.11127	0.108623047	7.01E-06
999	25	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.13369	0.146325912	0.00015967
999	50	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.10154	0.096551895	2.49E-05
999	50	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.12763	0.123218403	1.95E-05
999	50	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.15974	0.166008644	3.93E-05
999	75	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.1063	0.10391524	5.69E-06
999	75	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.13675	0.132623914	1.70E-05
999	75	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.17639	0.178683065	5.26E-06
999	100	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.10822	0.109478159	1.58E-06
999	100	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.14239	0.139712324	7.17E-06
999	100	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.18798	0.188239393	6.73E-08
999	120	2	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.10853	0.113147203	2.13E-05
999	120	2.4	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.14538	0.144391267	9.78E-07
999	120	3	0.03666767	0.00782332	0.37175846	0	0.08515141	0.15683764	0.08622168	0.67178928	0.195	0.194543409	2.08E-07

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Rangeland hydrology and erosion model (RHEM) enhancements for applications on disturbed rangelands

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Abstract:

The rangeland hydrology and erosion model (RHEM) is a new process-based model developed by the USDA Agricultural Research Service. RHEM was initially developed for functionally intact rangelands where concentrated flow erosion is minimal and most soil loss occurs by rain splash and sheet flow erosion processes. Disturbance such as fire or woody plant encroachment can amplify overland flow erosion by increasing the likelihood of concentrated flow formation. In this study, we enhanced RHEM applications on disturbed rangelands by using a new approach for the prediction and parameterization of concentrated flow erosion. The new approach was conceptualized based on observations and results of experimental studies on rangelands disturbed by fire and/or by tree encroachment. The sediment detachment rate for concentrated flow was calculated using soil erodibility and hydraulic (flow width and stream power) parameters. Concentrated flow width was calculated based on flow discharge and slope using an equation developed specifically for disturbed rangelands. Soil detachment was assumed to begin with concentrated flow initiation. A dynamic erodibility concept was applied where concentrated flow erodibility was set to decrease exponentially during a run-off event because of declining sediment availability. Erodibility was estimated using an empirical parameterization equation as a function of vegetation cover and surface soil texture. A dynamic partial differential sediment continuity equation was used to model the total detachment rate of concentrated flow and rain splash and sheet flow. The enhanced version of the model was evaluated against rainfall simulation data for three different sites that exhibit some degree of disturbance by fire and/or by tree encroachment. The coefficient of determination (R^2) and Nash–Sutcliffe efficiency were 0.78 and 0.71, respectively, which indicates the capability of the model using the new approach for predicting soil loss on disturbed rangeland. By using the new concentrated flow modelling approach, the model was enhanced to be a practical tool that utilizes readily available vegetation and soil data for quantifying erosion and assessing erosion risk following rangeland disturbance.

KEY WORDS erosion modelling; fire; woodland encroachment; rangeland management; dynamic erodibility; stream power

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INTRODUCTION

Millions of acres of US rangelands have been degraded through burning, overgrazing, and woody plant encroachment (Schlesinger *et al*., 1990; Brown *et al*., 2005; Miller *et al*., 2005; Wilcox, 2010; Davies *et al*., 2011). These disturbances alter the site ecological characteristics and hydrological behaviour that, in turn, lead to increased soil loss (Pierson *et al*., 2001, 2007, 2008a, 2011, 2013; Williams *et al*., 2013). Many rangeland conservation practices are aimed at reducing soil loss associated with disturbances (Briske, 2011; Spaeth *et al*., 2013). In order to quantify the potential benefits of rangeland conservation practices, land managers need reliable tools to predict soil loss under baseline conditions and following land management actions. In recent years, research has been undertaken to develop such tools. One of these new tools is the rangeland hydrology and erosion model (RHEM) (Nearing *et al*., 2011).

The rangeland hydrology and erosion model was developed for assessing the run-off, soil erosion rate, and sediment delivery rate and volume for rainfall events at the hillslope scale. RHEM is a modified and improved version of the Water Erosion Prediction Project (WEPP) model (Flanagan and Nearing, 1995). The model was initially developed for functionally intact rangelands where concentrated flow erosion is minimal and most

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soil loss occurs by rain splash and sheet erosion processes. RHEM includes a new splash and sheet equation that was developed by Wei *et al.* (2009) using rainfall simulation data from rangelands and has parameterization equations for functionally intact rangelands. The original version of RHEM adapted WEPP's cropland-based shear stress approach for modelling concentrated flow erosion.

Recent studies show that concentrated flow is the dominant erosion process on disturbed rangelands (Pierson *et al.*, 2008a, 2009, 2010, 2013; Al-Hamdan *et al.*, 2013; Williams *et al.*, 2013). Connected patches of bare ground on disturbed rangelands promote formation of well-organized concentrated flow paths that rapidly accelerate run-off velocity and the ability of water to erode and transport sediment downslope (Wilcox *et al.*, 1996; Pierson *et al.*, 2008a, 2009; Urgeghe *et al.*, 2010; Pierson *et al.*, 2013; Williams *et al.*, 2013). The hydraulics of concentrated flow on disturbed rangelands is largely controlled by discharge, the amount of ground cover, and hillslope angle (Al-Hamdan *et al.*, 2012a, 2013). Concentrated flow on disturbed rangelands typically exhibits a dynamic erodibility, where erodibility is high at the beginning of a run-off event and then declines exponentially mainly because of reduction of availability of disturbance-source sediment (Al-Hamdan *et al.*, 2012b). Also, Al-Hamdan *et al.* (2012b) showed that stream power provides the best linear relationship among five hydraulic parameters that were tested to describe concentrated flow detachment rate for burned and tree-encroached rangelands.

The unique characteristics of concentrated flow hydraulics and erodibility on disturbed rangelands imply that a rangeland-based concentrated flow erosion modelling approach is needed. The goal of this study is to enhance the application of RHEM on a disturbed rangeland using a new approach for predicting concentrated flow erosion based on the work of Al-Hamdan *et al.* (2012a,b, 2013). For this paper, we defined disturbance as any change that results in loss of understory plants and ground cover, increases bare soil, and increases connectedness of concentrated flow paths that promote accelerated soil erosion and sediment yield (Davenport *et al.*, 1998; Miller *et al.*, 2005; Petersen *et al.*, 2009; Pierson *et al.*, 2010, 2013; Williams *et al.*, 2013). We present burning and the process whereby western juniper trees have encroached into sagebrush plant communities as examples of such disturbance. The specific objectives of this paper are the following: (1) present new model formulations for predicting concentrated flow erosion based on stream power and dynamic or constant erodibility approaches and (2) evaluate enhanced model performance across varying degrees of landscape disturbance.

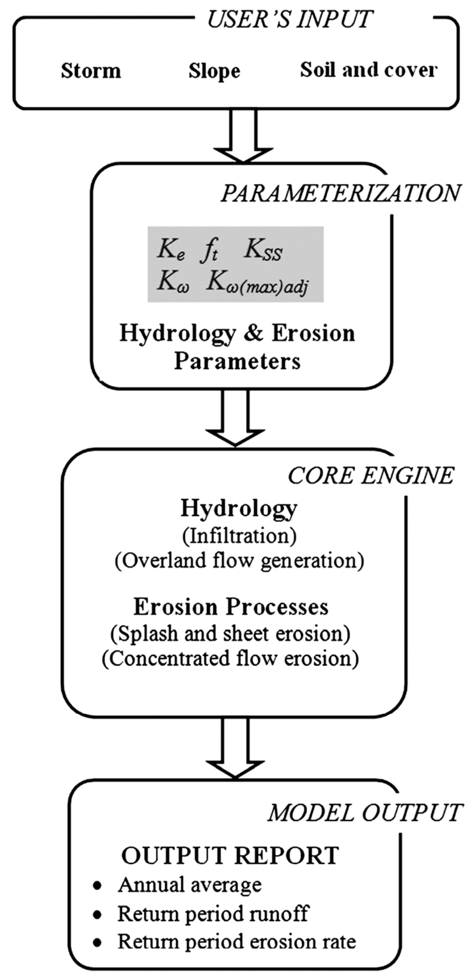

Figure 1. A flow chart of RHEM erosion prediction procedure

METHODOLOGY

Model description

The rangeland hydrology and erosion model simulates hillslope run-off and erosional responses based on two process model components within the core engine, hydrology and erosion (Figure 1).The hydrology component of the enhanced RHEM model is based on the KINEROS2 (K2) model (Smith *et al.* 1995). The conceptual model of soil hydrology in K2 represents a soil of either one or two layers, with the upper layer of arbitrary depth. Infiltration may occur from either rainfall directly on the soil or from ponded surface water created from upslope rainfall excess (Figure 2). At the beginning of a storm and prior to ponding, the infiltration rate is rain limited and equal to the rate of precipitation. If the rainfall intensity is greater than the saturated hydraulic conductivity, then at the onset of run-off, the infiltration rate approaches the infiltration capacity that is described by the Parlange three-parameter model (Parlange *et al.* 1982):

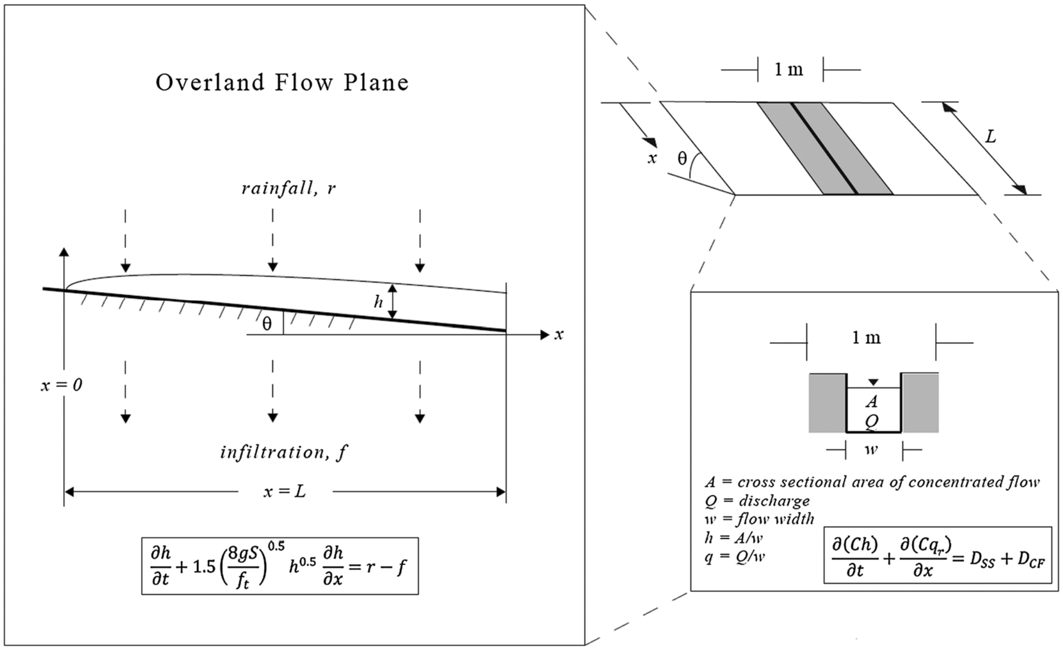

Figure 2. A diagram of the overland flow and erosion routing procedure in enhanced RHEM

$$f = K_e\left[1 + \frac{\alpha}{\exp\left(\frac{\alpha I}{(G+h)(\theta_s-\theta_i)}\right) - 1}\right] \quad (1)$$

where f is the infiltration capacity (m s^{-1}), I is the cumulative depth of the water infiltrated into the soil (m), θ_s is the soil porosity (m^3 m^{-3}), θ_i is the initial (antecedent) soil moisture content, α is a parameter between 0 and 1, h is the depth of surface flow, and K_e is the soil effective saturated hydraulic conductivity (m s^{-1}). When $\alpha = 0$, Equation (1) is reduced to the familiar Green and Ampt infiltration model (Green and Ampt, 1911), and when $\alpha = 1$, the equation simplifies to the Smith and Parlange (1978) model. In this study, α was set at a value near to zero (i.e. 0.03) in order to reduce Equation (1) to an approximation of the Green–Ampt infiltration model. The effective net capillary drive (G) is the integrated capillary head across the wetting front (Smith *et al.*, 1993):

$$G(\psi_i) = \int_0^{\psi_i}\left(\frac{K(\psi)}{K_e}\right)d\psi \quad (2)$$

in which ψ is the soil water capillary head taken as positive (m), ψ_i is the initial (antecedent) soil capillary head (m), and K is hydraulic conductivity (m s^{-1}). The parameter G (m) accounts for the effect of capillary forces on moisture absorption during infiltration.

The solution of the following equation is used to rout the rainfall excess:

$$\frac{\partial h}{\partial t} + \frac{\partial q}{\partial x} = v \quad (3)$$

where h is the depth of flow (m), q is discharge per unit width (m^2 s^{-1}), and v is the rainfall excess (m s^{-1}) that is calculated by the following equation:

$$v = r - f \quad (4)$$

where r is the rainfall rate (m s^{-1}), and f is the infiltration rate (m s^{-1}).

The relationship between q and h is represented by the following equation:

$$q = \left(\frac{8gS}{f_t}\right)^{0.5} h^{1.5} \quad (5)$$

where g is the gravity acceleration (m s^{-2}), S is the slope (m m^{-1}), and f_t is the Darcy–Weisbach friction factor estimated by (Al-Hamdan *et al.*, 2013)

$$\log(f_t) = -0.109 + 1.425 res + 0.442 rock + 1.764 bascry + 2.068S \quad (6)$$

where *res* is the fraction of area covered by litter to total area (m^2 m^{-2}), *bascry* is the fraction of area covered by basal plants and cryptogams to total area (m^2 m^{-2}), and *rock* is the fraction of area covered by rock to total area (m^2 m^{-2}). Substituting Equations (4) and (5) in Equation (3) results in the hydrology routing equation:

$$\frac{\partial h}{\partial t} + 1.5\left(\frac{8gS}{f_t}\right)^{0.5} h^{0.5}\frac{\partial h}{\partial x} = r - f \tag{7}$$

The erosion component in enhanced RHEM calculates sediment rate as the total detachment rate of concentrated flow and rain splash and sheet flow using a dynamic partial differential sediment continuity equation:

$$\frac{\partial(Ch)}{\partial t} + \frac{\partial(Cq_r)}{\partial x} = D_{SS} + D_{CF} \tag{8}$$

where C is the measured sediment concentration (kg m^{-3}), q_r is the flow discharge of concentrated flow per unit width (m^2 s^{-1}), D_{SS} is the splash and sheet detachment rate (kg s^{-1} m^{-2}), and D_{CF} is the concentrated flow detachment rate (kg s^{-1} m^{-2}).

For a 1-m wide plane, when overland flow accumulates into a concentrated flow path, the concentrated flow discharge per unit width (q_r) is calculated by the following equation:

$$q_r = \frac{q}{w} \tag{9}$$

where w is the concentrated flow width (m) calculated by (Al-Hamdan *et al*., 2012a)

$$w = \frac{2.46Q^{0.39}}{S^{0.4}} \tag{10}$$

The splash and sheet detachment rate (D_{SS}) is calculated as in the original version of RHEM by the following equation (Wei *et al*., 2009):

$$D_{SS} = K_{SS}r^{1.052}q^{0.592} \tag{11}$$

where K_{SS} is the splash and sheet erodibility, and r is the rainfall intensity (m s^{-1}).

Concentrated flow detachment rate (D_{CF}) is calculated as the net detachment and deposition rate (Foster, 1982):

$$D_{CF} = \begin{bmatrix} D_C\left(1 - \frac{CQ}{T_c}\right), CQ \le T_c \\ \frac{0.5V_f}{Q}(T_c - CQ), CQ \ge T_c \end{bmatrix} \tag{12}$$

where D_C is the concentrated flow detachment capacity (kg s^{-1} m^{-2}), Q is the flow discharge (m^3 s^{-1}), T_c is the sediment transport capacity (kg s^{-1}), and V_f is the soil particle fall velocity (m s^{-1}) that is calculated as a function of particle density and size (Fair *et al*., 1971). Soil particle fall velocity is calculated using the mean particle size (D_{50}) of the soil texture.

Sediment detachment rate from concentrated flow is calculated using soil erodibility of the site and hydraulic parameters of the flow such as flow width and stream power. Soil detachment is assumed to start when concentrated flow starts (i.e. no threshold concept for initiating detachment is used) (Al-Hamdan *et al*., 2012b).

In the case where dynamic erodibility concept is used, concentrated flow erodibility is set to be high at the beginning of the event and then decreases exponentially because of the reduction of the availability of disturbance-source sediment (Al-Hamdan *et al*., 2012b):

$$D_C = K_{\omega(Max)adj}\exp(\beta q_c)\omega \tag{13}$$

$$q_c = \int q_r dt \tag{14}$$

$$\omega = \gamma S q_r \tag{15}$$

where $K_{\omega(max)adj}$ is the maximum stream power erodibility (s^2 m^{-2}) corresponding to the decay factor (β = –5.53 m^{-2}), β is a decay coefficient representing erodibility change during an event (m^{-2}), ω is the stream power (kg s^{-3}), q_c is the cumulative flow discharge of concentrated flow per width unit (m^2), γ is the water specific weight (kg m^{-2} s^{-2}), and S is the slope (m m^{-1}).

To calculate D_C for the case of constant erodibility, where $\beta = 0$, Equation (13) becomes (Al-Hamdan *et al*., 2012b)

$$D_C = K_\omega(\omega) \tag{16}$$

where K_ω is the event-constant stream power erodibility factor (s^2 m^{-2}). To calculate the transport capacity (T_c), the empirical equation of Nearing *et al.* (1997) is used:

$$Log_{10}\left(\frac{10T_c}{w}\right) = -34.47 + 38.61 * \frac{\exp[0.845 + 0.412\log(1000\omega)]}{1 + \exp[0.845 + 0.412\log(1000\omega)]} \tag{17}$$

Study sites and experimental data

The data used for evaluating the model were obtained from published rainfall simulation experiments conducted on three disturbed rangeland sites. The first site, Breaks, is located in the USDA, Agricultural Research Service, Reynolds Creek Experimental Watershed, Idaho. This sagebrush site was disturbed by moderate-severity to high-severity prescribed fire. Rainfall simulation experiments (60 min, 60 mm h^{-1}) were conducted on eight plots (6.5-m long by 5-m wide, large rainfall plots) before the fire and on eight burned plots immediately after fire. Rainfall simulation experiments were replicated on eight additional randomly selected burned plots 1 and 2 years after the fire. For more information about the Breaks site and experiments, refer to Moffet *et al*. (2007) and Pierson *et al.* (2009).

The second site, Steens, is located in south-eastern Oregon. This historical sagebrush site is in the later stages of woodland (western juniper) encroachment and has a degraded understory with extensive, well-connected bare ground within the intercanopy (area between trees). A part of the site was treated by cutting trees, which resulted in some degree of recovery of the intercanopy vegetation cover after 10 years. Rainfall simulation experiments (60 min, 55 mm h^{-1}) were conducted on 16 plots (6.5-m long by 5-m wide) in the intercanopy area (eight plots on the degraded uncut area and eight plots on the recovered area 10 years after tree cutting). For more information about the Steens site and experiments, refer to Pierson *et al*. (2007).

The third site, Castlehead, is located in south-western Idaho. This sagebrush site has been disturbed by woodland (western juniper) encroachment and by subsequent wildfire in some areas. Rainfall simulation experiments (45 min, 102 mm h^{-1}) were conducted on 18 plots (6.5-m long by 2-m wide) where six plots were located in the burned intercanopy area, six plots in the unburned intercanopy area, and six plots in the burned tree zone (area directly underneath tree canopy pre-fire). For more information about the Castlehead site and experiments, refer to Pierson *et al*. (2013) and Williams *et al*. (2013).

Slope and ground cover as well as sediment rates and run-off were measured for each plot at the three sites. Splash and sheet erosion estimates were obtained from small rainfall simulation plots (0.7-m long by 0.7-m wide) in which concentrated flow does not form (Pierson *et al*. 2009, 2013; Williams *et al*. 2013). These values then were upscaled to the large plots (Williams *et al*., 2013) to determine the fraction of splash and sheet erosion to total erosion value. Splash and sheet estimates were only available for burned plots 1- and 2-year post-fire at Breaks and 1-year post-fire at Castlehead. Small plot rainfall simulations were not conducted at the Steens site (Pierson *et al*., 2007). Only data from plots that generated run-off were used for the model evaluation analysis. For the Breaks and Castlehead sites, only data from plots where site-specific calibrated concentrated flow erodibility was available were used for the model evaluation analysis. Table I shows a summary of the site characteristics and experiments that were used for evaluating the new concentrated flow erosion modelling approach.

Model parameterization

To test the performance of the new stream-power-based concentrated flow erosion modelling approach for cases of constant (average value within the run-off event) and dynamic erodibility, K_e and initial saturation were optimized on the total volume of run-off and run-off starting time, respectively. By using optimized K_e values, average total run-off converged within less than 0.01 mm of the average of the measured values for all plots. Time for run-off was within a minute of actual start time for run-off in each plot. The erosion model performance was analysed in different parameterization schemes for erodibility.

In the first parameterization scheme, the model performance was tested using erodibility parameters estimated by empirical equations developed from rangeland experimental sites (Al-Hamdan *et al*. 2012b) as follows.

For the dynamic erodibility case, the maximum initial concentrated flow erodibility ($K_{\omega(max)adj}$) was estimated by

$$log_{10}\left(K_{\omega(max)adj}\right) = -3.64 - 1.97(res + bascry) - 1.85rock - 4.99clay + 6.06silt \qquad (18)$$

Table I. Experimental sites used to evaluate the new RHEM version

Site	Treatment	Years after treatment	No. of plots	No. of plots used for evaluation	Slope	Applied rainfall (mm)	Rainfall duration (min)
Breaks	All	—	32	25	43	65	60
	Burned	0	8	8	42	59	60
	Burned	1	8	6	42	70	60
	Burned	2	8	7	45	67	60
	Unburned	—	8	4	40	65	60
Castlehead	All	—	18	15	18	85	45
	Burned intercanopy	1	6	4	16	85	45
	Unburned intercanopy	—	6	5	20	86	45
	Burned trees	1	6	6	18	84	45
Steens	All	—	16	10	19	54	60
	Cut trees	10	8	2	19	55	60
	Uncut trees	—	8	8	19	54	60
All		—	66	50	—	—	—

In the constant erodibility case for burned plots, erodibility (K_ω) was estimated by

$$log_{10}(K_\omega) = -3.29 - 2.25(res + bascry) - 1.82rock + 3.95silt \tag{19}$$

In the constant erodibility case for unburned (undisturbed or woodland encroached) plots, erodibility (K_ω) was estimated by

$$log_{10}(K_\omega) = -4.14 - 1.28res - 0.98rock - 15.16clay + 7.09silt \tag{20}$$

Splash and sheet erodibility (K_{SS}) was estimated by (Hernandez *et al.*, 2013)

$$log_{10}(K_{SS}) = 4.01 - 1.18rock - 0.982(litter + cancov) \tag{21}$$

where *litter* is the fraction of area covered by litter to total area ($m^2\,m^{-2}$), and *cancov* is the fraction of area covered by canopy to total area ($m^2\,m^{-2}$).

In the second parameterization scheme, the erosion model was tested when using calibrated K_{SS}, while $K_{\omega(max)adj}$ and K_ω were estimated by the empirical equations (Equations (18)–(20)). The purpose of this parameterization scheme is to strictly test the performance of the concentrated flow erosion modelling approach by eliminating the error generated from the splash and sheet erosion component in the model. K_{SS} was calibrated by setting concentrated flow erosion erodibility as zero while changing the K_{SS} value until it converged to the measured splash and sheet erosion with an error margin of less than 1%. The errors generated from splash and sheet erosion were estimated by comparing the simulated erosion values, when using Equation (21) to estimate K_{SS}, against the measured splash and sheet erosion.

The model was also run using calibrated K_{SS}, but calibrated $K_{\omega(max)adj}$ and K_ω values were obtained from concentrated flow experiments at the Breaks site (Al-Hamdan *et al.*, 2012b). The purpose of this parameterization scheme is to assess error generated from the concentrated flow erodibility empirical estimation equations (Equations (18)–(20)). Values of erodibility parameters used for all parameterization schemes are shown in Table II.

Statistical analysis

Mean value and standard error of simulated erosion with each parameterization scheme were calculated within each study-year-treatment combination to compare simulated and measured erosion. Mean value and standard error of simulated time series erosion rate using calibrated K_ω and $K_{\omega(max)adj}$ and calibrated K_{SS} were calculated for the burned tree plots at the Castlehead site to compare the constant and dynamic erodibility concept performance. Coefficient of determination (R^2), Nash–Sutcliffe efficiency (*NSE*) (Nash and Sutcliffe, 1970), percent bias (*PBIAS*) (Gupta *et al.*, 1999), ratio of root-mean-square error to standard deviation (*RSR*) (Legates and McCabe, 1999), and relative difference error (*Rdiff*) (Nearing, 2000) were used to evaluate the overall performance of the model to predict soil erosion for all sites and treatments, when using estimated $K_{\omega(max)adj}$ and K_ω and calibrated K_{SS}.

R^2 was calculated by

$$R^2 = \left(\frac{\sum_{i=1}^{n}(O_i - O_{avg})(M_i - M_{avg})}{\sqrt{\sum_{i=1}^{n}(O_i - O_{avg})^2}\sqrt{\sum_{i=1}^{n}(M_i - M_{avg})^2}} \right)^2 \tag{22}$$

NSE was calculated by

$$NSE = 1 - \frac{\sum_{i=1}^{n}(O_i - M_i)^2}{\sum_{i=1}^{n}(O_i - O_{avg})^2} \tag{23}$$

Table II. Average values of estimated and site-specific calibrated concentrated flow erodibility parameters (K_ω and $K_{\omega(max)adj}$) and estimated and calibrated splash and sheet erodibility (K_{SS}) for burned plots at the Breaks and Castlehead sites and tree-encroached plots at the Steens site used for running the model

			K_ω ($10^{-3}\,s^2\,m^{-2}$)		$K_{\omega(max)adj}$ ($10^{-3}\,s^2\,m^{-2}$)		K_{SS} (10^3)	
Site	Disturbance	Years after fire	Estimated	Calibrated	Estimated	Calibrated	Estimated	Calibrated
Breaks	Burned	0	1.42	2.1	1.64	2.9	5.91	23.44
	Burned	1	0.94	2.56	1.15	3.81	1.8	89.09
	Burned	2	0.19	0.89	0.28	1.59	0.44	
Castlehead	Burned intercanopy	1	1.39	1.09	2.15	2.03	1.0	2.04
	Burned tree	1	2.19	3.04	5.35	5.39	2.51	2.33
Steens	Tree encroached		0.19	—	4.91	—	6.27	—

PBIAS was calculated by

$$PBIAS = \frac{\sum_{i=1}^{n}(O_i - M_i)*100}{\sum_{i=1}^{n}(O_i)} \tag{24}$$

RSR was calculated by

$$RSR = \frac{\sqrt{\sum_{i=1}^{n}(O_i - M_i)^2}}{\sqrt{\sum_{i=1}^{n}\left(O_i - O_{avg}\right)^2}} \tag{25}$$

and *Rdiff* was calculated by

$$Rdiff = \frac{(M_i - O_i)}{(M_i + O_i)} \tag{26}$$

where O_i is the ith observation to be evaluated, M_i is the simulated value by the model for the corresponding ith observation, O_{avg} is the average of the observed values, M_{avg} is the average of simulated values, and n is the number of observations. *Rdiff* was compared with 95% confidence interval of relative difference error because of natural variability between plots calculated by Nearing (2000) from a large number of replicated plot data.

RESULTS AND DISCUSSION

Model performance with estimated K_{SS}

The performance of the enhanced RHEM model when K_{SS} was estimated using empirical Equation (21) varied among sites and disturbance types. For the Breaks site, using estimated K_ω and $K_{\omega(max)adj}$ for the constant and dynamic erodibility concepts poorly predicted soil erosion with respect to measured values of the first few years after post-fire (Figure 3). Both concepts predicted ~40% of the measured erosion immediately following fire and predicted 20–25% of the measured erosion 1-year post-fire (Figure 3a). The estimated erodibility model using the dynamic concept predicted ~50% and more than 80% of the measured erosion for the second year post-fire and unburned conditions, respectively (Figure 3b). However, measured concentrated flow erosion rates were low on burned plots by the second year following fire and on unburned plots. There was no major difference between the soil erosion predicted in the unburned plots using the constant *versus* dynamic erodibility concepts. A large part of the total erosion underestimation in the first few years post-fire at Breaks can be explained by the error in splash and sheet erosion estimates. As can be seen in Figure 4a, using estimated K_{SS}, the model predicted only 26% of the measured splash and sheet erosion (4.6 ton ha^{-1}) for burned plots immediately after fire. In the burned plots 1 year after fire, the model predicted 37% of the measured splash and sheet erosion (0.54 ton ha^{-1}). Percentage of simulated splash and sheet erosion to total erosion in the unburned plots at the Breaks was relatively high (44%).

At the Steens site, the constant and dynamic erodibility concepts similarly predicted the measured effects of tree cutting on soil erosion, but the dynamic erodibility concept greatly overpredicted soil erosion from the uncut plots (Figure 5). Measured soil erosion was generally low (0.06 ton ha^{-1}) in the cut woodland and was only slightly less than that predicted by the constant and dynamic concepts. For uncut plots, measured and constant erodibility-predicted soil erosion were both slightly greater than 1 ton ha^{-1}, whereas the dynamic concept (Equation (13)) predicted nearly 3 ton ha^{-1} of soil erosion. We attribute the significantly greater soil loss predicted by the dynamic erodibility to the fact that the dynamic erodibility estimation equation (Equation (18)) was derived from data collected on burned rangelands with ample detachable sediment supply (Al-Hamdan *et al.* 2012b). Simulated splash and sheet erosion at the Steens provided the majority of total simulated erosion (84% in the uncut plots and 98% in the cut plots). Even though

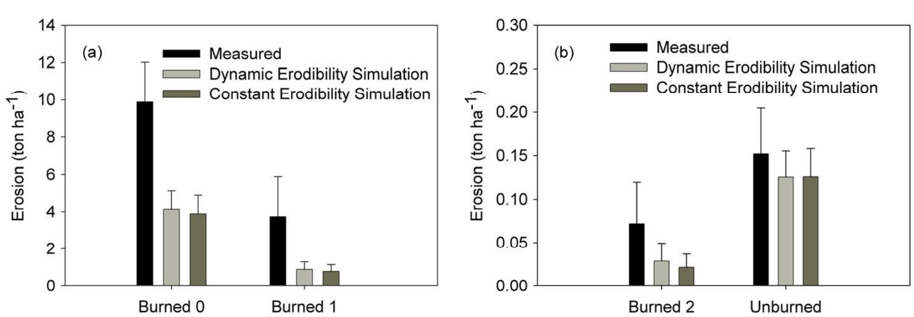

Figure 3. Measured and simulated erosion using dynamic and constant erodibility approaches with estimated concentrated flow and splash and sheet erodibility parameters at the breaks site: (a) immediately after fire (burned 0) and 1 year after fire (burned 1); (b) 2 years after fire (burned 2) and unburned. Error bars represent standard error

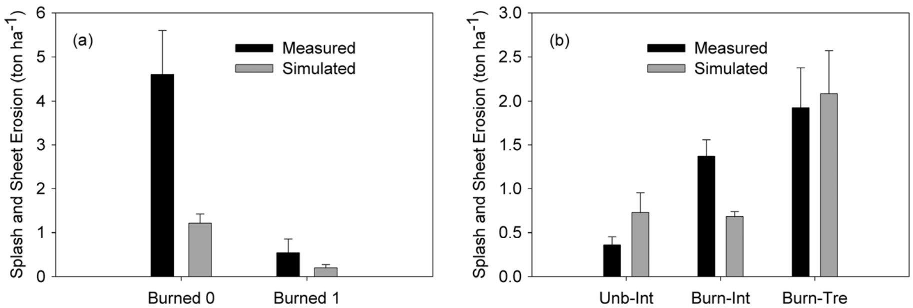

Figure 4. Measured and simulated splash and sheet erosion with estimated splash and sheet erodibility parameters at the following: (a) the breaks site, immediately after fire (burned 0) and 1 year after fire (burned 1); (b) the Castlehead site, unburned intercanopy (Unb-Int), burned intercanopy (Burn-Int), and burned trees (Burn-Tre). Error bars represent standard error

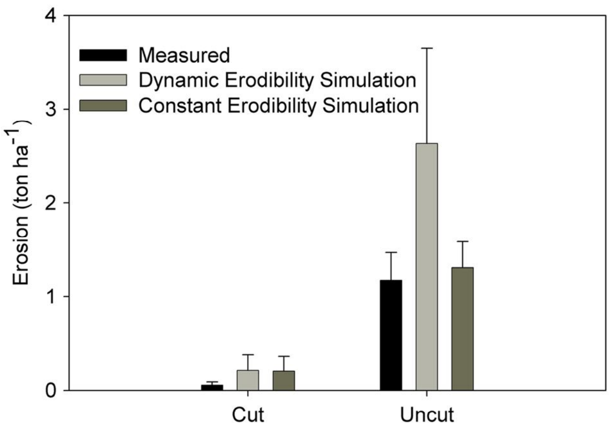

Figure 5. Measured and simulated erosion using dynamic and constant erodibility approaches with estimated concentrated flow and splash and sheet erodibility parameters at the steens site. Error bars represent standard error

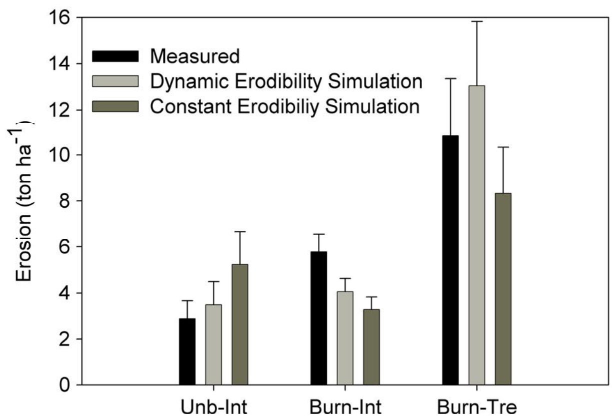

Figure 6. Measured and simulated erosion using dynamic and constant erodibility approaches with estimated concentrated flow and splash and sheet erodibility parameters at the Castlehead site, unburned intercanopy (Unb-Int), burned intercanopy (Burn-Int), and burned trees (Burn-Tre). Error bars represent standard error

measured splash and sheet erosion was not available for comparison in these plots, model prediction of splash and sheet being the major source of erosion was consistent with the field observations at these plots where incised concentrated flow paths were absent (Pierson *et al*. 2007).

At the Castlehead site, applying the constant erodibility concept when using estimated values of erodibility, simulated erosion (5.24 ton ha^{-1}) was twofold larger than measured erosion (2.88 ton ha^{-1}) in the unburned intercanopy (Figure 6). Using the dynamic erodibility, the error was reduced to 21%, where simulated erosion was 3.48 ton ha^{-1}. In burned intercanopy, the constant erodibility concept predicted 57% and the dynamic erodibility concept predicted 70% of the measured erosion. In the burned tree area at Castlehead, the constant erodibility underestimated measured erosion by 23%, while the dynamic approach overestimated the actual values by 21%. Error in simulating overall splash and sheet erosion at the Castlehead site varied depending on plot locations (Figure 4b). The model overestimated the measured splash and sheet erosion by twofold (0.4 ton ha^{-1}) in the unburned intercanopy, and it predicted only half of the measured (1.4 ton ha^{-1}) splash and sheet erosion in the burned intercanopy. The error in estimating splash and sheet erosion was only 8% in the burned tree plots.

Fire at the Breaks and Castlehead sites not only increased concentrated flow erosion but it also increased splash and sheet erosion. The estimation equation for K_{SS} (Equation (21)) reasonably detected the overall increase of erosion from burned tree plots at Castlehead but not from burned plots at Breaks (Figure 4). Slope averages at Breaks and Castlehead plots were 43% and 18%, respectively. The slope difference suggests that even though Equation (21) was developed from undisturbed rangeland, it can be used to estimate K_{SS} for gently sloped disturbed rangeland. However, the combined conditions of fire and steep slope angle may require a different estimation equation. For steeply sloped burned conditions, gravitational effects on detachment resistance become minor relative to those on gentle terrain (Moody *et al*., 2005), and the relationship between erosion rate and energy of rainfall and sheet flow is enhanced. The use of stream-power-based transport capacity allows the model to address the increase in concentrated flow erosion for highly disturbed sites similar to the burned plots at Breaks. However, a new modelling approach for splash and sheet erosion or new parameterization approach for K_{SS} might be needed for such conditions to address the slope effect on the relationship between erosion rate and energy of rainfall and sheet flow.

Model performance with calibrated K_{SS}

In order to assess the performance of, strictly, the concentrated flow erosion modelling approaches, we eliminated the error associated with splash and sheet erosion through calibrating K_{SS}. In general, replacing estimated K_{SS} by a calibrated value reduced the overall error in predicting total erosion. Both dynamic and constant erodibility predicted most of the total measured erosion (70–74%) from burned plots immediately after fire at the Breaks (Figure 7a). Calibrating K_{SS} improved prediction of total erosion in the burned plots at Breaks 1 year after fire when using the dynamic erodibility concept. However, simulated erosion was still low with respect to the measured erosion (33%). Removing the splash and sheet erosion error reduced the overall erosion prediction error in the unburned intercanopy plots at Castlehead from 21 to 9% when using the dynamic erodibility (Figure 7b). Error in total erosion prediction reduced from 82 to 70% when using constant erodibility. Calibrating K_{SS} also reduced the simulated error in the burned intercanopy plots at Castlehead to less than 20% when using the dynamic erodibility concept and 31% when using the constant erodibility. For burned tree plots, calibrating K_{SS} slightly reduced error to 19% in the dynamic erodibility case, whereas it increased the error slightly in the constant erodibility case to 25%.

The error in total erosion prediction after eliminating the splash and sheet error can be explained by two major sources. The first error comes from the uncertainty of a concentrated flow erodibility estimation equation. For instance, reducing this source of error by using the calibrated erodibility $K_{\omega(max)adj}$ for the burned plots at Breaks (1 year after fire) increased the simulated erosion values to 3.05 ton ha^{-1} (82% of the measured value) (Figure 8). Calibrated K_ω also increased the estimated erosion for these plots to 2.24 ton ha^{-1} (60% of the measured erosion) with respect to using estimated K_ω (Figure 8). Given the fact that measured erosion (erodibility) has natural spatial variability within the same site (Wendt *et al*., 1986; Nearing, 2000), the error generated from the estimation equations is still reasonable. This natural variability is reduced in the case of high erosion (Wendt *et al*., 1986; Nearing, 2000) such as in the burned plots immediately after a year, where the error generated from the erodibility estimation equations is reduced (Figure 8).

The second major source of error could be in the hydrology component. Because soil erosion is highly dependent on run-off (Pierson *et al*., 2010, 2013; Williams *et al*., 2013), less accuracy in predicting run-off facilitates less accuracy in erosion prediction. Even though the model was optimized for total run-off and

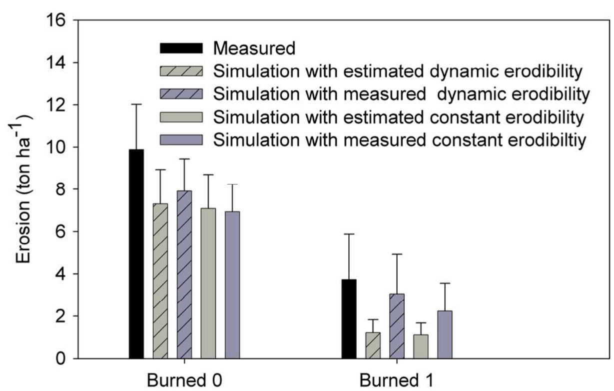

Figure 8. Measured and simulated erosion using dynamic and constant erodibility approaches with estimated and measured concentrated flow erodibility and calibrated splash and sheet erosion at the breaks site, immediately after fire (burned 0) and 1 year after fire (burned 1). Error bars represent standard error

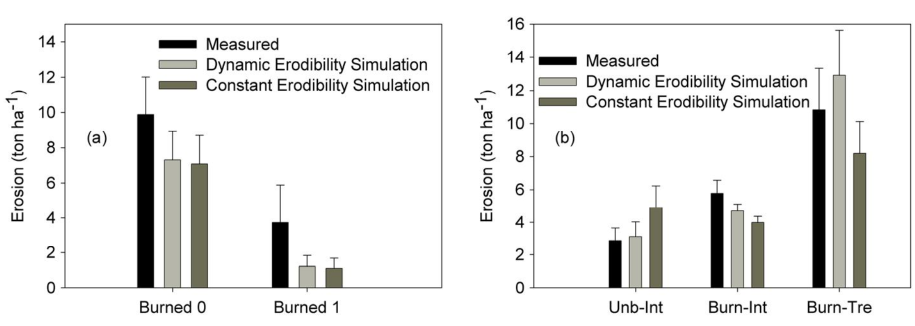

Figure 7. Measured and simulated erosion using dynamic and constant erodibility approaches with estimated concentrated flow erodibility and calibrated splash and sheet erosion for the high erodible plots at the following: (a) the breaks site, immediately after fire (burned 0) and 1 year after fire (burned 1); (b) the Castlehead site, unburned intercanopy (Unb-Int), burned intercanopy (Burn-Int), and burned trees (Burn-Tre). Error bars represent standard error

run-off starting time, the shape of the hydrograph (e.g. peak time, rising limb, and recession limb) in some cases, such as the burned plots at Breaks (immediately after fire), was poorly simulated (Figure 9a). Water repellency in such burned sites causes the infiltration not to follow those rates indicated by the Green–Ampt model. In this situation, infiltration decreases during early stages and then increases with time, after the water repellent layer breaks down, until it (if sufficient time passes) reaches steady state infiltration (Meeuwig 1971; Imeson *et al.*, 1992; Robichaud, 2000; Pierson *et al.*, 2001, 2008b, 2010). Soil water repellency on burned tree plots at Castlehead also reduced the infiltration rate. The low infiltration resulted in an early start of run-off as well as high total run-off. However, the impact of the water repellent layer on hydrograph shape was not apparent (Figure 9b). Soil water repellency was strong to a depth of 5 cm at Castlehead (Williams *et al.*, 2013), thus wetting up of the thick repellent layer may not have occurred during the rainfall simulation.

Recommended applications in RHEM

Based on the results in the preceding texts, we recommend using the dynamic erodibility concept for sites with relatively immediate disturbance, such as fire, for modelling concentrated flow erosion in RHEM. Using dynamic erodibility instead of constant erodibility improved the model performance on these sites by addressing the instantaneously elevated sediment pulse generated by the disturbance. The differences in the performance of the constant erodibility *versus* dynamic concepts can be more important in smaller rainfall events. Using constant erodibility would have reasonable results for long run-off events like those in our rainfall simulations given that overestimation of erosion in late stages compensates for underestimation in the early stages of the run-off event. For instance, in the burned tree plots at the Castlehead site, the erosion rate simulation using constant erodibility had greater error in the first 15 min of the 45-min run (Figure 10a). The error was reduced when using the dynamic erodibility concept (Figure 10b). The return interval of a storm similar to the applied rainfall simulation (102 mm h^{-1}, 45 min) exceeds 100 years for the Castlehead site, while the return interval of such intensity over 10 and 15 min is 33 and 75 years, respectively (Hanson and Pierson, 2001). Therefore, using a dynamic erodibility for sites similar to the burned tree plots at Castlehead likely provides a better estimate of post-fire erosion from commonly occurring storms. The difference in the results between constant and dynamic

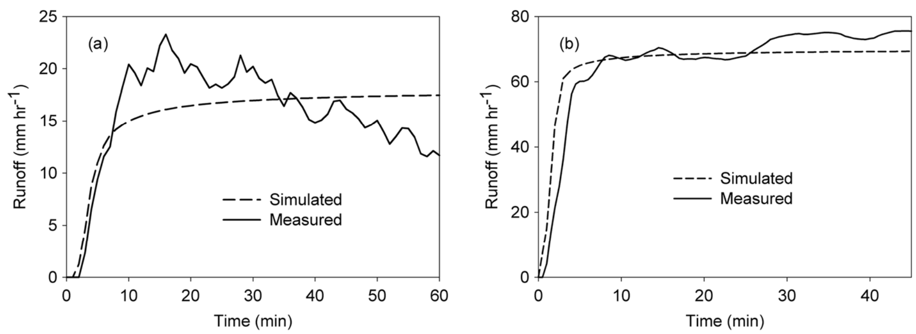

Figure 9. Measured and simulated run-off with optimizing K_e and K_{ss} for (a) burned plots at the breaks site immediately after fire and (b) burned tree plots at the Castlehead site

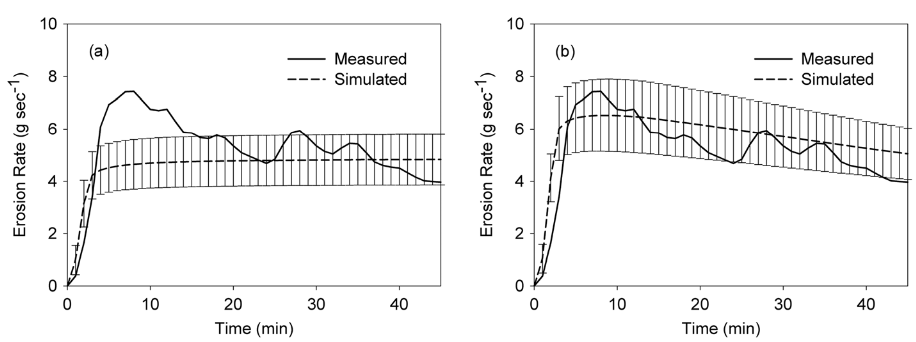

Figure 10. Measured and simulated erosion rate using (a) constant erodibility approach and (b) dynamic erodibility approach with measured concentrated flow erodibility and calibrated splash and sheet erosion for the burned tree plots at the Castlehead site. Error bars represent standard error

erodibility concepts brings the necessity of defining the timing of the measurement and estimation of average constant erodibility values. Different measurement timing with respect to run-off would result in different constant erodibility and thus different erosion estimation. The impact of this problem is reduced in the dynamic erodibility concept because only the erodibility at the beginning of each run-off event is needed.

For the undisturbed or gradually disturbed sites (e.g. woodland encroached), we recommend using the constant erodibility concept for modelling concentrated flow erosion in RHEM. For the undisturbed sites, the major source of erosion is from splash and sheet processes, and the likelihood of concentrated flow generation is small (Al-Hamdan *et al.*, 2013). For tree-encroached sites, the chance for formation of concentrated flow is higher than for undisturbed sites; however, these sites have less available sediment with respect to a newly burned site, as they have been eroding at reasonable high rates for years. This gradual reduction in sediment availability in the intercanopy reduced the significance of an immediate pulse of sediments at the beginning of a rainfall event with respect to a newly burned site. Therefore, choosing between the two concepts for modelling concentrated flow is not crucial in both undisturbed sagebrush and tree-encroached sites. Because the estimation equation for the dynamic erodibility was developed from burned sites, using constant erodibility would be recommended for the unburned sites.

The model with constant erodibility in the unburned sites and dynamic erodibility in the burned site was able to match the predicted effect of disturbances and treatments. For instance, following the measured erosion trend, simulated erosion increased dramatically immediately after fire at the Breaks and then started to decrease with years passing (Figure 8). Also, the model predicted the effect of the tree cut treatment where simulated erosion decreased significantly 10 years after cutting trees (Figure 5). The overall performance of the enhanced model using estimated K_ω and $K_{\omega(max)adj}$ had a coefficient of determination (R^2) of 0.78 and *NSE* of 0.71 (Figure 11). A low *RSR* and a low absolute *PBIAS* are indications for the favourable performance of the model (Moriasi *et al.*, 2007). All predictions had an *Rdiff* within the 95% occurrence of such error from a large number of replicated plot data (Figure 12), which suggests that the error in all predictions was acceptable relative to natural or expected plot-to-plot variations at a site (Nearing, 2000).

The newly presented concentrated flow erosion modelling approach has several advantages. The linear stream-power-based equation to predict detachment capacity was found to be the best predictor for soil erosion on sites with high disturbance (Al-Hamdan *et al.*, 2012b). The linearity of stream power *versus* detachment capacity allows the

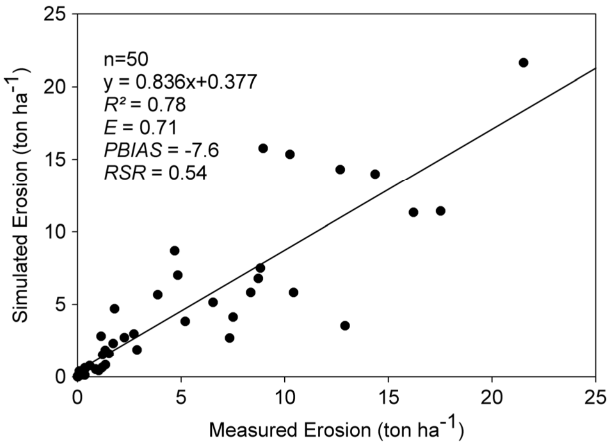

Figure 11. Measured and simulated erosion rate for all sites using constant erodibility approach at the unburned sites and dynamic erodibility approach at the burned sites with estimated concentrated flow erodibility and calibrated splash and sheet erosion

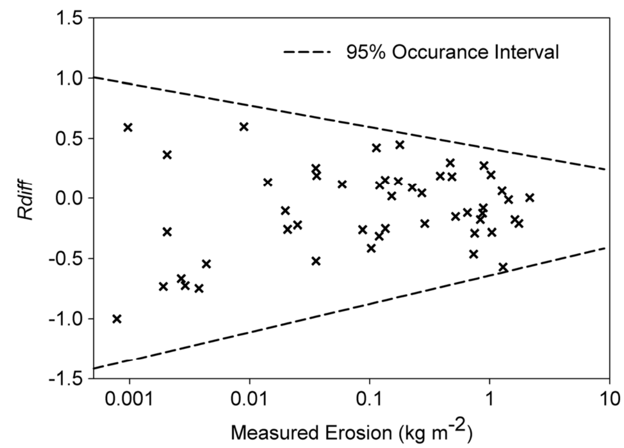

Figure 12. Relative difference between simulated and measured erosion (*Rdiff*) with measured erosion (kg m^{-2}) for all sites using constant erodibility approach at the unburned sites and dynamic erodibility approach at the burned sites with estimated concentrated flow erodibility and calibrated splash and sheet erosion. Dash line is the 95% interval of occurrence of Rdiff from a large number of replicated plot data (after Nearing, 2000)

concentrated flow erosion component to couple with other components in RHEM. The approach does not require a threshold value for initiating erosion that reduces the parameters needed to run the model. In addition, the results of this study show that the established estimating equations for the required concentrated erodibility parameters worked reasonably well on the tested sites. These equations were obtained from data that represent a diverse set of rangeland environments with high variability of hydraulic regime (Al-Hamdan *et al.*, 2012b). Such high variability within the data set should allow application of the enhanced RHEM model for disturbed conditions across a wide span of flow regimes, ecological sites, soils, slopes, and vegetation and ground cover conditions.

CONCLUSIONS AND IMPLICATIONS

In this study, we enhanced the applications of the RHEM model on disturbed rangelands where concentrated flow plays a major role in the soil erosion process by incorporating a new concentrated flow erosion modelling approach. The new approach uses stream power as a driving force for detaching and transporting sediments and addresses the increase in concentrated flow erodibility because of the elevation of exposed bare soils caused by disturbance such as fire or tree encroachment. The approach addresses the instantaneously elevated sediment pulse of limited supply caused by fire by using a dynamic erodibility concept where concentrated flow erosion starts at high rates and then decreases because of the decline of sediment supply. Evaluation of the enhanced version of RHEM, including associated parameter estimation equations using plot scale experimental data at three different sites, indicated the ability of the model to predict erosion at the plot scale with a satisfactory range of error ($n = 50$, $R^2 = 0.78$, and $NSE = 0.71$). The new version of the model was able to match the predicted effect of disturbances and treatments across a wide range of ecological sites and vegetation and ground cover conditions.

Including a new concentrated flow erosion modelling approach into RHEM creates a practical management tool for quantifying erosion and assessing erosion risk following rangeland disturbance. The enhanced RHEM model is easily parameterized using readily available vegetation, soils, and ground cover data. The tool can use vegetation and ground cover data to determine the degree of disturbance, impact on erosion, and track the rate of site recovery. The enhancements to RHEM expand its applicability as a practical land management tool for conservation planning and quantifying environmental benefits of alternative conservation practices. For future work, further evaluation of the new modelling approach performance at different scales, on other sites, or other kind of disturbance would help to expand its applicability scope.

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Application of a catchment evolution model to the prediction of long-term erosion on the spoil heap at Ranger uranium mine

Initial analysis

G Willgoose & SR Riley

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Department of the Environment

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Variables

$\boldsymbol{a}$	=	channel initiation function
$\boldsymbol{A}$	=	area per unit width
β_1, m_1, n_1	=	sediment transport coefficient and discharge and slope exponents respectively
β_3, m_3, n_3	=	runoff coefficient, and discharge and slope exponents respectively
β_5, m_5, n_5	=	channel initiation threshold coefficient, and discharge and slope exponents respectively
c_0	=	tectonic uplift
D	=	diffusivity
$\mathrm{f}(\boldsymbol{Y})$	=	a sediment transport coefficient dependent on the pattern of channelisation
$\boldsymbol{G}$	=	a function dependent of the runoff process modelled
O_t	=	ratio of hillslope to channel erosion rate
$\boldsymbol{q}$	=	discharge per unit width
$\boldsymbol{Q}$	=	discharge in the channel
$\boldsymbol{q_s}$	=	sediment transport per unit width (mass/time)
ρ_{sb}	=	bulk density of the sediment
$\boldsymbol{S}$	=	slope in the steepest downstream direction
t	=	time
τ	=	the bottom shear stress for the flow and
τ_c	=	a shear stress threshold
x,y	=	horizontal distance
$\boldsymbol{Y}$	=	channel indicator variable (0 = hillslope, 1 = channel)
$\boldsymbol{z}$	=	elevation

Abstract

There is a need to assess the long-term stability of engineered landforms associated with the rehabilitation of Ranger Uranium Mine, Northern Territory, Australia, as it is a requirement that mill tailings must be contained for periods in excess of 1000 years. The geomorphic model, SIBERIA, is calibrated on hydrology and erosion data collected by a combination of monitoring and rainfall simulation experiments on the waste rock dumps of Ranger. Preliminary analysis of Ranger's preferred above-grade and below-grade rehabilitation options suggests that erosion of the order of 7–8 m will occur on the structure in a period of 1000 years. This depth of erosion may be sufficient to compromise the integrity of the containment. It is shown that SIBERIA has significant advantages over steady-state erosion models. Suggestions are made for the design that will enhance the stability of the structure and extend the structural life of the containment.

1 Introduction

1.1 Overview

It is necessary to determine whether the rehabilitated landforms of Ranger Uranium Mine, Northern Territory, Australia, will meet their design specifications, specifically, the containment of uranium mill tailings for several hundred years. Computer modelling of geomorphic processes, and particularly of the degradation of the engineered landforms, is a crucial aspect of the assessment program. As a first stage in the development of assessment procedures, the computer model developed by Willgoose et al (1989, 1990, 1991a,b,c,d), which can simulate the evolution of landscapes over time (SIBERIA), is calibrated to existing hydrogeomorphic data. This report presents details of the calibration of the model and predictions made by it of the likely development of engineered landforms of a rehabilitated Ranger uranium mine.

Details of the research strategy and background to the problem of geomorphic modelling of Ranger are given in Riley (in prep). The following is a brief discussion, details are given in Riley (in prep). It is assumed in the following sections that the reader has access to the background report.

Ranger uranium mine is located in the seasonally wet tropics, has an average annual rainfall of 1500 mm, and is an area of low relief and extremely low rates of denudation (<20 mMa^{-1}). The mine is located in the World Heritage Listed Area of Kakadu National Park, adjacent to Magela Creek, along which are important wetlands and cultural heritage sites.

The rehabilitation of the mine will involve shaping waste rock dumps, consisting of more than 100 million tonnes of waste rock and low grade ore, and containing the mill tailings. The mill tailings may be rehabilitated either above- or below-grade and must be contained in structures with ‘structural lives’ in excess of 1000 years. Ranger Mines Pty Ltd (RUM) prefers the above-grade option. However, the Environmental Requirements for the mine specify tailings disposal options as follows: ‘that by dealing with tailings... the environment will be no less well protected than by transferring the tailings to the mine pits...’. Engineered landforms will be constructed from waste rock—a chlorite rich schist that weathers rapidly to gravels and clay fractions. Geomorphic processes will largely determine the long-term stability of the structures.

Supervisory and regulatory authorities need a means of determining whether designs will perform in accordance with design guidelines. A geomorphic model is needed to assess the long-term stability. The model needs to predict the long-term changes in landforms and the likely water and sediment discharge from the site over time. The research program for developing and testing this model has involved detailed studies of erosion and hydrologic processes on waste rock and natural sites, as well as assessment of risk of dispersal of potential contaminants. Monitoring and simulation were used to collect hydrogeomorphic data for examining the critical processes and providing a data set for calibration of hydrogeomorphic models.

A review of available models suggested that the geomorphic model, SIBERIA, was suitable for the assessment. Hence, it was calibrated on the hydrogeomorphic data and predictions made of landform stability. A series of objectives were set as part of this evaluation.

1.2 Objectives

The objective of this project is to assess the long-term erosional stability of engineered landforms at the Ranger uranium mine using the Willgoose Catchment Evolution Model (SIBERIA).

Specific objectives of this project are:

1 To calibrate the Willgoose Catchment Evolution model (SIBERIA) using data supplied by the Geomorphology Group at ***eriss***.

2 To test the erosional stability of the 'above- and below-grade' options for engineered landforms as currently proposed by RUM.

3 To identify sections of SIBERIA that may need modification and outline the research needed to undertake these modifications.

4 To identify geomorphic research needed to further develop SIBERIA for use at RUM.

5 To present the model in a form that will enable different design options for the engineering of rehabilitation landforms to be tested, within the constraints of the model.

6 To predict particulate discharge in the form of sedigraphs.

The work to achieve these aims is divided into two stages. This report discusses the first stage of the project and addresses objectives 1–4. The second stage report addresses objectives 5 and 6.

1.3 SIBERIA – long-term landscape evolution model

SIBERIA is a computer model for studying the erosional development of catchments and their channel networks. A crucial component of this model is that it explicitly incorporates the interaction between the hillslopes and the growing channel or gully network based on physically observable mechanisms. The elevations within the catchment—both hillslope and channel—are simulated by a mass transport continuity equation applied over geologic time. Mass transport processes considered include fluvial sediment transport, such as modelled by the Einstein-Brown equation, and mass movement mechanisms such as creep, rainsplash or landslide. An explicit differentiation between the processes that act on the hillslopes and in the channels is made. The growth of the channel network is governed by a physically based threshold mechanism, where if a function (called the channel initiation function) is greater than some predetermined threshold then channel head advance occurs. The channel initiation function is primarily dependent on the discharge and slope at that point, and the channel initiation threshold is dependent on the resistance of the catchment to channelisation. Channel growth is thus governed by the hillslope form and processes that occur upstream of the channel head, but in a way that that can be independent of channel growth stability arguments (Smith & Bretherton 1972). The elevations on the hillslopes and the growing channel interact through the different transport processes in each regime and the preferred drainage to the channels that results. The interaction of these processes produces the long-term form of the catchment. The preferential erosion in the channels results in the familiar pattern of hills and valleys with hillslope flow being towards the channel network in the bottoms of the valleys.

The model has two main components. The first component is a model of elevation variation; the second component is a model of where the channels are formed in the catchment. The channels develop in response to changes in the elevation, and in turn, the elevations change in response to the channels.

The first component of the model, the variation of elevation within the catchment, is simulated by a mass transport continuity equation applied over geologic time. If more material enters a region than leaves it, then the elevation rises and vice versa. The mass transport processes in SIBERIA include both fluvial sediment transport and a conceptualisation of diffusive mass movement mechanisms such as creep, rainsplash and landslide. The model averages these processes in time so that the elevations (and the channel network) are indicative of the average, with time, of the full range of erosion events; the elevations simulated are average elevations with time. The model explicitly differentiates between the transport processes that act on the hillslope and in the channel.

The model's second component, the channel network, is simulated by an equation that initiates the advance of the channel heads into the surrounding hillslopes. Catchments start with an initial pattern of channelisation, or no channelisation at all, and channel head advance occurs when a channel initiation function, nonlinearly dependent on the local slope and discharge, exceeds a threshold, characteristic of the landscape. Conceptually this threshold can represent overland flow velocity or shear stress, subsurface flow criteria or criteria based on local landsliding at the channel head.

The first component of the model, the governing equation of the elevations in the catchment model, is expressed as:

$$\frac{\partial z}{\partial t} = c_0 + \frac{\nabla . \boldsymbol{q_s}}{\rho_{sb}} + D\left(\frac{\partial^2 z}{\partial x^2} + \frac{\partial^2 z}{\partial y^2}\right) \qquad 1.3.1$$

where	x,y	horizontal directions
	z	elevation
	t	time
	c_0	tectonic uplift
	$\boldsymbol{q_s}$	sediment transport per unit width (mass/time)
	ρ_{sb}	bulk density of the sediment
	D	diffusivity

Variables whose variation in space and time is dependent on the form of the catchment, and thus change as the simulated catchment evolves in time, are highlighted here in bold. All other parameters, though they may vary in space and time, are considered independent of the evolving form of the catchment. The detailed behaviour of these equations will not be discussed in detail here as it has been dealt with adequately elsewhere (Willgoose et al 1991a,b,c,d).

The differential equation for elevation (equation 1.3.1) is a continuity equation in space for sediment transport. It is an average equation that models the average sediment transport over many erosion events to give the average elevations with time. The first term in the elevation equation is the rate of tectonic uplift (positive upwards). This term may be time varying. The third term in the elevation equation represents diffusive mechanisms occurring in certain mass transport processes, such as creep, rainsplash and landsliding (Culling 1963, Dunne 1980, Andrews & Bucknam 1987). The rate of these processes is governed by the diffusivity D. Both the diffusivity and tectonic uplift may vary over the catchment but are not dependent on the form of the catchment. In principle, it is possible to use more sophisticated diffusive processes in models of hillslope evolution but at this time data do not appear to be available to define them accurately. These enhancements (eg viscous and plastic flow) are typically spatially variable and dependent on soil depth. At this time SIBERIA does not model the chemical and physical processes associated with weathering and soil formation. Accordingly, it cannot model those processes that depend on soil depth.

The sediment transport process, $\boldsymbol{q_s}$, modelled by the second term in equation 1.3.1, can be parameterised in any way that is believed to reflect the processes occurring in the catchment. Willgoose et al (1989) and others (eg Kirkby 1971) suggest that a realistic formulation is of the form

$$\boldsymbol{q_s} = f(\boldsymbol{Y})\, \boldsymbol{G}\, \boldsymbol{q}^{m_1} \boldsymbol{S}^{n_1} \qquad 1.3.2$$

where

$\boldsymbol{q_s}$	sediment transport per unit width (mass/time)
$\boldsymbol{q}$	discharge per unit width
$\boldsymbol{S}$	slope in the steepest downstream direction
f($\boldsymbol{Y}$)	a sediment transport coefficient dependent on the pattern of channelisation, discussed below
$\boldsymbol{G}$	a function dependent of the runoff process modelled, discussed below
m_1, n_1	sediment transport coefficients

This fluvial sediment transport term is one that has been commonly used by geomorphologists (Kirkby 1971, Smith & Bretherton 1972, Moore & Burch 1986) to represent a transport-limited process. It can be directly related to generally accepted instantaneous sediment transport physics, such as Einstein-Brown, by averaging over the range of flood events. Briefly, when modelling the instantaneous sediment transport rate the appropriate discharge to use is the instantaneous discharge at that time. However, here the equation is used to model the mean sediment transport, so that the appropriate discharge to use is the mean peak discharge derived from a frequency analysis of runoff events (Willgoose et al 1989). This averaging of the sediment transport is carried out in section 4.3. Note that we describe as fluvial erosion any sediment transport processes that result from surface runoff, whether they be on the hillslope, as sheet or rill flow, or in the channels.

The function $\boldsymbol{G}$ indicates what *proportion of storms* saturate that point and thus generate surface runoff. It is only during those storms when surface runoff is generated that fluvial erosion occurs. The calculation of this parameter is discussed in further detail in Willgoose et al (1991e). Suffice to say that for Hortonian runoff it might be assumed that $\boldsymbol{G}$=1. For subsurface saturation generated runoff, smaller storms saturate a smaller proportion of the catchment than do larger storms. Thus for subsurface saturation runoff, $\boldsymbol{G}$ is less than 1 and largest in those parts of the catchment saturated most frequently.

The slope in the fluvial sediment transport equation is determined directly from the catchment elevations and the direction of steepest downhill drainage. The discharge relationship, dependent on area and slope, can be formulated to reflect the processes that occur in the field. However, it is important to note that if the sediment transport equation is to model the *long term average* sediment transport equation then the discharge per unit width, $\boldsymbol{q}$, should be interpreted as the mean annual peak discharge, analogous to the idea of a dominant discharge (Willgoose et al 1989), so that

$$\boldsymbol{Q} = \beta_3\, \boldsymbol{A}^{m_3}\, \boldsymbol{S}^{n_3} \qquad 1.3.3$$

where $\boldsymbol{Q}$ discharge in the channel

β_3 runoff rate constant

$\boldsymbol{S}$ slope in the steepest downstream direction

$\boldsymbol{A}$ area per unit width

m_3, n_3 exponents

This relationship is calibrated in section 4.2 of this report. This empirical relationship accounts for runoff routing effects within the catchment and the spatial correlation of rainfall (Leopold et al 1964, Pilgrim 1987).

A crucial feature of this model is its ability to explicitly model the extension of the channel network and to allow for different sediment transport processes in the channels and on the hillslopes. A variable is defined, $\boldsymbol{Y}$, that identifies where channels exist ($\boldsymbol{Y}\approx1$) versus where the catchment is hillslope ($\boldsymbol{Y}\approx0$). Initially a catchment can either have no channels or it can have a predefined channel network and drainage pattern. The extension of the network occurs when a function, nonlinearly dependent on contributing area slope, called the channel initiation function $\boldsymbol{a}$, exceeds a threshold value called the channel initiation threshold a_t. The exact means by which the transformation from hillslope to channel occurs appears to be unimportant, though Willgoose and co-workers have extensively used one that results in channels being permanently formed at a point once the threshold has been exceeded at that point. More important is the functional dependence of the channel initiation function on discharge and slope which Willgoose and co-workers have formulated as

$$\boldsymbol{a} = \beta_5\, \boldsymbol{q}^{m_5}\, \boldsymbol{S}^{n_5} \qquad 1.3.4$$

where $\boldsymbol{a}$ channel initiation function

β_5, m_5, n_5 coefficients

Again, within the conceptual framework of the model, the form of the channel initiation function can be formulated as seen fit in light of physical processes observed in the field. The formulation above results from consideration of surface flow driven channel formation processes where it has been postulated that channel formation occurs when a critical velocity or tractive force is exceeded by overland flow or where the head gradient in the groundwater exceeds a specified piping threshold (Willgoose et al 1989). It is consistent with field data collected by other workers (Montgomery & Dietrich 1988, Patton & Schumm 1975). This relationship will be calibrated in section 4.4 of this report using preliminary data from Tin Camp Creek.

The channel network calculated by the model is used to determine the rate at which fluvial sediment transport occurs as

$$f(\boldsymbol{Y}) = \begin{cases} \beta_1 O_t & \boldsymbol{Y} = 0 \text{ (hillslope)} \\ \beta_1 & \boldsymbol{Y} = 1 \text{ (channel)} \end{cases} \qquad 1.3.5$$

where $\boldsymbol{Y}$ channel indicator variable

β_1 erosion rate constant

O_t ratio of hillslope to channel erosion rate

The transport rate β_1 can be spatially variable in any predefined way; structural controls due to the differential erodibility of strata can be easily modelled. However, the sediment transport rate β_1 is not varied as a result of the evolving catchment's hills and valleys so that differential sediment transport rates in valleys and interfluves cannot be modelled other than with a crude area or slope dependence. Very little data are available to calibrate such a dependence. The parameter O_t is generally assumed to be somewhat less than 1 and this reflects the increased velocities, and thus transport rates, in channels over that occurring on the hillslopes. Diffusive transport is assumed to occur at the same rate on both hillslopes and channels.

Note that the sole use of the channel network *within the model* is in determining the differential rates of erosion that occur in the channel and on the hillslopes. No field interpretation is made regarding whether a channel head is an abrupt or gradual transition, only that the fluvial transport rate changes abruptly. Willgoose and co-workers have normally assumed that the actual channel network observed in the field and the channel network postulated in the model are synonymous.

In summary, the important feature of the presented model—the one that distinguishes the networks it generates from other stochastic network generation models (Leopold & Langbein 1962, Howard 1971)—is that the network extension process is governed by physical conditions: the drainage pattern on the hillslopes and the local slopes in the hillslopes around the channel head. That channels can be assumed to erode faster than the hillslopes facilitates the natural tendency towards convergence of flow on the hillslopes around the channel heads. The pattern of pre-existing channels governs the valley erosion, which in turn governs the drainage pattern of the hillslopes and their slopes, and thus, the spatial pattern of the channel initiation function. This complicated interaction of flow and sediment transport in both the channels and hillslopes over long time scales is central to the channel network extension process and it gives catchments their form.

1.4 Hydrology model

Runoff is the most important determinant of soil erosion. Thus it is important to simulate runoff as accurately as possible to provide a reliable erosion assessment. To do this a digital terrain based rainfall-runoff model will be calibrated to the field data collected at experimental sites on the spoil. This model will then be used to calibrate the runoff required by SIBERIA. The model will also be used to simulate the long-term runoff series that will be used to determine the relationship between the short-term erosion rate measured during runoff events and the long-term erosion over the historical range of runoff events.

The hydrology model used to fit to the rainfall simulator and natural rainfall plots is based on the 1-D kinematic wave flood routing model described by Field and Williams (1987) called the Generalized Kinematic Catchment Model (GKCM). This model is a conceptual rainfall-runoff model (fig 1.1) that breaks the catchment up into a number of subcatchments connected together with a channel network (fig 1.2) draining to a single catchment outlet. More specifically it includes:

1 Nonlinear storage of water on the hillslope surface

2 Philip infiltration from the surface storage to a linear groundwater store

3 Discharge from the surface storage to the channel

4 Discharge from the groundwater storage to the channel

5 Routing of the runoff down the channel by use of the kinematic wave

This form of the model has been tested on a number of catchments and has been shown to give satisfactory results. As conceptualised by the developers this model is a Hortonian runoff model.

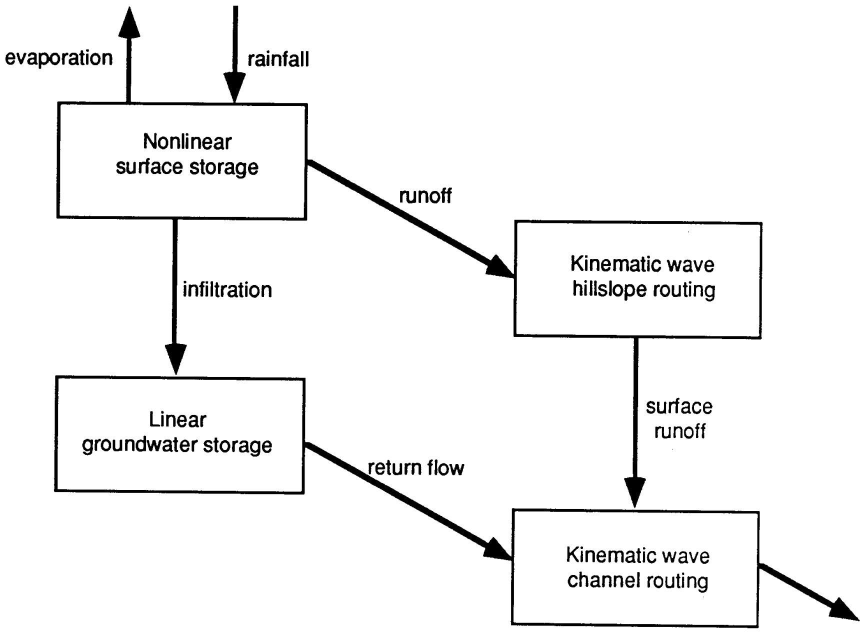


Figure 1.1 Conceptual arrangement of the Field-Williams rainfall-runoff model as extended by Willgoose (DISTFW)

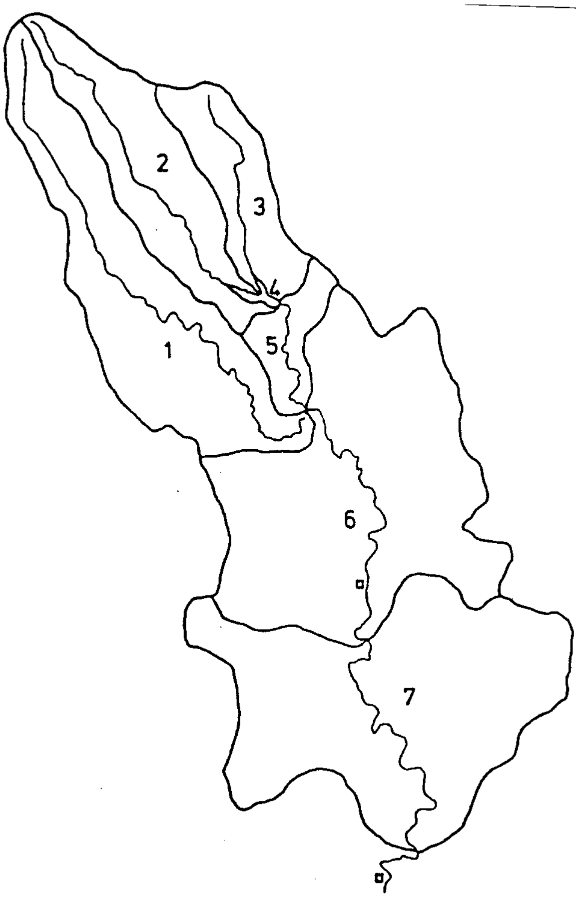


Figure 1.2 Typical division of catchment into subcatchments (from Field & Williams 1987)

This model has been extended to use digital terrain elevation data on a square grid; hereafter this new extended model will be called the Distributed Field-Williams Model (DISTFW). Each grid point is considered to be a subcatchment and drainage from node to node and through nodes occurs by a kinematic wave on the overland flow. For the purposes of this project the modifications to the model include:

1 The drainage pattern from node to node is determined on the basis of the steepest slope direction using the same algorithm used in SIBERIA.

2 The groundwater component on the model has been disabled. Infiltration is assumed to drain to a very deep aquifer which does not discharge to the surface within the study site. This is believed to be a good representation of the waste rock dump.

3 The area associated with each subcatchment (node) is equal and equal to the square of the grid spacing. The DTMs provided for the waste rock dump are on a 30 m grid so that the area of each node is 900 m^2.

This extended model maintains the conceptualisation of Hortonian runoff but by using the digital terrain extensions it is possible to model subsurface saturation runoff using the methodology of Moore and Grayson (1991). The subsurface saturation runoff mechanism is not considered important on the waste rock dump because of the lack of a well developed soil profile exhibiting decreasing hydraulic conductivity with depth and underlying impermeable bedrock layer.

1.5 Erosion model

The overland flow erosion model used to fit the erosion data is one commonly used by geomorphologists and soil scientists. It is of the general form

$$\boldsymbol{q_S} = \beta_1\, \boldsymbol{q}^{m_1}\, \boldsymbol{S}^{n_1} \left(\tau - \tau_c\right) \qquad 1.5.1$$

where $\boldsymbol{q_S}$ sediment discharge/unit width

$\boldsymbol{q}$ discharge/unit width

$\boldsymbol{S}$ local slope

τ bottom shear stress for the flow

τ_C shear stress threshold

The parameters β_1, m_1 and n_1 are fixed by the flow geometry and erosion physics. This equation parameterises the total load; ie the sum of both the suspended and bed loads. For instance, for a constant width channel with sediment transport according to the Einstein-Brown equation m_1 = 1.8 and n_1 = 2.1. For flow in rills the parameters are approximately $m_1 \approx 1.3$ and $n_1 \approx 2.2$ (Moore & Burch 1986, Willgoose et al 1989). Exact values for these parameters depend on the rill geometry. The parameter β_1 gives the rate of sediment transport and is primarily a function of sediment grain size.

Riley (1992) attempted to identify a shear stress threshold as in equation 1.5.1 for the material from the waste rock dump using a small flume and concluded that the value was very small, and that he was unable to reliably estimate it. On this basis the shear stress threshold in all the work that follows will be assumed to be zero.

We also note that bottom shear stress, τ, can be described by a function of discharge and slope (ie Willgoose et al 1989) so that the sediment transport model that is used here has the form

$$\boldsymbol{q_s} = \beta_1 \, \boldsymbol{q}^{m_1} \boldsymbol{S}^{n_1} \qquad 1.5.2$$

This model does not incorporate hysteric effects in the sediment rating curve that may result from sediment storage. However, since there is no data for the region that indicates the possible importance of this effect over areas of the size of the waste rock dump this effect has been ignored. It is not possible at the current time to predict the magnitude of this effect without extensive field data for large catchments.

For smaller areas the overland erosion is dominated by rainsplash, or rain-flow, erosion. Rainsplash is generally modelled by an additive Fickian diffusion term where the diffusivity, D, is a function of the applied rainfall energy (in turn a function of the energy of the individual raindrops and the rainfall rate) so that $D = D'R$ where R is the rainfall rate. The total erosion rate is then given by the expression

$$q_s = \beta_1 q^{m_1} S^{n_1} + DS = \beta_1 q^{m_1} S^{n_1} + D'RS \qquad 1.5.3$$

For calibration, this result is more conveniently expressed in terms of the concentration

$$c = \beta_1 q^{m_1 - 1} S^{n_1} + \frac{DS}{q} = \beta_1 q^{m_1 - 1} S^{n_1} + \frac{D'RS}{q} \qquad 1.5.4$$

These equations indicate that as the discharge decreases, or the area of the plot decreases, then the second, diffusive term will begin to dominate the expression for concentration. For large areas the diffusive term becomes relatively less important. That the diffusive term is additive implies that the processes that cause diffusive transport and those that cause fluvial transport do not interact. Thus a higher or lower level of diffusive transport does not of itself change the rate of fluvial transport.

In using SIBERIA it is necessary to clearly distinguish between the instantaneous sediment transport rate and the long-term sediment transport rate. The instantaneous transport rate is that which is measured at some instant in time, for instance, within a runoff event by a grab sample. This is the quantity that is measured during field trials. The long-term sediment transport is the average rate of transport of sediment per year; the average of all the erosion events during the year. As well as being a function of the short-term rate, this quantity is a function of the average runoff properties and climate of the catchment. Willgoose et al (1989) showed that it if the sediment transport rate was described by equation 1.5.2, then the long-term average could also be expressed in that form. The interpretation of β_1 and q are modified (β_1 is a frequency factor and q is the mean peak discharge) and the runoff modelling of this report is aimed at simulating this runoff data for the waste rock dump.

The model of equation 1.5.1 is primarily used for 'transport limited' sediment transport. That is, it is assumed that there is always sufficient material on the surface to satisfy the transport demands of the flow. This is not the case when sediment starvation or source limitation occurs and it is not established that equation 1.5.1 is necessarily complete for this case. There does appear to be some evidence to suggest that sediment starvation can occur at Ranger (Riley, in prep). Riley (1992) showed that for a constant discharge the concentration of sediment decreased over a period of 1 hour but the effect appeared to be small. Moreover, some of the concentration data for the natural rainfall events exhibited clockwise rating curves with discharge. However, if the sediment transport model is calibrated to the natural data rather than simulated runoff data, this effect will be accounted for, on average, in the calibration. For natural runoff events, the recorded data will be for the naturally sediment starved flow; the calibrated β_1 will be lower, reflecting the sediment starvation. If, however, the sediment transport model is calibrated with the rainfall simulator trials then sediment starvation has to be accounted for explicitly. This study uses the natural data wherever possible to circumvent this problem. In any event, the small differences between the simulated rainfall and natural rainfall concentration data appear to have negligible effect on the relationship between discharge and concentration.

2 Hydrology model calibration

2.1 Overview

2.1.1 Data

Natural rainfall runoff events for the caprock and batter sites were supplied by staff of the Geomorphology Branch at ***eriss***. Tables 2.1 and 2.2 summarise the runoff and rainfall data that have been used in this study. Maps of the field sites are provided in appendix A and the data are tabulated in appendix B. Catchment characteristics are summarised in table 2.3.

Some of the rainfall and runoff data were checked by double mass curves. A very good correlation was found for most storms (see fig 2.1 & 2.2) as would be expected by their closeness. For the 16/2/91 event, the batter gauge appears to have missed the first peak of a two-peaked storm.

The plot characteristics (eg area, slope) were determined from the contour maps in appendix A.

Table 2.1 Runoff data supplied for caprock and batter sites[c]

	Caprock sites[a]					Batter sites		
Storm	WT1	WT2	WT3	RT1	OUT	RT2	WT1	WT2
25/12/90								
28/12/90								
7/1/91 (20:50)[b]	?				✓[d]			
7/1/91 (14:55)[b]		✓		✓	✓[d]			
8/1/91					✓[d]			
10/1/91 (7:55)[b]	✓	✓		✓	✓[d]			
10/1/91 (14:00)[b]					✓[d]			
11/1/91					✓[d]			
21/1/91	✓	✓						
27/1/91								
28/1/91					✓[d]			
30/1/91								✓
4/2/91		✓					✓	
6/2/91			✓			✓	✓	✓
13/2/91						✓		
16/2/91	✓		✓			✓	✓	✓
22/2/91						✓	✓	

(a) Site notation as per Neave (1991); (b) Two events supplied for this day, approximate beginning time in 24 hour clock;
(c) Notation is ✓ = data appears to be accurate; × = data appears to be inaccurate; ? = data conflicts with other data;
(d) Data is truncated above discharge 15 L/s.

Table 2.2 Supplied rainfall data[b]

	Site			Site	
Storm	CAP	BAT	Storm	CAP	BAT
25/12/90	✓		27/1/91	✓	
28/12/90	✓		28/1/91		✓
7/1/91 (20:50)[a]	✓		30/1/91	✓	✓
7/1/91 (14:55)[a]	✓		4/2/91	✓	✓
8/1/91	✓		6/2/91	✓	✓
10/1/91 (7:55)[a]	✓		13/2/91		✓
10/1/91 (14:00)[a]	✓		16/2/91	✓	×
11/1/91	✓		22/2/91		✓
21/1/91	✓	✓			

[a] Two events supplied for this day, approximate beginning time in 24 hour clock; [b] Notation is ✓ = data appears to be accurate, × = data appears to be inaccurate, ? = data conflicts with other data.

Table 2.3 Catchment characteristics

	Area (m^2)	Mean slope	Mean width (m)	Length (m)
COUT	2182	0.03	(b)	(b)
CRT1	461	0.029	(b)	(b)
CRT2	330	0.039	(b)	(b)
CRT3	731	0.034	(b)	(b)
CWT1	149 [a]	0.04	4.57	32.6
CWT2	102	0.035	1.87	54.4
CWT3	91	0.036	1.63	55.6

[a] see text; [b] variable width and length

2.1.2 Calibration

The primary data used for calibration of the rainfall-runoff model were the natural rainfall events. Reliable events were selected for several sites and the model parameters adjusted by trial and error to give a good fit. The broad range of hydrographs available in the provided data (single peaked versus double peaked hydrographs for a variety of closely spaced sites) exercised all components of the model. The rainfall simulator trials had less variation in discharge and did not exercise all the components of the model, making it difficult to reliably estimate their parameters. They provide useful verification data and if the natural event data were poor or unavailable would have been a crucial data source.

As far as possible parameters were determined from, or checked against, other independent data. For instance, Manning *n* values for the kinematic wave routing have been checked against measures of surface roughness.

Where extra runoff event data were available verification of the selected model parameters was carried out. This verification is an important part of the process of ensuring that the selected model and parameters are satisfactory. If the parameters are satisfactory then the predictions of the model for an independent site and runoff event should provide a satisfactory fit without adjustment of model parameters. The goodness of fit for the verification sites and events is not normally as good as for the calibration runs, for obvious reasons, but they should at least exhibit a correspondence in volume, peak discharge and its timing, and an overall shape of the hydrograph.

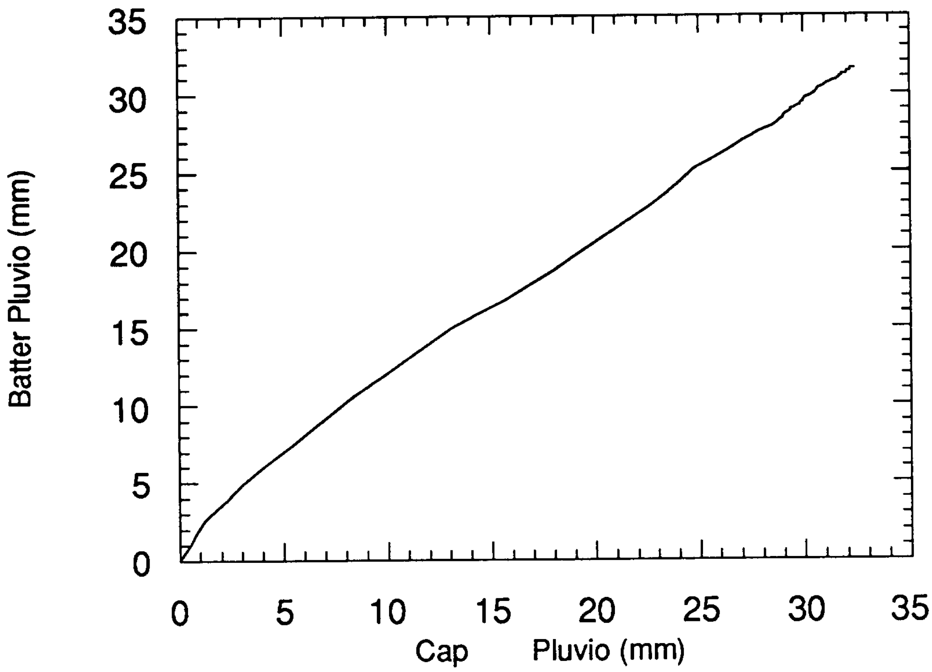


Figure 2.1 Double mass curve for the batter and caprock pluviographs used to measure the natural rainfall events

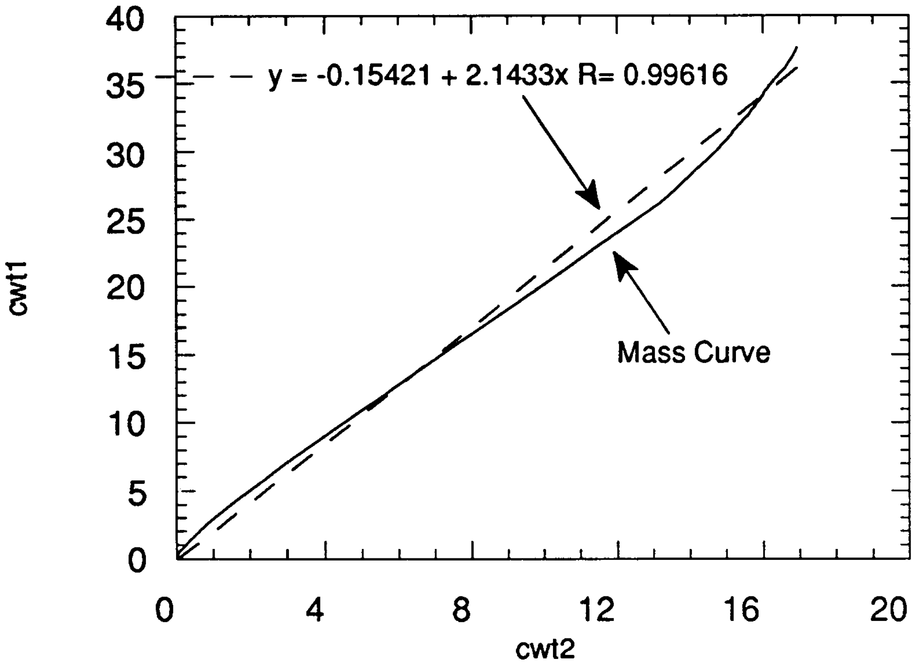


Figure 2.2 Double mass curve for catchment CWT1 and CWT2 for the event of 10/1/91

2.2 Caprock sites calibration

2.2.1 Natural rainfall data

The first of the plots to be calibrated was CWT2. Three reliable storms were chosen and parameters fitted by trial and error. The only difference for the parameters for the three storms were initial soil wetness conditions, parameterised by the initial sorptivity. The parameters adopted are given in table 2.4 (see section 2.4). The simulations of runoff for the three storms are given in figures 2.3, 2.4, and 2.5. The chosen parameters fit all aspects of the hydrographs well. There appears to be a slight problem with the data for the second peak of the hydrograph for the 7/1/91 storm but there were insufficient data to check these observed data against other data by use of double mass curves. In all cases the timing of peaks is satisfactory indicating that the conveyance parameters (ie Mannings *n*) are satisfactory. The widths of the hydrographs are satisfactory indicating that the surface storage parameters are satisfactory. Finally the volume and the distribution of this volume within the hydrographs are well matched indicating that the infiltration parameters are satisfactory.

The next plot to be calibrated was CWT3. The first attempt at calibration used the parameters as derived from CWT2. The conveyance was modified by the width of the plot given the values in CWT2. Since these plots were only about 70 m apart it was believed that the parameters of the two plots would have similar characteristics. However this gave a hydrograph that had too much volume, though the peak was satisfactory. It was possible to identify high infiltration zones within the catchment near the bottoms and the tops of the catchment. These zones had a long-term infiltration rate of about 40 mm/hr, much higher than 6.5 mm/hr found in CWT2. The two events examined, 6/2/91 and 16/2/91, are illustrated in figures 2.6 and 2.7. The predicted hydrographs are given for the adjusted CWT2 parameters and using the high infiltration zone parameters. This high infiltration rate may result from a number of causes including cracks in the surface or zones of lower compaction in the surface layer. That the infiltration rate is higher in CWT3 than elsewhere is supported by a double mass curve analysis for storm 16/2/91 using CWT1 and CWT3 (fig 2.8). This double mass curve suggests that the runoff in CWT1 is approximately four times that CWT3 even though their areas are very similar.

The parameters derived for plots CWT2 and CWT3 were then used to calibrate/verify the runoff events for plot COUT. This is believed to be one of the better data sets, however, all data have been truncated above about 15 L/s so that only lower flow values can be compared. However, the timing of the rises can be used to assess the value of the conveyance, and thus the Mannings *n*, and the lower peaks in the storms can be used to provide some support for the infiltration values for this site. It is expected that the parameters of CWT2 should be indicative of the parameters for COUT because CWT2 is a subcatchment of COUT. Indeed this was the case. Plots of estimated storms are provided in figures 2.9 and 2.10. For these storms the initial sorptivity was estimated; all other parameters are as calibrated for CWT1 (table 2.4).

Finally site CWT1 was examined. This site has a number of rainfall events that are common with the calibration events described above. To validate the model it was decided to use the parameters fitted above and the initial conditions identified above to fit the events on CWT1. This section is then a true validation test because no parameters are fitted. If the model parameters are incorrect then the predictions would be poor; otherwise they should be good. The two events used were 10/1/91 and 21/1/91. The observed and predicted runoffs are given in figures 2.11 and 2.12. An initial peak in the event of 21/1/91 has been estimated in the simulation. This appears to be an error in the observed runoff record for this site since an initial peak is indicated by both pluviograph records. The fit of the simulation data to the runoff data for these two events appears to be satisfactory.

A further verification of the model was carried out with the data for CRT1. The event of 7/1/91 was fitted for COUT. These parameters, and catchment properties from the maps were used to predict the response of CRT1. The results are shown in figure 2.13. The initial conditions on the sorptivity were those fitted for that event at COUT. The overall verification is very satisfactory with both peaks and volumes being well fitted.

2.2.2 Comparison of fitted hydrologic parameters with other data

Samples of the surface lag material were taken and their grading analysed by workers at ***eriss***. This grading data can be used to estimate a value of Mannings n for comparison with the value calibrated in the runoff-routing. There were 4 sites on the caprock surface C1F3S1, C1F3S2, C1F3S3, and C1F3S3 where samples were taken. Henderson (1966) gives an expression relating the size below which 75% of the material falls and Mannings n of

$$n = 0.031\ d_{75}^{\ 1/6} \qquad 2.2.1$$

The d_{75} of the four sites were 6, 2, 2.4 and 2 mm respectively yielding values of Mannings n of 0.018, 0.015, 0.015, and 0.015 respectively. These values reflect only the roughness of the surface due to the grain roughness and the actual measured Mannings n will be somewhat higher. They do not account for form drag on the surface (due to lumps and undulations in the surface), rapid changes in the cross section of the flow, and tortuosity of the flow paths. Chow (1959) outlines a method of allowing for these effects (table 5.5, p 109). Allowing for these effects (minor irregularity, occasional cross-section changes and appreciable meandering) suggests an increase in n of about 0.01–0.015 so that the Mannings n of the surface should be about 0.03. This value is in good agreement with the calibrated value (see table 2.4).

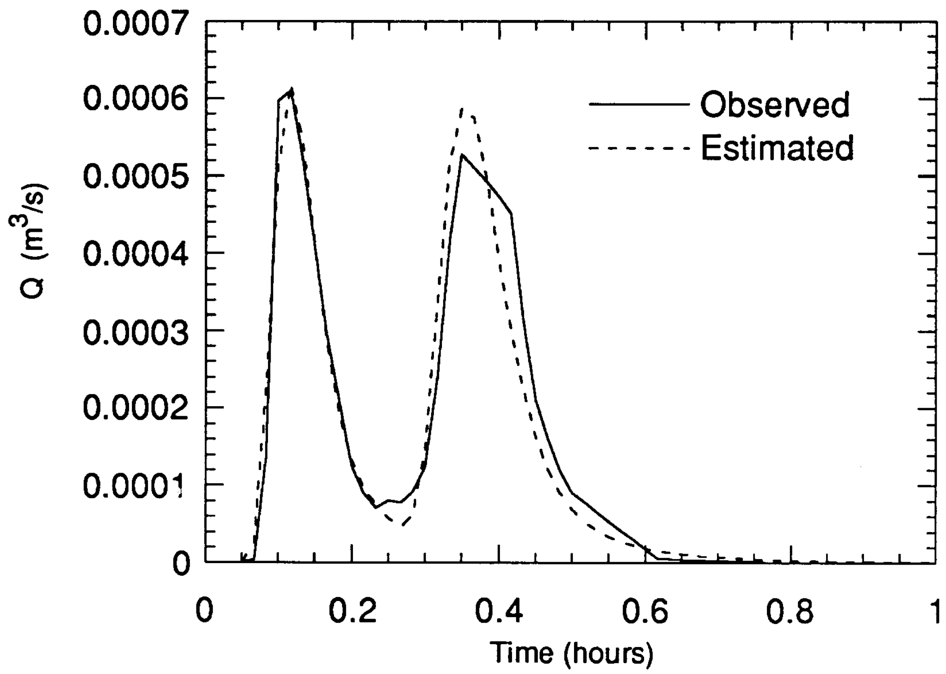


Figure 2.3 Calibration for CWT2 on 7/1/91

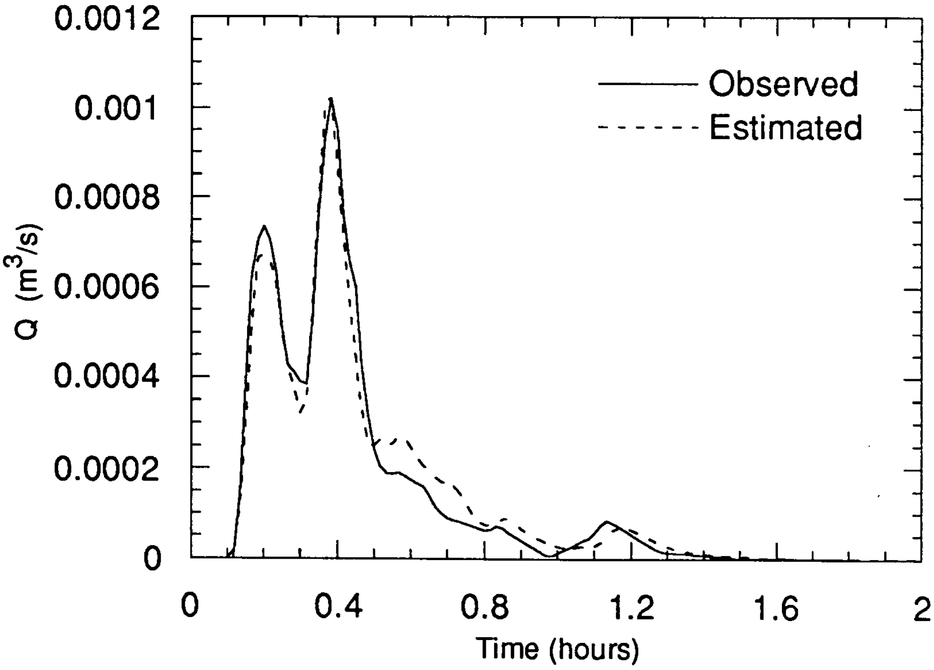


Figure 2.4 Calibration for CWT2 on 10/1/91

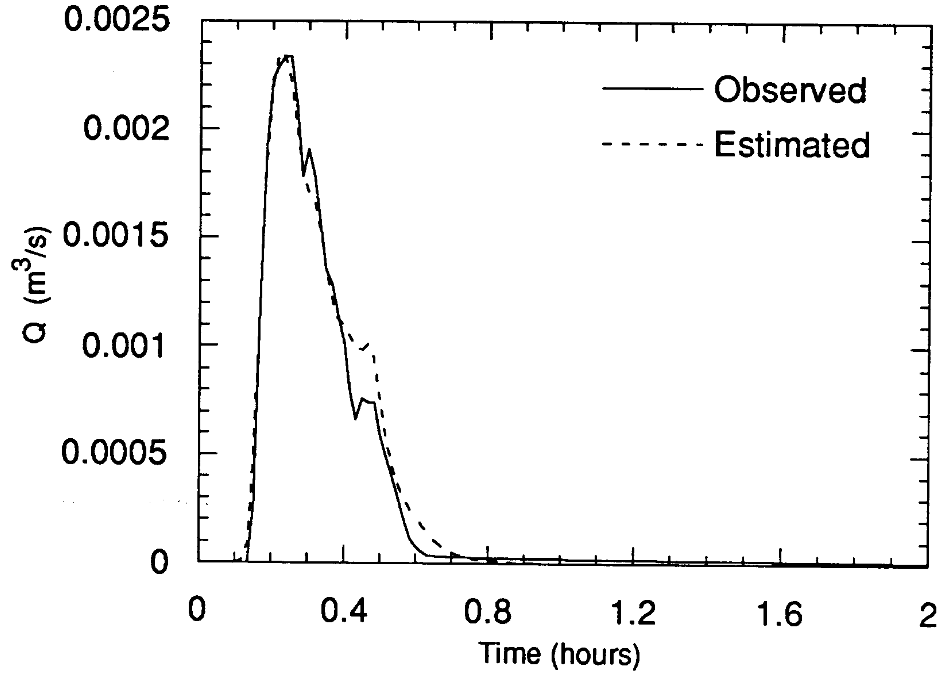


Figure 2.5 Calibration for CWT2 on 21/1/91

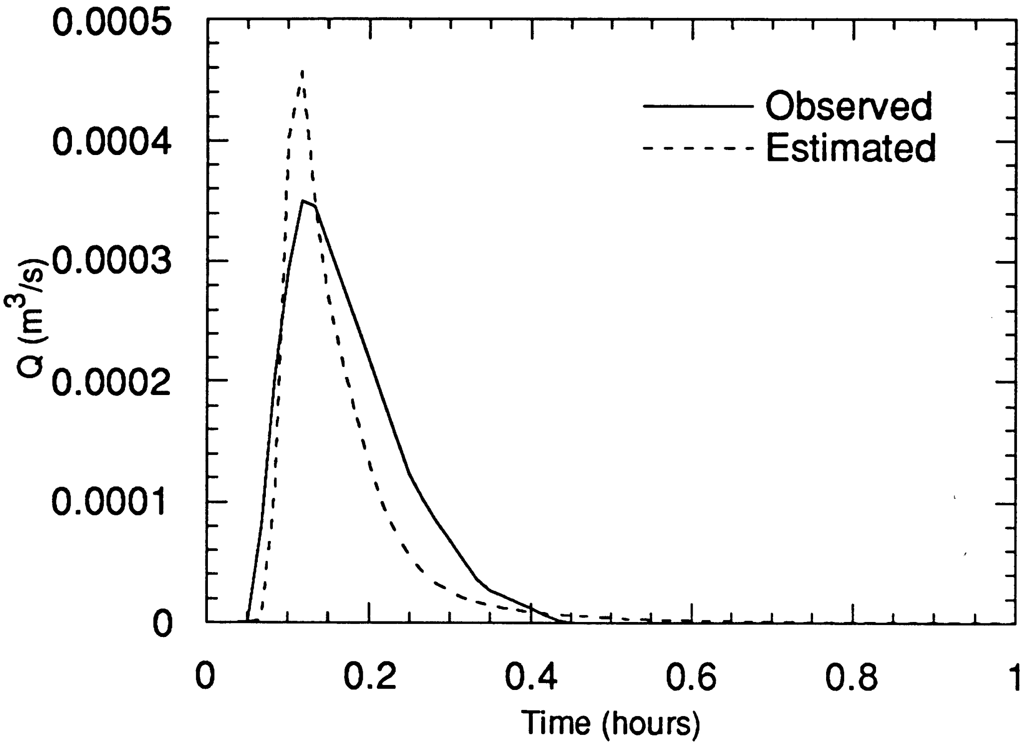


Figure 2.6 Calibration for CWT3 on 6/2/91

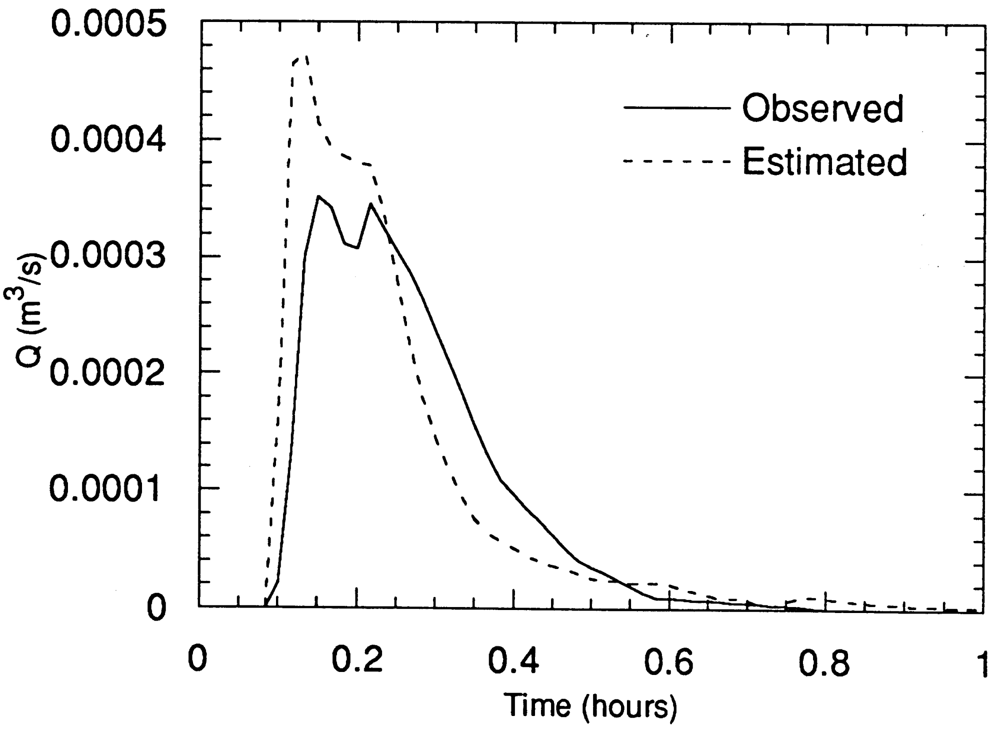


Figure 2.7 Calibration for CWT3 on 16/2/91

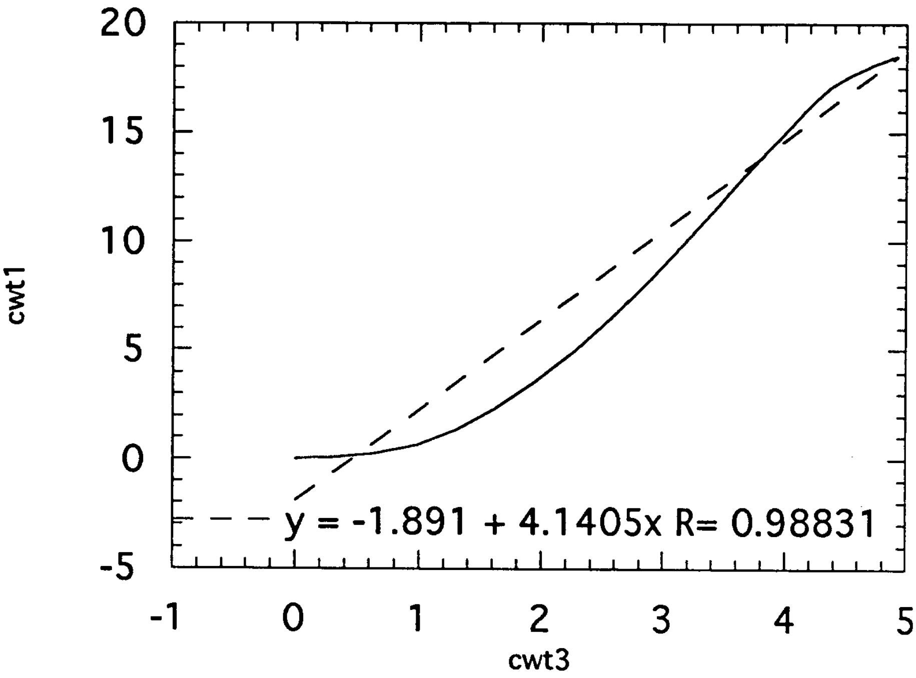


Figure 2.8 Double mass curve for CWT1 and CWT3 for event 16/2/91

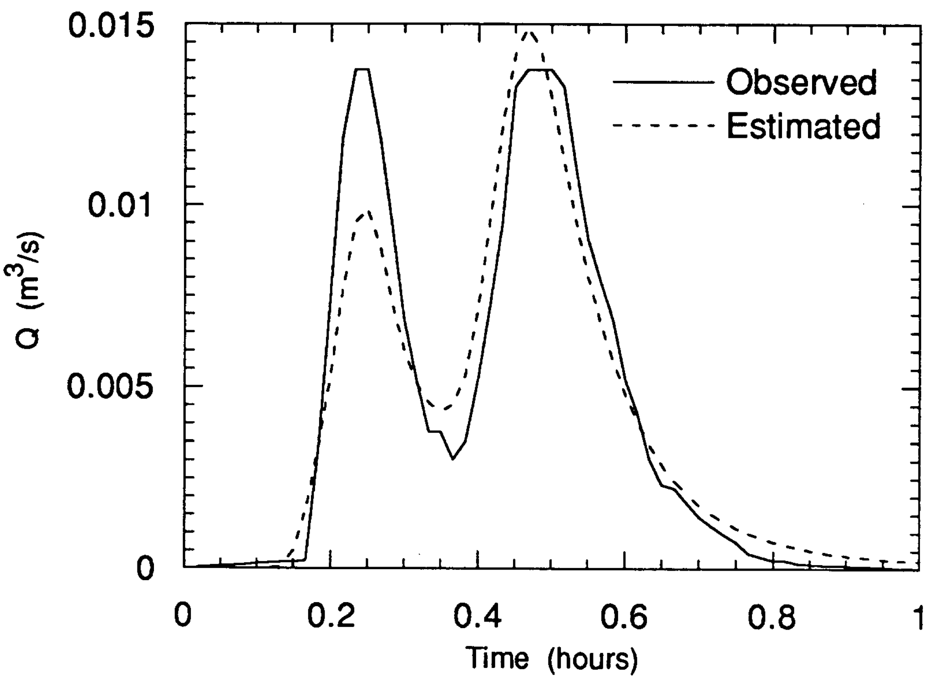


Figure 2.9 Calibration for COUT on 7/1/91

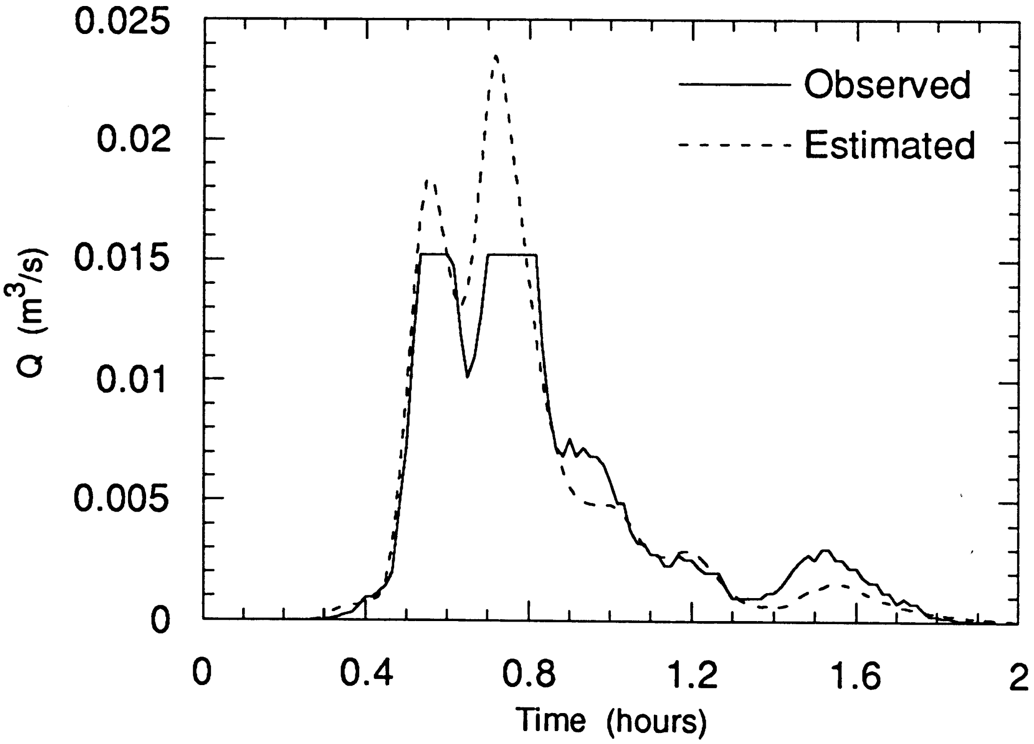


Figure 2.10 Calibration for COUT on 10/1/91

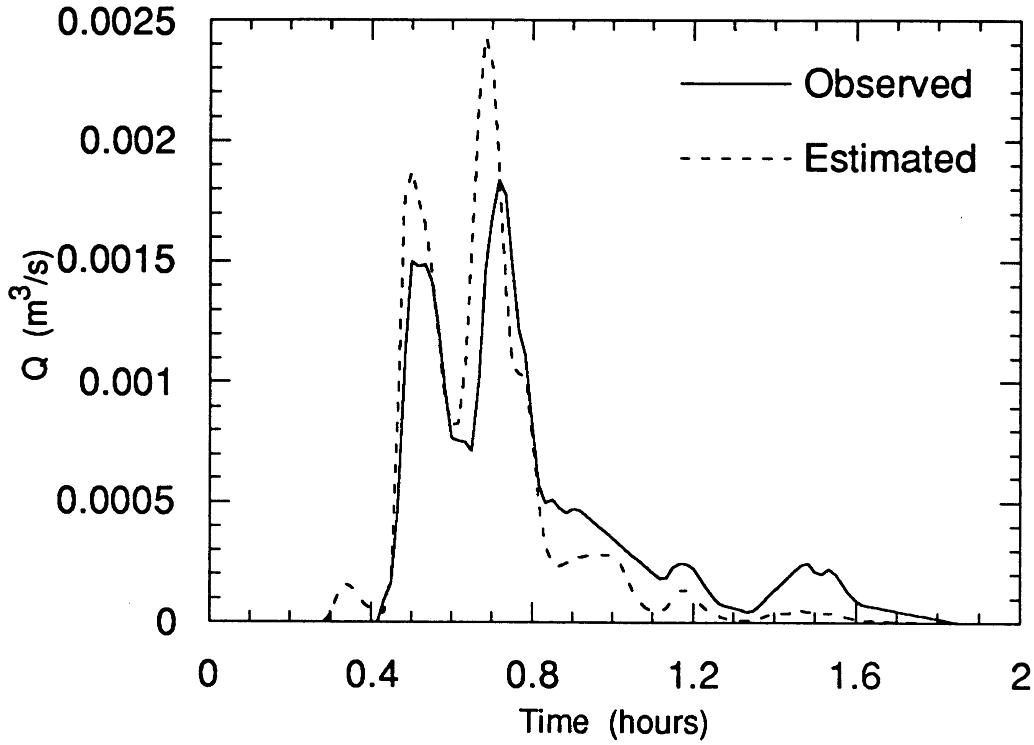


Figure 2.11 Verification for CWT1 on 10/1/91

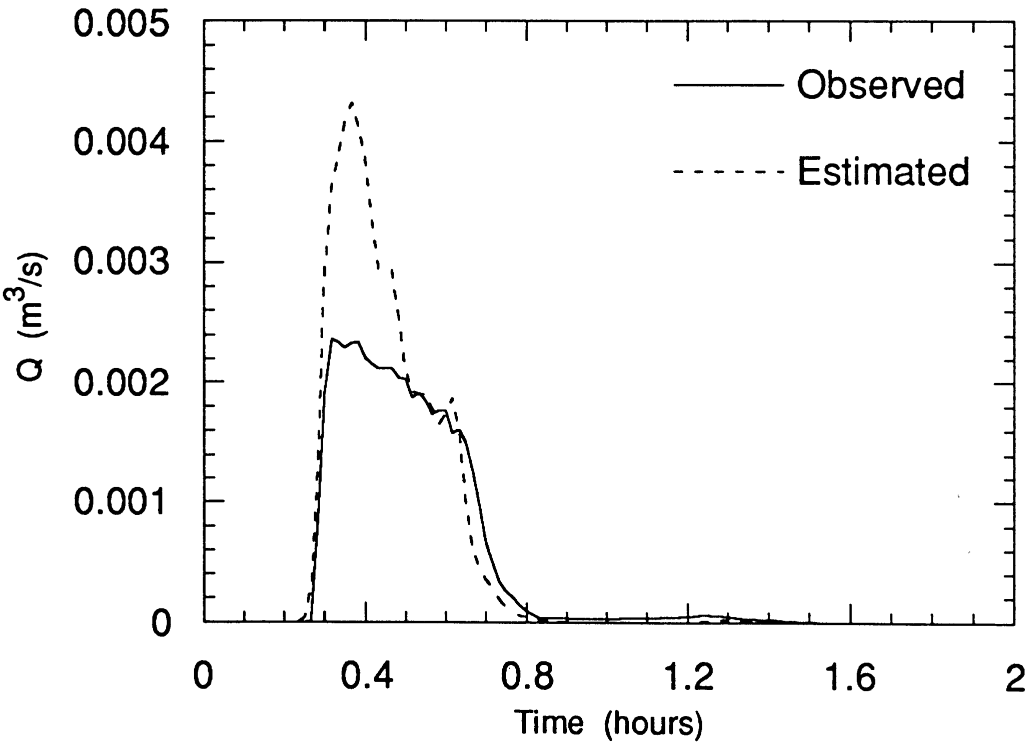


Figure 2.12 Verification for CWT1 on 21/1/91

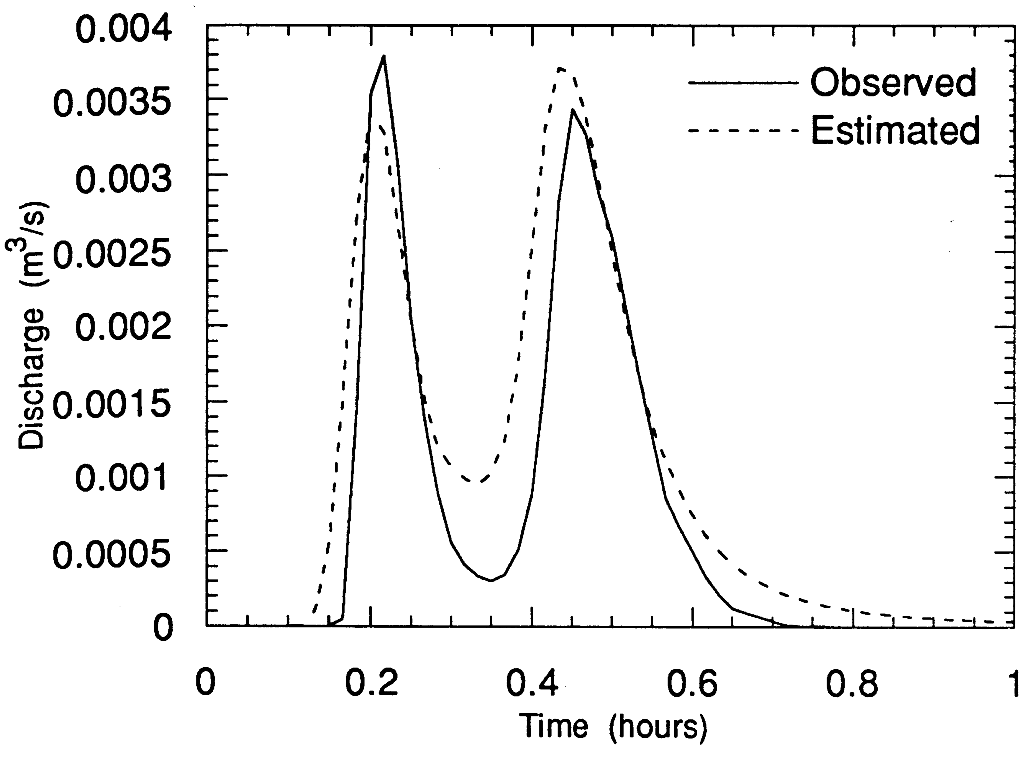


Figure 2.13 Verification for CRT1 on 7/1/91

2.3 Batter sites calibration

2.3.1 Natural rainfall data

The parameters fitted in the previous section for the caprock sites were used as the starting point for the calibration of the batter sites. Only three sites had reliable data for calibration of the hydrology. Of these two plots (BWT2 and BWT3) were discarded as being too short to be able to check the routing behaviour of the plots; the lags between peak rainfall and peak discharge were judged to be too small. The remaining site, BRT2, had 4 rainfall events of which three were considered reliable. The fourth had fluctuations in the rainfall that were not exhibited in the runoff. Two of the events, those on 6/2/91 and 22/2/91, were used for the verification of the parameters. These were a small flood (max 1.5 L/s) and a large flood (max 5 L/s) respectively, allowing the hydrology model to be verified over a range of discharges.

The fits for the 6/2/91 and 22/2/91 sites are illustrated in figures 2.14 and 2.15. The runoff volumes appear too small, particularly for the event of 22/2/91. Overall, however, the parameters as fitted for the caprock appear to be satisfactory for prediction of runoffs from the batter.

The Manning *n* used for predicting the runoff from the batters in figure 2.14 and 2.15 was the same as that for the caprock. The rising limb of the 6/2/91 event appears to be leading slightly, suggesting a higher value of Mannings *n* may be appropriate (of about 0.003), however, the rising limb for 22/2/91 appears to be satisfactory suggesting no change. The grading of the surface material on the batter appears to be similar to that on the caprock suggesting that the value of Mannings *n* should be the same as that measured/calibrated for the caprock sites. On balance, given the good overall fits, no case could be made for significant changes in Mannings *n* from the caprock to the batter.

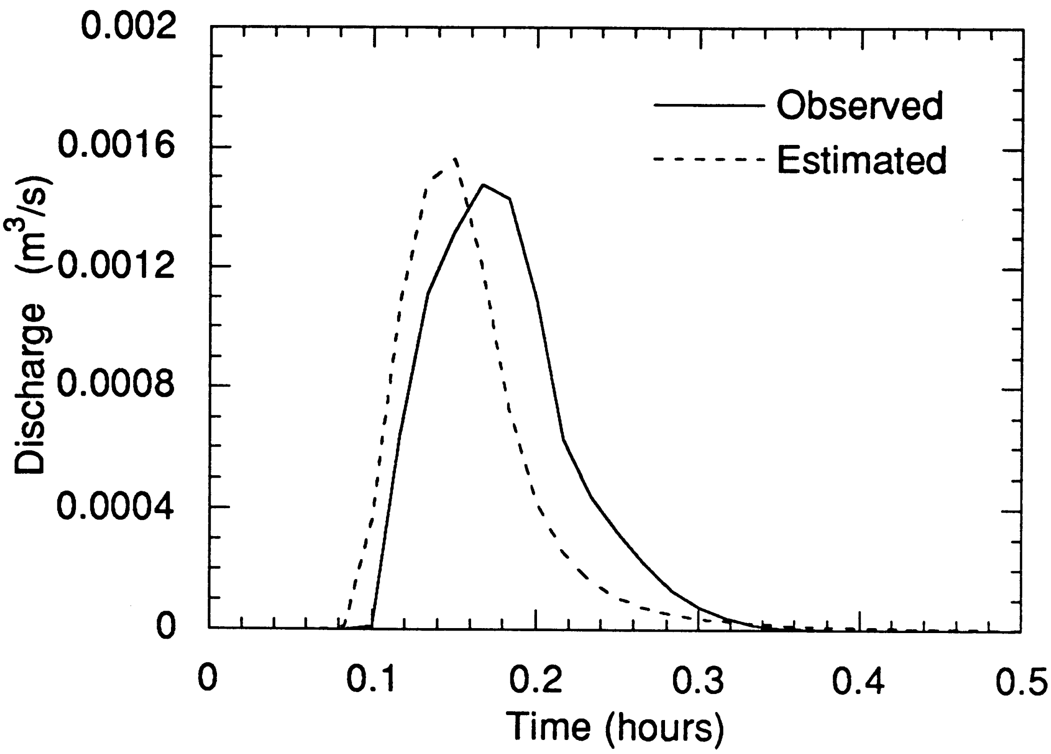


Figure 2.14 Verification of BRT2 event 6/2/91

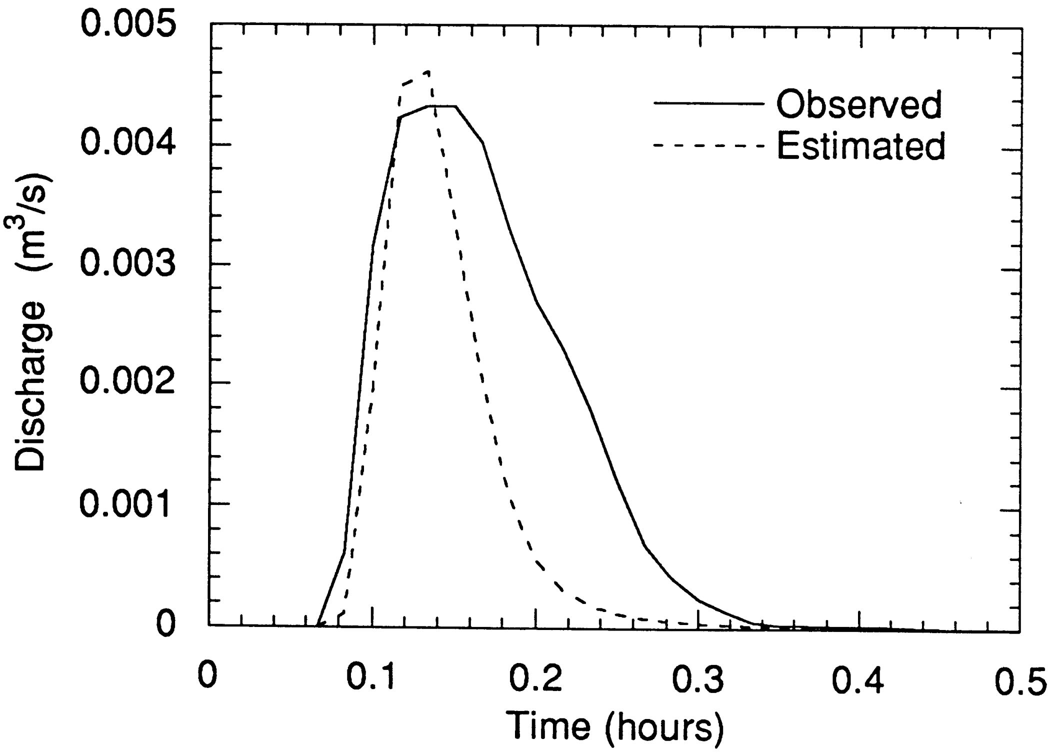


Figure 2.15 Verification of BRT2 event 22/2/91

2.3.2 Rainfall simulator data

There were a small amount of batter data available for validation of the parameters determined above. Not all the data were examined but one simulation experiment for the largest of the plots was selected. This simulation is referred to as Plot 4 Run 2 in the computer data file B1RF2QSS (see appendix B). An area of 67.8 m^2 has been adopted as the catchment area for this plot. The rainfall applied to this plot was measured by two pluviographs, both situated within the plot; the average of these two pluviographs has been adopted as the applied rainfall. Timing discrepancies in the observed runoffs and rainfalls were apparent and the data were adjusted accordingly. Figure 2.16 show the result of a simulation using the adopted parameters in table 2.4 for these data (ϕ=6.5 mm/hr). The considerable scatter of the simulated data around the observed data is due to the highly responsive plot responding to fluctuations in the applied rainfall, presumably due to random effects of wind during the simulator trials. What we need to consider is the mean trend of the simulated data averaging out these fluctuations.

The volume of this hydrograph for ϕ=6.5 mm/hr is too high by about 20%. The long-term infiltration rate, ϕ, was adjusted to 35 mm/hr and the simulation run again. This yielded a hydrograph that is marginally too low in volume by about 5%. This raises the question of what is the appropriate ϕ to adopt for this study. A value of ϕ=35 mm/hr is too high for two reasons. Firstly, the simulation data suggest it is. Secondly, a value of ϕ greater than 20 mm/hr results in no runoff occurring in the many natural storms that have been measured for both the caprock and batter. Thus it appears that the simulation data are in conflict with the data collected for the natural rainfall events. Whether this conflict is real or simply an artefact of the calibration procedure would require a statistical study of the parameter estimates from the natural and simulate rainfall experiments (eg Kuczera 1983). Until more definitive data are available, it is recommended that the value of 6.5 mm/hr fitted to the natural runoff events be adopted for the batter sites. This value is conservative and is consistent with the natural rainfall-runoff data.

No other parameters can be verified for the batters because the plot response is too quick to allow accurate calibration-verification of the plot response parameters (eg Mannings *n*). However, it is apparent in figure 2.16 that the rising and falling limb of the simulations for the observed and simulated data have similar slopes and timings, so that the parameters adopted in the simulations appear to be consistent with those observed in the field.

2.4 Conclusion

The distributed Field-Williams rainfall-runoff model (DISTFW) has been shown to provide a satisfactory fit to the data collected on the caprock and batter sites. Scatter in the infiltration parameters was observed from site to site, possibly suggesting localised porous zones in the fill. The sorptivity also exhibited small fluctuations depending on whether a rainfall event had occurred previously that day. This variation in the sorptivity appears to be important but its variation with antecedent wetness conditions could only be estimated roughly in this study because of the lack of detailed data testing specifically for this parameter. The adopted parameters are listed in table 2.4.

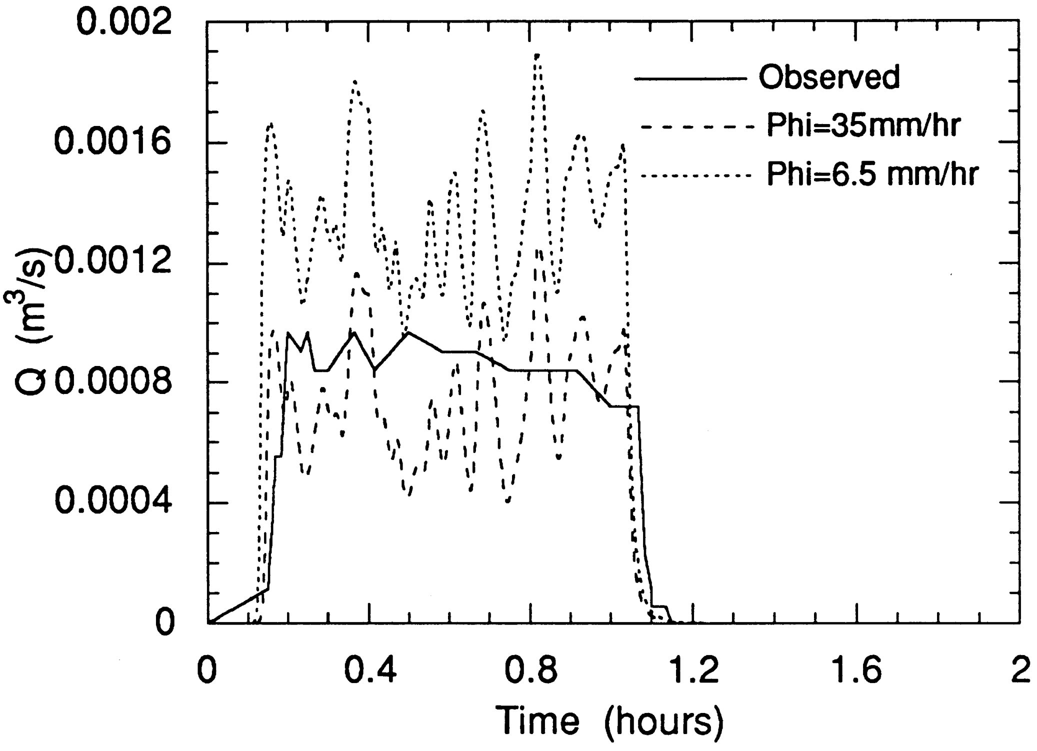


Figure 2.16 Batter Plot 4 Run 2 rainfall simulation experiment

Table 2.4 Adopted parameters for the Distributed Field-Williams Model

Parameter		Value	(Range)
S_ϕ	Sorptivity, initial infiltration	3.85 mm/hr$^{1.2}$	(0–3.85)
ϕ	Long-term infiltration rate	6.5 mm/hr	(6.5–40)
n	Mannings coefficient	0.03	(0.025–0.035)
C_r	Conveyance coefficient for 30 m wide sheetflow	7.0	(6–8.5)
e_m	Conveyance exponent	1.66	
c_s	Surface storage coefficient	0.03	
γ	Surface storage exponent	0.375	

3 Erosion model calibration

3.1 Overview

Natural rainfall runoff events for the caprock and batter sites were supplied by staff of the Geomorphology Branch at ***eriss***. Table 3.1 summarises the sediment yield data used in this study. Maps of the field sites are provided in appendix A and the data used in the study are tabulated in appendix C.

Data for a range of rainfall simulation data were provided in report and computer readable form. The computer data are summarised in table 3.2. These simulator rainfall-concentration data have been checked for consistency and appear to be accurate, with no obvious signs of error.

Table 3.1 Sediment yield data supplied for caprock and batter sites[(c)]

	Caprock sites[(a)]						Batter sites		
Storm	WT1	WT2	WT3	RT1	RT2	OUT	RT2	WT1	WT2
7/1/91 (20:50)[(b)]	✓	×		×	×	?			
7/1/91 (14:55)[(b)]	×	✓		✓	×	?			
8/1/91						?			
10/1/91 (7:55)[(b)]						?			
10/1/91 (14:00)[(b)]	×	×		×		?			
11/1/91				×		?			
21/1/91	✓	✓					×		
28/1/91							×		
30/1/91							×	×	
4/2/91		✓				×	×	✓	
6/2/91			✓				✓	✓	✓
13/2/91							✓	✓	
16/2/91	✓		✓				✓	✓	✓
22/2/91							✓	✓	

(a) Site notation as per Neave (1991);

(b) Two events supplied for this day, approximate beginning time in 24 hour clock;

(c) Notation is ✓ = data appears to have reliable matching discharge data, × = no matching reliable discharge data; ? = part or whole of the matching discharge hydrograph is questionable.

Table 3.2 Computer readable rainfall simulator data supplied

Datafile	Run	Date	Area (m^2)	Slope
Batter: B1RF1QSS	plot1 (runs 1–5), uncovered	5–7/10/90	1.2	0.152
	plot2 (runs 1–5), covered	5–7/10/90	0.99	0.185
Batter: B1RF2QSS	plot1 (runs 1–3)	17–18/10/91	1.2	0.152
	plot2 (runs 1–3)	17–18/10/91	10.2	0.187
	plot3 (run 1)	17/10/91	0.99	0.99
	plot4 (runs 2–3)	18/10/91	107.7[b]	0.19
Cap: C1RT2SS	plot1 (runs 2–4)	23–25/4/90	113.5	0.021
	plot2 (runs 2–4)	23–25/9/90	116.5	0.025
Cap: MESO	plot1 (runs 1–5)[a]	22–25/4/90	7.8	
	plot2 (runs 1–5)[a]	22–25/4/90	4.5	

[a] the suspended solids data for plot1 run5 and plot2 run 4 were not available;
[b] area possibly erroneous (see section 2.3.2)

The intention of this section is to calibrate the instantaneous sediment transport model described by equation 1.5.2. This will be converted to the long-term erosion rate in section 4.3. There are thus 3 parameters that require determination: β_1, m_1 and n_1, the transport rate, and the exponents on the discharge and slope respectively. The process adopted will be to use multiple regression on the available data, over a range of discharges, catchment areas and slopes, to estimate these parameters.

3.2 Natural rainfall data

The range of sediment transport events from natural rainfall events were examined and the data used to calibrate a sediment transport relationship of the form of equation 1.5.2. A number of events were discarded because either the sediment data or the discharge data were suspect. For instance, many of the storm event data were only for the falling limb of the hydrograph.

A common characteristic of the data was that if the rising limb at the start of the storm had been observed the first datum point at the start had an anomalously high concentration. This behaviour is not uncommon and is commonly believed to result from rainfall detachment of particles at the start of the event, while depressions are being filled, and before runoff has begun. This hyper-concentrated water is then flushed in the first minutes of the storm after which concentrations fall back to normal levels (Loch, pers comm). The total mass of sediment in that first flush is not a significant proportion of the total mass of the event and because these data bias the multiple regression procedure they were deleted from those events where they were observed.

The result of the multiple regression analysis with the remaining reliable data yield a relationship of the form

$$c = 0.27\, q^{0.22}\, S^{0.01} \;\; ; \;\; r^2 = 0.29 \qquad 3.2.1$$

The overall fit of this expression to the data is quite poor as indicated by the correlation coefficient. Figures 3.1 and 3.2 show the concentration data against the slope and discharge. Partial regression tests indicate that the exponent on discharge is significantly different from 0, as is the multiplicative constant at the 5% level, while that for slope is not. Finally, there was no significant difference between the sediment concentrations for the wash traps and the rill traps.

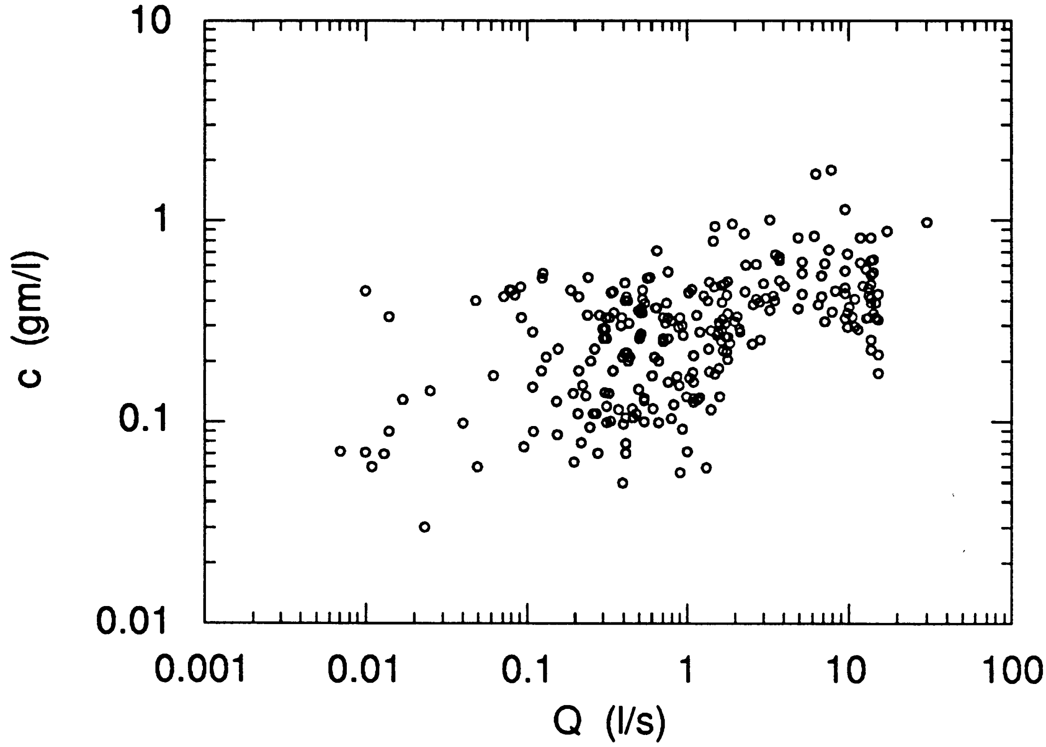


Figure 3.1 Concentration versus discharge for the natural rainfall events on both the batter and the caprock sites

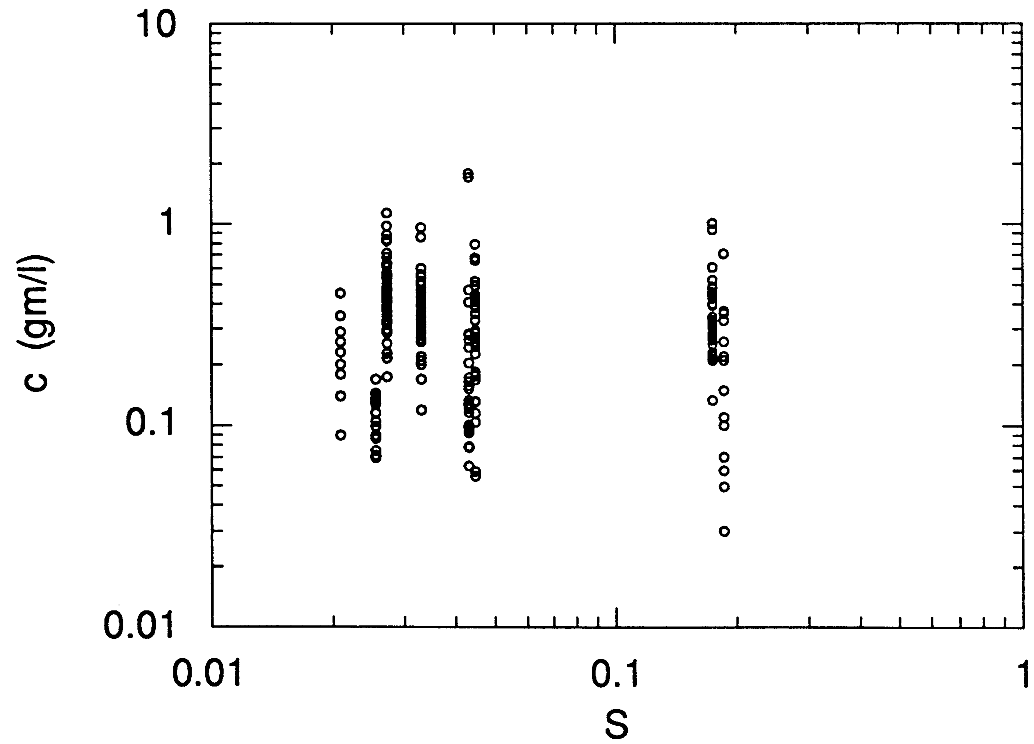


Figure 3.2 Concentration versus slope for the natural rainfall events on both the batter and the caprock sites

The independence of the concentration from slope is surprising and disturbing but a close examination of the results in figure 3.2 suggest a reason. The concentrations for the batter sites (slope ≈ 0.2) are notably lower than those of the caprock sites (slope ≈ 0.02–0.04). In the initial culling of the data it was not possible to remove all the data that came from events where only the falling limb of the data was sampled otherwise very little data would have been left. The rating curves with discharge indicated that clockwise loop ratings were common, though not universal. This type of rating is indicative of sediment concentrations peaking before the hydrograph (Williams 1989) but may also be a result of sediment starvation. If only the falling limb of the hydrograph is sampled then the concentrations will be lower than the mean values. Examination of the data suggest that the higher slope sites on the batter seemed to have sampled the falling limbs of the hydrograph more often than the caprock sites so that the concentrations on the batter slopes were biased downwards. This effect clearly reduces the reliability of the slope estimate for concentration.

3.3 Rainfall simulator data

The larger simulator catchments from the batter and cap plot 4 from B1RF2QSS and C1RF2QSS (see table 3.1) were used to calibrate the fluvial sediment transport equation of equation 1.5.2 on the presumption that they would be least dominated by rainsplash. That way multiple regression could be used to directly fit the parameters on discharge and slope.

Figures 3.3 and 3.4 show the variation of the concentration with the discharge and slope for these large plots. The result of the multiple regression was

$$c = 3.55 \; Q^{0.42} \, S^{0.66} \; ; \; r^2 = 0.620 \qquad 3.3.1$$

The correlation coefficient indicates that the fit of this equation is better than that obtained with the natural rainfall data. The exponent on discharge is consistent with fluvial transport according to Einstein-Brown sediment transport on a rilled surface (about 0.3–0.5, Willgoose et al 1989) and other field data (Loughran 1977, Moore & Burch 1986). The variation of concentration with discharge for one rainfall simulation experiment is illustrated on figure 3.5. Note that the apparent decline in concentration with time is strongly associated with the period of initially increasing discharge and that this apparent starvation effect appears to be complete within about 20 minutes. Thereafter, concentration decreases with decreasing discharge as expected in the non starved case.

The exponent on the slope in equation 3.3.1, however, is considerably less than that expected for a rilled surface (about 1.5–2). One possible explanation for this deviation is that the batter (hence higher slope) plots may have had a coarser lag layer (compared with the caprock plots) so reducing the transport rate on the higher slope surfaces. The exponent of 1.5–2 is derived using the assumption that the material grading properties do not change with discharge or slope. Grading of samples taken from the caprock and batter regions suggest that there are minor differences in the lag layer, but not of the magnitude needed to explain the deviations from theory observed.

To calibrate the diffusive transport, the data were fitted using multiple regression with trial and error estimates for the diffusive transport by using the transformation

$$c - \frac{DS}{q} = \beta_1 \, q^{m_1 - 1} \, S^{n_1} \qquad 3.3.2$$

The best estimate that was obtained by this process was

$$c = 3.59 \, q^{0.68} \, S^{0.69} + \frac{0.178 RS}{q} \; ; \; r^2 = 0.638 \qquad 3.3.3$$

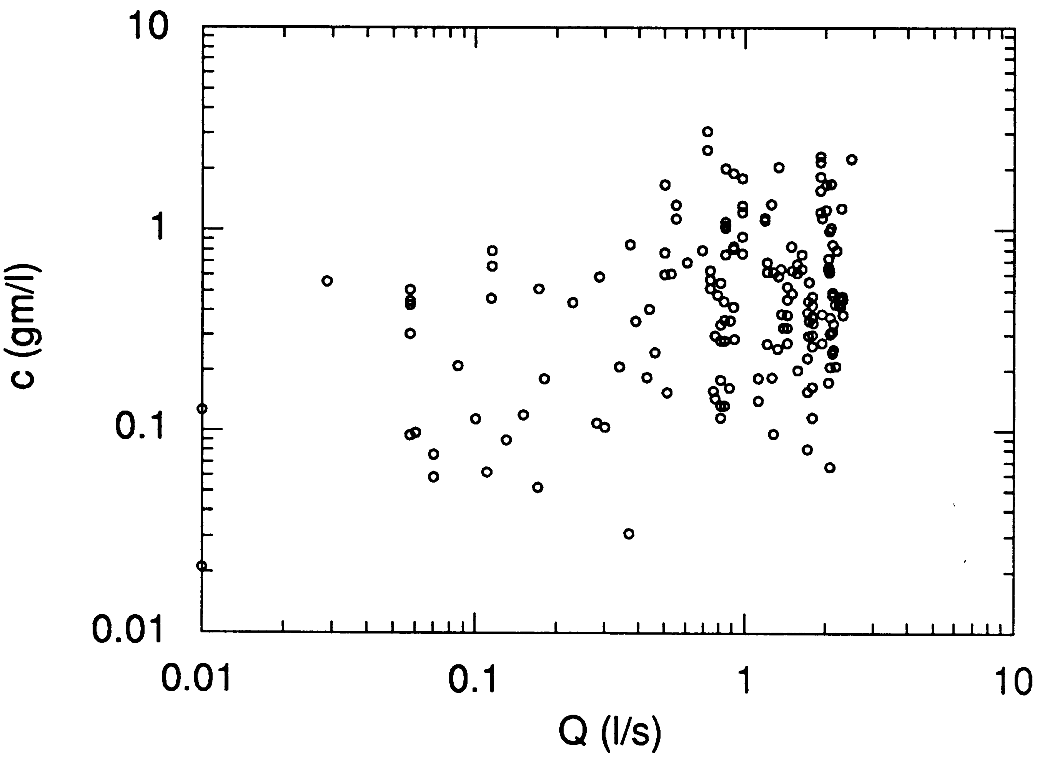


Figure 3.3 Concentration versus discharge for the large plots

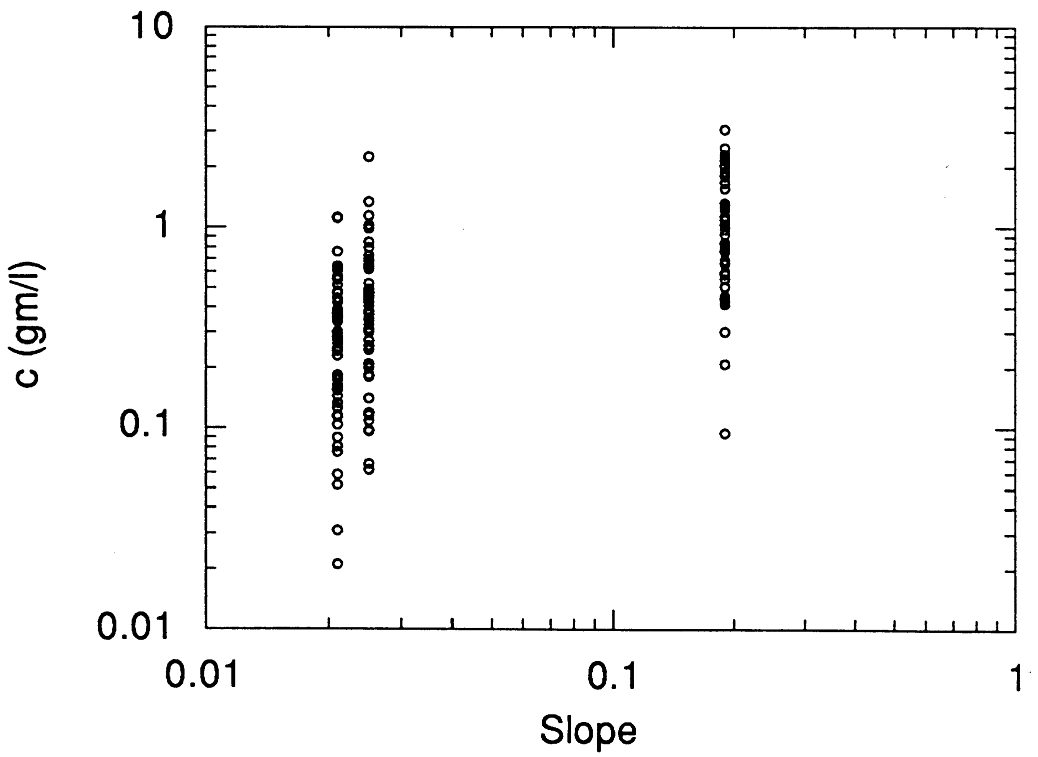


Figure 3.4 Concentration versus slope for the large plots

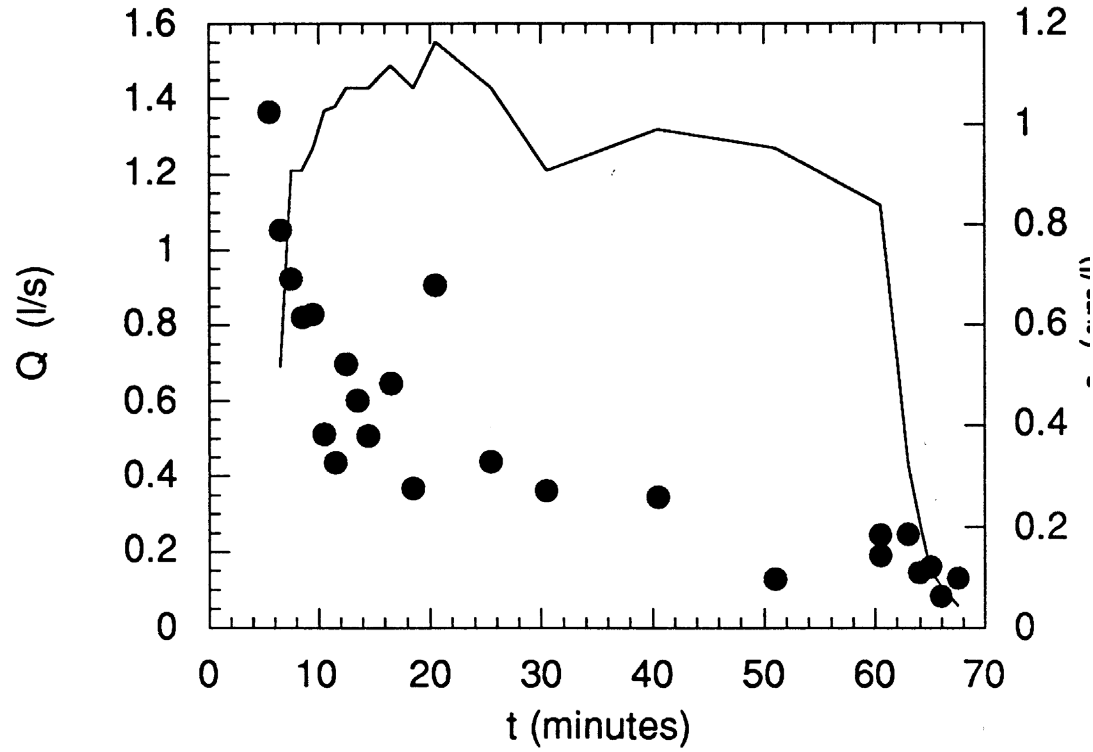


Figure 3.5 Sample hydrograph and sediment samples for caprock, large plot rainfall simulation

The estimated parameters are only slightly different from those determined from the case ignoring diffusive transport in equation 3.3.1 and there was a small, though significant, improvement in the correlation coefficient for this case. The exponent on the discharge was significantly increased, though the value is still in the range to be expected for rill flow. The exponent on slope was not significantly changed.

The diffusivity obtained for the small plot data for the batter (plots 1 and 2 from B1RF1QSS) were used to independently check the diffusivity calculated above. These plots have comparable area and slope and vary only in that one was covered and one was not. The purpose of the covering was to break the fall of the raindrops and thus dissipate the rainsplash energy. On the small area of 1 m^2 rainsplash is expected to dominate overland erosion. The difference in the transport of the two plots could thus be expected to be a good indicator of the magnitude of the rainsplash transport and thus the diffusivity.

The concentration versus discharge for the two plots is illustrated in figure 3.6. This change in concentration for the two plots can be expressed as

$$\Delta c = \beta_1 q^{m_1 - 1} S^{n_1} - \left(\beta_1 q^{m_1 - 1} S^{n_1} + \frac{DS}{q} \right) = \frac{DS}{q} \qquad 3.3.4$$

This calculation gave a value of D = 0.26. This value is in good agreement with the value calculated from the large area plots of D = 0.178. It is worthwhile to note that the plots' behaviour was consistent with the Fickian diffusion mechanism with transport being independent of discharge, validating its use for the modelling small scale sediment transport behaviour.

Finally the MESO rainfall simulator plots were examined. The areas of these plots (5–8 m^2) were mid-range area between the small plot (1 m^2) and the large plots (100 m^2) so that they would be expected to exhibit behaviour midway between that of the small and large plots. This was the case. For the lower rainfall rates (and thus lower discharges) rainsplash (diffusive) transport was dominant. For higher rainfall rates the behaviour appeared more like the fluvial transport mechanism (figs 3.7 & 3.8). However, of note was that if all the MESO data was plotted together there is a clear downward trend with increasing discharge (fig 3.9).

This appears to be due to sediment starvation, as the MESO experiments were performed over 4 days with increasing rainfall rates (yielding large discharges) being applied in each day. It is believed that each day's erosion was starved because of the depletion of the sediment store that had occurred with the previous days experiments. It is important, however, to observe that during each high rainfall rate experiments there was a positive correlation with discharge, consistent with all the results for the other plots discussed above. It is asserted here that the parameters m_1, n_1 and D fitted above are adequate for describing sediment transport during any event, but that the parameter β_1 may vary from event to event reflecting the amount of sediment removed from storage by previous days' runoff events.

3.4 Conclusion

The data for the natural rainfall data and the simulator rainfall data have a significantly different functional dependence on slope though similar relationship with discharge. The problem remains as to which are the most reliable data. To this end the two sets of data were aggregated and examined as a whole. These data are plotted against discharge and slope in figures 3.10 and 3.11.

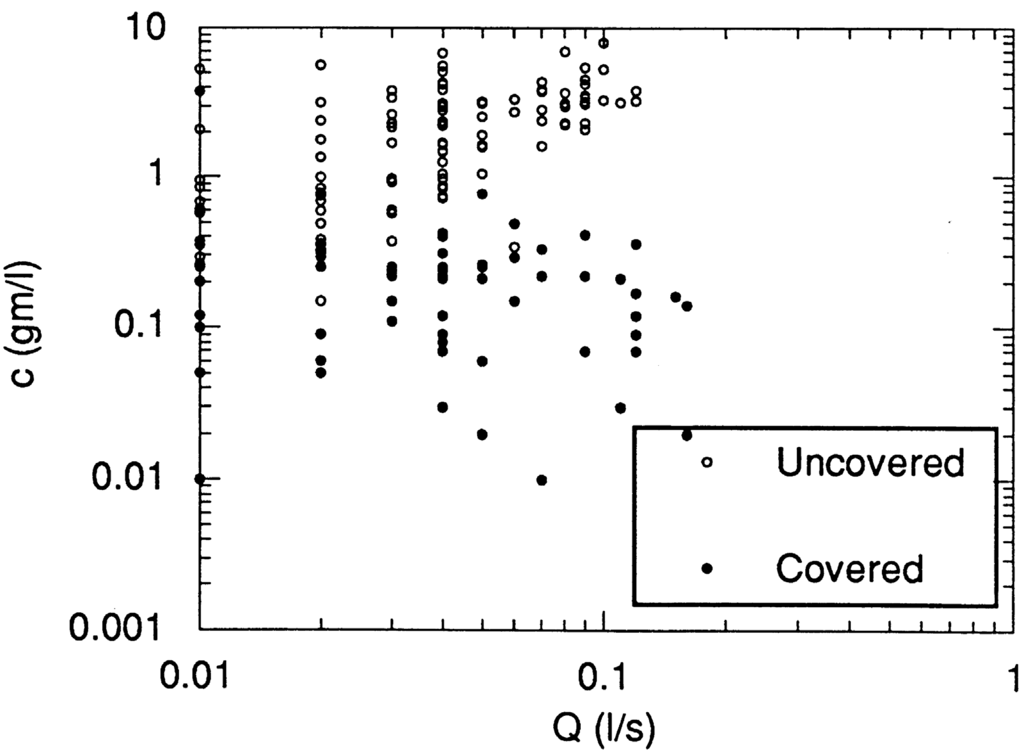


Figure 3.6 Concentration versus discharge for the covered and uncovered plots

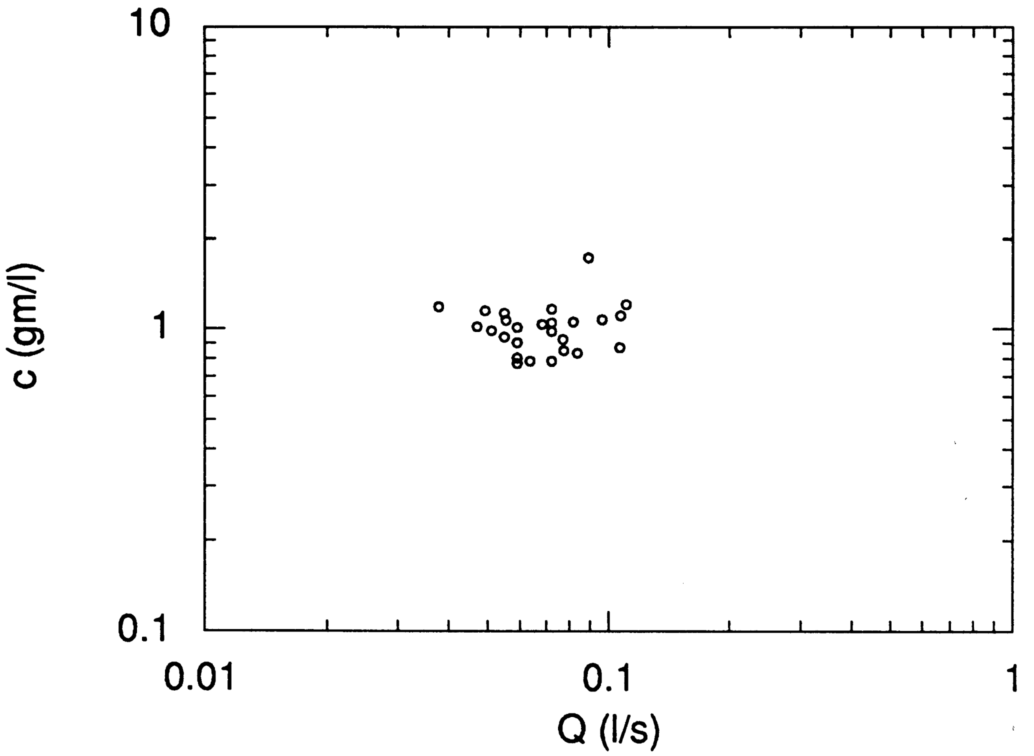


Figure 3.7 MESO plot (area 7.8 m^2) for low discharge. Note the lack of any trend with discharge

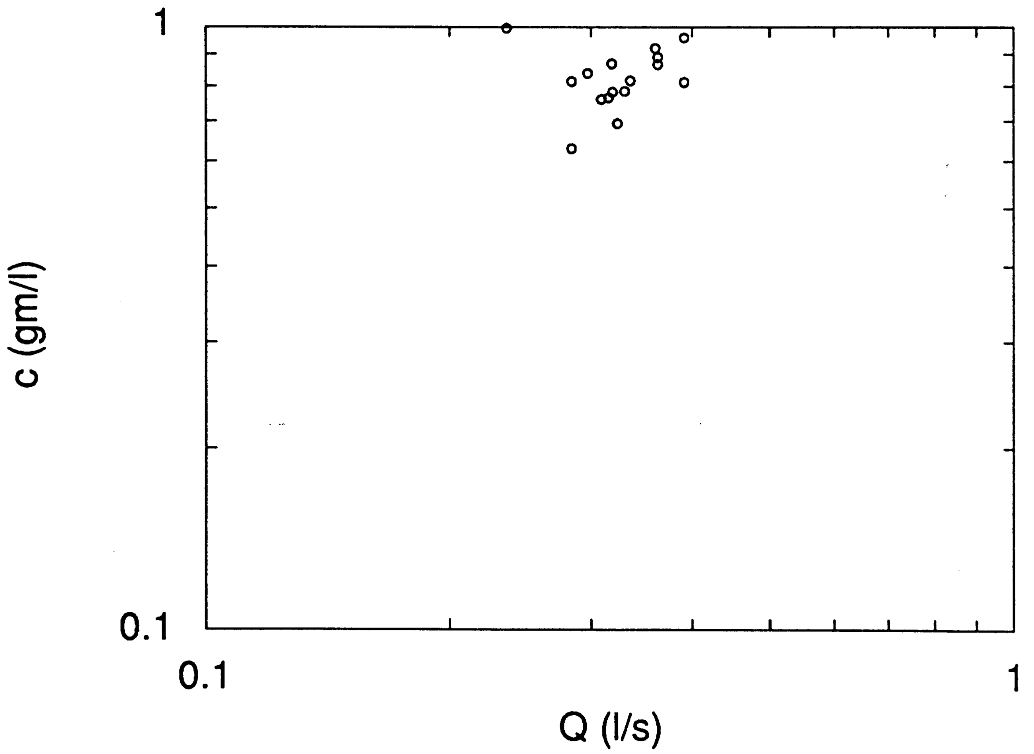


Figure 3.8 MESO plot (area 7.8 m^2) for high discharge. Note the positive trend with discharge

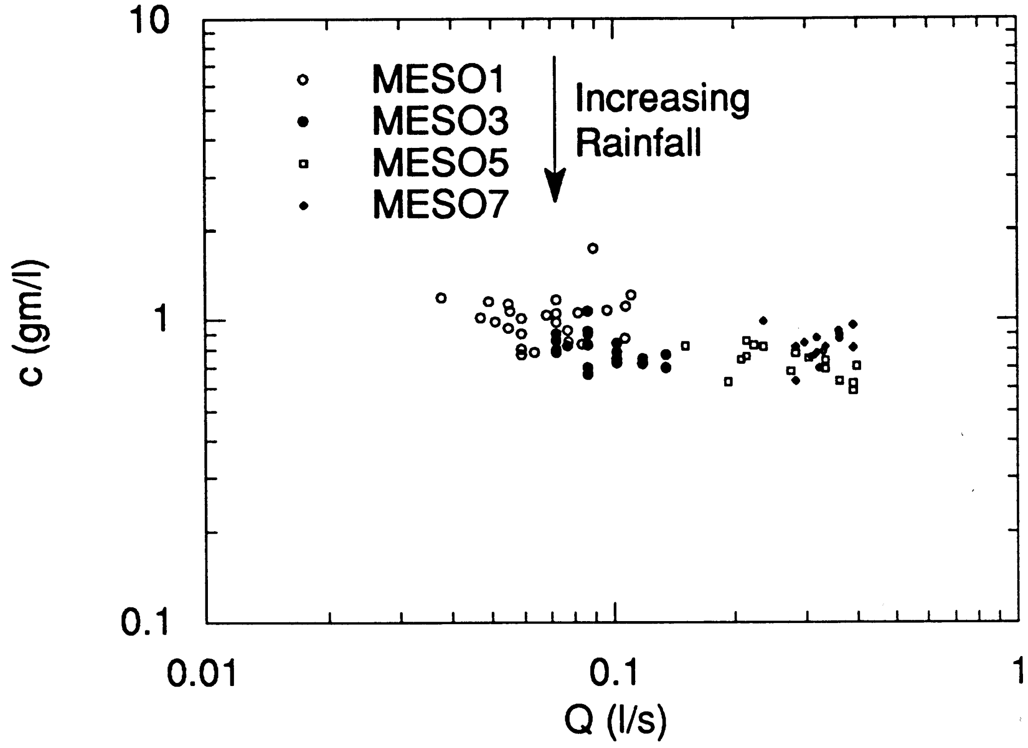


Figure 3.9 All available concentration-discharge data for the MESO plot of area 7.8 m²

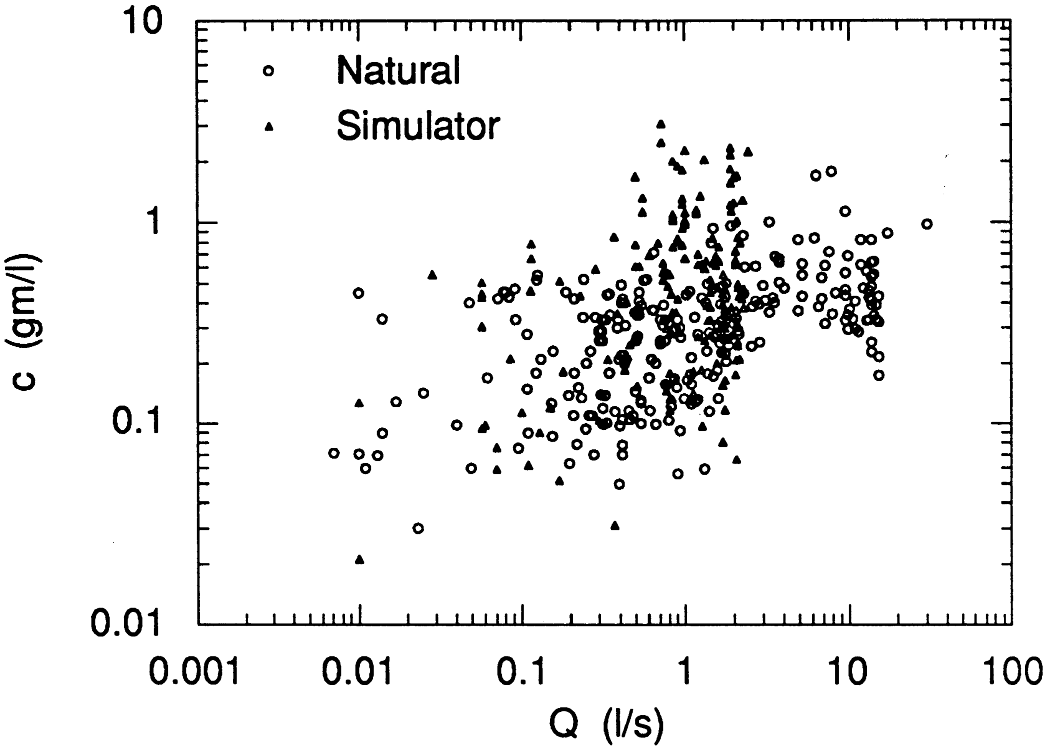


Figure 3.10 Concentration versus discharge for both the natural events and simulated data

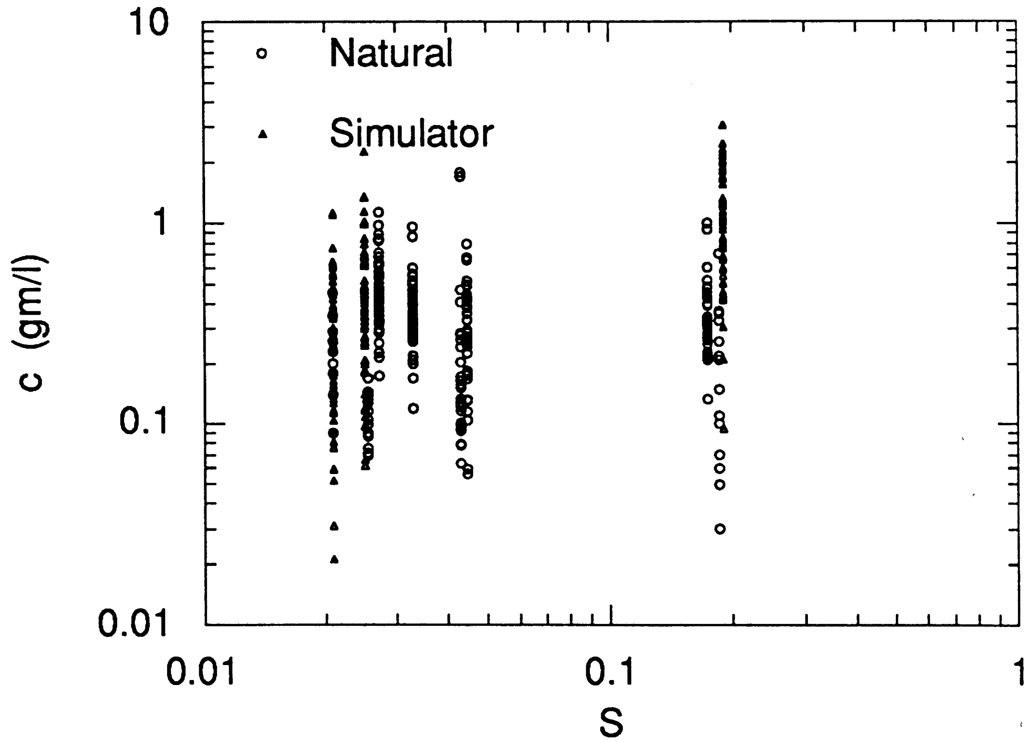


Figure 3.11 Concentration versus slope for both the natural events and simulated data

An examination indicates that the concentrations for the natural rainfall experiments are lower than the simulator results, particularly for high slopes. This behaviour is marked and suggests a bias in the natural data, as noted in section 3.2. In the graph of concentration versus discharge (fig 3.10) the results for the natural rainfall and simulated rainfall are little different, with the low discharge values for the natural event appearing to plot only slightly higher than the simulator.

Not surprisingly, a multiple regression of these data yields a result somewhat midway between the two results discussed in previous sections

$$c = 0.96\, q^{0.26}\, S^{0.34} \;\; ; \;\; r^2 = 0.29 \qquad 3.4.1$$

It is notable, however, that this fit is little better than that obtained for the natural data, and considerably worse than the fit for the simulation data. Furthermore, attempting to fit the diffusion coefficient, as was done for the simulated rainfall data, did not improve the significance of this fit. Given these considerations it was decided that the adopted sediment transport relation for this study should be the one fitted in equation 3.3.3 for the rainfall simulator experiments, ie

$$c = 3.59\, q^{0.68}\, S^{0.69} + \frac{0.178RS}{q} \;\; ; \;\; r^2 = 0.638 \qquad 3.4.2$$

4 Determination of parameters for SIBERIA

4.1 Overview

The parameter estimation of the hydrology and sediment transport models described in the previous section provide the basis for estimation of the parameters for SIBERIA. SIBERIA is a model of the long-term erosional behaviour of landscapes. Thus the parameters of SIBERIA characterise the average properties of the landscape and its processes, not the instantaneous or point values as calibrated in the hydrology and erosion studies above. However, there is very good reason to believe (Willgoose et al 1989, Huang & Willgoose 1992) that the requisite average parameters can be obtained from the hydrology and erosion models calibrated in previous sections. The parameters in SIBERIA can be considered in two groups.

The first group of parameters in SIBERIA define how the erosion varies with time, over periods of many years. This involves the averaging of the erosion that occurs in each runoff event, calibrated in section 3, to give the mean annual sediment yield. This mean annual sediment yield is not simply dependent on the sediment transport rate for a particular discharge and slope but also the range of discharges occurring during individual runoff events and the frequency at which these runoff events occur. Willgoose et al (1989) has shown that the simple concentration-discharge-slope dependence calibrated above in equation 3.4.2 is maintained in the mean annual formula but that the discharge used in the equation changes from being the discharge at that time to the mean peak discharge obtained from a frequency analysis of runoff events. This peak discharge can in turn be related to the contributing area to that point. This mean peak discharge is very similar in interpretation to the dominant discharge, or channel forming discharge, commonly used by river engineers in river sediment transport studies. The process that is followed in this report will be to simulate, using the hydrology model and observed pluviograph records for Jabiru, a runoff and erosion time series. The resulting erosion series will be averaged over the simulated record and the average sediment transport rate will be related to the mean peak discharge estimated by the hydrology model.

The second group of parameters define how the hydrology changes at different points within the catchment and, in particular, how the mean peak discharge varies with area—the scale dependence of the runoff hydrology. The hydrology model will use the digital terrain map of the proposed mine sites to simulate the variation of discharge with area for specified rainfall data. This model will then be used below to predict the scale dependence of the mean peak discharge; the variation of the discharge with increasing area and slope.

Finally, to predict the extent of potential gullying a gully threshold for the gully development module of the SIBERIA model is required. Data for a nearby natural site with similar regolith properties are used to estimate the magnitude of this threshold and its dependence on hillslope gradient and area.

This calibration process is summarised in figure 4.1.

4.2 Scale dependence of the hydrology

Some of the most important parameters in SIBERIA are those that define how the discharge used in the calculation of the sediment transport rate varies with catchment area. The general form of the relationship between discharge and area used in SIBERIA is given in equation 1.3.3. This relationship has been widely used in empirical studies of catchment hydrology and is the basis of mainly regional relationships for flood frequency.

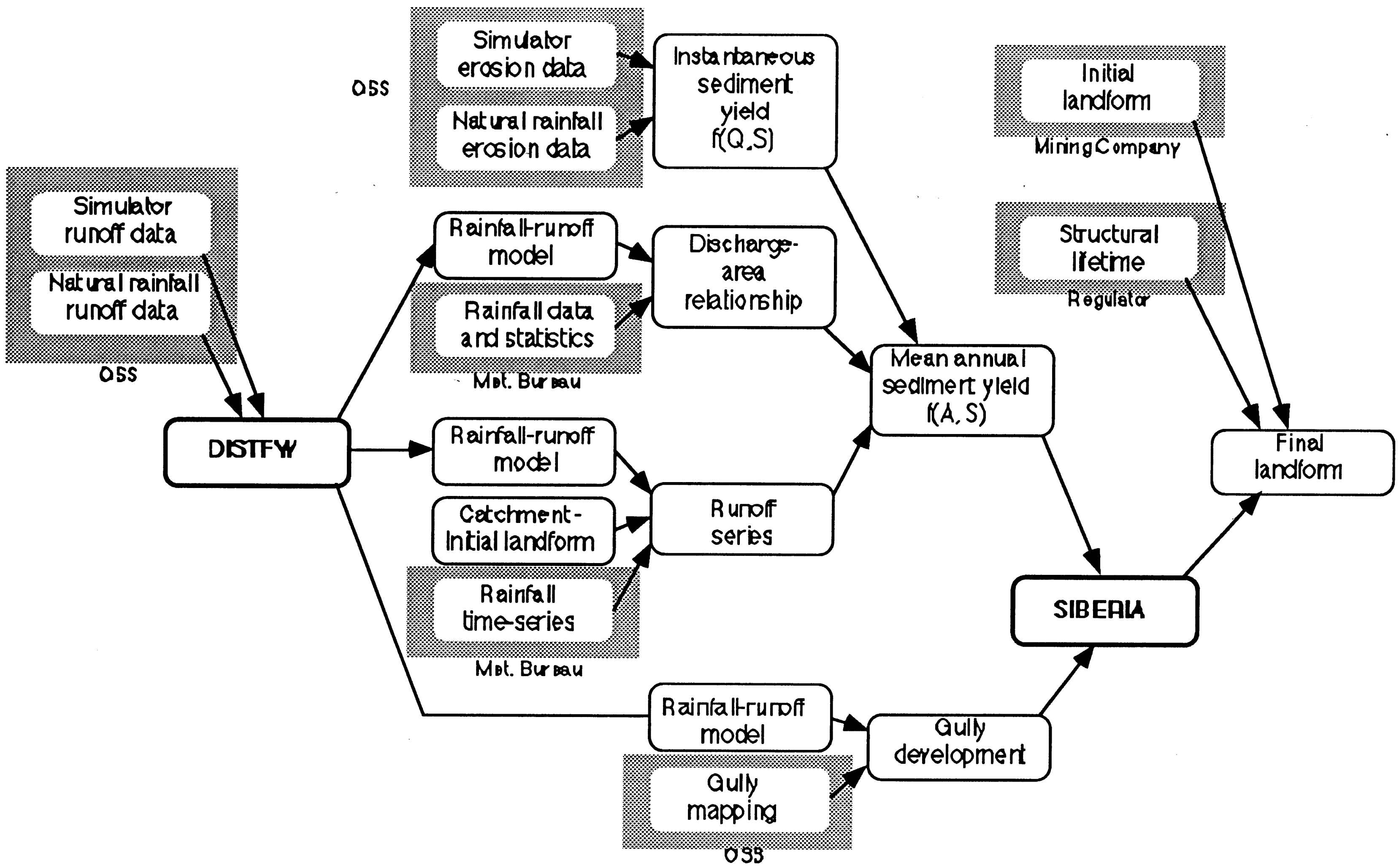


Figure 4.1 Schematic of the calibration process and use of SIBERIA

Recently, Huang and Willgoose (1992, 1993) have studied how the DISTFW rainfall-runoff model may be used to determine this relationship. This process is only valid for small catchment where it is reasonable to assume that the rainfall in all parts of the catchment are the same.

The process is as follows

1 Calibrate or select the parameters for the DISTFW model.

2 From Intensity-Frequency-Duration (IFD) curves of rainfall the 2 year storms of various durations are selected. Using the rainfall temporal patterns from Australian Rainfall and Runoff each of these storms is applied to the catchments and the peak discharge for every node in the catchment is noted for each storm.

3 The peak discharge at each node from the various duration 2 year storms is determined (smaller areas have highest discharge from short storms, larger from longer storms). These peak discharges are then plotted against area and the coefficients of the discharge-area relationship in SIBERIA are directly fitted from the graph. Huang and Willgoose (1992) have found that the correlation coefficient of this relationship is very high, and that the parameters in the relationship are a function primarily of the conveyance parameters in the rainfall-runoff model.

This process was followed to determine the area dependence of the discharge at RUM. It might be noted that equation 1.3.3 allows a slope dependence on discharge. Functionally, this dependence is only of importance when there are wholescale changes in the average slope of the catchment with time. This is not the case in this study so this dependence is ignored (ie n_3=0) and the discharge-area relationship is calibrated for the initial slopes.

Using the 30 m digital terrain map of the proposed rehabilitation strategy for the above-grade option the largest single catchment was defined (approx 1.6 km^2). This catchment was believed to have a hydrologic response typical of the other catchments on the rehabilitated area and is outlined in figure 4.2.

This digital terrain map was used as input to the digital terrain based version of DISTFW and a number of 1 in 2 year storms of different duration were simulated using IFD data for Jabiru. The 1 in 2 year storm was used because it is of about the same return period as the mean annual discharge (1 in 2.33 years), the discharge required by SIBERIA. The parameters used in DISTFW were those calibrated in section 2 with the exception of kinematic wave rate parameter as discussed below. For any node in the catchment the maximum peak discharge simulated from the different duration storms was calculated. This peak discharge was then plotted against area (fig 4.3) and the parameter m_3 calibrated. The adopted relationship for the 1 in 2 year discharge is

$$Q_2 = 0.000114\ A^{0.88} \qquad 4.2.1$$

The coefficient on this relationship, β_3, is not important as it only appears in SIBERIA in conjunction with the erosion rate parameter, β_1. These two parameters will be calibrated together in the next section where the mean annual erosion rate is determined.

As noted one parameter was changed from that in the calibrations of section 2. This was the kinematic wave rate parameter. This parameter is a function of the width of flow occurring (as well as Manning *n*). It was assumed in the work above that the width of flow in one node was half the grid spacing; ie 15 m. That is, that half of the surface area is flooded in a storm. For a rilled surface this is considered more reasonable than assuming that everywhere is flooded (ie classical overland sheet flow). Recent research in the US (Abrahams & Parsons 1991) has established that the classical model of overland sheet flow is unreasonable. The effect of this on the calibrated parameter, m_3, is relatively small as seen in figure 4.4. The general question of what proportion of the surface provides significant downslope flow (the so called rill area, as opposed to the remaining areas called interrill areas) is a major focus of research at this time (Willgoose & Riley 1993, Moore pers comm).

4.3 Long-term erosion rate and timescales for the simulation

For the determination of the long-term erosion rate a runoff series is created using the historical rainfall records at Jabiru and the calibrated rainfall-runoff model. Using the sediment transport equation previously calibrated and this runoff time-series an erosion time-series is generated and the average sediment transport per year can be determined.

The exceptionally large computational demands of generating a runoff series of sufficient accuracy for determining the average sediment transport rate from the engineered landform necessitated a multi-stage process for the generation of the runoff and erosion time-series.

1 The 1.6 km^2 catchment used in the hydrologic study of the previous section was used here for the sediment transport study.

2 This digital terrain map was used as input to the digital terrain based version of DISTFW and using a measured rainfall event a runoff event was simulated. Parameters used were those calibrated for the hydrology model in the previous section.

3 Using the plan of the catchment from the digital terrain map the conceptual subcatchment version of DISTFW with 10 subcatchments was calibrated to the simulated runoff event at the catchment outlet. Only one parameter was calibrated—the kinematic wave rate parameter; all other parameters are independent of whether the DTM or subcatchment version of DISTFW is used.

4 The subcatchment based model calibrated in 3 was then used to generate a 5 minute resolution runoff series for the catchment outlet from the 20 years of 30 minute pluviograph data for Jabiru.

5 Using the runoff data a time-series of the sediment yield from the catchment was then generated and averaged for each year. These results were then correlated to area and used as input to SIBERIA.

The key simplification in this process is in stage 3 which was required because to simulate the runoff data using the DTM rainfall-runoff model at 5 minute intervals would have required about 60 CPU hours per year on a high performance HP 710 workstation (about 3 times faster than a SUN SparcStation II workstation). The simplification of the runoff model did not significantly affect the accuracy and reduced the required computer time for the simulation of the 20 year runoff series to about 25 CPU minutes per year.

Figure 4.5 is a map based on the digital terrain map for the above-ground option. It shows the drainage network for the region including the engineered containment structure. The approximate boundary of the rehabilitated area is outlined on the map. The region selected for the hydrologic modeling is outlined on this figure. This region consists of 1773 nodes with area of 900 m^2 each for total catchment area of 1.6 km^2. The flow paths and the slopes were calculated by SIBERIA.

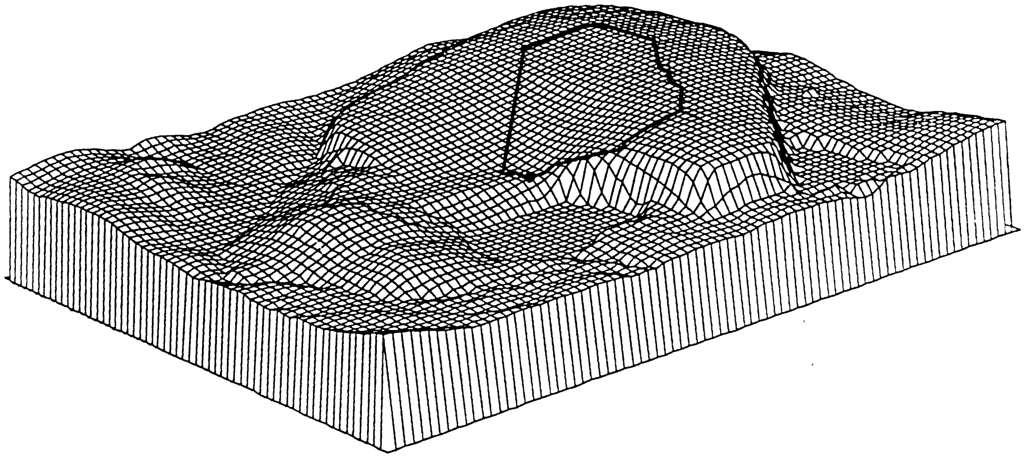


Figure 4.2 Perspective of the study catchment used for the hydrology study

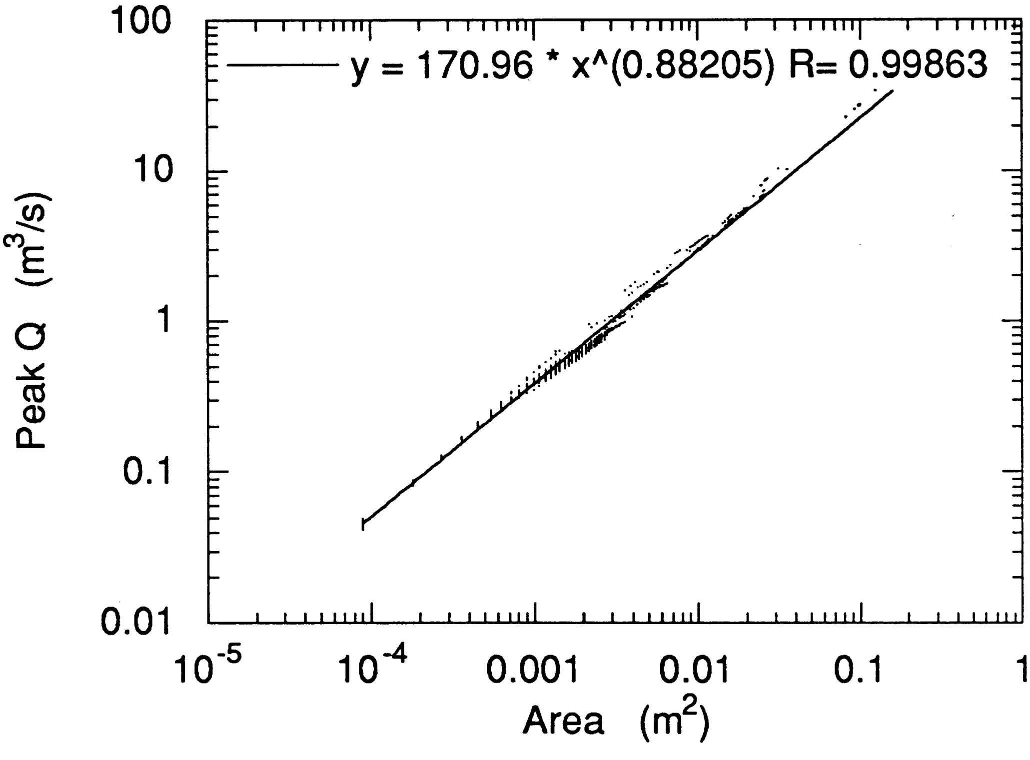


Figure 4.3 Discharge-area relationship for the 1 in 2 year storm for each node in the study catchment

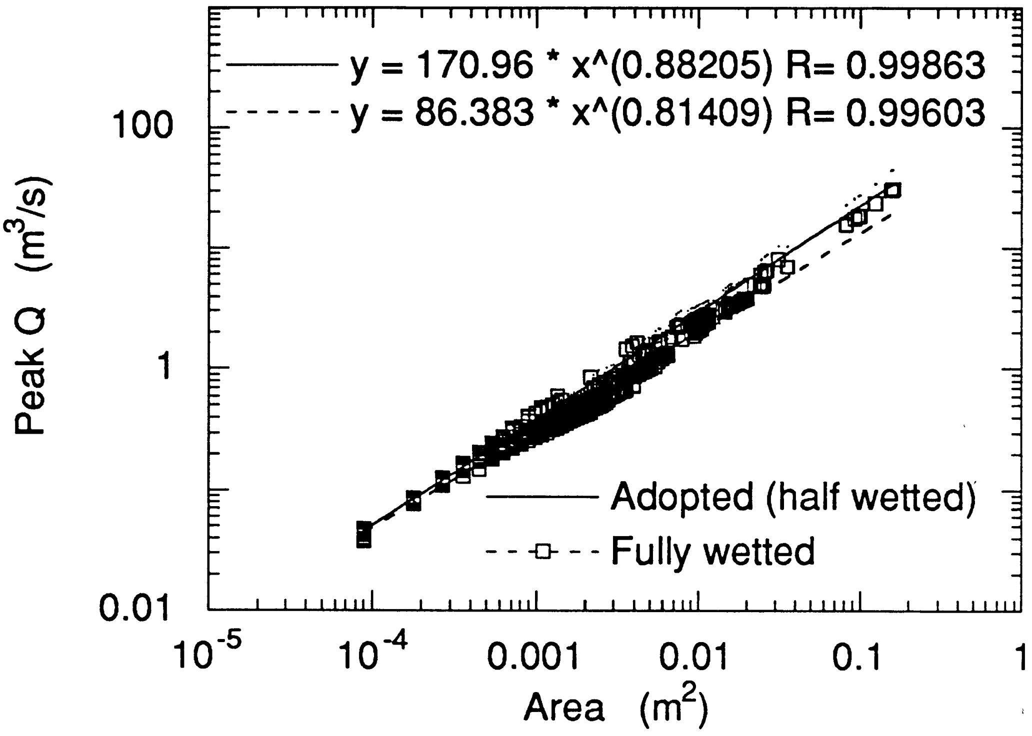


Figure 4.4 Sensitivity study on the discharge-area relationship for the 1 in 2 year storm for each node in the study catchment

The next stage was the calibration of the subcatchment model to the DTM model output. It was found on the work in the section 4.2 that the approximate time of concentration of the selected catchment was 60 minutes. The rainfall events that were collected and discussed as part of the calibration work (table 2.2) were examined and a storm that was close to the time of concentration was selected. The selected storm was the batter gauge on 21/1/91. The hydrograph from the catchment is shown in figure 4.6. The parameters used for this hydrograph are those for the adopted case used in the previous section with the exception of the sorptivity and the steady state infiltrations rate which were set to 0. The drainage paths within the catchment were then examined to select the 10 subcatchments for the subcatchment model. The selected subcatchments, together with the drainage pattern for the DTM model are shown in figure 4.5. As previously noted the only parameter that needed to be calibrated was the conveyance rate parameter, all others do not change (eg infiltration rates) from that in the DTM model. Figure 4.6 shows the satisfactory result of the calibration of the subcatchment model.

The final stage in the hydrology calculation was the simulation of the runoff time-series. For this ***eriss*** provided a pluviograph record for Jabiru at 30 minute resolution. This data series began in mid–1971 and ended in mid–1990. It is not possible to use the longer-term rainfall records at Darwin because it has significantly different rainfall statistics from Jabiru (Riley 1991). There is no evidence to suggest that the record at Jabiru is statistically different from that expected at the mine site. While individual storms may vary substantially from Jabiru to the mine-site, passing over one but not the other, it is the statistical characteristics of the rainfall and runoff series that are important in determining the mean runoff and sediment transport rates.

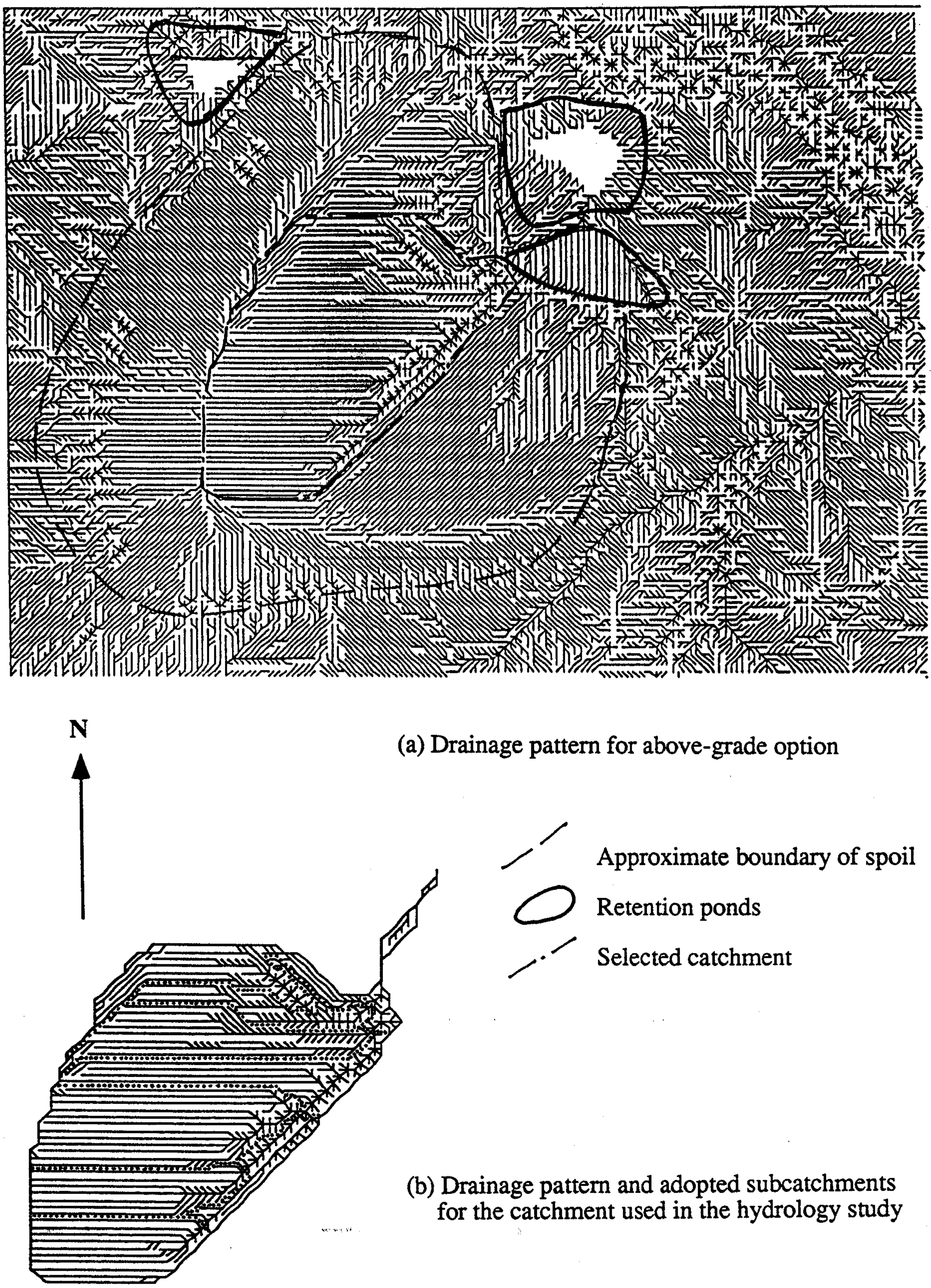


Figure 4.5 The drainage pattern of the study catchment used in the hydrology study

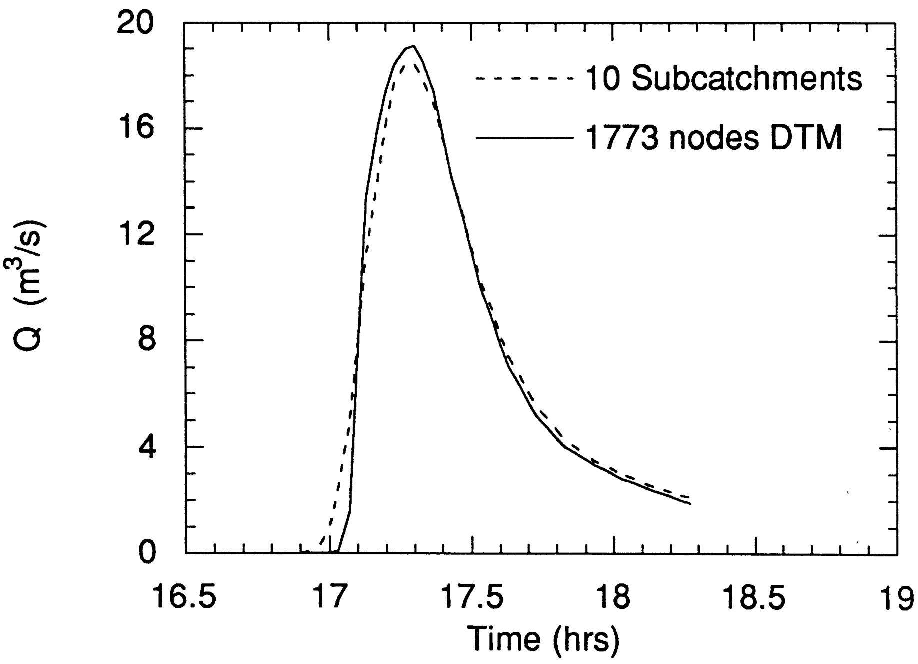


Figure 4.6 Calibration of the 10 subcatchment runoff model to the output of the 1773 node DTM runoff predictions for the event of 22/1/91

The Jabiru record is separated into two halves by a 3 year gap from 1980–1983. Data recovery from the early period was poor with substantial gaps in both the Dry and Wet seasons but data recovery is considerably better in the second half. It was necessary to simulate this runoff series at 5 minute intervals for almost 20 years of data. It was assumed that where rainfall data were missing during the Dry season rainfall did not occur.

Finally, this runoff series was used to simulate the erosion series. The adopted erosion model of equation 3.4.2 was used for this purpose. This erosion loss is considered to be indicative of losses that will occur from the cap of the engineered landform when it is in the unvegetated state. Losses from the batters are expected to be considerably higher because of the higher slopes. That there are higher losses on the batter compared with the caprock will be confirmed in the analysis of section 5.

4.4 Gully thresholds

One of the novel features of SIBERIA is its ability to model the dynamic development of gullies in response to hydrologic and erosional characteristics of the surface. Using a user-defined threshold, a gully occurs when that threshold is exceeded by a function called the channel initiation function (CIF). This CIF is a function of the hydrology upstream of the gully head. This hydrology is, in turn, a function of upslope area and slope. The CIF can be a function of the velocity of the overland flow, the shear stress of the overland flow, or, in areas dominated by groundwater flow, various functions of the groundwater head gradient. Most importantly, these functions are positively correlated with runoff and rainfall, area upstream of the gully head and the slope at the gully head (Willgoose et al 1989). Everything else being equal increases in rainfall, runoff, area and slope increase the tendency for a gully to erode at any given point in a catchment. This threshold behaviour based on area, slope and runoff has been widely observed in natural catchments (Patton & Schumm 1975, Montgomery & Dietrich 1988). At this time there is some inconclusive data for mine spoils (eg Elliott 1988) but the natural data suggest that similar mechanisms will occur in mine rehabilitation sites.

SIBERIA requires that this area-slope-runoff relation be determined *a priori* from field data and used as input parameters to the model. Once a gully is triggered, by exceeding the channel initiation threshold, the excavation of that channel proceeds using the sediment transport physics calibrated in section 3 of this report.

No data exist for the RUM rehabilitation site at this stage to allow the calibration of such a relationship. However, Williams and Riley (1992) have examined a natural area (Tin Camp Creek) derived from similar geologic material, schists. These data could be expected to be *reasonably indicative* of gullying behaviour of the mine site at some time in the future when the spoil site has developed a natural soil profile. However, without matching hydrologic data any conclusions on gully development on RUM must be made with extreme caution. Since the soils at both sites will be largely derived from the fast weathering schists in the outcropping rocks then it is likely that the soil profile will be similar. The main difference between the sites is that Tin Camp Creek is underlain at a relatively shallow depth by bed rock while the waste rock dump is not. This may affect the hydrology (and through it the channel initiation behaviour). The shape and size of the gullies will probably be only slightly different because it appears that most of the gullies at Tin Camp Creek do not excavate down to bedrock and where they do the bedrock is heavily weathered and friable; gully depth at Tin Camp Creek is not constrained by bedrock levels.

The form of the channel initiation function, $\boldsymbol{a}$, and its threshold, $\boldsymbol{a}_t$, used by SIBERIA is

$$\boldsymbol{a} = \beta_5\, \boldsymbol{q}^{m_5}\, \boldsymbol{S}^{n_5} \lesseqgtr \boldsymbol{a}_t \tag{4.4.1}$$

This function is both consistent with field data (Willgoose et al 1990) and justified from theoretical considerations (Willgoose et al 1989, Dietrich pers comm). If the discharge-area-slope relation of equation 1.3.3 ($\boldsymbol{q} = \beta_3 \boldsymbol{A}^{m_3} \boldsymbol{S}^{n_3}$) is adopted, then this relation can be re-expressed as

$$\boldsymbol{a} = \beta_5\, \boldsymbol{A}^{m_5} \boldsymbol{S}^{n_5} \lesseqgtr \boldsymbol{a}_t \tag{4.4.2}$$

where the primed variables are functions of the parameters of the CIF and the discharge relationships. Williams and Riley (1992) used discriminant analysis to identify two relationships, each with a threshold, that defined the transition from ungullied to knickpoint, and from knickpoint to gullied. The general form of their recommended relationship was of the form

$$\boldsymbol{a} = \beta_6 + \boldsymbol{AS} + l \lesseqgtr \boldsymbol{a}_t \tag{4.4.3}$$

where l was the slope length, which can be considered a surrogate of area (ie $l \sim A^{1/2}$). For this study it was necessary to reinterpret their data to develop a relationship of the form of equation 4.4.2.

Discriminant analysis (Mosteller & Tukey 1977) was used to identify the threshold between gully and ungullied. For this purpose, those points that were ungullied were given a discriminant value of 1, knickpoint 2, and gullied 3. A knickpoint is a gully head. At a gully head the channel initiation function equals the threshold (if it were less than the threshold then it would not be a gully, if it were greater than the threshold then it would not be the gully head—some point upstream with less area would be). Thus the line with discriminant value 2 defines the threshold between gullied and ungullied. The data analysis is plotted in figure 4.7 and the resulting channel initiation function is given as

$$\boldsymbol{a} = \boldsymbol{A}^{2.27} \boldsymbol{S} \lesseqgtr 23.6 \text{ x } 10^6 \tag{4.4.4}$$

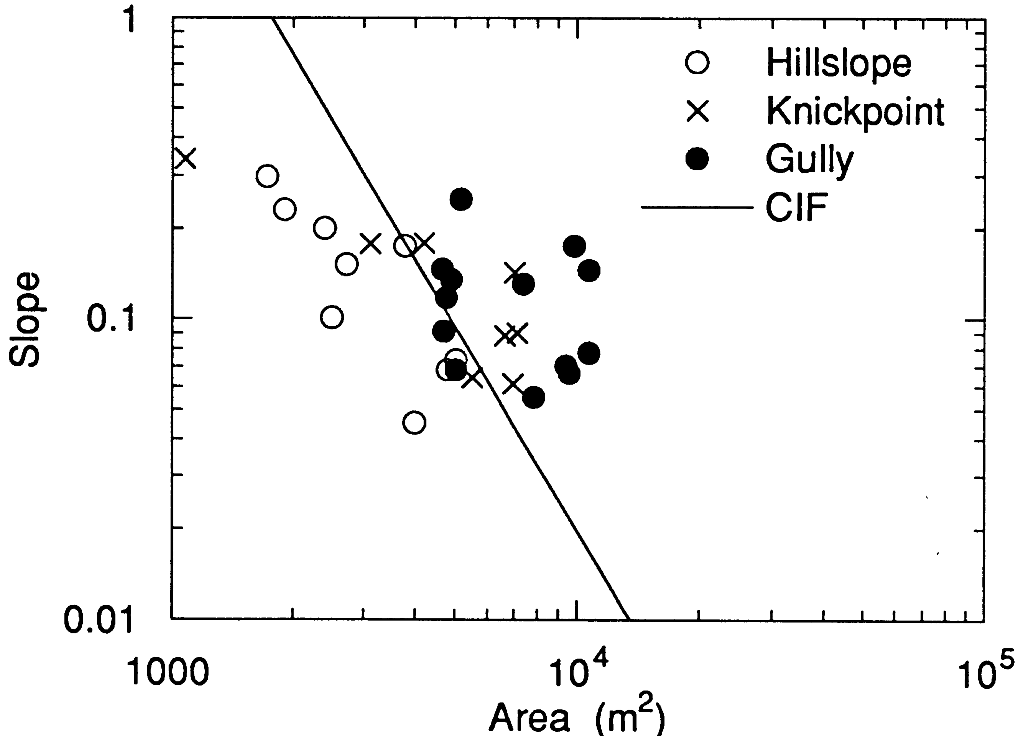


Figure 4.7 Adopted threshold for distinguishing gully from hillslope (data from Williams & Riley 1992)

The power on area in the above expression is in the range of values that have been observed for natural catchments and within the range of values predicted from theory. For a slope of 0.15 (approximately that of the waste rock batters) it predicts an area of about 4000 m^2 which for a planar slope is a slope length of about 65 m. For a slope of 0.02 (approximately that of the waste rock cap) it predicts an area of about 10 000 m^2 which for a planar slope is a slope length of about 100 m. It appears that the discriminating power of equation 4.4.4 and that of Williams and Riley (1992) are similar.

5 Assessment of proposed RUM landforms

5.1 Overview

The relationships that have been developed in the preceding sections were used to determine the parameters to be used by SIBERIA for the assessment of the various cases to be studied in this project. Two potential baseline designs were examined for the extent and location of erosion and deposition at the end of the design lifetime of 1000 years. They were the so-called above-grade and below-grade options as proposed by RUM where the tailings were stored above-grade and below-grade in a mine-pit, respectively.

A number of sensitivity studies have been carried out to assess the reliability of the predictions for the baseline above- and below-grade options.

Most importantly, the effect of settlement of the landform was examined. Richards (1987) believes that settlements of up to 1 m can be expected, randomly distributed in space. Random fluctuations on the initial elevations were imposed and the effect on the erosion was examined.

The gully threshold information from Tin Camp Creek is used to predict the extent of the gully erosion that will occur. The effect of gully erosion is to incise a localised gully into the surface so that the maximum depth of erosion is the depth of erosion determined in the baseline case plus the depth of gully incision.

The issue of greenhouse warming is discussed and its potential effect, through changes in rainfall, on the rate of erosion. Upper bound estimates are provided for infiltration which may assist in revegetation studies.

5.2 Above-grade option – baseline case

The above-grade option was run for the equivalent of 1000 years using the parameters calibrated in the previous sections. Perspectives of the waste rock dump are for the as-constructed year zero condition and for the 500 and 1000 year cases (fig 5.1 & 5.2). The grid used in this figure is a 60 m grid, ie since the calculations were done on a 30 m grid only every second elevation value is plotted. This was done to simplify the interpretation though inevitably some detail, particularly of the narrower valleys, is lost. While the differences in the surfaces for 0 and 1000 years may appear to be small, it must be remembered that the waste rock dump is almost 20 m high. The maximum valley depth is 7.7 m with the maximum deposition being 6.1 m. Note that while these valleys appear to be deeply incised in the figures this is simply a function of the vertical exaggeration of the figures. Even for the maximum depth of 7 m over the 30 grid resolution means that valley side slopes are still only 0.2, much less than for typical incised gullies.

Figure 5.1 also shows elevations at 500 years. Maximum erosion depth at 500 years is 5.7 m, 74% of the maximum 1000 year erosion. This indicates that incision of the valley proceeds very rapidly in early years. It is apparent from figure 5.1 that incision occurs most rapidly and that the extension of the developing valley network (triggered by the incision) occurs more uniformly over the 1000 year design period.

A plot of the initial elevations minus the 1000 year elevations (erosion positive upwards, deposition negative) is shown in figure 5.3. It is apparent from this figure that the maximum erosion occurs in the centrally draining part of the waste rock dump in three valleys that dissect the central plateau. Most of the eroded material from these areas appears to be deposited in the pit that the central area drains to. SIBERIA is currently limited in its capability to analyse deposition in dams so that interpretation of deposition in dams is particularly prone to errors. Note that the rate of erosion over most of the central spoil, outside of the gullies, is quite low and mostly less than 500 mm.

There is also significant erosion along the outside batters in the range of about 3–7 m. It fact, it is almost possible to define the extent of the waste rock dump from the peaks of gully development around the outside of the batters. Figure 5.3 plots the deposition and suggests that most of this eroded material is deposited in the region within about 100–200 m of the batter. The depth of deposition in those regions near the batter is approximately 5 m.

5.3 Above-grade option – effect of settlement

To assess the potential effect of settlements on the form of the erosion and the potential position of the valleys formed in the study of the baseline case some simulations were carried out where the initial elevations were randomly perturbed by 0 to -1 m. Because the settlement will occur randomly over the waste rock dump, the random application of settlement provides a sensitivity study of the potential location of valley and gully development. Two simulations were carried out and the final surfaces of the two realisations are plotted in figure 5.4. Maximum depths of erosion are 7.8 m and 8.5 m respectively—not significantly different from the 7.7 m depth predicted for the baseline case.

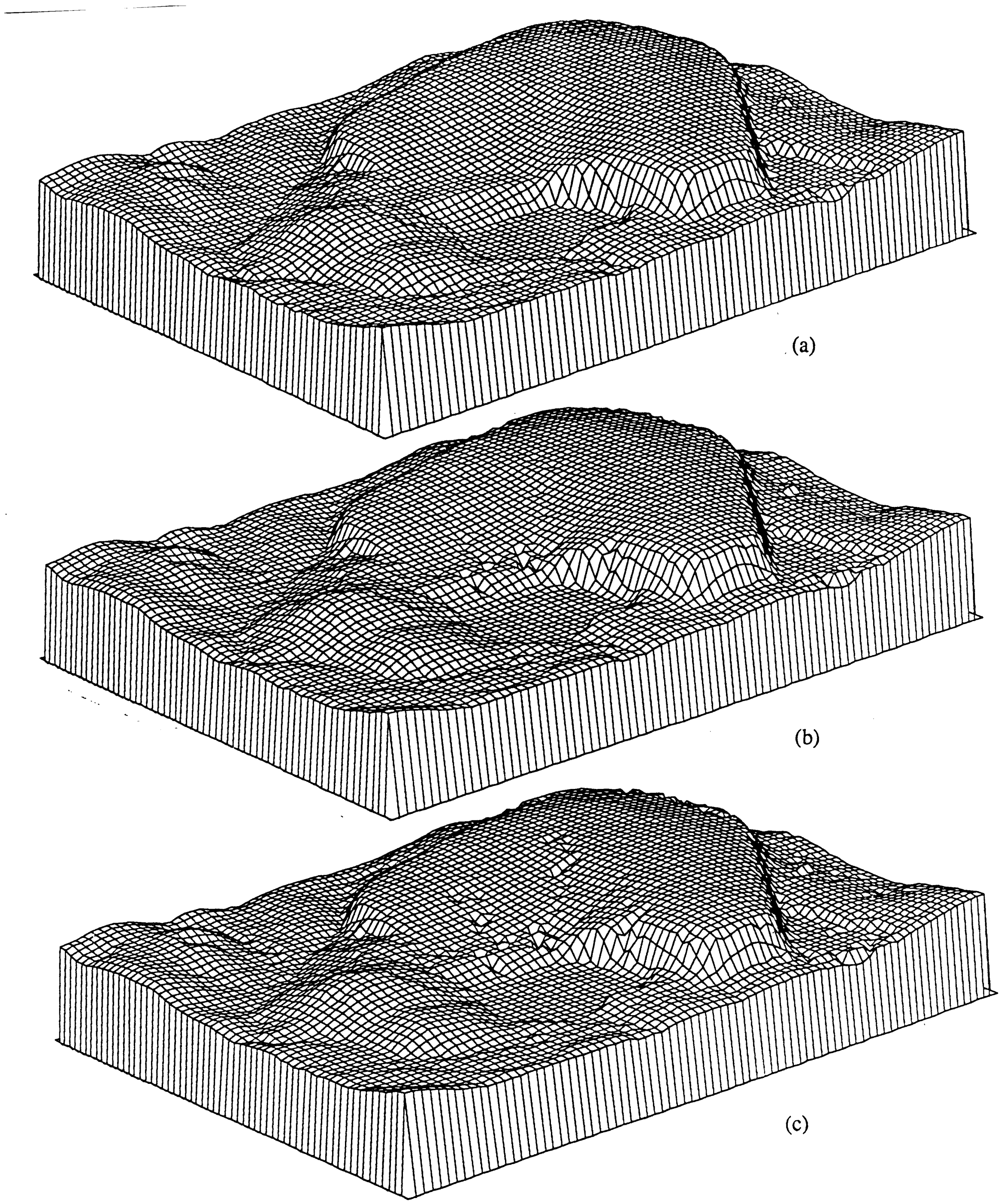
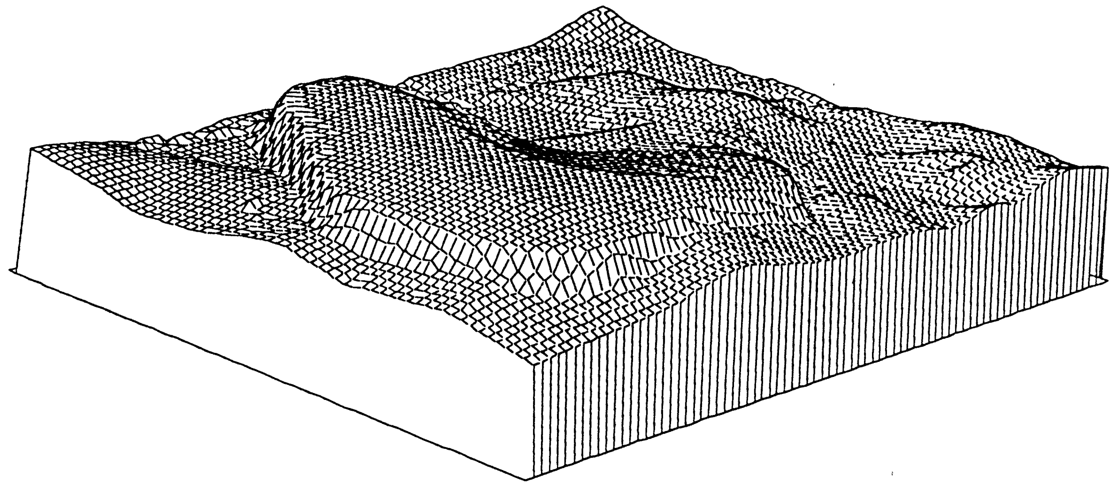
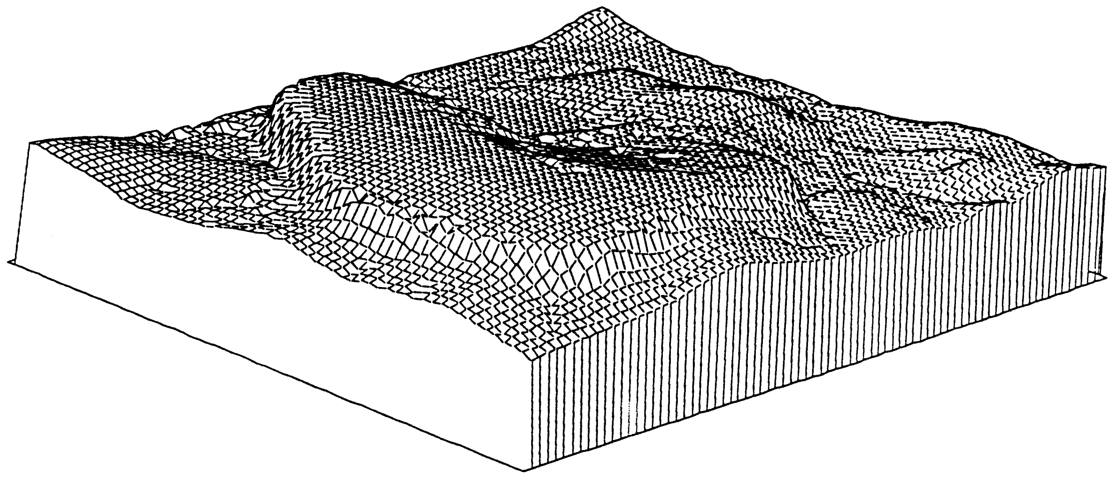


Figure 5.1 Above-grade option, baseline case: Elevations at (a) 0, (b) 500, (c) 1000 year viewed from the NE

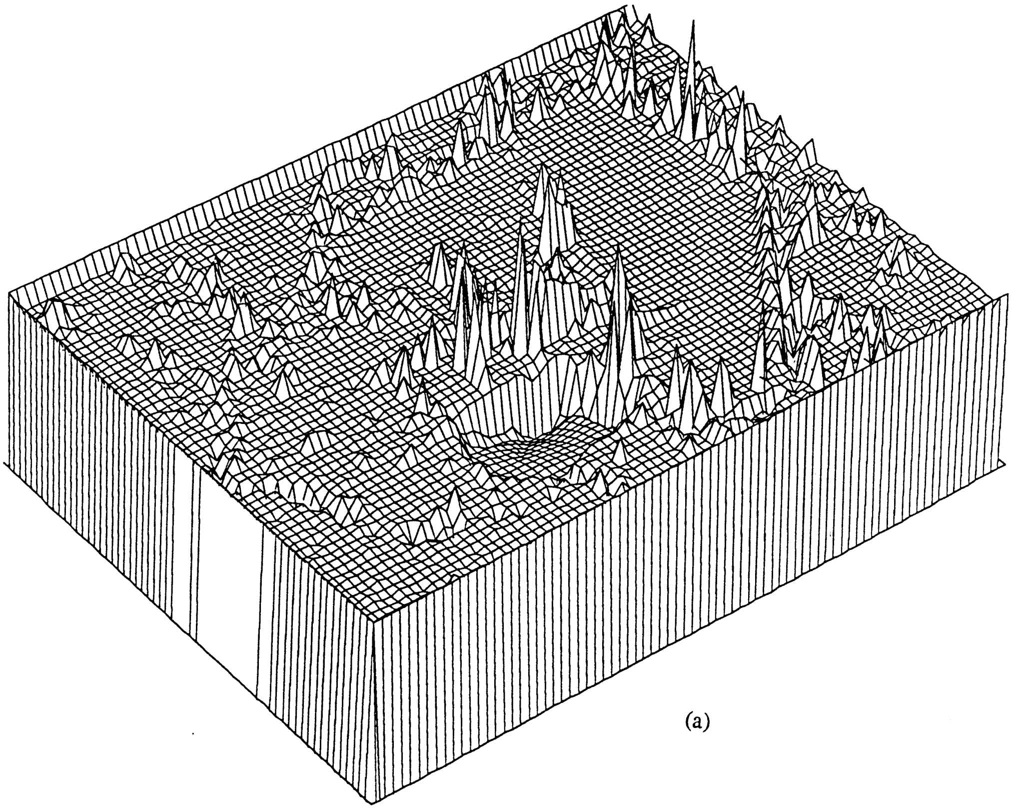


(a)

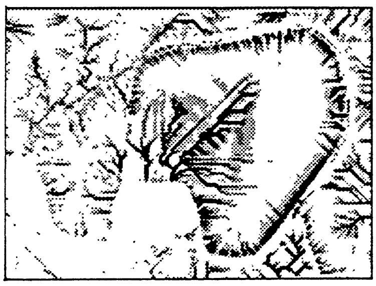


(b)

Figure 5.2 Above-grade option, baseline case: Elevations at (a) 0, (b) 1000 year viewed from the SW



(a)



(b) Contours of erosion with 0m = white to ≥ 1m = black

Figure 5.3 Above-grade option, baseline case: Erosion (upwards) and deposition at 1000 years

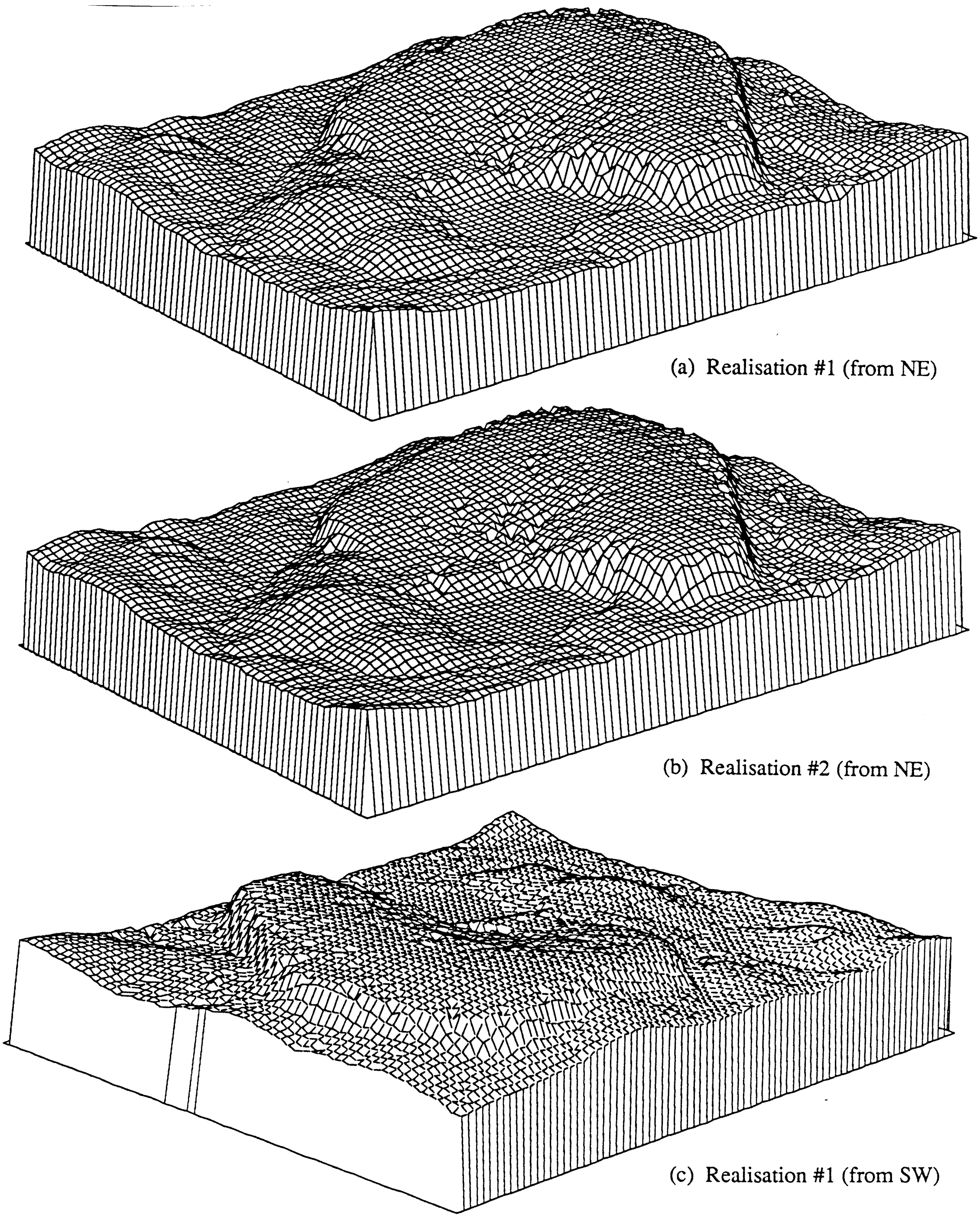


Figure 5.4 Above-grade option, with-random settlements cases: Elevations at 1000 years

Valley formation is much more widespread on the cap than it was under the baseline case. With careful inspection similarities in the valley patterns for the baseline case and the perturbed cases can be seen. The general areas where the valleys occur are the same in both cases—there is simply more widespread gullying in the with-settlement case.

On the batters there is also a significant change in the behaviour of the erosion when random settlement is allowed. Very significant and deep isolated valleys are formed in the with-settlement case, particularly on the north-western boundary. In the baseline case the erosion, though high, does not create the deep valleys that are apparent on the northwestern edge of the waste rock dump. Figure 5.4c shows a comparison of the extent of valley formation on the SW batters for the with- and without-settlement cases.

Figure 5.5 shows the spatial distribution of the erosion for the first of the with-settlement realisations. The most obvious difference with the baseline case (fig 5.3) is the widespread random background erosion of about 1 m. This is a direct consequence of the eroding and filling of the 1 m pits and hollows created by settlement. More detailed comparison shows that the regions of high erosion in the baseline case are maintained in the with-settlement case. As is observed in the elevation maps the high points of erosion are also more widespread.

The reason for the changes in behaviour on the caprock layer is very simple and has been observed in other situations. The baseline case is very initially smooth with the initial flow patterns consisting of long parallel flow paths (see for instance fig 4.5). The occurrence of the pits in the surface that result from settlement result in convergence of flow and the flow concentrates more readily. Flow is no longer uniformly spread over the surface but tends to flow along preferential flow paths. When flow concentrates in this way enhanced erosion occurs and valleys are more easily formed because velocities and shear stresses are increased. The first author's experience is that valley formation will inevitably occur in both cases; in the with-settlement case initial valley formation occurs somewhat earlier than in the smoother baseline case. Note that this flow concentration behaviour can result not only from settlement but has been observed to occur in the field as a result from any sort of perturbation that runs downslope (eg dozer tracks; Toy & Hadley 1987).

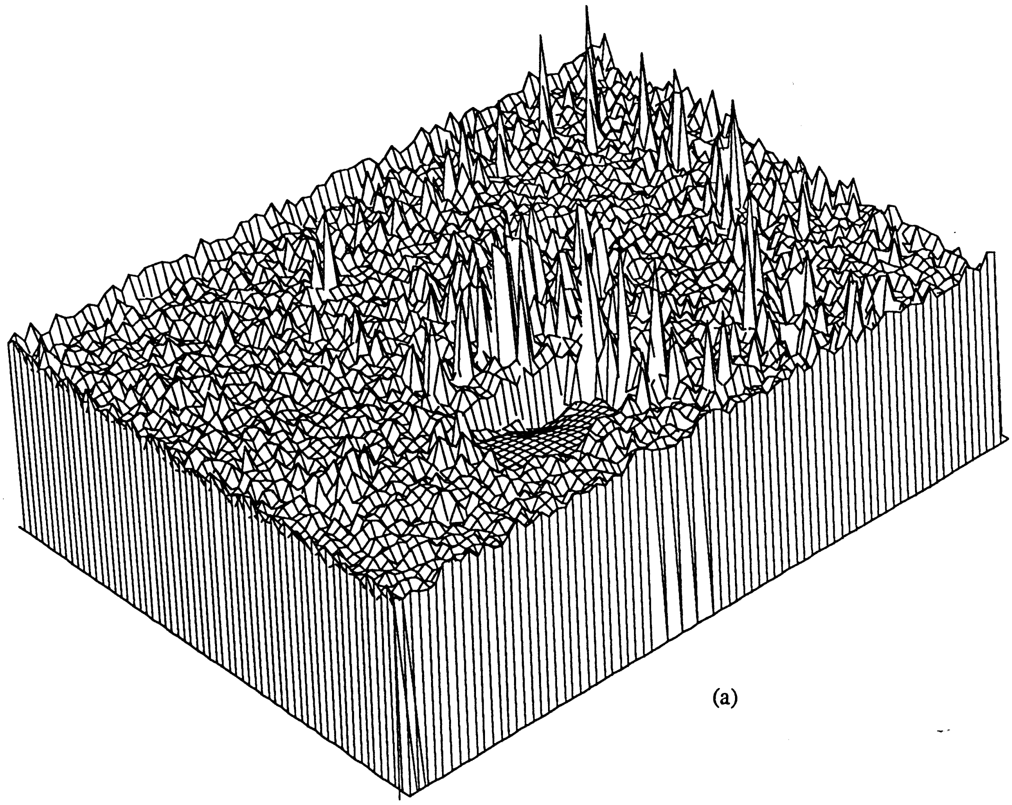
5.4 Above-grade option – with gullies

In this sensitivity study the potential for gully erosion, over and above the sheet erosion already discussed in the sections above, is examined for the above-grade case. The gully erosion threshold (called the CIF threshold) observed by Williams and Riley (1992) at Tin Camp Creek (discussed in section 4.4) is used to define the upper limits of gully erosion on the waste rock dump. In the absence of information of the sediment transport in the gullies at Tin Camp Creek, the sediment transport rate in the gullies is assumed to be equal to that on the hillslopes (eg SIBERIA's parameter O_t=1). The sensitivity of the gully development to the random settlements is also examined, particularly how the position of gullies change with the imposition of settlements. Here we do not predict the depth of gully development (that would require further data from studies at Tin Camp Creek), however, the gully incision can be simply added to the depths of sheet erosion discussed above; the two depths of erosion are believed to be largely independent over geomorphic timescales.

Figure 5.6 shows the gully positions for the baseline case at 1000 years. Figure 5.6a shows the gullies superimposed on a contour map of the site and figure 5.6b shows them superimposed on a map showing areas where slopes are greater than 0.04.

The gullies extend quite some distance into the central caprock area fanning out to fill the lower regions of the caprock. They do not extend all the way to the drainage divide on the caprock because there the contributing area and slopes are too low to trigger gully development. The gully development on the batters is largely constrained to the batters themselves although some do extend onto the caprock for a short distance in the south-west corner.

That most gullies stop at the top of the batters is not surprising since the slopes abruptly decrease at this point and on the caprock the CIF threshold in equation 4.4.4 is no longer exceeded. The extension onto the caprock in the south-west corner of the batter is possible because of the longer slope lengths on the caprock contributing to the batter at that point. However, even for those regions where gullies do not extend onto the caprock in 1000 years it is likely that for longer times they will as valleys incise and slopes near the divide increase.



(a)

(b) Contours of erosion with 0m = white to ≥ 1m = black

Figure 5.5 Above-grade option, with-random settlements cases: Erosion (upwards) and deposition at 1000 years

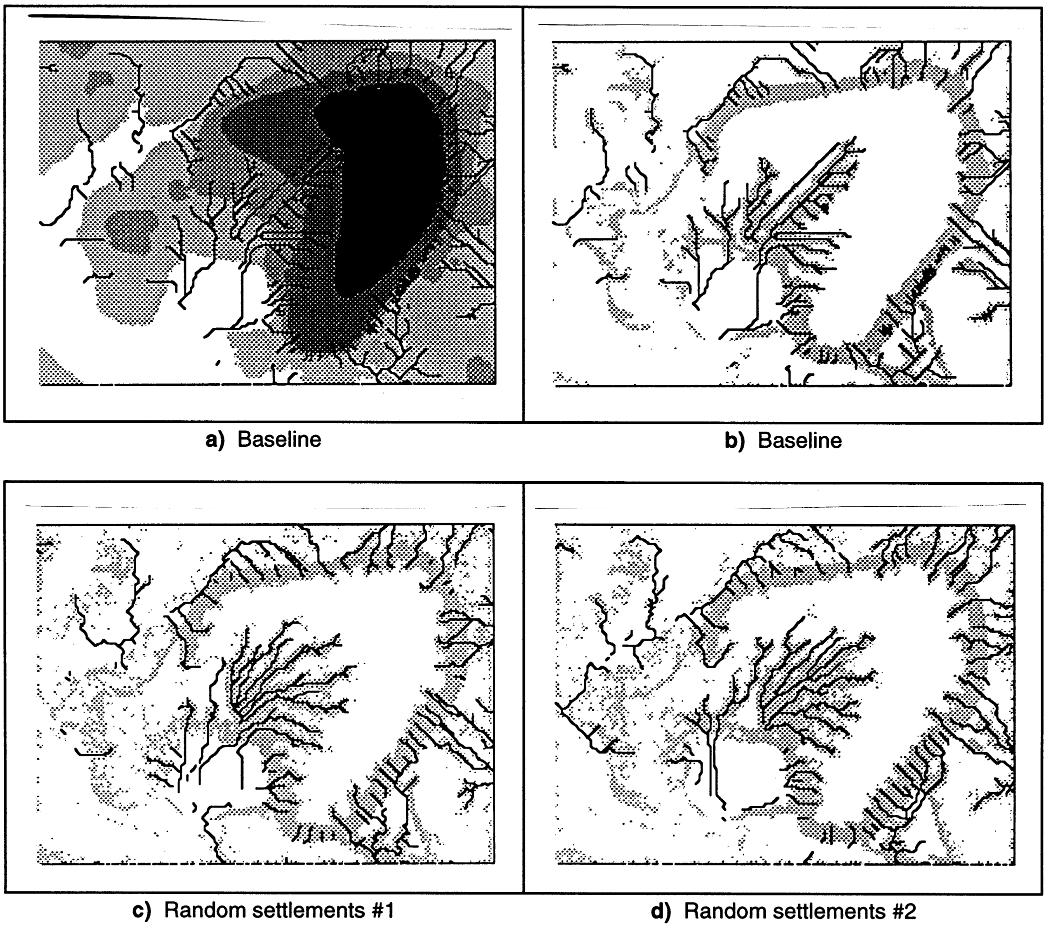


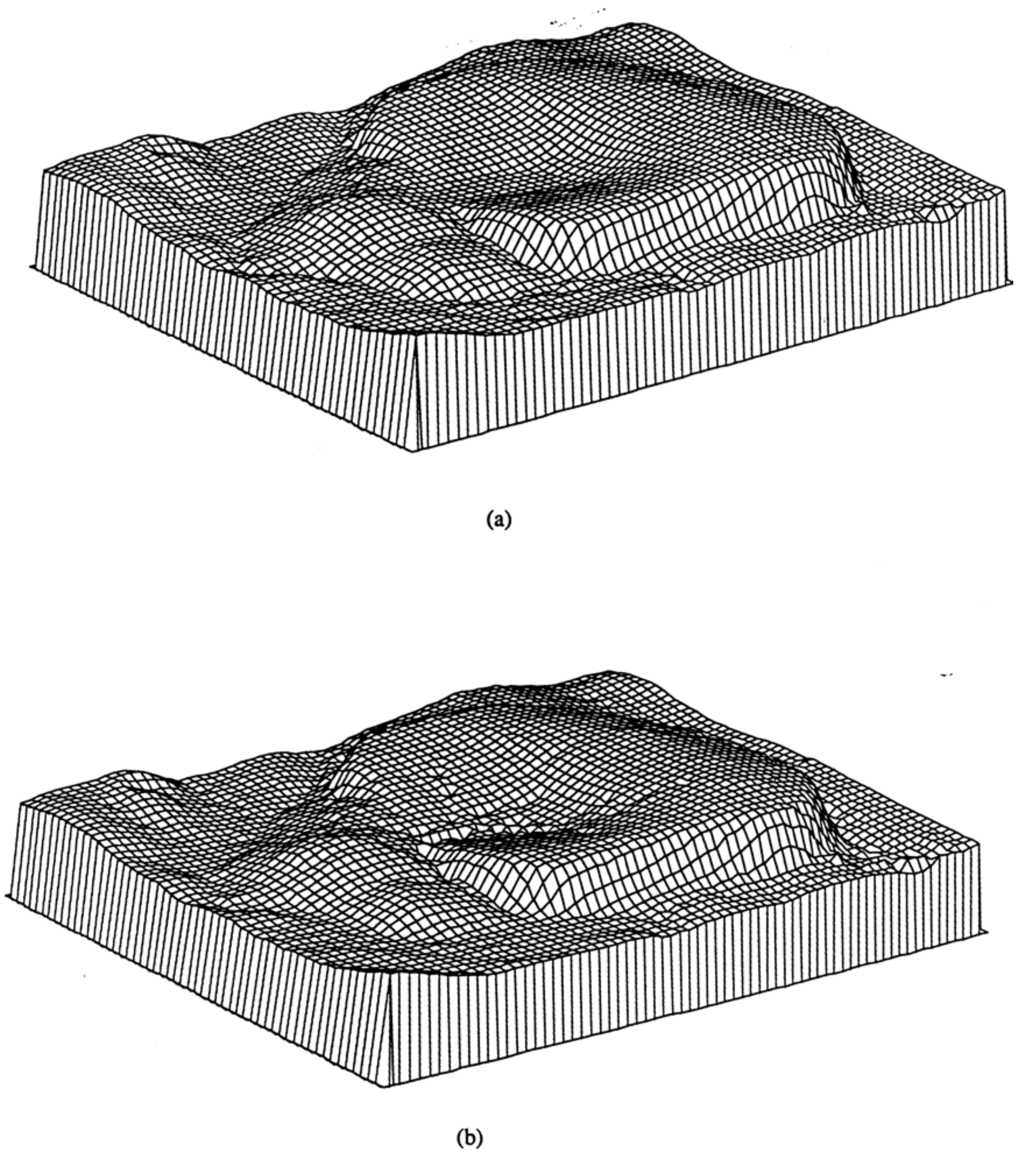
Figure 5.6 Above-grade option, baseline and with-settlement cases: Preliminary estimates of gully development on the rehabilitation at 1000 years, overlaid on (a) elevations, (b), (c), (d) slopes greater than 0.05

Figure 5.6c,d shows the gully development for the two with-settlement cases discussed above. Most important is that the exact gully positions are different in both the with-settlement realisations, and that they are different from those in the baseline case. This is a result of the random fluctuations on the drainage pattern imposed by the settlements and is a direct result of a lack of imposed valley and drainage pattern in the baseline case. Despite these differences in the exact gully positions it can be clearly seen that all the figures show similarities in their average, overall, behaviour. Gullies are heavily concentrated in the central part of the caprock layer and they all terminate at about the same distance up the caprock layer. On the batters the gullies mostly stop at the batter top except in the south-west corner where once again gullies incise upstream onto the caprock upstream of the caprock layer. It is apparent that the gullies in the with-settlement case have advanced into the caprock more than in the baseline case, reflecting the increased erosion observed in the with-settlement case.

In all cases the drainage density of the gully development is about the same suggesting that settlements do not have a significant effect on the extent of gullying, only the location.

5.5 Below-grade option – baseline case

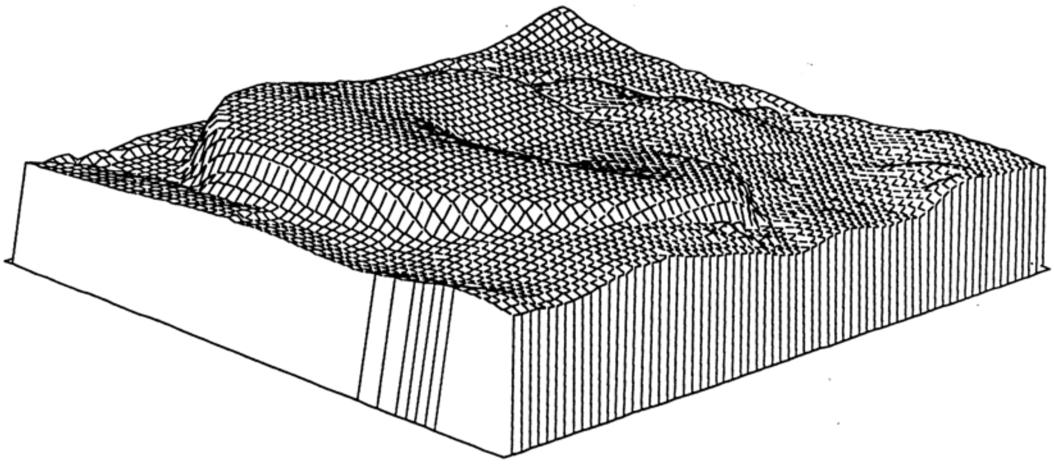
The below-grade option was run for the equivalent of 1000 years using the parameters calibrated in the previous sections. The procedure used was identical to that used in section 5.2 above for the above-grade option. Perspectives of the waste rock dump are for the as constructed year zero condition and for the 1000 year case in figures 5.7 and 5.8. As for section 5.2 these data are plotted on a 60 m grid though all erosion calculations were done on a 30 m grid.



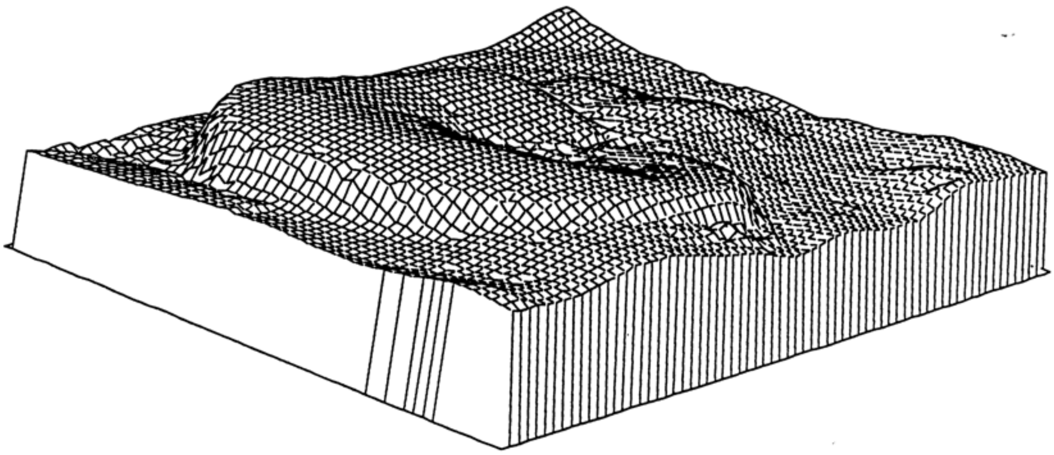
(a)

(b)

Figure 5.7 Below-grade option, baseline case: Elevations at (a) 0, (b) 1000 year viewed from the NE



(a)



(b)

Figure 5.8 Below-grade option, baseline case: Elevations at (a) 0, (b) 1000 year viewed from the SW

The maximum depth of valley formation is 5.75 m and the maximum depth of deposition is 3.1 m. The maximum valley depths for the below-grade option are approximately 75% of those for the above-grade option. This reflects the smaller area draining to the central area and consequently the lower rate of erosion. The lower depths of deposition also reflect the lower rates of erosion.

In the centrally draining caprock region there are deep valleys forming in a similar fashion to those that occur in the above-ground case. These valleys radiate out in all directions from the dam in the centre of the caprock region. Note that these valleys propagate upwards from the gully that is formed by the intersection of the batters and the natural landscape on the north-east edge of the rehabilitation. The valley with maximum depth occurs in the central part of the rehabilitation and extends downstream in a northerly direction along the intersection of the NE batter and the natural surface. It thus seems likely that the dam that is proposed for the centrally draining area may be breached at some stage in the future by this valley propagating southwards along the NE batter bottom.

As in the above-grade option there is substantial erosion occurring along the batters on the northern, western and southern sides (fig 5.9). The peak erosion rates (about 3–4 m) occur on the western batter. The reason for this is similar to the reason for the severe batter erosion in the above-grade case. The 250 m slope length that flows west contributes flow to the batter tops so that erosion on the batters is enhanced. Again, as in the above-grade case, the uniformity of the erosion along the western edge means that structural protection works would be required for the complete length of the batter top. As in the above-grade case the deposition of the sediment eroded on the batters mostly occurs within 100–200 m downstream of the batters.

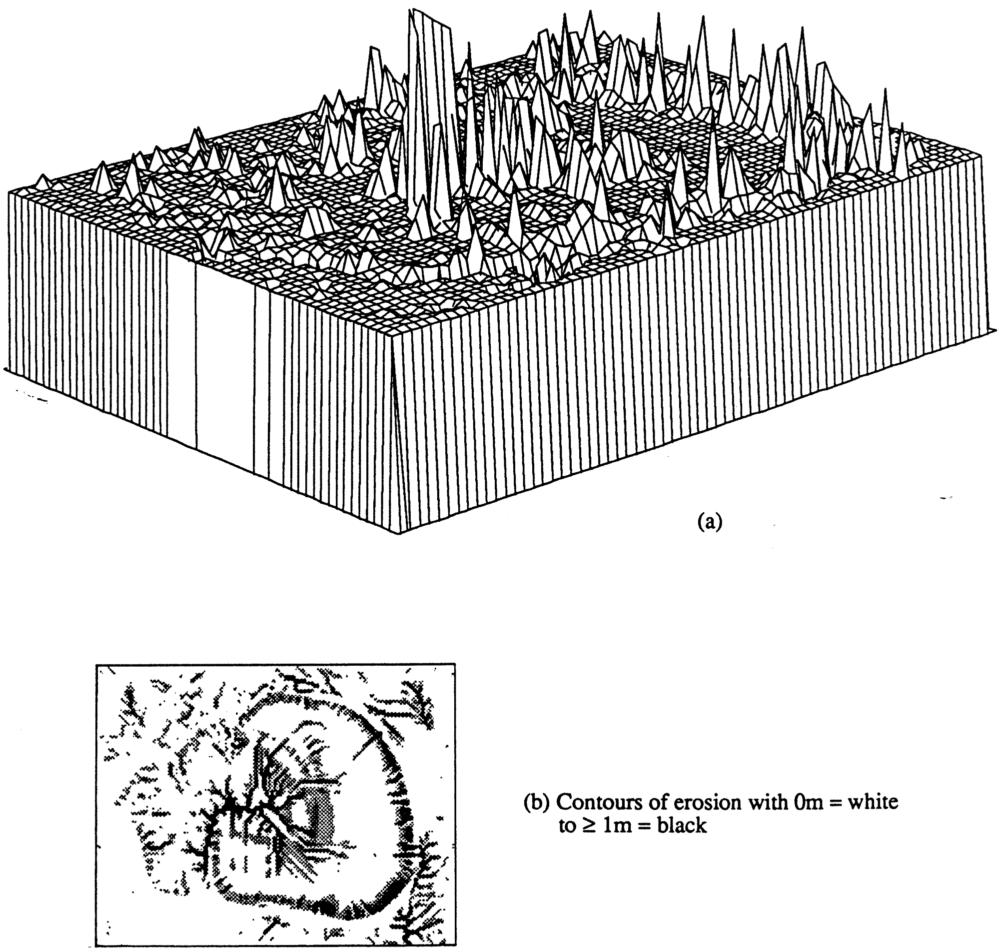
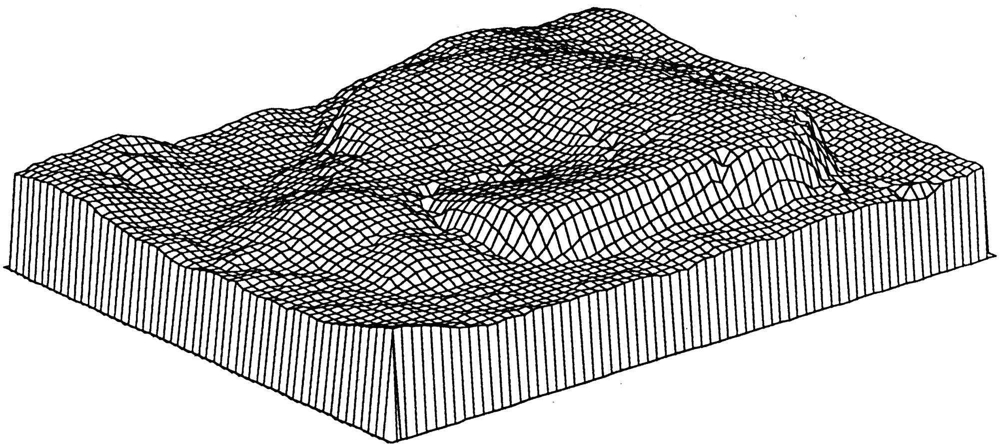


Figure 5.9 Below-grade option, baseline case: Erosion (upwards) and deposition at 1000 years

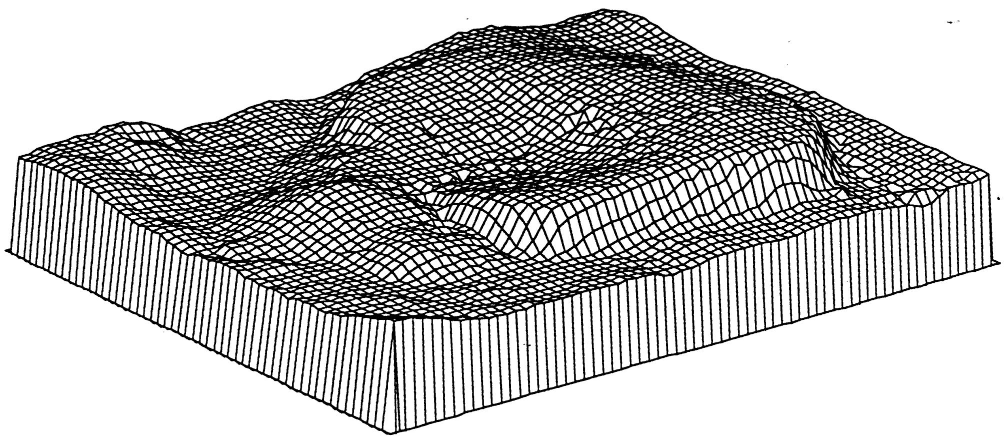
The drainage density of the gully development for the below-grade option is about 15% less than that for the above grade option. That is, the total length of gullies/unit area in the below-grade case is 15% less than that in the above-grade case. This reduced gully development appears to be mainly a result of reduced gully development on the batters, which directly reflects the shorter hillslope lengths on the caprock contributing to the tops of the batters.

5.6 Below-grade option – effect of settlement

As in the above-grade case the sensitivity of the erosion pattern to random settlement effects was examined. The same procedure as for the above-grade was adopted and the erosion pattern simulated for 1000 years. Figures 5.10 and 5.11 shows the design landform subject to an initial 1 m random settlement at 1000 years. The maximum depths of erosion are 7.9 m and 6.1 m respectively—significantly higher than the 5.8 m observed in the baseline case.



(a) Realisation #1

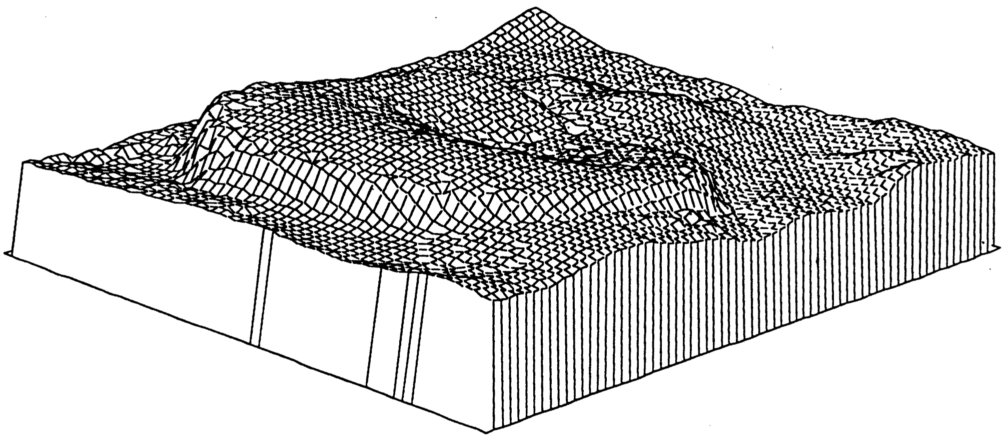


(b) Realisation #2

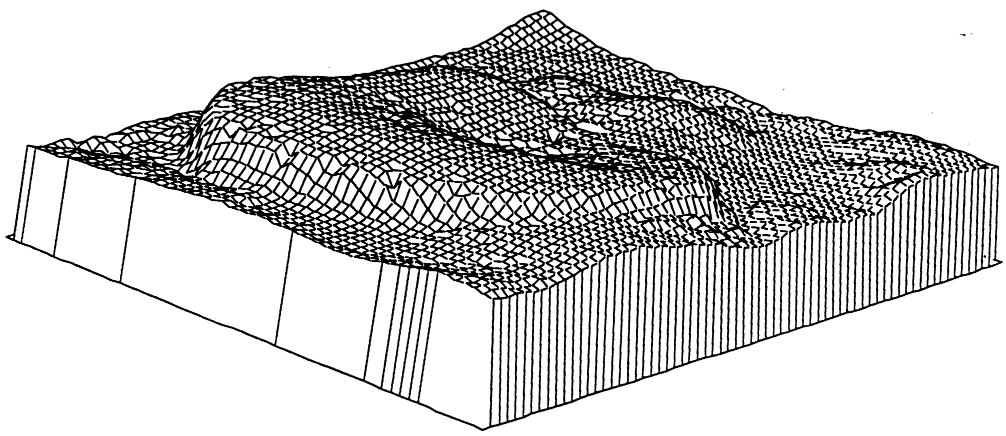
Figure 5.10 Below-grade option, with-random settlements cases: Elevations at 1000 years viewed from the NE

As for the above-grade with-settlement case the valley formation that occurs for the below-grade with-settlement case is more widespread than without settlement but the general region of valley formation is similar to the case of no settlement.

On the batters there is more widespread valley formation for the with-settlement case than the baseline case. As in the above-grade case this is a result of the convergence of flow on the caprock that the settlement triggers, which in turn concentrates the flow and erosion enhancing the valley formation process. Figure 5.11 shows the extent of valley formation on the batters for the with-settlement which can be compared with for the without-settlement baseline case (fig 5.8).



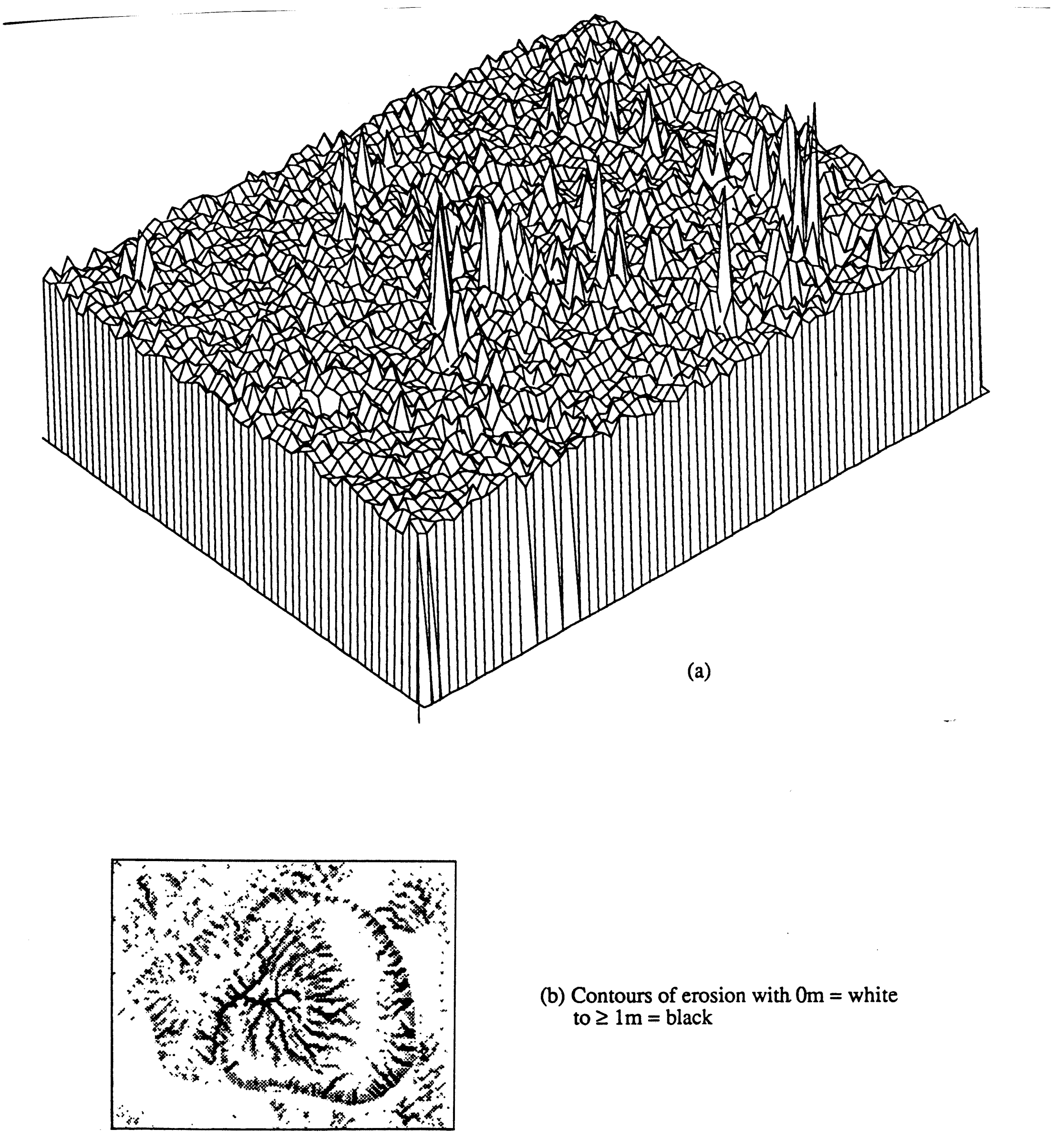
(a) Realisation #1



(b) Realisation #2

Figure 5.11 Below-grade option, with-random settlements cases: Elevations at 1000 years viewed from the SW

Figure 5.12 shows the spatial distribution of the erosion for the first of the with-settlement realisations. The results here are qualitatively very similar to those observed for the above-grade case. Again the most obvious difference with the erosion for the baseline case (fig 5.9) is the widespread random background erosion of about 1 m. As in the above-grade case the regions of high erosion in the baseline case are maintained in the with-settlement case. The high points of erosion are also more widespread.



(a)

(b) Contours of erosion with 0m = white to ≥ 1m = black

Figure 5.12 Below-grade option, with-random settlements cases: Erosion (upwards) and deposition at 1000 years

5.7 Below-grade option – with gullies

In this sensitivity study the potential for gully erosion, over and above the sheet erosion already discussed in the sections above, is examined for the above-grade case. The gully erosion threshold (called the CIF threshold) observed by Williams and Riley (1992) at Tin Camp Creek (discussed in section 4.4) is used to define the upper limits of gully erosion on the waste rock dump. In the absence of information of the sediment transport in the gullies at Tin Camp Creek the sediment transport rate in the gullies is assumed to be equal to that on the hillslopes. The sensitivity of the gully development to the random settlements is also examined, particularly how the position of gullies change with the imposition of settlements. Here we do not predict the depth of gully development (that would require further data from studies at Tin Camp Creek), however, the gully incision can be simply added to the depths of sheet erosion discussed above; the two depths of erosion are believed to be largely independent over geomorphic timescales.

Figure 5.13a,b shows the gully positions for the below-grade baseline case at 1000 years. Figure 5.13a shows the gullies superimposed on a contour map of the site and 5.13b shows them superimposed on a map showing areas where slopes are greater than 0.04. The gullies extend quite some distance into the central caprock area fanning out to fill the lower regions of the caprock. They do not extend all the way to the drainage divide on the caprock because there the contributing area and slopes are too low to trigger gully development. The gully development on the batters is largely constrained to the batters themselves. Unlike the above-grade case no gullies extend onto the caprock region upstream of the batters, reflecting the shorter hillslopes upstream of the batters. As in the above-grade case, however, it is likely that for times greater than 1000 years, as the slopes at the top of the batter-caprock intersection begin to round, that the gullies will extend into the caprock region. The shorter slope lengths in the below-grade case mean that this extension will not occur as quickly as in the above-grade case.

Figure 5.13c,d shows the gully development for the two with-settlement cases discussed above. As in the above-grade case, the exact gully positions are different from those of the baseline case. This is a result of the random fluctuations on the drainage patterns imposed by the settlements and is a direct result of the lack of an imposed valley and drainage pattern in the baseline case. Despite these differences in the exact gully positions it can be seen that the average, overall, position of gullies is similar in all cases. Gullies are heavily concentrated in the central part of the caprock layer and they terminate at about the same distance up the caprock layer. On the batters the gullies no longer terminate at the top of the batter with some advancing onto the caprock, reflecting the increased erosion observed in the with-settlement case.

In all cases the drainage density of the gully development is about the same suggesting that settlements do not have a significant effect on the extent of gullying, only the location.

Finally note the gully that develops along the base of the NE batter, whose position is well known and independent of random settlements. This was discussed for the baseline case and poses a potential danger to the dam on the caprock.

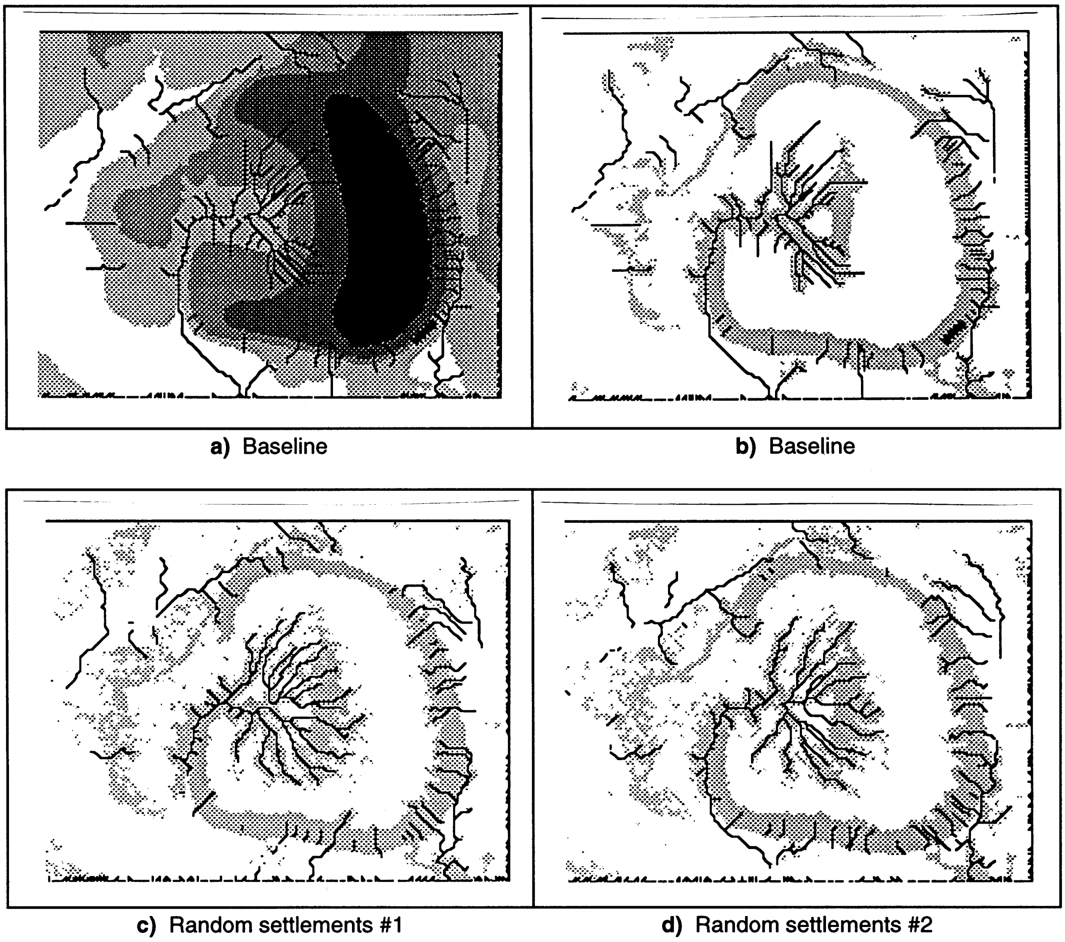


Figure 5.13 Below-grade option, baseline and with-settlement cases: Preliminary estimates of gully development on the rehabilitation at 1000 years, overlaid on (a) elevations, (b), (c), (d) slopes greater than 0.05

5.8 Other issues

5.8.1 Greenhouse warming

Changes in the rainfall occurring at Ranger as a result of enhanced greenhouse warming will change the runoff and thus the mean annual erosion. Systematic increases in rainfall will increase both runoff and erosion. It is unlikely that changes in the climate will modify the behaviour of these scenarios, so that gullies, etc, will still appear where predicted, but they will occur at earlier times.

The Intergovernmental Panel Report on Climate Change (IPCC 1990) is currently considered to be the most reliable source of information on the effects of enhanced greenhouse warming and the likely effects on climate. While there is considerable doubt about the ability of existing Global Circulation Models (GCMs) to provide accurate predictions of regional climate change, IPCC provides maps of changes in temperature, precipitation and soil moisture for the globe for a doubling of CO_2 as estimated by three models: the CCC (Canadian Climate Center), GFHI (Geophysical Fluid Dynamics Laboratory, Princeton) and UKHI (United Kingdom Meteorological Office).

IPCC provides estimates of the changes in precipitation. For the Darwin/Jabiru region it provides estimates of the change in precipitation for the months December to February ranging from +1 to 2 mm/day (CCC) to -1 to 2 mm/day (UKHI). For the months of June to August they universally predict 0 to 1 mm/day.

IPCC also provide predictions of changes in soil moisture. For the months December to February they predict a change in the soil moisture content ranging from a reduction of 10–20 mm (UKHI) to increases of more than 20 mm (CCC). For the months of June to August they predict increases in soil moisture ranging from 0 mm (GFHI) to 20 mm (CCC).

Clearly, there is substantial conflict between the predictions of the models. Also, it is clear from the maps provided that the values above are nowhere near the extremes predicted for other regions of the world.

It is recommended that until more convincing evidence appears, effects of enhanced greenhouse warming on the rainfall and erosion at Jabiru over the next 1000 years should be ignored.

5.8.2 Infiltration

Knowledge of the rates of infiltration is useful for assessing the availability of moisture to the plants used in revegetation. The runoff time-series simulation of the section 4.2 can be used to provide an upper bound on the amount of moisture that would have been available under historical conditions. This *upper bound* is the amount of water that does not runoff, and consists of both infiltration from the surface to lower layers and evaporation from the surface. More accurate assessment of the net infiltration requires accurate assessment of evaporation and evapotranspiration losses which is outside of the scope of this project. The yearly average upper bound figures are listed in table 5.1. Note that in some years rainfall for only part of the Wet season was collected, while for other years large parts of the Dry season were not recorded. In these years the upper bound on infiltration may well be higher. These years are noted accordingly.

Table 5.1 Simulated runoff yield for waste rock dump

Year	Rainfall (mm)	Runoff (mm)	Year	Rainfall (mm)	Runoff (mm)
1971[(a)]	173	90	1983[(a)]	184	108
1972	1163	548	1984	2082	1026
1973	1353	656	1985[(a)]	378	207
1974	1604	586	1986	1145	414
1975	1642	693	1987	1277	531
1976	1144[(b)]	444	1988	1135	515
1977	928	445	1989	1152	484
1978	1467	744	1990[(a)]	748	355
1979	1193	559			
1980	1663	782			

[(a)] Year incomplete; [(b)] Dry season incomplete

The runoff *yield* for the engineered landform is approximately 0.45. However, this should not be mistaken for the runoff coefficient from the engineered landform, which is also a function of the rainfall volume and temporal pattern, and overland flow hydraulics. Hydrological studies of natural areas near Jabiru (eg Tin Camp Creek) and revegetated/ripped areas on the existing waste rock dump should provide useful comparative runoff yield data.

5.8.3 Long-term versus short-term erosion modelling

Traditional methods of erosion assessment used by agricultural engineers, such as USLE, RUSLE and CREAMS, determine the erosion at any given time for a particular landform. They are unable to predict the change in shape of the landscape as a result of the erosion that occurs on it, nor are they able to predict the effect that the change in the landform has on the future erosion patterns. These methods are implicitly short-term techniques. If erosion predictions are only required for a small time in the future, over which the erosion doesn't change the landform much, then they provide good predictions of erosion patterns.

Over longer periods of time, however, the change of landform shape cannot be ignored. This is the rationale for the use of the SIBERIA landscape evolution model for the erosion assessment in this report. Localised erosion results in localised convergence of flow with further increases in erosion. Thus valleys will deepen over time as the natural process of drainage development occurs. While over the short-term the predictions of the short-term and long-term models will be little different, as the landform erodes the short-term models will progressively provide poorer estimates of the erosion. In particular, the spatial *pattern* of erosion, where the localised high erosion occurs on the rehabilitation, will be poorly estimated.

Figure 5.14 demonstrates the difference between the two modelling approaches, showing the patterns of erosion for three cases for the above-grade baseline proposal. The first case (figure 5.14b) shows the pattern of erosion for the first 3 years after the rehabilitation is complete (assuming that the surface of the rehabilitation was completed at the same time, rather than progressively during mine operation); the second case (figure 5.14c) shows the pattern of erosion for the 3 years after the end of the design life (ie years 1000 to 1003). Both of these cases can be considered to be indicative of the results from short-term modelling exercises with specified landforms. The second case, of course, assumes that we know the result of the long-term modeling exercise. The third case (figure 5.14d) shows the pattern of erosion for the 1000 year long-term modeling described in section 5.

The pattern of erosion is different in both cases. Both of the short-term results predict a more uniform erosion distribution than the well defined, localised, erosion apparent in the long-term result. The 1000 year short-term result does exhibit some localised erosion but only in the valleys already created by the long-term model; it does not predict the localised erosion upstream that will probably occur after 1000 years in the long-term case.

The reason for this result lies in the way valleys are incised over time. Valleys do not gradually downcut over their whole length with time. If they did, then erosion depth estimates from the short-term models could be factored up for the design life of the landform. Rather, valleys rapidly incise at the valley head as it propagates upstream from the highwall around the central retention pond with proportionally less erosion both upstream and downstream of the headcut. This is apparent in figure 5.14c where the highest erosion rates are at the valley heads. Short-term methods can predict where the areas of localised high erosion will occur at any given time for any specified landform, however, they are unable to predict how this region of localised high erosion will move over time. They are thus unable to accurately estimate the spatial distribution of the regions of high erosion.

While the *pattern* of erosion is different in the short-term and long-term results, the average rate of erosion over the domain (caprock, batters and the portions of undisturbed natural surface illustrated in fig 5.1) is much the same (about 0.3 m over the 1000 years). The difference between the short-term and long-term results is that much more of the long-term erosion is concentrated in deep valleys; the short-term results would predict more uniform, less concentrated, erosion depths. In short, the short-term modelling results would be non-conservative with lower values for maximum erosion depths, even though average depths of erosion appear to similar for both short-term and long-term results.

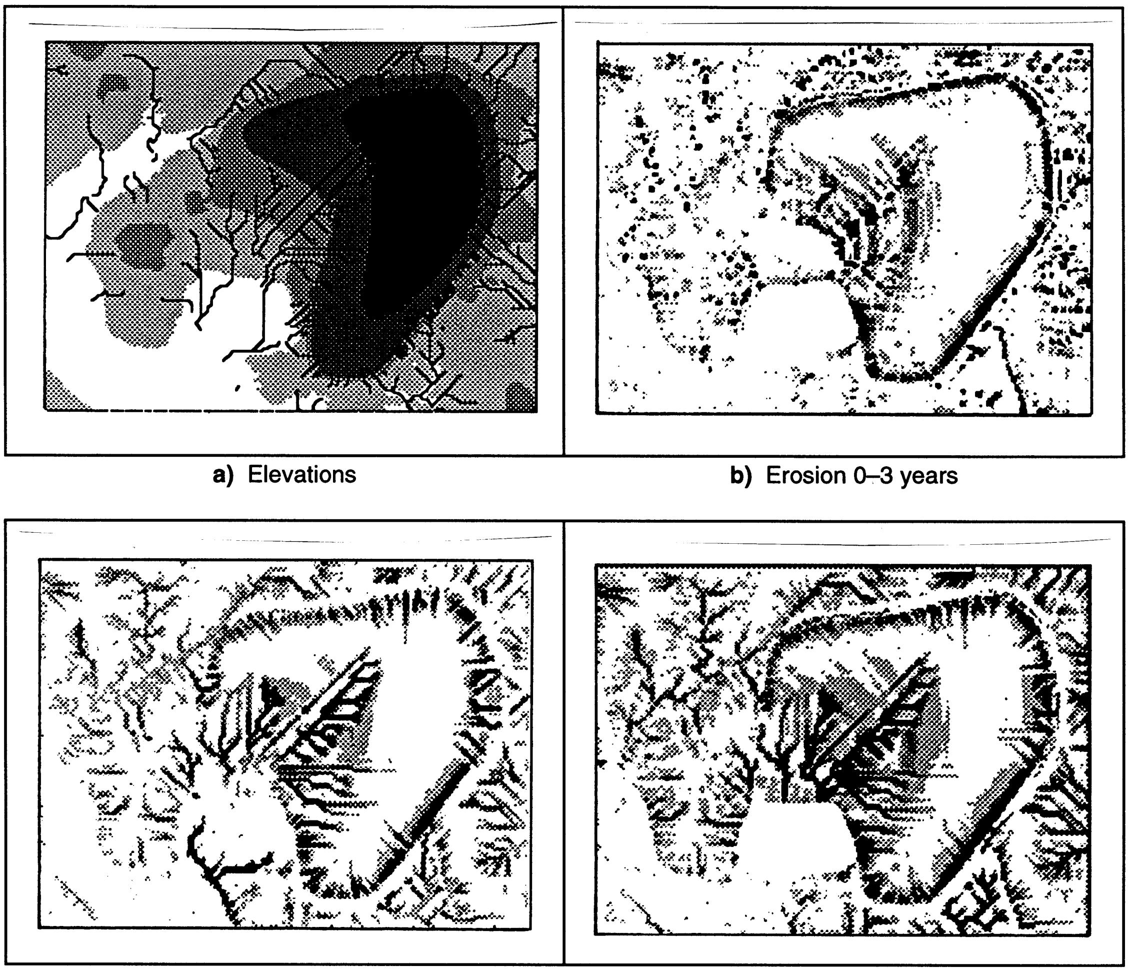


Figure 5.14 Comparison of the patterns of erosion for the short-term and long-term erosion modelling methods

6 Conclusions

6.1 Discussion

The simulations herein have clearly showed that significant erosion will occur in the next 1000 years in the caprock region of both the above-ground and below-ground options. Peak erosion depths without gully development are predicted to be in the range of 7–8 m. Gully development potentially increases the maximum penetration of the caprock layer further. It is predicted that a number of valleys will dissect the central region of the caprock. The exact position of these valleys is subject to some doubt because of the poor definition of an initial drainage structure on the proposed designs. It thus appears difficult to design localised protective measures for these gullies because the position of these potential gullies cannot be predicted *a priori*. Drainage network development is a chaotic process (Willgoose et al 1991c, Ijjasz-Vasquez 1990) but if an initial drainage pattern is imposed some predicability should be imposed on the eroding system.

In addition, it has also been shown that the steep (slope≈ 0.15) batter slopes will suffer severe degradation of the order of 5–7 m. The valleys on the batters do not occur in predictable places but occur along all the batter extremities of the waste rock dump. The erosion problem is thus not localised to one place, where it potentially may be protected, but it occurs across broad areas making it difficult to design reliable protective measures. The fundamental cause of this problem is that there are substantial slope lengths (>200 m) on the caprock that contribute flow to the upper end of the batters. When this flow reaches the batter it cascades over the batter causing severe degradation. One solution, bund walls around the top of the batter, is unlikely to solve this problem. The widespread nature of the erosion on the batters indicates that there appear to be few safe locations where this flow can be diverted to.

The substantial erosion on the batters results in deposition in the surrounding areas. The deepest depths of deposition (about 5 m over 1000 years) appear to very close (within 150–200 m of the batters) to the batters, although it is apparent that some deposition does occur at greater distances. Computational limitations meant that it was necessary to restrict the study area to that immediately surrounding the proposed waste rock dump so that more exact comments of the region of deposition cannot be made at this stage. Moreover, without knowledge of erosion rates on the natural areas surrounding the waste rock dump such a study may be subject to significant error.

Finally, in the absence of random settlements, the rates of erosional loss on the majority of the caprock layer away from the gullies appear to be relatively small (less than 500 mm). In fact, the low erosional loss on the portion of that caprock region contributing to the batters enhances the gully erosion that occurs on the batters. Addition of random settlements with a range of 0−1 m induces erosion and deposition on the caprock of about 1 m depth. There is no apparent systematic pattern to this erosion.

This deep sheet erosion in isolated regions with little erosion in intervening areas suggests a solution strategy for the problem and involves considering the geomorphology of the entire waste rock dump. As previously noted, the major problem with the existing designs is that their slopes decrease as drainage area increases in a different fashion from that observed in natural catchments, which are closer to their equilibrium form. This characteristic of natural catchment arises from the balance of erosion, drainage patterns and elevations that catchments tend towards over geologic timescales (Gilbert 1909, Willgoose et al 1991d, Willgoose 1993). Figure 6.1 is a schematic showing how this natural adjustment process works.

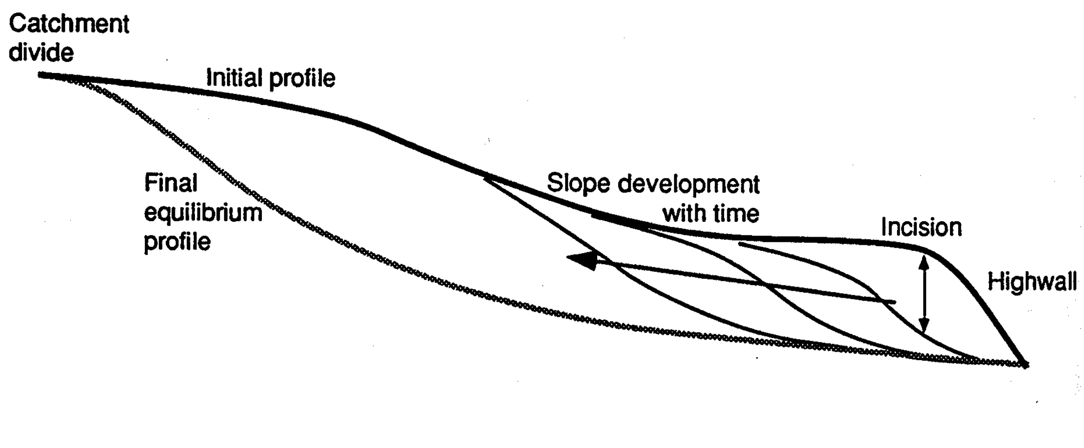


Figure 6.1 Schematic of erosion incision when the initial profile is far from the long-term equilibrium profile

The closer that the starting profile is to the final equilibrium profile the less incision will occur. These equilibrium profiles can be described mathematically by (Willgoose 1993)

$$\frac{A^{\alpha_1} S}{Z - Z_d{}^{\alpha_2}} = \text{constant} \qquad 6.1.1$$

where A is the drainage area, S the slope, Z the elevation and Z_d the datum elevation and the parameters α_1 and α_2 are a function of the runoff and erosion physics. These long-term equilibria results (published by the first author and others) should be examined as a criteria to redesign the slopes and landform of the waste rock dump. Effort should be concentrated on reducing slope lengths and gradients near the base of the dump in the central area. Emphasis should also be placed on imposing a drainage structure that is appropriate to the runoff and erosion from the waste rock dump. The long flat hillslopes that characterise the proposed design bear little resemblance to natural conditions and should be replaced with hills and valleys of the kind observed in natural catchments. This imposed drainage structure could maintain the key internal drainage feature of the existing design and would allow the use of the proposed pits and dams to trap sediment.

Thus, in summary, there are a three problems with the proposals that should be addressed.

The first problem is that the slope gradient does not decrease downslope as it does in natural catchments. This feature means that sediment transport increase much faster downslope than occurs in natural catchments. The long-term effect of this is for gully erosion to develop at the bottom of the slopes as the lower parts of the catchment trend towards the low slope condition in the lower reaches of the catchment which is the long-term equilibria.

The second problem is that the wide flat hillslopes allow gullies to concentrate flow (and thus increase the discharges and erosion) with great ease. By imposing a drainage structure of valleys with interceding hills it becomes very difficult for a gully to capture adjacent areas (first they must erode away the interceding hill). Discharges are then unlikely to change much as erosion proceeds from that designed. A secondary advantage is that if a gully does occur it will be localised and its growth will be controlled. A key feature controlling the rate of growth of gullies is their ability to capture area; reduce this ability and gullies grow less quickly.

The third problem is that the long caprock hillslopes contribute flow to the tops of the batters, inducing deep erosion at the tops of the batters around the emplacement area.

6.2 Recommendations for future work

6.2.1 Increasing the reliability of SIBERIA parameters

- **Checking of data**: Further reliability checks are required on available monitoring data and the data for the simulator trials should be carefully compared with the data from natural storms to solve the apparent conflict in the fitted ϕ value for these two data sources.
- **Sediment yield data from natural rainfall events**: For sediment yield data that have no matching discharges, the discharge data should be reconstructed from the hydrology model and recorded rainfall records. These data could then be used to increase the reliability of the sediment transport model calibrated here.
- **Erosion studies**: Erosion studies should be carried out over slopes intermediate between that of the caprock and the batter to better define and explain the slope dependence of the sediment transport equation.

- **Runoff studies for other conditions 1**: Rainfall simulator or natural runoff data should be collected for abandoned mine workings where spoil heaps are derived from similar schist material as at Ranger. This would allow the estimation of the effect of soil development on runoff and erosion properties.
- **Runoff studies for other conditions 2**: Rainfall simulator or natural runoff data should be collected for the vegetated areas of the spoil heap at RUM. This would allow the estimation of the effect of vegetation development on runoff and erosion properties.
- **Analysis of existing data not considered here**: The data collected during 1991/1992 for the deep ripped sites on the caprock should be analysed and compared with the analysis in this report for unripped sites. This will allow assessment of the short-term effects on infiltration, runoff and erosion.
- **Gully erosion at Tin Camp Creek**: The gully geometry of the gullies proceeding downstream should be correlated with area and slope. This will give reliable indicators of the amount of sediment delivered by these gullies to the catchment during their formation. This can be then be used to predict the depth of gullying likely at RUM, for design of the depth of the upper cap layer.
- **Gully erosion at abandoned mine sites**: The threshold above which gully erosion occurs should be examined and hydrologic studies carried out to consider the hydrologic generality of the threshold behaviour for abandoned mine sites in the region. These studies will increase confidence in the thresholds derived from the natural catchment at Tin Camp Creek. Gully cross-sections should be correlated to area and slope as for Tin Camp Creek.

6.2.2 Further simulations with SIBERIA

- **Long-term equilibria** (beyond 1000 years) of the sites should be examined to provide information on the long-term form of the landscape.
- **SIBERIA and natural landforms**: The efficacy of SIBERIA should be examined for the ability to predict the form of the nearby terrain (eg Tin Camp Creek area) using the hydrology and erosion data collected by ***eriss***.
- **Spatial variability of rainfall**: The radar data for rainfall of Krawjewski et al (1991) should be closely examined for its possible effect on the parameters of SIBERIA and predictions herein.
- **Sediment storage in dams**: Detailed data regarding the three dams that the waste rock dump drains into should be used for input to SIBERIA to assess the timescales over which these dams will fill and understand their usefulness for stopping off-site deposition over geomorphologic timescales.

Appendixes

Appendix A Maps of field sites

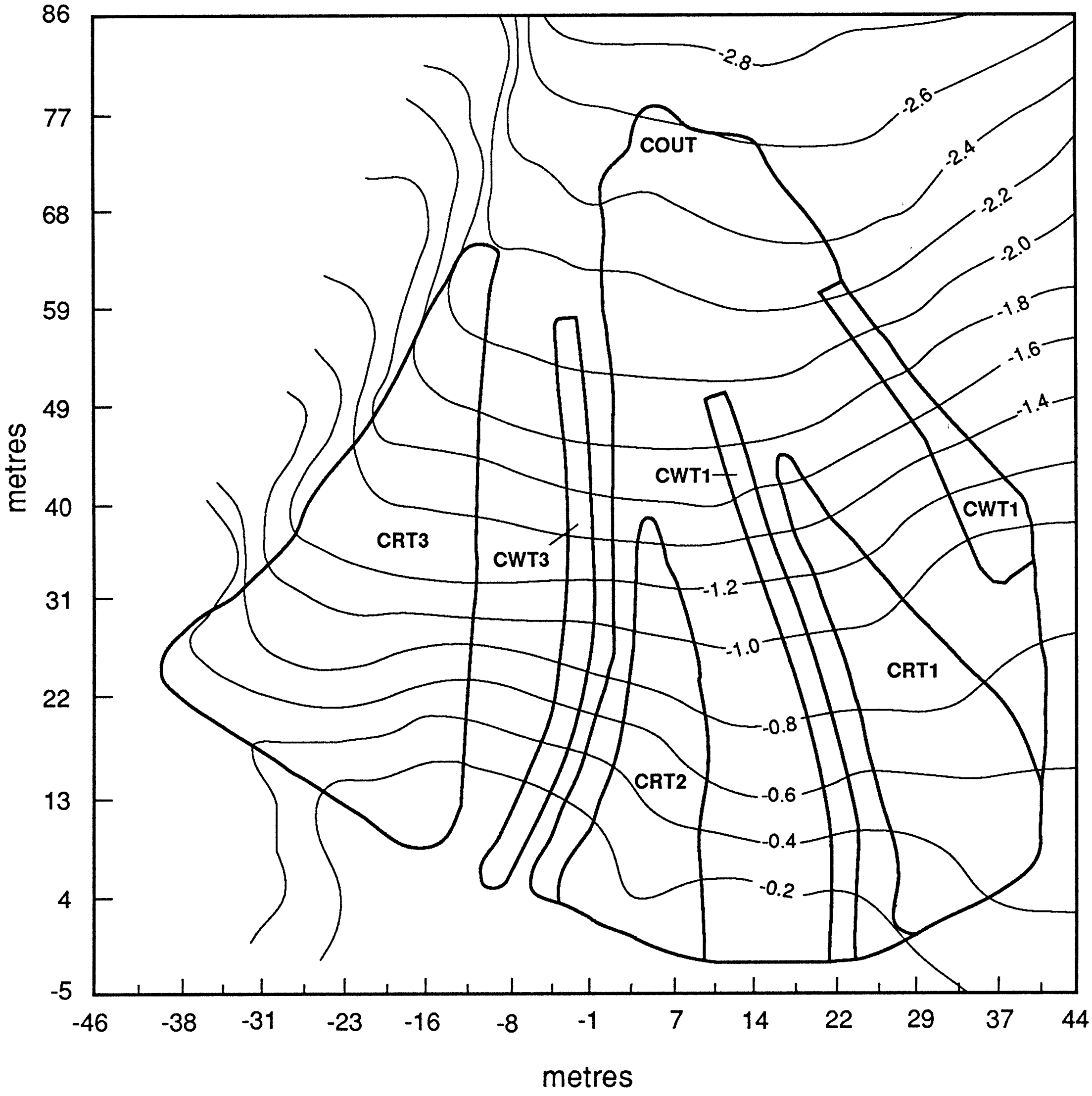


Figure A.1 Caprock monitoring sites and contours

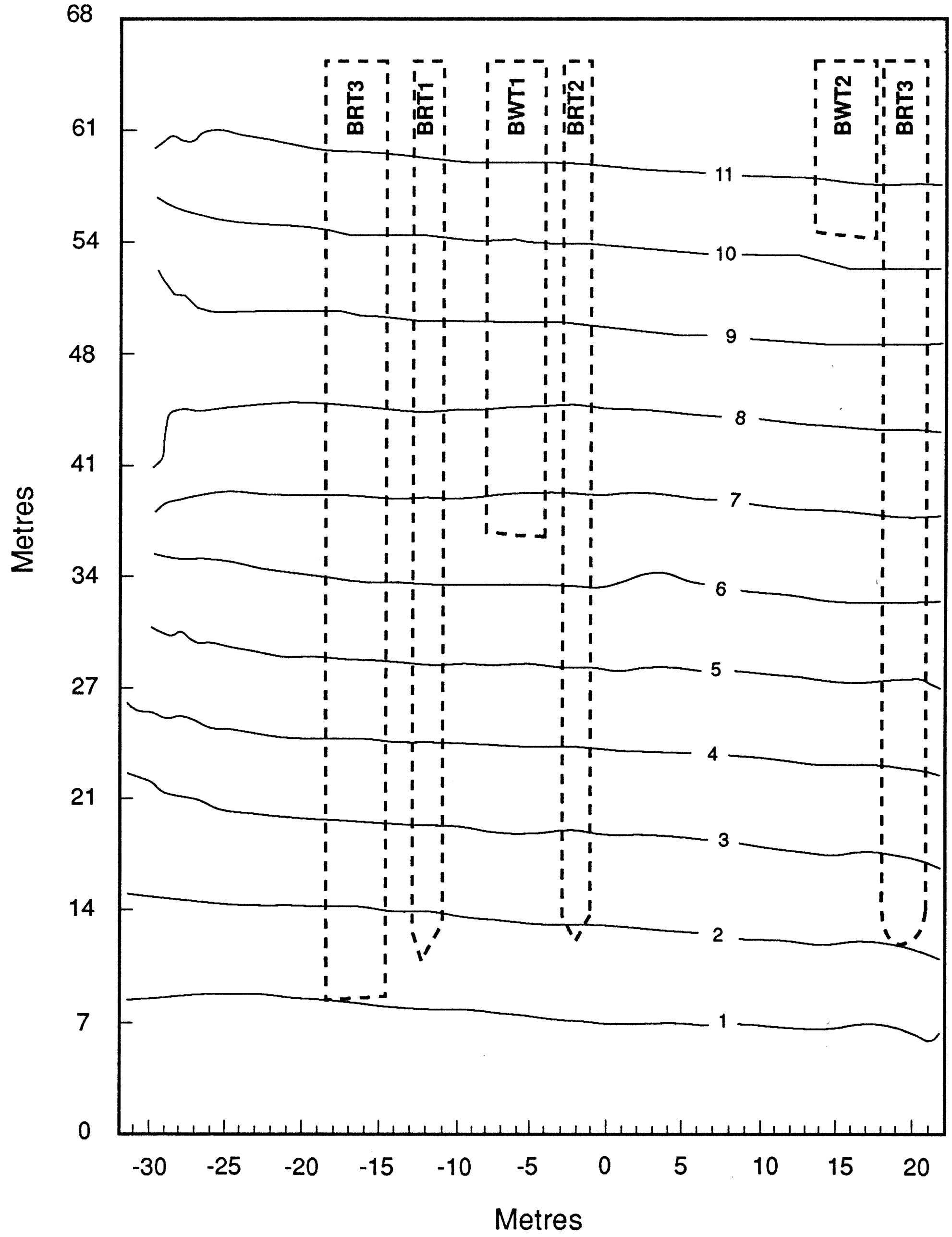


Figure A.2 Batter monitoring sites and contours

Appendix B Runoff data

B.1 Natural rainfall

The following data are pluviograph records for the storms used in the calibration of the hydrology model for the natural rainfall experiments. Times are in the format 24 hour time and date, and rainfall is mm.

Caprock pluviograph

time	rainfall	time	rainfall	time	rainfall
14:50_07/01/1991	0.000	20:40_07/01/1991	0.000	07:45_10/01/1991	0.000
14:51_07/01/1991	0.000	20:41_07/01/1991	0.000	07:46_10/01/1991	0.000
14:52_07/01/1991	0.000	20:42_07/01/1991	0.000	07:47_10/01/1991	0.000
14:53_07/01/1991	2.000	20:43_07/01/1991	0.000	07:48_10/01/1991	0.000
14:54_07/01/1991	3.000	20:44_07/01/1991	0.200	07:49_10/01/1991	0.000
14:55_07/01/1991	6.000	20:45_07/01/1991	0.200	07:50_10/01/1991	0.000
14:56_07/01/1991	7.000	20:46_07/01/1991	0.200	07:51_10/01/1991	0.000
14:57_07/01/1991	2.000	20:47_07/01/1991	0.400	07:52_10/01/1991	0.000
14:58_07/01/1991	1.000	20:48_07/01/1991	0.800	07:53_10/01/1991	0.000
14:59_07/01/1991	1.000	20:49_07/01/1991	1.000	07:54_10/01/1991	0.000
15:00_07/01/1991	0.000	20:50_07/01/1991	1.000	07:55_10/01/1991	0.000
15:01_07/01/1991	1.000	20:51_07/01/1991	0.600	07:56_10/01/1991	0.600
15:02_07/01/1991	0.000	20:52_07/01/1991	0.200	07:57_10/01/1991	1.000
15:03_07/01/1991	0.000	20:53_07/01/1991	0.200	07:58_10/01/1991	0.800
15:04_07/01/1991	0.000	20:54_07/01/1991	0.200	07:59_10/01/1991	0.400
15:05_07/01/1991	0.000	20:55_07/01/1991	0.000	08:00_10/01/1991	0.200
15:06_07/01/1991	0.000	20:56_07/01/1991	0.000	08:01_10/01/1991	0.000
15:07_07/01/1991	0.000	20:57_07/01/1991	0.000	08:02_10/01/1991	0.600
15:08_07/01/1991	0.000	20:58_07/01/1991	0.400	08:03_10/01/1991	0.800
15:09_07/01/1991	0.000	20:59_07/01/1991	0.200	08:04_10/01/1991	1.000
15:10_07/01/1991	0.000	21:00_07/01/1991	0.000	08:05_10/01/1991	1.200
15:11_07/01/1991	0.000	21:01_07/01/1991	0.400	08:06_10/01/1991	0.800
15:12_07/01/1991	0.000	21:02_07/01/1991	0.600	08:07_10/01/1991	0.600
15:13_07/01/1991	0.000	21:03_07/01/1991	0.600	08:08_10/01/1991	1.000
15:14_07/01/1991	0.000	21:04_07/01/1991	0.800	08:09_10/01/1991	0.800
15:15_07/01/1991	0.000	21:05_07/01/1991	0.600	08:10_10/01/1991	0.600
15:16_07/01/1991	0.000	21:06_07/01/1991	0.400	08:11_10/01/1991	0.400
15:17_07/01/1991	0.000	21:07_07/01/1991	0.400	08:12_10/01/1991	0.400
15:18_07/01/1991	0.000	21:08_07/01/1991	0.400	08:13_10/01/1991	0.400
15:19_07/01/1991	0.000	21:09_07/01/1991	0.200	08:14_10/01/1991	0.400
15:20_07/01/1991	0.000	21:10_07/01/1991	0.200	08:15_10/01/1991	0.200
15:21_07/01/1991	0.000	21:11_07/01/1991	0.200	08:16_10/01/1991	0.200
15:22_07/01/1991	0.000	21:12_07/01/1991	0.000	08:17_10/01/1991	0.200
15:23_07/01/1991	0.000	21:13_07/01/1991	0.200	08:18_10/01/1991	0.000

time	rainfall	time	rainfall	time	rainfall
15:24_07/01/1991	0.000	21:14_07/01/1991	0.200	08:19_10/01/1991	0.200
15:25_07/01/1991	0.000	21:15_07/01/1991	0.000	08:20_10/01/1991	0.000
		21:16_07/01/1991	0.000	08:21_10/01/1991	0.200
		21:17_07/01/1991	0.000	08:22_10/01/1991	0.200
		21:18_07/01/1991	0.200	08:23_10/01/1991	0.200
		21:19_07/01/1991	0.000	08:24_10/01/1991	0.000
		21:20_07/01/1991	0.000	08:25_10/01/1991	0.400
		21:21_07/01/1991	0.000	08:26_10/01/1991	0.400
		21:22_07/01/1991	0.000	08:27_10/01/1991	0.200
		21:23_07/01/1991	0.000	08:28_10/01/1991	0.400
		21:24_07/01/1991	0.000	08:29_10/01/1991	0.200
		21:25_07/01/1991	0.000	08:30_10/01/1991	0.200
		21:26_07/01/1991	0.000	08:31_10/01/1991	0.200
		21:27_07/01/1991	0.000	08:32_10/01/1991	0.000
		21:28_07/01/1991	0.000	08:33_10/01/1991	0.200
		21:29_07/01/1991	0.000	08:34_10/01/1991	0.200
		21:30_07/01/1991	0.000	08:35_10/01/1991	0.000
				08:36_10/01/1991	0.200
				08:37_10/01/1991	0.000
				08:38_10/01/1991	0.000
				08:39_10/01/1991	0.000
				08:40_10/01/1991	0.000
				08:41_10/01/1991	0.200
				08:42_10/01/1991	0.000
				08:43_10/01/1991	0.000
				08:44_10/01/1991	0.000
				08:45_10/01/1991	0.000
				08:46_10/01/1991	0.000
				08:47_10/01/1991	0.000
				08:48_10/01/1991	0.000
				08:49_10/01/1991	0.000
				08:50_10/01/1991	0.000
14:00_10/01/1991	0.000	16:40_21/01/1991	0.000	11:40_06/02/1991	0.000
14:01_10/01/1991	0.000	16:41_21/01/1991	0.000	11:41_06/02/1991	0.000
14:02_10/01/1991	0.000	16:42_21/01/1991	0.000	11:42_06/02/1991	0.000
14:03_10/01/1991	0.200	16:43_21/01/1991	0.000	11:43_06/02/1991	0.200
14:04_10/01/1991	0.000	16:44_21/01/1991	0.000	11:44_06/02/1991	0.800
14:05_10/01/1991	0.000	16:45_21/01/1991	0.000	11:45_06/02/1991	2.200
14:06_10/01/1991	0.000	16:46_21/01/1991	0.000	11:46_06/02/1991	1.400
14:07_10/01/1991	0.000	16:47_21/01/1991	0.000	11:47_06/02/1991	1.200

time	rainfall	time	rainfall	time	rainfall
14:08_10/01/1991	0.000	16:48_21/01/1991	0.000	11:48_06/02/1991	0.800
14:09_10/01/1991	0.200	16:49_21/01/1991	0.000	11:49_06/02/1991	0.600
14:10_10/01/1991	0.000	16:50_21/01/1991	0.400	11:50_06/02/1991	0.600
14:11_10/01/1991	0.000	16:51_21/01/1991	0.200	11:51_06/02/1991	0.400
14:12_10/01/1991	0.000	16:52_21/01/1991	0.400	11:52_06/02/1991	0.000
14:13_10/01/1991	0.000	16:53_21/01/1991	0.400	11:53_06/02/1991	0.000
14:14_10/01/1991	0.000	16:54_21/01/1991	0.600	11:54_06/02/1991	0.000
14:15_10/01/1991	0.200	16:55_21/01/1991	0.600		
14:16_10/01/1991	0.000	16:56_21/01/1991	0.800		
14:17_10/01/1991	0.200	16:57_21/01/1991	1.400		
14:18_10/01/1991	0.400	16:58_21/01/1991	1.400		
14:19_10/01/1991	0.000	16:59_21/01/1991	1.400		
14:20_10/01/1991	0.000	17:00_21/01/1991	1.600		
14:21_10/01/1991	0.000	17:01_21/01/1991	1.600		
14:22_10/01/1991	0.000	17:02_21/01/1991	1.600		
14:23_10/01/1991	0.000	17:03_21/01/1991	1.400		
14:24_10/01/1991	0.200	17:04_21/01/1991	1.400		
14:25_10/01/1991	0.000	17:05_21/01/1991	1.000		
14:26_10/01/1991	0.400	17:06_21/01/1991	1.200		
14:27_10/01/1991	0.600	17:07_21/01/1991	1.200		
14:28_10/01/1991	1.000	17:08_21/01/1991	1.000		
14:29_10/01/1991	0.600	17:09_21/01/1991	1.000		
14:30_10/01/1991	0.600	17:10_21/01/1991	0.800		
14:31_10/01/1991	0.800	17:11_21/01/1991	0.800		
14:32_10/01/1991	0.400	17:12_21/01/1991	0.800		
14:33_10/01/1991	0.600	17:13_21/01/1991	0.800		
14:34_10/01/1991	0.200	17:14_21/01/1991	0.600		
14:35_10/01/1991	0.200	17:15_21/01/1991	0.800		
14:36_10/01/1991	0.400	17:16_21/01/1991	0.800		
14:37_10/01/1991	0.400	17:17_21/01/1991	0.800		
14:38_10/01/1991	0.200	17:18_21/01/1991	0.600		
14:39_10/01/1991	0.800	17:19_21/01/1991	0.200		
14:40_10/01/1991	1.000	17:20_21/01/1991	0.400		
14:41_10/01/1991	0.800	17:21_21/01/1991	0.200		
14:42_10/01/1991	0.800	17:22_21/01/1991	0.200		
14:43_10/01/1991	0.600	17:23_21/01/1991	0.200		
14:44_10/01/1991	0.400	17:24_21/01/1991	0.000		
14:45_10/01/1991	0.400	17:25_21/01/1991	0.200		
14:46_10/01/1991	0.600	17:26_21/01/1991	0.000		
14:47_10/01/1991	0.200	17:27_21/01/1991	0.000		

time	rainfall	time	rainfall
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14:50_10/01/1991	0.400	17:30_21/01/1991	0.000
14:51_10/01/1991	0.200	17:31_21/01/1991	0.000
14:52_10/01/1991	0.200	17:32_21/01/1991	0.200
14:53_10/01/1991	0.400	17:33_21/01/1991	0.200
14:54_10/01/1991	0.200	17:34_21/01/1991	0.000
14:55_10/01/1991	0.200	17:35_21/01/1991	0.000
14:56_10/01/1991	0.200	17:36_21/01/1991	0.200
14:57_10/01/1991	0.200	17:37_21/01/1991	0.000
14:58_10/01/1991	0.000	17:38_21/01/1991	0.200
14:59_10/01/1991	0.200	17:39_21/01/1991	0.000
15:00_10/01/1991	0.200	17:40_21/01/1991	0.000
15:01_10/01/1991	0.000	17:41_21/01/1991	0.200
15:02_10/01/1991	0.200	17:42_21/01/1991	0.000
15:03_10/01/1991	0.000	17:43_21/01/1991	0.000
15:04_10/01/1991	0.200	17:44_21/01/1991	0.200
15:05_10/01/1991	0.000	17:45_21/01/1991	0.200
15:06_10/01/1991	0.200	17:46_21/01/1991	0.000
15:07_10/01/1991	0.200	17:47_21/01/1991	0.200
15:08_10/01/1991	0.200	17:48_21/01/1991	0.000
15:09_10/01/1991	0.200	17:49_21/01/1991	0.200
15:10_10/01/1991	0.000	17:50_21/01/1991	0.200
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15:18_10/01/1991	0.000	17:58_21/01/1991	0.000
15:19_10/01/1991	0.200	17:59_21/01/1991	0.000
15:20_10/01/1991	0.000	18:00_21/01/1991	0.200
15:21_10/01/1991	0.200	18:01_21/01/1991	0.000
15:22_10/01/1991	0.200	18:02_21/01/1991	0.000
15:23_10/01/1991	0.200	18:03_21/01/1991	0.000
15:24_10/01/1991	0.000	18:04_21/01/1991	0.200
15:25_10/01/1991	0.200	18:05_21/01/1991	0.000
15:26_10/01/1991	0.200	18:06_21/01/1991	0.000
15:27_10/01/1991	0.200	18:07_21/01/1991	0.000

time	rainfall	time	rainfall
15:28_10/01/1991	0.000	18:08_21/01/1991	0.000
15:29_10/01/1991	0.200	18:09_21/01/1991	0.000
15:30_10/01/1991	0.000	18:10_21/01/1991	0.000
15:31_10/01/1991	0.400	18:11_21/01/1991	0.000
15:32_10/01/1991	0.000	18:12_21/01/1991	0.000
15:33_10/01/1991	0.000	18:13_21/01/1991	0.000
15:34_10/01/1991	0.000	18:14_21/01/1991	0.200
15:35_10/01/1991	0.000	18:15_21/01/1991	0.000
15:36_10/01/1991	0.000		
15:37_10/01/1991	0.200		
15:38_10/01/1991	0.000		
15:39_10/01/1991	0.000		
15:40_10/01/1991	0.200		
15:41_10/01/1991	0.000		
15:42_10/01/1991	0.000		
15:43_10/01/1991	0.000		
15:44_10/01/1991	0.000		
15:45_10/01/1991	0.000		
14:35_16/02/1991	0.000		
14:36_16/02/1991	0.000		
14:37_16/02/1991	0.000		
14:38_16/02/1991	0.000		
14:39_16/02/1991	0.000		
14:40_16/02/1991	0.000		
14:41_16/02/1991	0.000		
14:42_16/02/1991	0.200		
14:43_16/02/1991	1.600		
14:44_16/02/1991	1.600		
14:45_16/02/1991	1.600		
14:46_16/02/1991	1.800		
14:47_16/02/1991	1.400		
14:48_16/02/1991	1.000		
14:49_16/02/1991	1.200		
14:50_16/02/1991	1.200		
14:51_16/02/1991	1.200		
14:52_16/02/1991	1.200		
14:53_16/02/1991	1.200		
14:54_16/02/1991	0.800		
14:55_16/02/1991	0.600		
14:56_16/02/1991	0.600		

time	rainfall
14:57_16/02/1991	0.600
14:58_16/02/1991	0.200
14:59_16/02/1991	0.400
15:00_16/02/1991	0.400
15:01_16/02/1991	0.200
15:02_16/02/1991	0.200
15:03_16/02/1991	0.000
15:04_16/02/1991	0.200
15:05_16/02/1991	0.000
15:06_16/02/1991	0.000
15:07_16/02/1991	0.200
15:08_16/02/1991	0.000
15:09_16/02/1991	0.000
15:10_16/02/1991	0.200
15:11_16/02/1991	0.000
15:12_16/02/1991	0.000
15:13_16/02/1991	0.000
15:14_16/02/1991	0.000
15:15_16/02/1991	0.000
15:16_16/02/1991	0.000
15:17_16/02/1991	0.000
15:18_16/02/1991	0.000
15:19_16/02/1991	0.200
15:20_16/02/1991	0.000
15:21_16/02/1991	0.000
15:22_16/02/1991	0.000
15:23_16/02/1991	0.000
15:24_16/02/1991	0.000
15:25_16/02/1991	0.000

Batter pluviograph

time	rainfall	time	rainfall
11:40_06/02/1991	0.000	13:30_22/02/1991	0.000
11:41_06/02/1991	0.000	13:31_22/02/1991	0.000
11:42_06/02/1991	0.000	13:32_22/02/1991	0.000
11:43_06/02/1991	0.200	13:33_22/02/1991	0.000
11:44_06/02/1991	0.400	13:34_22/02/1991	1.400
11:45_06/02/1991	1.600	13:35_22/02/1991	2.000
11:46_06/02/1991	1.200	13:36_22/02/1991	2.200
11:47_06/02/1991	0.800	13:37_22/02/1991	2.400
11:48_06/02/1991	0.800	13:38_22/02/1991	2.200
11:49_06/02/1991	0.800	13:39_22/02/1991	1.200
11:50_06/02/1991	0.000	13:40_22/02/1991	0.000
11:51_06/02/1991	0.000	13:41_22/02/1991	0.000
11:52_06/02/1991	0.000	13:42_22/02/1991	0.000
11:53_06/02/1991	0.000	13:43_22/02/1991	0.000
11:54_06/02/1991	0.000	13:44_22/02/1991	0.000
11:55_06/02/1991	0.000	13:45_22/02/1991	0.000
11:56_06/02/1991	0.000	13:46_22/02/1991	0.000
11:57_06/02/1991	0.200	13:47_22/02/1991	0.000
11:58_06/02/1991	0.000	13:48_22/02/1991	0.000
11:59_06/02/1991	0.000	13:49_22/02/1991	0.000
12:00_06/02/1991	0.000	13:50_22/02/1991	0.000
12:01_06/02/1991	0.000	13:51_22/02/1991	0.000
12:02_06/02/1991	0.000	13:52_22/02/1991	0.000
12:03_06/02/1991	0.000	13:53_22/02/1991	0.000
12:04_06/02/1991	0.000	13:54_22/02/1991	0.000
12:05_06/02/1991	0.000	13:55_22/02/1991	0.000
12:06_06/02/1991	0.000	13:56_22/02/1991	0.000
12:07_06/02/1991	0.000	13:57_22/02/1991	0.000
12:08_06/02/1991	0.000	13:58_22/02/1991	0.000
12:09_06/02/1991	0.000	13:59_22/02/1991	0.000
12:10_06/02/1991	0.000	14:00_22/02/1991	0.000
		14:01_22/02/1991	0.200
		14:02_22/02/1991	0.000
		14:03_22/02/1991	0.000
		14:04_22/02/1991	0.000
		14:05_22/02/1991	0.000
		14:06_22/02/1991	0.200
		14:07_22/02/1991	0.200
		14:08_22/02/1991	0.200

time	rainfall	time	rainfall
		14:09_22/02/1991	0.000
		14:10_22/02/1991	0.000
		14:11_22/02/1991	0.000
		14:12_22/02/1991	0.200
		14:13_22/02/1991	0.000
		14:14_22/02/1991	0.000
		14:15_22/02/1991	0.000

The data below are the measured runoffs for the storms used in the calibration of the hydrology model. Times are in the format 24 hour time and date, and runoff litres/second.

CWT1		CWT1		CWT2	
time	**runoff**	**time**	**runoff**	**time**	**runoff**
14:25_10/01/91	0.0000	14:43_16/02/91	0.0000	20:45_07/01/1991	0.000
14:26_10/01/91	0.0907	14:44_16/02/91	0.0025	20:46_07/01/1991	0.000
14:27_10/01/91	0.1643	14:45_16/02/91	0.0102	20:47_07/01/1991	0.000
14:28_10/01/91	0.4740	14:46_16/02/91	0.0178	20:48_07/01/1991	0.000
14:29_10/01/91	1.1145	14:47_16/02/91	0.0254	20:49_07/01/1991	0.004
14:30_10/01/91	1.5001	14:48_16/02/91	0.0806	20:50_07/01/1991	0.136
14:31_10/01/91	1.4792	14:49_16/02/91	0.2604	20:51_07/01/1991	0.597
14:32_10/01/91	1.4862	14:50_16/02/91	0.5208	20:52_07/01/1991	0.610
14:33_10/01/91	1.4184	14:51_16/02/91	0.8362	20:53_07/01/1991	0.525
14:34_10/01/91	1.2397	14:52_16/02/91	1.1248	20:54_07/01/1991	0.410
14:35_10/01/91	0.9634	14:53_16/02/91	1.3419	20:55_07/01/1991	0.295
14:36_10/01/91	0.7687	14:54_16/02/91	1.5538	20:56_07/01/1991	0.210
14:37_10/01/91	0.7565	14:55_16/02/91	1.6263	20:57_07/01/1991	0.126
14:38_10/01/91	0.7525	14:56_16/02/91	1.6388	20:58_07/01/1991	0.091
14:39_10/01/91	0.7152	14:57_16/02/91	1.6015	20:59_07/01/1991	0.072
14:40_10/01/91	1.0053	14:58_16/02/91	1.5400	21:00_07/01/1991	0.081
14:41_10/01/91	1.4629	14:59_16/02/91	1.3471	21:01_07/01/1991	0.078
14:42_10/01/91	1.6801	15:00_16/02/91	1.0688	21:02_07/01/1991	0.092
14:43_10/01/91	1.8360	15:01_16/02/91	0.9281	21:03_07/01/1991	0.124
14:44_10/01/91	1.7770	15:02_16/02/91	0.7650	21:04_07/01/1991	0.238
14:45_10/01/91	1.4935	15:03_16/02/91	0.6016	21:05_07/01/1991	0.418
14:46_10/01/91	1.2131	15:04_16/02/91	0.3978	21:06_07/01/1991	0.528
14:47_10/01/91	1.1122	15:05_16/02/91	0.2686	21:07_07/01/1991	0.510
14:48_10/01/91	0.8143	15:06_16/02/91	0.1931	21:08_07/01/1991	0.492
14:49_10/01/91	0.5728	15:07_16/02/91	0.1558	21:09_07/01/1991	0.473
14:50_10/01/91	0.4965	15:08_16/02/91	0.1296	21:10_07/01/1991	0.451
14:51_10/01/91	0.5113	15:09_16/02/91	0.1034	21:11_07/01/1991	0.314
14:52_10/01/91	0.4761	15:10_16/02/91	0.0772	21:12_07/01/1991	0.211
14:53_10/01/91	0.4559	15:11_16/02/91	0.0572	21:13_07/01/1991	0.160
14:54_10/01/91	0.4701	15:12_16/02/91	0.0496	21:14_07/01/1991	0.120
14:55_10/01/91	0.4692	15:13_16/02/91	0.0420	21:15_07/01/1991	0.091
14:56_10/01/91	0.4453	15:14_16/02/91	0.0345	21:16_07/01/1991	0.079
14:57_10/01/91	0.4214	15:15_16/02/91	0.0269	21:17_07/01/1991	0.066
14:58_10/01/91	0.3976	15:16_16/02/91	0.0193	21:18_07/01/1991	0.054
14:59_10/01/91	0.3737	15:17_16/02/91	0.0117	21:19_07/01/1991	0.042
15:00_10/01/91	0.3498	15:18_16/02/91	0.0064	21:20_07/01/1991	0.030
15:01_10/01/91	0.3259	15:19_16/02/91	0.0057	21:21_07/01/1991	0.017

time	runoff	time	runoff	time	runoff
15:02_10/01/91	0.3021	15:20_16/02/91	0.0051	21:22_07/01/1991	0.006
15:03_10/01/91	0.2782	15:21_16/02/91	0.0044	21:23_07/01/1991	0.005
15:04_10/01/91	0.2543	15:22_16/02/91	0.0037	21:24_07/01/1991	0.004
15:05_10/01/91	0.2305	15:23_16/02/91	0.0031	21:25_07/01/1991	0.004
15:06_10/01/91	0.2066	15:24_16/02/91	0.0024	21:26_07/01/1991	0.003
15:07_10/01/91	0.1827	15:25_16/02/91	0.0018	21:27_07/01/1991	0.003
15:08_10/01/91	0.1886	15:26_16/02/91	0.0011	21:28_07/01/1991	0.002
15:09_10/01/91	0.2309	15:27_16/02/91	0.0004	21:29_07/01/1991	0.002
15:10_10/01/91	0.2489	15:28_16/02/91	0.0000	21:30_07/01/1991	0.001
15:11_10/01/91	0.2449	15:29_16/02/91	0.0000		
15:12_10/01/91	0.2228				
15:13_10/01/91	0.1829				
15:14_10/01/91	0.1430				
15:15_10/01/91	0.1032				
15:16_10/01/91	0.0761				
15:17_10/01/91	0.0684				
15:18_10/01/91	0.0606				
15:19_10/01/91	0.0529				
15:20_10/01/91	0.0451				
15:21_10/01/91	0.0514				
15:22_10/01/91	0.0787				
15:23_10/01/91	0.1061				
15:24_10/01/91	0.1334				
15:25_10/01/91	0.1607				
15:26_10/01/91	0.1881				
15:27_10/01/91	0.2154				
15:28_10/01/91	0.2427				
15:29_10/01/91	0.2469				
15:30_10/01/91	0.2112				
15:31_10/01/91	0.2024				
15:32_10/01/91	0.2248				
15:33_10/01/91	0.2020				
15:34_10/01/91	0.1595				
15:35_10/01/91	0.1197				
15:36_10/01/91	0.0891				
15:37_10/01/91	0.0732				
15:38_10/01/91	0.0680				
15:39_10/01/91	0.0629				
15:40_10/01/91	0.0577				
15:41_10/01/91	0.0525				
15:42_10/01/91	0.0473				

time	runoff
15:43_10/01/91	0.0421
15:44_10/01/91	0.0369
15:45_10/01/91	0.0317
15:46_10/01/91	0.0265
15:47_10/01/91	0.0214
15:48_10/01/91	0.0162
15:49_10/01/91	0.0110
15:50_10/01/91	0.0058
15:51_10/01/91	0.0025
15:52_10/01/91	0.0019
15:53_10/01/91	0.0014
15:54_10/01/91	0.0009
15:55_10/01/91	0.0003
15:56_10/01/91	0.0000
15:57_10/01/91	0.0000

CWT2		CWT2		CWT3	
time	**runoff**	**time**	**runoff**	**time**	**runoff**
14:20_10/01/1991	0.000	16:50_21/01/1991	0.000	11:42_06/02/1991	0.000
14:21_10/01/1991	0.000	16:51_21/01/1991	0.000	11:43_06/02/1991	0.000
14:22_10/01/1991	0.000	16:52_21/01/1991	0.000	11:44_06/02/1991	0.000
14:23_10/01/1991	0.000	16:53_21/01/1991	0.000	11:45_06/02/1991	0.001
14:24_10/01/1991	0.000	16:54_21/01/1991	0.000	11:46_06/02/1991	0.080
14:25_10/01/1991	0.000	16:55_21/01/1991	0.000	11:47_06/02/1991	0.202
14:26_10/01/1991	0.000	16:56_21/01/1991	0.000	11:48_06/02/1991	0.293
14:27_10/01/1991	0.000	16:57_21/01/1991	0.000	11:49_06/02/1991	0.350
14:28_10/01/1991	0.142	16:58_21/01/1991	0.261	11:50_06/02/1991	0.345
14:29_10/01/1991	0.397	16:59_21/01/1991	1.159	11:51_06/02/1991	0.313
14:30_10/01/1991	0.628	17:00_21/01/1991	1.924	11:52_06/02/1991	0.282
14:31_10/01/1991	0.707	17:01_21/01/1991	2.230	11:53_06/02/1991	0.250
14:32_10/01/1991	0.735	17:02_21/01/1991	2.290	11:54_06/02/1991	0.218
14:33_10/01/1991	0.706	17:03_21/01/1991	2.334	11:55_06/02/1991	0.187
14:34_10/01/1991	0.632	17:04_21/01/1991	2.335	11:56_06/02/1991	0.155
14:35_10/01/1991	0.510	17:05_21/01/1991	2.126	11:57_06/02/1991	0.123
14:36_10/01/1991	0.428	17:06_21/01/1991	1.782	11:58_06/02/1991	0.102
14:37_10/01/1991	0.411	17:07_21/01/1991	1.905	11:59_06/02/1991	0.085
14:38_10/01/1991	0.391	17:08_21/01/1991	1.775	12:00_06/02/1991	0.069
14:39_10/01/1991	0.386	17:09_21/01/1991	1.555	12:01_06/02/1991	0.052
14:40_10/01/1991	0.528	17:10_21/01/1991	1.349	12:02_06/02/1991	0.036
14:41_10/01/1991	0.761	17:11_21/01/1991	1.279	12:03_06/02/1991	0.027

time	runoff	time	runoff	time	runoff
14:42_10/01/1991	0.936	17:12_21/01/1991	1.141	12:04_06/02/1991	0.022
14:43_10/01/1991	1.020	17:13_21/01/1991	1.015	12:05_06/02/1991	0.017
14:44_10/01/1991	0.946	17:14_21/01/1991	0.792	12:06_06/02/1991	0.012
14:45_10/01/1991	0.760	17:15_21/01/1991	0.666	12:07_06/02/1991	0.007
14:46_10/01/1991	0.661	17:16_21/01/1991	0.762	12:08_06/02/1991	0.002
14:47_10/01/1991	0.601	17:17_21/01/1991	0.743	12:09_06/02/1991	0.000
14:48_10/01/1991	0.428	17:18_21/01/1991	0.742	12:10_06/02/1991	0.000
14:49_10/01/1991	0.315	17:19_21/01/1991	0.591		
14:50_10/01/1991	0.244	17:20_21/01/1991	0.494		
14:51_10/01/1991	0.204	17:21_21/01/1991	0.399		
14:52_10/01/1991	0.189	17:22_21/01/1991	0.304		
14:53_10/01/1991	0.188	17:23_21/01/1991	0.208		
14:54_10/01/1991	0.190	17:24_21/01/1991	0.113		
14:55_10/01/1991	0.182	17:25_21/01/1991	0.079		
14:56_10/01/1991	0.174	17:26_21/01/1991	0.056		
14:57_10/01/1991	0.166	17:27_21/01/1991	0.034		
14:58_10/01/1991	0.159	17:28_21/01/1991	0.033		
14:59_10/01/1991	0.140	17:29_21/01/1991	0.032		
15:00_10/01/1991	0.114	17:30_21/01/1991	0.031		
15:01_10/01/1991	0.101	17:31_21/01/1991	0.029		
15:02_10/01/1991	0.090	17:32_21/01/1991	0.028		
15:03_10/01/1991	0.085	17:33_21/01/1991	0.027		
15:04_10/01/1991	0.081	17:34_21/01/1991	0.026		
15:05_10/01/1991	0.076	17:35_21/01/1991	0.025		
15:06_10/01/1991	0.071				
15:07_10/01/1991	0.067				
15:08_10/01/1991	0.062				
15:09_10/01/1991	0.064				
15:10_10/01/1991	0.072				
15:11_10/01/1991	0.067				
15:12_10/01/1991	0.056				
15:13_10/01/1991	0.048				
15:14_10/01/1991	0.040				
15:15_10/01/1991	0.032				
15:16_10/01/1991	0.024				
15:17_10/01/1991	0.016				
15:18_10/01/1991	0.008				
15:19_10/01/1991	0.006				
15:20_10/01/1991	0.012				
15:21_10/01/1991	0.019				
15:22_10/01/1991	0.025				

time	runoff
15:23_10/01/1991	0.032
15:24_10/01/1991	0.039
15:25_10/01/1991	0.045
15:26_10/01/1991	0.057
15:27_10/01/1991	0.075
15:28_10/01/1991	0.084
15:29_10/01/1991	0.078
15:30_10/01/1991	0.070
15:31_10/01/1991	0.062
15:32_10/01/1991	0.053
15:33_10/01/1991	0.045
15:34_10/01/1991	0.037
15:35_10/01/1991	0.028
15:36_10/01/1991	0.020
15:37_10/01/1991	0.015
15:38_10/01/1991	0.013
15:39_10/01/1991	0.012
15:40_10/01/1991	0.011
15:41_10/01/1991	0.010
15:42_10/01/1991	0.009
15:43_10/01/1991	0.008
15:44_10/01/1991	0.007
15:45_10/01/1991	0.006
15:46_10/01/1991	0.005
15:47_10/01/1991	0.004
15:48_10/01/1991	0.003
15:49_10/01/1991	0.002
15:50_10/01/1991	0.001

CWT3		COUT		COUT	
time	**runoff**	**time**	**runoff**	**time**	**runoff**
14:40_16/02/1991	0.000	20:50_07/01/1991	0.207	07:55_10/01/1991	0.000
14:41_16/02/1991	0.000	20:51_07/01/1991	3.262	07:56_10/01/1991	0.000
14:42_16/02/1991	0.000	20:52_07/01/1991	7.569	07:57_10/01/1991	0.000
14:43_16/02/1991	0.000	20:53_07/01/1991	11.859	07:58_10/01/1991	0.013
14:44_16/02/1991	0.000	20:54_07/01/1991	13.740	07:59_10/01/1991	0.944
14:45_16/02/1991	0.000	20:55_07/01/1991	13.740	08:00_10/01/1991	3.516
14:46_16/02/1991	0.021	20:56_07/01/1991	11.859	08:01_10/01/1991	6.513
14:47_16/02/1991	0.134	20:57_07/01/1991	9.499	08:02_10/01/1991	8.317
14:48_16/02/1991	0.300	20:58_07/01/1991	6.856	08:03_10/01/1991	9.908

time	runoff	time	runoff	time	runoff
14:49_16/02/1991	0.351	20:59_07/01/1991	5.214	08:04_10/01/1991	10.117
14:50_16/02/1991	0.342	21:00_07/01/1991	3.780	08:05_10/01/1991	10.540
14:51_16/02/1991	0.311	21:01_07/01/1991	3.780	08:06_10/01/1991	14.227
14:52_16/02/1991	0.307	21:02_07/01/1991	3.015	08:07_10/01/1991	15.234
14:53_16/02/1991	0.345	21:03_07/01/1991	3.516	08:08_10/01/1991	15.234
14:54_16/02/1991	0.325	21:04_07/01/1991	5.214	08:09_10/01/1991	15.234
14:55_16/02/1991	0.306	21:05_07/01/1991	7.208	08:10_10/01/1991	13.739
14:56_16/02/1991	0.287	21:06_07/01/1991	9.499	08:11_10/01/1991	10.117
14:57_16/02/1991	0.265	21:07_07/01/1991	13.256	08:12_10/01/1991	12.782
14:58_16/02/1991	0.238	21:08_07/01/1991	13.740	08:13_10/01/1991	14.727
14:59_16/02/1991	0.211	21:09_07/01/1991	13.740	08:14_10/01/1991	15.234
15:00_16/02/1991	0.184	21:10_07/01/1991	13.740	08:15_10/01/1991	15.234
15:01_16/02/1991	0.157	21:11_07/01/1991	13.256	08:16_10/01/1991	15.234
15:02_16/02/1991	0.131	21:12_07/01/1991	10.970	08:17_10/01/1991	12.316
15:03_16/02/1991	0.109	21:13_07/01/1991	9.096	08:18_10/01/1991	9.498
15:04_16/02/1991	0.097	21:14_07/01/1991	7.938	08:19_10/01/1991	7.569
15:05_16/02/1991	0.085	21:15_07/01/1991	6.856	08:20_10/01/1991	6.513
15:06_16/02/1991	0.074	21:16_07/01/1991	5.214	08:21_10/01/1991	5.527
15:07_16/02/1991	0.062	21:17_07/01/1991	4.329	08:22_10/01/1991	6.175
15:08_16/02/1991	0.050	21:18_07/01/1991	3.015	08:23_10/01/1991	5.214
15:09_16/02/1991	0.041	21:19_07/01/1991	2.325	08:24_10/01/1991	4.615
15:10_16/02/1991	0.035	21:20_07/01/1991	2.219	08:25_10/01/1991	4.051
15:11_16/02/1991	0.030	21:21_07/01/1991	1.809	08:26_10/01/1991	3.516
15:12_16/02/1991	0.024	21:22_07/01/1991	1.433	08:27_10/01/1991	4.329
15:13_16/02/1991	0.019	21:23_07/01/1991	1.173	08:28_10/01/1991	5.214
15:14_16/02/1991	0.013	21:24_07/01/1991	0.944	08:29_10/01/1991	6.175
15:15_16/02/1991	0.009	21:25_07/01/1991	0.744	08:30_10/01/1991	6.855
15:16_16/02/1991	0.009	21:26_07/01/1991	0.426	08:31_10/01/1991	7.569
15:17_16/02/1991	0.008	21:27_07/01/1991	0.305	08:32_10/01/1991	6.855
15:18_16/02/1991	0.007	21:28_07/01/1991	0.207	08:33_10/01/1991	6.855
15:19_16/02/1991	0.007	21:29_07/01/1991	0.207	08:34_10/01/1991	6.855
15:20_16/02/1991	0.006	21:30_07/01/1991	0.131	08:35_10/01/1991	6.175
15:21_16/02/1991	0.005			08:36_10/01/1991	5.214
15:22_16/02/1991	0.005			08:37_10/01/1991	4.329
15:23_16/02/1991	0.004			08:38_10/01/1991	3.516
15:24_16/02/1991	0.003			08:39_10/01/1991	3.015
15:25_16/02/1991	0.003			08:40_10/01/1991	2.325
15:26_16/02/1991	0.002			08:41_10/01/1991	1.809
15:27_16/02/1991	0.001			08:42_10/01/1991	1.614
15:28_16/02/1991	0.000			08:43_10/01/1991	1.433
15:29_16/02/1991	0.000			08:44_10/01/1991	1.173

time	runoff	time	runoff	time	runoff
15:30_16/02/1991	0.000			08:45_10/01/1991	0.744
				08:46_10/01/1991	0.744
				08:47_10/01/1991	0.305
				08:48_10/01/1991	0.207
				08:49_10/01/1991	0.131
				08:50_10/01/1991	0.131
				08:51_10/01/1991	0.075
				08:52_10/01/1991	0.075
				08:53_10/01/1991	0.037
				08:54_10/01/1991	0.013
				08:55_10/01/1991	0.013

CRT1		BRT2		BRT2	
time	**runoff**	**time**	**runoff**	**time**	**runoff**
20:40_07/01/1991	0.000	11:40_06/02/1991	0.000	13:30_22/02/1991	0.000
20:41_07/01/1991	0.000	11:41_06/02/1991	0.000	13:31_22/02/1991	0.000
20:42_07/01/1991	0.000	11:42_06/02/1991	0.000	13:32_22/02/1991	0.000
20:43_07/01/1991	0.000	11:43_06/02/1991	0.000	13:33_22/02/1991	0.000
20:44_07/01/1991	0.000	11:44_06/02/1991	0.000	13:34_22/02/1991	0.000
20:45_07/01/1991	0.000	11:45_06/02/1991	0.000	13:35_22/02/1991	0.618
20:46_07/01/1991	0.000	11:46_06/02/1991	0.011	13:36_22/02/1991	3.174
20:47_07/01/1991	0.000	11:47_06/02/1991	0.638	13:37_22/02/1991	4.240
20:48_07/01/1991	0.000	11:48_06/02/1991	1.112	13:38_22/02/1991	4.334
20:49_07/01/1991	0.000	11:49_06/02/1991	1.317	13:39_22/02/1991	4.334
20:50_07/01/1991	0.046	11:50_06/02/1991	1.477	13:40_22/02/1991	4.024
20:51_07/01/1991	1.464	11:51_06/02/1991	1.428	13:41_22/02/1991	3.308
20:52_07/01/1991	3.546	11:52_06/02/1991	1.092	13:42_22/02/1991	2.697
20:53_07/01/1991	3.798	11:53_06/02/1991	0.629	13:43_22/02/1991	2.301
20:54_07/01/1991	3.094	11:54_06/02/1991	0.440	13:44_22/02/1991	1.793
20:55_07/01/1991	2.044	11:55_06/02/1991	0.325	13:45_22/02/1991	1.207
20:56_07/01/1991	1.377	11:56_06/02/1991	0.218	13:46_22/02/1991	0.687
20:57_07/01/1991	0.898	11:57_06/02/1991	0.133	13:47_22/02/1991	0.420
20:58_07/01/1991	0.560	11:58_06/02/1991	0.076	13:48_22/02/1991	0.240
20:59_07/01/1991	0.411	11:59_06/02/1991	0.041	13:49_22/02/1991	0.143
21:00_07/01/1991	0.337	12:00_06/02/1991	0.016	13:50_22/02/1991	0.058
21:01_07/01/1991	0.302	12:01_06/02/1991	0.006	13:51_22/02/1991	0.030
21:02_07/01/1991	0.344	12:02_06/02/1991	0.003	13:52_22/02/1991	0.026
21:03_07/01/1991	0.513	12:03_06/02/1991	0.001	13:53_22/02/1991	0.023
21:04_07/01/1991	0.885	12:04_06/02/1991	0.000	13:54_22/02/1991	0.020
21:05_07/01/1991	1.654	12:05_06/02/1991	0.000	13:55_22/02/1991	0.018

time	runoff	time	runoff	time	runoff
21:06_07/01/1991	2.830	12:06_06/02/1991	0.000	13:56_22/02/1991	0.015
21:07_07/01/1991	3.439	12:07_06/02/1991	0.000	13:57_22/02/1991	0.012
21:08_07/01/1991	3.274	12:08_06/02/1991	0.000	13:58_22/02/1991	0.009
21:09_07/01/1991	2.884	12:09_06/02/1991	0.000	13:59_22/02/1991	0.006
21:10_07/01/1991	2.587	12:10_06/02/1991	0.000	14:00_22/02/1991	0.003
21:11_07/01/1991	2.124	12:11_06/02/1991	0.000	14:01_22/02/1991	0.001
21:12_07/01/1991	1.667	12:12_06/02/1991	0.000	14:02_22/02/1991	0.000
21:13_07/01/1991	1.271	12:13_06/02/1991	0.000	14:03_22/02/1991	0.000
21:14_07/01/1991	0.853	12:14_06/02/1991	0.000	14:04_22/02/1991	0.000
21:15_07/01/1991	0.660	12:15_06/02/1991	0.000	14:05_22/02/1991	0.000
21:16_07/01/1991	0.496				
21:17_07/01/1991	0.334				
21:18_07/01/1991	0.211				
21:19_07/01/1991	0.120				
21:20_07/01/1991	0.092				
21:21_07/01/1991	0.064				
21:22_07/01/1991	0.036				
21:23_07/01/1991	0.009				
21:24_07/01/1991	0.007				
21:25_07/01/1991	0.004				
21:26_07/01/1991	0.002				
21:27_07/01/1991	0.000				
21:28_07/01/1991	0.000				
21:29_07/01/1991	0.000				
21:30_07/01/1991	0.000				

B.2 Simulated rainfall

The data below are the rainfall data for the comparison of the hydrology model with the data from the rainfall simulation experiments (fig 2.16), plot 4 run2 from data set B1RF2QSS. Time is measured in minutes from the start of the rainfall. Rainfall measurements are in cumulative mm from the start of the experiment (the rainfall used in the comparison was the average of the two pluviographs measurements). Runoff measurements are in litres/second.

Time	Pluvio 1	Pluvio 2	Time	q
8:20:30	0	0	8:29:30	0.11500
8:20:40	0.2	0.2	8:30:00	0.49950
8:20:50	0.4	0.2	8:30:30	0.55280
8:21:00	0.6	0.4	8:31:00	0.55280
8:21:10	1	0.6	8:32:00	0.97120
8:21:20	1.2	0.8	8:34:00	0.90670
8:21:30	1.4	1	8:35:00	0.97120
8:21:40	1.8	1.2	8.36:00	0.84210
8:21:50	2.2	1.4	8.38:00	0.84210
8:22:00	2.4	1.6	8.40:00	0.90670
8:22:10	2.8	1.8	8.42:00	0.97120
8:22:20	3.2	2	8.45:00	0.84210
8:22:30	3.4	2.2	8.50:00	0.97120
8:22:40	3.8	2.4	8.55:00	0.90670
8:22:50	4.2	2.6	9.00:00	0.90670
8:23:00	4.4	2.8	9.05:00	0.84210
8:23:10	4.8	3	9.15:00	0.84210
8:23:20	5	3.2	9.20:00	0.72030
8:23:30	5.4	3.6	9.24:30	0.72030
8:23:40	5.8	3.8	9.25:00	
8:23:50	6.2	4	9.25:30	0.49950
8:24:00	6.6	4.2	9.25:30	0.22880
8:24:10	7	4.4	9.26:00	0.11500
8:24:20	7.4	4.8	9.26:30	0.057200
8:24:30	7.6	5	9.27:00	0.057200
8:24:40	8	5.2	9.27:30	0.057200
8:24:50	8.2	5.4	9.28:00	0.057200
8:25:00	8.2	5.4	9.28:30	0.057200
8:25:10	8.6	5.6	9.29:00	0.0000
8:25:20	8.8	5.8		
8:25:30	9	6		
8:25:40	9.4	6.2		
8:25:50	9.8	6.4		
8:26:00	10.2	6.6		
8:26:10	10.4	7		
8:26:20	10.8	7.2		

Time	Pluvio 1	Pluvio 2	Time	q
8:26:30	11	7.4		
8:26:40	11.4	7.6		
8:26:50	11.6	7.8		
8:27:00	12	8		
8:27:10	12.6	8		
8:27:20	12.8	8.2		
8:27:30	13	8.4		
8:27:40	13.4	8.6		
8:27:50	13.4	8.8		
8:28:00	13.6	9		
8:28:10	13.8	9		
8:28:20	14	9.2		
8:28:30	14.2	9.4		
8:28:40	14.2	9.6		
8:28:50	14.6	9.8		
8:29:00	14.8	10		
8:29:10	15	10.2		
8:29:20	15.4	10.4		
8:29:30	15.6	10.6		
8:29:40	15.8	10.8		
8:29:50	16	11		
8:30:00	16.2	11.2		
8:30:10	16.2	11.4		
8:30:20	16.6	11.6		
8:30:30	16.8	12		
8:30:40	17	12.2		
8:30:50	17.2	12.4		
8:31:00	17.4	12.8		
8:31:10	17.6	13		
8:31:20	17.8	13.4		
8:31:30	18	13.6		
8:31:40	18.2	13.8		
8:31:50	18.6	14.2		
8:32:00	18.8	14.4		
8:32:10	19	14.8		
8:32:20	19.2	15		
8:32:30	19.4	15.2		
8:32:40	19.6	15.4		
8:32:50	19.8	15.6		
8:33:00	20	15.8		

Time	Pluvio 1	Pluvio 2	Time	q
8:33:10	20.2	16		
8:33:20	20.4	16		
8:33:30	20.8	16.2		
8:33:40	21	16.4		
8:33:50	21.4	16.6		
8:34:00	21.8	16.8		
8:34:10	22.4	16.8		
8:34:20	22.6	17		
8:34:30	22.8	17.2		
8:34:40	23	17.4		
8:34:50	23.2	17.6		
8:35:00	23.4	17.6		
8:35:10	23.8	17.8		
8:35:20	24.2	18		
8:35:30	24.6	18.2		
8:35:40	25	18.4		
8:35:50	25.2	18.6		
8:36:00	25.6	18.8		
8:36:10	25.8	19.2		
8:36:20	26.2	19.4		
8:36:30	26.6	19.6		
8:36:40	27	19.8		
8:36:50	27.4	20		
8:37:00	27.8	20.2		
8:37:10	28	20.4		
8:37:20	28.4	20.6		
8:37:30	28.8	20.8		
8:37:40	29.2	21.2		
8:37:50	29.4	21.4		
8:38:00	29.8	21.6		
8:38:10	30.2	22		
8:38:20	30.6	22.2		
8:38:30	30.8	22.4		
8:38:40	31.2	22.6		
8:38:50	31.4	22.8		
8:39:00	31.8	23		
8:39:10	32	23.2		
8:39:20	32.2	23.4		
8:39:30	32.4	23.6		
8:39:40	32.6	23.8		

Time	Pluvio 1	Pluvio 2	Time	q
8:39:50	33	23.8		
8:40:00	33.2	24		
8:40:10	33.6	24.2		
8:40:20	33.8	24.4		
8:40:30	34.2	24.6		
8:40:40	34.4	24.8		
8:40:50	34.6	25		
8:41:00	34.8	25.2		
8:41:10	35	25.2		
8:41:20	35.2	25.4		
8:41:30	35.6	25.6		
8:41:40	35.8	25.8		
8:41:50	36	26		
8:42:00	36.2	26		
8:42:10	36.6	26.2		
8:42:20	36.6	26.4		
8:42:30	36.8	26.6		
8:42:40	37	26.6		
8:42:50	37.4	26.8		
8:43:00	37.4	27		
8:43:10	37.8	27.2		
8:43:20	38	27.4		
8:43:30	38.4	27.6		
8:43:40	38.6	27.6		
8:43:50	38.6	27.8		
8:44:00	38.8	28		
8:44:10	39	28.2		
8:44:20	39	28.4		
8:44:30	39.4	28.4		
8:44:40	39.6	28.6		
8:44:50	40	28.8		
8:45:00	40.2	29		
8:45:10	40.4	29.2		
8:45:20	40.6	29.2		
8:45:30	40.6	29.4		
8:45:40	41	29.6		
8:45:50	41.2	29.8		
8:46:00	41.6	30		
8:46:10	41.8	30.2		
8:46:20	42.2	30.2		

Time	Pluvio 1	Pluvio 2	Time	q
8:46:30	42.4	30.4		
8:46:40	42.6	30.6		
8:46:50	42.8	30.8		
8:47:00	43	30.8		
8:47:10	43.4	31.2		
8:47:20	43.6	31.2		
8:47:30	43.8	31.6		
8:47:40	44.2	31.6		
8:47:50	44.4	31.8		
8:48:00	44.8	32		
8:48:10	45	32.2		
8:48:20	45.2	32.4		
8:48:30	45.4	32.4		
8:48:40	45.6	32.6		
8:48:50	45.8	32.8		
8:49:00	46.2	33		
8:49:10	46.4	33.2		
8:49:20	46.6	33.4		
8:49:30	46.8	33.6		
8:49:40	47	33.6		
8:49:50	47.2	33.8		
8:50:00	47.4	34		
8:50:10	47.6	34.4		
8:50:20	47.8	34.8		
8:50:30	48	35		
8:50:40	48.2	35.4		
8:50:50	48.6	35.6		
8:51:00	48.6	35.8		
8:51:10	49	36.2		
8:51:20	49	36.4		
8:51:30	49.2	36.6		
8:51:40	49.4	36.8		
8:51:50	49.6	37.2		
8:52:00	49.8	37.6		
8:52:10	50	37.8		
8:52:20	50.2	38		
8:52:30	50.4	38.2		
8:52:40	50.6	38.4		
8:52:50	50.6	38.6		
8:53:00	50.8	38.8		

Time	Pluvio 1	Pluvio 2	Time	q
8:53:10	51	39		
8:53:20	51.2	39.2		
8:53:30	51.4	39.4		
8:53:40	51.6	39.6		
8:53:50	51.8	39.8		
8:54:00	51.8	39.8		
8:54:10	52.2	40		
8:54:20	52.4	40.2		
8:54:30	52.8	40.4		
8:54:40	53	40.6		
8:54:50	53.4	40.8		
8:55:00	53.8	41		
8:55:10	54.2	41.2		
8:55:20	54.6	41.4		
8:55:30	55	41.6		
8:55:40	55.4	41.6		
8:55:50	55.8	41.8		
8:56:00	56.2	42		
8:56:10	56.6	42		
8:56:20	56.8	42.2		
8:56:30	57.2	42.4		
8:56:40	57.6	42.4		
8:56:50	57.8	42.8		
8:57:00	58.2	43		
8:57:10	58.4	43.2		
8:57:20	58.6	43.2		
8:57:30	59	43.4		
8:57:40	59.2	43.6		
8:57:50	59.4	43.8		
8:58:00	59.6	44		
8:58:10	59.6	44.2		
8:58:20	59.8	44.4		
8:58:30	59.8	44.6		
8:58:40	60	44.8		
8:58:50	60.2	45		
8:59:00	60.2	45.2		
8:59:10	60.4	45.4		
8:59:20	60.6	45.6		
8:59:30	60.8	45.8		
8:59:40	61	46		

Time	Pluvio 1	Pluvio 2	Time	q
8:59:50	61.4	46		
9:00:00	61.6	46.2		
9:00:10	62	46.4		
9:00:20	62.2	46.6		
9:00:30	62.4	46.8		
9:00:40	62.6	47		
9:00:50	62.8	47.2		
9:01:00	63	47.2		
9:01:10	63.4	47.4		
9:01:20	63.6	47.6		
9:01:30	63.8	47.8		
9:01:40	64.2	48		
9:01:50	64.4	48.2		
9:02:00	64.6	48.4		
9:02:10	64.8	48.6		
9:02:20	65.2	48.8		
9:02:30	65.6	48.8		
9:02:40	66	49		
9:02:50	66.2	49.2		
9:03:00	66.6	49.4		
9:03:10	67	49.6		
9:03:20	67.4	50		
9:03:30	67.8	50.2		
9:03:40	68.2	50.4		
9:03:50	68.4	50.6		
9:04:00	68.8	51		
9:04:10	69	51.2		
9:04:20	69.4	51.4		
9:04:30	69.8	51.6		
9:04:40	70.2	51.8		
9:04:50	70.6	52		
9:05:00	71	52.2		
9:05:10	71.4	52.4		
9:05:20	71.6	52.6		
9:05:30	71.8	52.8		
9:05:40	72.2	53		
9:05:50	72.2	53.2		
9:06:00	72.4	53.2		
9:06:10	72.6	53.4		
9:06:20	72.6	53.8		

Time	Pluvio 1	Pluvio 2	Time	q
9:06:30	72.8	54		
9:06:40	73	54		
9:06:50	73.2	54.2		
9:07:00	73.4	54.4		
9:07:10	73.6	54.6		
9:07:20	73.8	54.8		
9:07:30	74.2	55		
9:07:40	74.6	55.2		
9:07:50	75	55.2		
9:08:00	75.4	55.4		
9:08:10	75.8	55.4		
9:08:20	76.2	55.6		
9:08:30	76.6	55.8		
9:08:40	76.8	55.8		
9:08:50	77.2	56		
9:09:00	77.6	56.2		
9:09:10	78	56.4		
9:09:20	78.4	56.6		
9:09:30	78.6	56.8		
9:09:40	79	56.8		
9:09:50	79.4	57		
9:10:00	79.8	57.2		
9:10:10	80.2	57.2		
9:10:20	80.6	57.4		
9:10:30	81	57.6		
9:10:40	81.4	57.6		
9:10:50	81.8	57.6		
9:11:00	82.4	57.8		
9:11:10	82.8	58		
9:11:20	83	58		
9:11:30	83.4	58.2		
9:11:40	83.6	58.4		
9:11:50	84	58.6		
9:12:00	84.2	58.8		
9:12:10	84.4	58.8		
9:12:20	84.8	59		
9:12:30	85	59.2		
9:12:40	85.4	59.2		
9:12:50	85.8	59.4		
9:13:00	86.2	59.4		

Time	Pluvio 1	Pluvio 2	Time	q
9:13:10	86.6	59.6		
9:13:20	86.8	59.6		
9:13:30	87.2	59.8		
9:13:40	87.6	59.8		
9:13:50	88	60		
9:14:00	88.4	60		
9:14:10	88.6	60.2		
9:14:20	89	60.2		
9:14:30	89.4	60.4		
9:14:40	89.8	60.6		
9:14:50	90.2	60.8		
9:15:00	90.6	60.8		
9:15:10	91	61		
9:15:20	91.2	61.2		
9:15:30	91.6	61.4		
9:15:40	92	61.4		
9:15:50	92.2	61.6		
9:16:00	92.6	61.8		
9:16:10	93.2	62		
9:16:20	93.6	62		
9:16:30	94	62.2		
9:16:40	94.4	62.2		
9:16:50	94.6	62.4		
9:17:00	95	62.6		
9:17:10	95	62.6		
9:17:20	95	62.6		
9:17:30	95	62.6		
9:17:40	95	62.6		
9:17:50	95	62.6		
9:18:00	95	62.6		
9:18:10	95	62.8		
9:18:20	95	62.8		

Appendix C Erosion data

C.1 Natural rainfall

All data in the tables below are in units of 24 hour time to a resolution of a minute and date (time), litres/s (discharge, q) and grams/litre (concentration, c).

Batter sites

BRT2			BWT1		
time	**q**	**c**	**time**	**q**	**c**
11:52_06/02/1991	1.092	0.21484100	09:52_30/01/1991	0.500	0.25999999
11:54_06/02/1991	0.440	0.21011100	09:54_30/01/1991	0.644	0.36999999
15:00_13/02/1991	1.996	0.31634700	09:56_30/01/1991	0.536	0.09999999
15:02_13/02/1991	1.664	0.39329200	09:58_30/01/1991	0.393	0.04999999
15:03_13/02/1991	1.628	0.25276900	10:00_30/01/1991	0.272	0.10999999
15:04_13/02/1991	1.596	0.30710800	17:04_04/02/1991	0.258	0.10999999
15:05_13/02/1991	1.559	0.28204100	17:06_04/02/1991	0.425	0.21999999
15:06_13/02/1991	1.526	0.26848500	17:08_04/02/1991	0.479	0.10999999
15:07_13/02/1991	1.599	0.30445500	17:10_04/02/1991	0.415	0.06999999
15:08_13/02/1991	1.664	0.28513600	17:12_04/02/1991	0.279	0.06999999
15:09_13/02/1991	1.743	0.30613700	17:14_04/02/1991	0.207	0.10999999
15:10_13/02/1991	1.773	0.22229700	17:16_04/02/1991	0.108	0.14999999
15:12_13/02/1991	1.559	0.27697500	17:18_04/02/1991	0.049	0.05999999
15:14_13/02/1991	1.672	0.32365100	17:20_04/02/1991	0.023	0.02999999
15:16_13/02/1991	1.811	0.26394300	17:22_04/02/1991	0.011	0.05999999
15:18_13/02/1991	1.590	0.31170600	11:48_06/02/1991	0.494	0.35999999
15:20_13/02/1991	1.367	0.22980100	11:50_06/02/1991	0.645	0.70999999
15:22_13/02/1991	0.991	0.13327000	11:52_06/02/1991	0.310	0.32999999
14:50_16/02/1991	1.777	0.22740400	11:54_06/02/1991	0.132	0.20999999
14:51_16/02/1991	1.713	0.48569600			
14:52_16/02/1991	1.640	0.47978000			
14:53_16/02/1991	1.498	0.93804600			
14:54_16/02/1991	1.069	0.45763700			
14:56_16/02/1991	0.583	0.52107700			
14:58_16/02/1991	0.243	0.52351600			
15:00_16/02/1991	0.084	0.43003200			
15:02_16/02/1991	0.048	0.40051400			
15:04_16/02/1991	0.014	0.33303600			
15:06_16/02/1991	0.010	0.44691700			
13:41_22/02/1991	3.308	1.0051030			
13:42_22/02/1991	2.697	0.60572000			
13:43_22/02/1991	2.301	0.44268500			
13:44_22/02/1991	1.793	0.34495600			
13:45_22/02/1991	1.207	0.28009800			

Caprock sites

CWT2			CWT3		
time	q	c	time	q	c
20:53_07/01/1991	0.525	0.45000000	11:49_06/02/1991	0.350	0.35000000
20:54_07/01/1991	0.410	0.40000000	11:51_06/02/1991	0.313	0.26000000
20:55_07/01/1991	0.295	0.29000000	11:53_06/02/1991	0.250	0.20000000
20:56_07/01/1991	0.210	0.42000000	11:55_06/02/1991	0.187	0.45000000
20:57_07/01/1991	0.126	0.55000000	11:57_06/02/1991	0.123	0.18000000
20:58_07/01/1991	0.091	0.47000000	14:51_16/02/1991	0.311	0.29000000
20:59_07/01/1991	0.072	0.42000000	14:53_16/02/1991	0.345	0.18000000
21:00_07/01/1991	0.081	0.45000000	14:55_16/02/1991	0.306	0.14000000
21:01_07/01/1991	0.078	0.45000000	14:57_16/02/1991	0.265	0.23000000
21:02_07/01/1991	0.092	0.33000000	14:59_16/02/1991	0.211	0.18000000
21:03_07/01/1991	0.124	0.52000000	15:01_16/02/1991	0.157	0.23000000
21:04_07/01/1991	0.238	0.34000000	15:03_16/02/1991	0.109	0.09000000
21:05_07/01/1991	0.418	0.42000000			
21:06_07/01/1991	0.528	0.35000000			
21:07_07/01/1991	0.510	0.35000000			
21:08_07/01/1991	0.492	0.36000000			
14:29_10/01/1991	0.397	0.21000000			
14:30_10/01/1991	0.628	0.21000000			
14:31_10/01/1991	0.707	0.26000000			
14:32_10/01/1991	0.735	0.31000000			
14:33_10/01/1991	0.706	0.33000000			
14:34_10/01/1991	0.632	0.37000000			
14:35_10/01/1991	0.510	0.27000000			
14:36_10/01/1991	0.428	0.40000000			
14:37_10/01/1991	0.411	0.22000000			
14:38_10/01/1991	0.391	0.33000000			
14:39_10/01/1991	0.386	0.30000000			
14:40_10/01/1991	0.528	0.41000000			
14:41_10/01/1991	0.761	0.26000000			
14:42_10/01/1991	0.936	0.30000000			
14:43_10/01/1991	1.020	0.44000000			
14:44_10/01/1991	0.946	0.27000000			
14:45_10/01/1991	0.760	0.33000000			
14:46_10/01/1991	0.661	0.20000000			
14:47_10/01/1991	0.601	0.17000000			
14:48_10/01/1991	0.428	0.20000000			
14:49_10/01/1991	0.315	0.12000000			
17:00_21/01/1991	1.924	0.96000000			
17:02_21/01/1991	2.290	0.86000000			

CWT2			**CWT3**		
time	**q**	**c**	**time**	**q**	**c**
17:04_21/01/1991	2.335	0.60000000			
17:06_21/01/1991	1.782	0.50000000			
17:08_21/01/1991	1.775	0.43000000			
17:10_21/01/1991	1.349	0.40000000			
17:12_21/01/1991	1.141	0.34000000			
17:14_21/01/1991	0.792	0.32000000			
17:16_21/01/1991	0.762	0.56000000			
17:18_21/01/1991	0.742	0.39000000			
17:06_04/02/1991	0.522	0.37000000			
17:08_04/02/1991	0.542	0.39000000			
17:10_04/02/1991	0.432	0.31000000			
17:12_04/02/1991	0.330	0.33000000			
17:14_04/02/1991	0.285	0.34000000			
17:16_04/02/1991	0.108	0.28000000			

CRT1			**CRT2**		
time	**q**	**c**	**time**	**q**	**c**
20:51_07/01/1991	1.464	0.79473000	14:28_10/01/1991	0.000	0.07169600
20:52_07/01/1991	3.546	0.68102400	14:29_10/01/1991	0.222	0.15238100
20:53_07/01/1991	3.798	0.66075600	14:30_10/01/1991	0.762	0.15728100
20:54_07/01/1991	3.094	0.41398800	14:31_10/01/1991	1.090	0.15876700
20:55_07/01/1991	2.044	0.33409400	14:32_10/01/1991	1.097	0.12496500
20:56_07/01/1991	1.377	0.49845100	14:33_10/01/1991	1.031	0.16542000
20:57_07/01/1991	0.898	0.32978500	14:34_10/01/1991	0.889	0.15252300
20:58_07/01/1991	0.560	0.52054700	14:35_10/01/1991	0.665	0.09958900
20:59_07/01/1991	0.411	0.49276000	14:36_10/01/1991	0.402	0.09770400
21:00_07/01/1991	0.337	0.44134000	14:37_10/01/1991	0.247	0.09392000
21:01_07/01/1991	0.302	0.25933800	14:38_10/01/1991	0.219	0.07885600
21:02_07/01/1991	0.344	0.44371200	14:39_10/01/1991	0.197	0.06324600
21:03_07/01/1991	0.513	0.27446800	14:40_10/01/1991	0.413	0.07800700
21:04_07/01/1991	0.885	0.29710000	14:41_10/01/1991	0.935	0.09283200
21:05_07/01/1991	1.654	0.28733500	14:42_10/01/1991	1.488	0.17298100
21:06_07/01/1991	2.830	0.39422400	14:43_10/01/1991	1.799	0.20474800
21:07_07/01/1991	3.439	0.42346900	14:44_10/01/1991	1.601	0.13333600
21:08_07/01/1991	3.274	0.35967200	14:45_10/01/1991	1.157	0.12882000
21:09_07/01/1991	2.884	0.25528900	14:46_10/01/1991	0.818	0.12172700
21:10_07/01/1991	2.587	0.38363300	14:47_10/01/1991	0.611	0.11661500
21:11_07/01/1991	2.124	0.28951200	14:48_10/01/1991	0.333	0.10134700

time	q	c	time	q	c
21:12_07/01/1991	1.667	0.22524800	14:49_10/01/1991	0.153	0.12645900
21:13_07/01/1991	1.271	0.42242600	14:50_10/01/1991	0.040	0.09865400
14:30_10/01/1991	0.857	0.16850000	12:04_11/01/1991	1.401	0.28605000
14:31_10/01/1991	1.203	0.13229800	12:06_11/01/1991	1.472	0.46782600
14:32_10/01/1991	1.383	0.17744500	12:07_11/01/1991	1.727	0.26398900
14:33_10/01/1991	1.409	0.11567200	12:08_11/01/1991	2.145	0.27902600
14:34_10/01/1991	1.309	0.05928400	12:09_11/01/1991	2.558	0.24399300
14:35_10/01/1991	1.092	0.13183900	12:10_11/01/1991	2.696	0.40747100
14:36_10/01/1991	0.898	0.05614600	12:27_11/01/1991	7.820	1.7933880
14:37_10/01/1991	0.794	0.10383100	12:32_11/01/1991	6.308	1.7120430
14:39_10/01/1991	0.709	0.24974200			
14:41_10/01/1991	1.077	0.17614400			
14:43_10/01/1991	1.853	0.24668300			
14:45_10/01/1991	1.582	0.18447200			

CRT3			COUT		
time	q	c	time	q	c
20:52_07/01/1991	0.062	0.17045400	20:52_07/01/1991	7.569	0.71877800
20:53_07/01/1991	0.234	0.13516000	20:53_07/01/1991	11.859	0.82385400
20:54_07/01/1991	0.374	0.11517700	20:54_07/01/1991	13.740	0.82337000
20:55_07/01/1991	0.416	0.10505300	20:55_07/01/1991	13.740	0.53798400
20:56_07/01/1991	0.315	0.09925100	20:56_07/01/1991	11.859	0.62038400
20:57_07/01/1991	0.154	0.08699000	20:57_07/01/1991	9.499	0.56104500
20:58_07/01/1991	0.096	0.07591300	20:58_07/01/1991	6.856	0.53534200
20:59_07/01/1991	0.013	0.06974800	20:59_07/01/1991	5.214	0.62442700
21:00_07/01/1991	0.007	0.07167000	21:00_07/01/1991	3.780	0.63653700
21:01_07/01/1991	0.010	0.07053500	21:01_07/01/1991	3.780	0.50348600
21:02_07/01/1991	0.014	0.08993100	21:02_07/01/1991	3.015	0.48536400
21:03_07/01/1991	0.017	0.12837000	21:03_07/01/1991	3.516	0.40200800
21:04_07/01/1991	0.025	0.14296700	21:04_07/01/1991	5.214	0.54777700
21:05_07/01/1991	0.195	0.13833200	21:05_07/01/1991	7.208	0.61003700
21:06_07/01/1991	0.325	0.13925000	21:06_07/01/1991	9.499	0.46305200
21:07_07/01/1991	0.458	0.10556200	21:07_07/01/1991	13.256	0.46248900
21:08_07/01/1991	0.499	0.14522200	21:08_07/01/1991	13.740	0.48320100
21:09_07/01/1991	0.539	0.13055000	21:09_07/01/1991	13.740	0.38976900
21:10_07/01/1991	0.539	0.13171100	21:10_07/01/1991	13.740	0.41254400
21:11_07/01/1991	0.536	0.12790300	21:11_07/01/1991	13.256	0.42201900
21:12_07/01/1991	0.456	0.11641000	21:12_07/01/1991	10.970	0.40847700
			21:14_07/01/1991	7.938	0.35126200
			21:15_07/01/1991	6.856	0.41902400

CRT3			COUT		
time	q	c	time	q	c
			21:16_07/01/1991	5.214	0.43113700
			15:00_08/01/1991	4.913	0.81976900
			15:01_08/01/1991	9.909	0.68467700
			15:02_08/01/1991	13.740	0.63772200
			15:03_08/01/1991	14.228	0.64145900
			15:04_08/01/1991	14.228	0.55482800
			15:05_08/01/1991	12.317	0.47215000
			15:06_08/01/1991	8.318	0.44769200
			15:07_08/01/1991	6.176	0.83739800
			15:08_08/01/1991	4.051	0.47319400
			08:10_10/01/1991	13.739	0.25497900
			08:12_10/01/1991	12.782	0.57277400
			08:14_10/01/1991	15.234	0.17540200
			08:16_10/01/1991	15.234	0.43323500
			08:18_10/01/1991	9.498	1.1408720
			08:20_10/01/1991	6.513	0.38401600
			14:31_10/01/1991	11.410	0.28784300
			14:37_10/01/1991	14.727	0.38872900
			14:39_10/01/1991	10.117	0.37154500
			14:41_10/01/1991	12.782	0.32780200
			12:01_11/01/1991	15.234	0.32108100
			12:02_11/01/1991	15.234	0.21702000
			12:03_11/01/1991	13.255	0.33143600
			12:04_11/01/1991	10.969	0.29784800
			12:05_11/01/1991	9.908	0.29705600
			12:06_11/01/1991	9.498	0.43392400
			12:07_11/01/1991	9.498	0.32619700
			12:08_11/01/1991	10.540	0.33387300
			12:27_11/01/1991	17.355	0.88824700
			12:32_11/01/1991	30.452	0.97785000
			17:37_28/12/1990	2.325	1.3592980
			17:38_28/12/1990	3.780	1.2045150
			17:39_28/12/1990	4.329	1.2912300
			17:40_28/12/1990	4.329	1.1151860
			17:41_28/12/1990	4.051	1.2154910
			17:42_28/12/1990	3.015	1.3565480
			17:43_28/12/1990	2.219	1.2297690
			17:44_28/12/1990	1.614	1.2769350
			17:45_28/12/1990	1.173	1.1490480

CRT3			COUT		
time	q	c	time	q	c
			17:46_28/12/1990	0.744	1.3126110
			17:47_28/12/1990	0.571	1.2212900
			17:48_28/12/1990	0.426	1.5949080
			17:49_28/12/1990	0.305	1.2021710
			17:50_28/12/1990	0.132	1.2104180
			17:51_28/12/1990	0.075	1.1574080
			17:52_28/12/1990	0.037	1.4027180
			18:05_28/12/1990	0.004	1.1369710
			17:06_04/02/1991	13.739	0.22890900
			17:08_04/02/1991	14.727	0.32923000
			17:10_04/02/1991	14.227	0.34632300
			17:12_04/02/1991	9.908	0.34863000
			17:14_04/02/1991	7.208	0.31404800
			17:16_04/02/1991	4.912	0.36601000

C.2 Simulated rainfall

The data below are those for calibration of the sediment transport equation from simulated rainfall equation 3.3.1. Times, t, are in minutes from the start of the experiment, discharge, q, in litres/second, and concentrations, c, in grams/litre.

Batter sites

Plot 4 Run 2			Plot 4 Run 3		
time	**q**	**c**	**time**	**q**	**c**
8.29.30	0.115	0.66300000	11.19.30	0.4995	1.6779000
8.30.00	0.4995	0.77410000	11.20.00	0.9712	1.8078000
8.30.30	0.5528	1.1310000	11.20.30	0.8421	2.0133000
8.31.00	0.5528	1.3247000	11.21.00	1.897	2.3204000
8.32.00	0.9712	1.3201000	11.22.00	1.897	2.1612000
8.34.00	0.9067	1.8998000	11.23.00	1.897	1.2210000
8.35.00	0.9712	1.2279000	11.24.00	1.897	1.8315000
8.36.00	0.8421	1.0938000	11.25.00	2.077	1.6952000
8.38.00	0.8421	1.0370000	11.27.00	1.897	1.5653000
8.40.00	0.9067	0.80720000	11.29.00	2.263	1.2864000
8.42.00	0.9712	0.93130000	11.31.00	2.077	1.0251000
8.45.00	0.8421	1.0469000	11.34.00	1.987	1.6714000
8.50.00	0.9712	0.76500000	11.39.00	1.481	0.83240000
8.55.00	0.9067	0.41720000	11.44.00	1.987	1.2600000
9.00.00	0.9067	0.83170000	11.49.00	2.456	2.2437000
9.05.00	0.8421	0.75910000	11.54.00	1.327	2.0437000
9.15.00	0.8421	1.0252000	11.59.00	1.327	0.59260000
9.20.00	0.7203	3.0830000	12.08.40	1.179	1.1522000
9.24.30	0.7203	2.4868000	12.09.10	0.8421	1.0299000
9.25.00		0.97720000	12.09.40	0.6061	0.68950000
9.25.30	0.4995	0.60290000	12.10.10	0.3724	0.84940000
9.25.30	0.2288	0.43540000	12.10.40	0.286	0.58740000
9.26.00	0.115	0.78680000	12.11.10	0.1716	0.51180000
9.26.30	0.0572	0.50470000	12.11.40	0.1144	0.45710000
9.27.00	0.0572	0.42380000	12.12.10	0.0858	0.21110000
9.27.30	0.0572	0.44330000	12.12.40	0.0286	0.55190000
9.28.00	0.0572	0.30500000	12.12.30		0.66322000
9.28.30	0.0572	0.09500000			

Caprock sites

Plot 1 Run 2			Plot 1 Run 3		
time	**q**	**c**	**time**	**q**	**c**
6.0	0.53	0.607	3.1		1.124
7.0	0.74	0.630	4.5	1.18	1.112
8.0	0.74	0.515	6.0	1.49	0.628
9.0	0.74	0.568	7.0	1.56	0.612
10.0	0.81	0.550	8.0	1.62	0.756
11.1	0.79	0.479	9.5	1.71	0.446
12.0	0.81	0.339	10.5	1.77	0.423
13.0	0.84	0.358	11.5	1.77	0.374
14.0	0.77	0.299	12.5	1.7	0.391
15.0	0.81	0.283	14.5	1.77	0.368
17.0	0.88	0.356	16.0	1.77	0.469
19.0	0.84	0.282	18.5	1.71	0.299
21.0	0.91	0.288	20.5	1.77	0.264
26.0	0.84	0.134	25.5	1.7	0.231
31.0	0.81	0.134	30.5	1.77	0.165
41.0	0.81	0.180	41.0	1.7	0.156
51.5	0.77	0.146	50.5	1.77	0.117
60.0	0.87	0.164	57.0	1.7	0.081
61.0	0.76	0.158	58.0	1.26	0.185
62.5	0.37	0.031	59.0	0.51	0.155
63.5	0.17	0.052	60.0	0.3	0.104
64.5	0.1	0.114	61.0	0.13	0.090
65.5	0.07	0.059	62.0	0.07	0.076
66.5	0.01	0.021			

Plot 1 Run 4			Plot 2 Run 2		
time	**q**	**c**	**time**	**q**	**c**
1.5	1.36	0.645	5.5		1.024
2.5	1.62	0.640	6.5	0.69	0.790
3.5	1.72	0.553	7.5	1.21	0.692
4.5	1.79	0.346	8.5	1.21	0.616
5.5	1.92	0.383	9.5	1.27	0.622
12.0	1.92	0.276	10.5	1.37	0.384
14.0	2.11	0.251	11.5	1.38	0.327
16.0	2.06	0.304	12.5	1.43	0.522
19.0	2.11	0.244	13.5	1.43	0.450
26.0	2.04	0.175	14.5	1.43	0.380
52.5	0.39	0.353	16.5	1.49	0.485

time	q	c	time	q	c
56.5	0.01	0.127	18.5	1.43	0.276
			20.5	1.55	0.680
			25.5	1.43	0.328
			30.5	1.21	0.271
			40.5	1.32	0.258
			51.0	1.27	0.097
			60.5	1.12	0.142
			60.5	1.12	0.183
			63.0	0.43	0.185
			64.0	0.28	0.109
			65.0	0.15	0.120
			66.0	0.11	0.062
			67.5	0.06	0.098

Plot 2 Run 3			**Plot 2 Run 4**		
time	**q**	**c**	**time**	**q**	**c**
2.8		2.263	6.0	2.28	0.469
4.0	1.25	1.345	9.0	2.22	0.430
5.0	1.92	1.144	11.0	2.25	0.418
6.5	2.05	0.992	13.5	2.3	0.379
7.5	2.04	0.651	15.0	2.07	0.368
9.0	2.11	0.844	17.0	2.23	0.464
10.0	2.18	0.793	20.0	2.15	0.429
11.0	2.04	0.724	23.5	2.3	0.450
12.0	2.04	0.639	28.0	2.16	0.210
14.0	2.11	0.475	38.0	2.07	0.208
15.5	2.05	0.616	50.5	1.73	0.351
18.0	2.11	0.493	52.0	0.83	0.442
20.0	2.06	0.066	53.0	0.44	0.405
25.0	2.12	0.343			
30.0	2.11	0.313			
40.5	2.06	0.310			
50.0	2.12	0.256			
57.5	1.77	0.300			
58.5	1.57	0.201			
59.5	0.81	0.117			
60.5	0.46	0.247			
61.5	0.34	0.209			
63.0	0.18	0.182			

The data below are the covered and uncovered sediment transport from the batter plots B1RF1QSS data (table 3.2) for 1 m^2 for determination of the rainsplash diffusion coefficients used in figure 3.6. Data are in units as above.

Plot 1 Run 1			Plot 1 Run 2			Plot 1 Run 3		
time	q	c	time	q	c	time	q	c
2.5	0.02	1.36	1	0.03	2.30	1	0.04	5.10
3.5	0.04	3.87	2	0.04	4.19	2	0.04	6.76
4.5	0.02	1.78	3	0.04	2.24	3	0.04	2.36
5.5	0.01	0.94	4	0.04	0.97	4	0.04	2.79
6.5	0.04	0.97	5	0.03	0.37	5	0.05	1.92
7.5	0.02	0.78	6	0.02	2.38	6	0.04	4.30
8.5	0.02	0.69	7	0.03	2.16	8	0.04	5.54
9.5	0.02	0.38	8	0.04	2.35	10	0.04	3.86
10.5	0.02	0.99	9	0.04	1.26	12	0.03	3.42
11.5	0.06	0.34	11	0.03	1.68	14	0.08	3.67
12.5	0.04	1.68	13	0.05	3.21	20	0.03	2.63
14.5	0.04	0.85	15	0.04	0.84	25	0.04	3.14
16.5	0.04	1.04	17	0.04	1.48	30	0.08	2.30
18.5	0.05	1.05	19	0.04	0.72	35	0.04	2.21
20	0.03	0.93	20.5	0.04	1.49	40	0.05	1.58
25	0.01	0.68	25.5	0.04	0.87	50	0.07	3.75
30	0.02	0.84	30.5	0.04	1.64	60	0.05	3.14
35	0.03	0.60	40.5	0.02	0.15	60.3	0.02	0.59
40	0.03	0.97				61.3	0.01	2.09
50	0.03	0.57				62.3	0.00	5.32
60	0.02	0.49						
61	0.01	0.85						
62	0.01	0.20						

Plot 1 Run 4			Plot 1 Run 5		
time	q	c	time	q	c
1	0.04	5.10	0.5	0.08	3.11
2	0.04	6.76	1	0.09	2.28
3	0.04	2.36	2	0.09	2.08
4	0.04	2.79	3	0.10	3.27
5	0.05	1.92	4	0.08	2.97
6	0.04	4.30	5	0.07	2.83
8	0.04	5.54	6	0.09	4.19
10	0.04	3.86	7	0.08	2.24
12	0.03	3.42	8	0.07	2.39

time	q	c	time	q	c
14	0.08	3.67	10	0.09	3.52
20	0.03	2.63	12	0.04	0.40
25	0.04	3.14	14	0.04	0.74
30	0.08	2.30	16	0.03	3.79
35	0.04	2.21	18	0.02	0.31
40	0.05	1.58	20	0.05	1.63
50	0.07	3.75	25	0.01	0.00
60	0.05	3.14	30	0.01	0.29
60.3	0.02	0.59	30.5	0.00	0.00
61.3	0.01	2.09	40	0.05	2.52
62.3	0.00	5.32	50	0.02	5.64
			60	0.07	1.61
			60.5	0.02	3.16
			61	0.01	0.00

Plot 2 Run 1			Plot 2 Run 2			Plot 2 Run 3		
time	**q**	**c**	**time**	**q**	**c**	**time**	**q**	**c**
7	0.01	3.76	4.5	0.02	0.75	1.5	0.04	0.40
8	0.01	0.25	5.5	0.04	0.42	2.5	0.04	0.24
9	0.01	0.20	6.5	0.03	0.25	3.5	0.04	0.03
10	0.01	0.26	7.5	0.02	0.33	4.5	0.04	0.08
11	0.01	0.35	8.5	0.02	0.25	5.5	0.04	0.22
12	0.01	0.58	9.5	0.02	0.35	6.5	0.04	0.09
15	0.01	0.05	10.5	0.03	0.23	8.5	0.04	0.00
17	0.01	0.12	11.5	0.02	0.29	10.5	0.04	0.31
19	0.01	0.01	12.5	0.04	0.25	12.5	0.05	0.02
20.5	0.01	0.57	14.5	0.03	0.24	14.5	0.05	0.21
25.5	0.02	0.32	16.5	0.03	0.22	20.5	0.06	0.00
30.5	0.02	0.05	18.5	0.05	0.26	25.5	0.05	0.06
35.5	0.02	0.36	25	0.03	0.15	30.5	0.05	0.00
40.5	0.02	0.06	30	0.02	0.09	35.5	0.08	0.00
50.5	0.005	0.34	40	0.01	0.61	40.5	0.06	0.00
62.5	0.003	0.02	43	0.01	0.37	50.5	0.04	0.00
63.5	0.001	0.50	44	0.00	0.10	60.5	0.03	0.00

Plot 2 Run 4			Plot 2 Run 5		
time	q	c	time	q	c
1.5	0.06	0.49	1	0.09	0.41
2.5	0.06	0.15	2	0.15	0.00
3.5	0.07	0.22	3	0.12	0.09
4.5	0.04	0.03	4	0.12	0.12
5.5	0.04	0.00	5	0.15	0.16
6.5	0.07	0.01	6	0.12	0.07
7.5	0.04	0.08	7	0.09	0.07
8.5	0.04	0.21	8	0.11	0.03
10.5	0.04	0.12	9	0.05	0.77
12.5	0.01	0.00	10	0.09	0.22
14.5	0.02	0.00	11	0.11	0.21
16.5	0.03	0.00	12.5	0.12	0.17
18.5	0.01	0.00	14.5	0.16	0.14
20.5	0.01	0.00	16.5	0.16	0.02
25.5	0.003	0.00	20.5	0.09	0.00
30.5	0.002	0.00	25.5	0.05	0.25
30.5	0.12	0.36			
35.5	0.07	0.33			
40.5	0.06	0.29			
50.5	0.04	0.07			
60.25	0.05	0.00			
60.75	0.03	0.11			
61.25	0.01	0.00			

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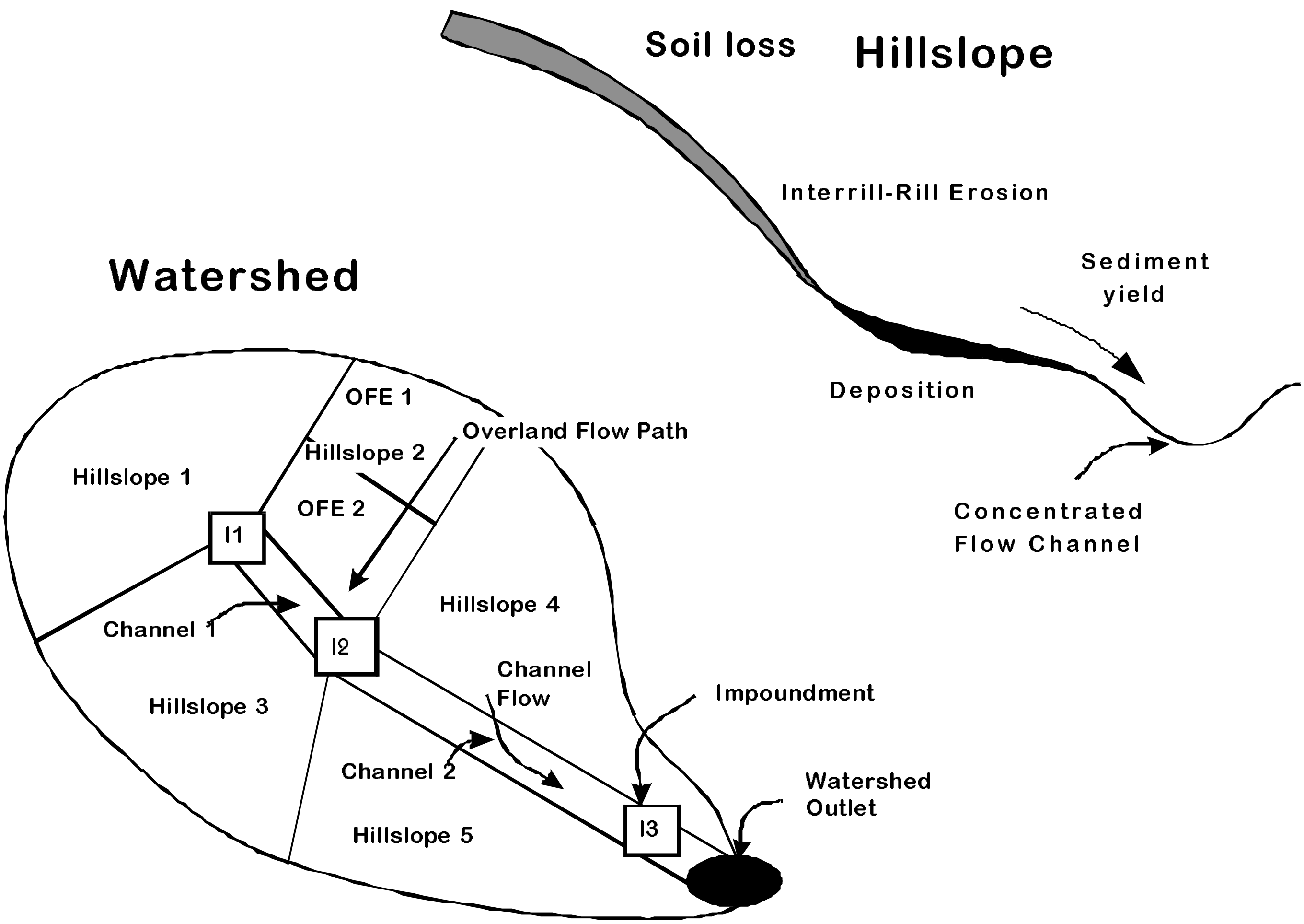
WEPP USER SUMMARY

USDA- Water Erosion Prediction Project



USDA - Agricultural Research Service
USDA - Natural Resource Conservation Service
USDA - Forest Service
USDI - Bureau of Land Management

NSERL Report NO. 11, July 1995
National Soil Erosion Research Laboratory
USDA-ARS-MWA
1196 SOIL Building
West Lafayette, IN 47907-1196

This User Summary document is part of a packet of material released with the WEPP Erosion Prediction Model (computer program) in August of 1995. The packet also includes technical documentation and a CD-ROM which contains all documentation, the WEPP erosion model and interface, file builders, graphics plotting programs, and sample data sets. For additional information on the WEPP models, please contact:

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WEPP QUICK START GUIDE

Hardware and Setup Requirements

This version of the Water Erosion Prediction Project (WEPP) model is designed to run on IBM and IBM-compatible Personal Computers (PCs) under the DOS operating system. In order to effectively run the WEPP model and associated satellite programs, your computer needs to have at least an 80386 CPU, along with a math coprocessor. A hard drive with at least 10 MB of free space is also required, and depending on the number of WEPP simulations and amounts of input data created and output data generated, free space on your hard drive may need to be larger. Set files=50 in your config.sys file.

If you are using the EMM386 device driver (for using expanded memory and accessing upper memory), you may need to modify the settings for the driver in your CONFIG.SYS file to allow the cropping and management file builder to execute properly. ***You must not specify the NOEMS*** option in your config.sys file because the current versions of the WEPP interface programs require access to both expanded memory and the upper memory area of your PC.

Installation from CD

Move to the CD-ROM drive on your PC. ("**Z:**", where Z is the letter of your CD-ROM drive). Move to the directory containing the WEPP installation programs (**CD WEPPEXE**). Then type: **INSTALL**, the installation program will prompt you for the destination directory and type of installation.

Installation from Diskettes

Place the 3.5" diskette labeled WEPP Installation Disk #1 into your floppy drive, then on your system move to the floppy drive. Type: **INSTALL** . The installation program will then ask you on which hard drive partition you wish to install the WEPP programs and files. Enter your choice, then the installation program will proceed to install all necessary directories and files in a directory **\WEPP** on the selected drive partition. Depending on the installation desired, you will be prompted for additional diskettes.

To start the WEPP hillslope interface program from the \WEPP directory, type:

HILL

To start the WEPP watershed interface program from the \WEPP directory, type:

SHED

A basic understanding of the hillslope interface is recommended before use of the watershed interface.

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Water Erosion Prediction Project (WEPP) Version 95.7 User Summary

INTRODUCTION

The objective of the Water Erosion Prediction Project is "to develop new generation water erosion prediction technology for use by the USDA-Soil Conservation Service, USDA-Forest Service, and USDI-Bureau of Land Management, and other organizations involved in soil and water conservation and environmental planning and assessment" (Foster and Lane, 1987).

The computer programs on the accompanying CD-ROM or diskettes are a major step towards meeting the project objectives. The WEPP erosion model represents prediction technology based on fundamental hydrologic and erosion mechanics science. WEPP allows both spatial and temporal estimates of erosion and deposition on watersheds consisting of hillslopes and channels which may range from very simple and uniform to very complex and nonuniform, and impoundments. The satellite programs accompanying the WEPP program consist of an interface and several file builders and graphics programs. The interface is meant to be an easy-to-use tool for the user to organize his/her WEPP runs and input/output files. The file builders allow rapid creation of new WEPP model input files or modification of existing data files. The graphics programs allow the user to view the location of detachment and deposition predicted on the profile, as well as the erosion (and many other variables) predicted through time.

MODEL DESCRIPTION

Model Summary

The WEPP model may be used in both hillslope and watershed applications. The model is a distributed parameter, continuous simulation, erosion prediction model, implemented as a set of computer programs for personal computers (PC's). The distributed input parameters include rainfall amounts and intensity, soil textural qualities, plant growth parameters, residue decomposition parameters, effects of tillage implements on soil properties and residue amounts, slope shape, steepness, and orientation, and soil erodibility parameters. Continuous simulation means that the computer program simulates a number of years, with each day having a different set of input climatic data. On each simulation day a rain storm may occur, which then may or may not cause a runoff event. If runoff is predicted to occur, the soil loss, sediment deposition, sediment delivery off-site, and the sediment enrichment for the event will be calculated and added to series of sum totals. At the end of the simulation period, average values for detachment, deposition, sediment delivery, and enrichment are determined by dividing by the time interval of choice. The entire set of parameters important when predicting erosion are updated on a daily basis, including soil roughness, surface residue cover, canopy height, canopy cover, soil moisture, etc. This continuous updating relieves the user of the difficult job of determining temporal distributions of important parameters, such as cover values.

In watershed applications, the WEPP model applies to field areas that include ephemeral gullies which may be farmed over and are known as concentrated flow gullies, or constructed waterways such as terrace channels and grassed waterways. For rangeland applications, it applies to areas that include gullies that are up to the size of ephemeral gullies in cropland, i.e. about 1 to 2 meters (3 to 6 ft) wide and 1 meter (3 ft.) deep. The hillslope routines of WEPP are used for the overland flow portion of the area and the watershed routines of WEPP are used on channels and impoundments. The procedure does not apply to areas having permanent channels such as classical gullies and perennial streams.

A watershed is defined as one or more hillslopes draining into one or more channels and/or impoundments. The smallest possible watershed includes one hillslope and one channel. Runoff characteristics, soil loss and deposition are first calculated on each hillslope with the hillslope component of WEPP for the entire simulation period. Main results are saved in a pass file that is used during the watershed routing. Then the model combines simulation results from each hillslope and performs runoff and sediment routing through the channels and impoundments each time runoff is produced on one of the hillslopes or channels, or if there is an outflow from one of the impoundments. Channel and impoundment parameters such as canopy height and impoundment water level are updated on a daily basis.

The major inputs to WEPP are a climate data file, a slope data file, a soil data file, and a cropping/management data file. The contents of each of these input files will be discussed in detail later in this document. If the user is simulating irrigation, additional input files are necessary. Applying WEPP in a watershed application also requires additional input files which provide information on channel and impoundment characteristics as well as watershed configuration. The climate file can easily be built using the CLIGEN program, either within the WEPP interface or outside of it, and the user has the option to choose from over 1000 weather stations in the United States. The slope file is easy to build either within the interface slope file builder, or by hand. The slope file builder has the added advantage of allowing the user to graphically preview the slope shape. The soil file can also be created through use of the soil file builder in the WEPP interface, or through use of a text editor. The cropping/management input file contains the largest number of different types of input parameters which describe the different plants, tillage implements, tillage sequences, management practices, etc. The user may wish to edit existing cropping/management input files, either using the interface file builder or a text editor.

Apart from the input required for hillslope simulations, a watershed simulation requires additional files to describe the watershed configuration (the structure file), the channel topography (the channel slope file), the channel soils (the channel soil file), the channel management practices (the channel management file), and the channel hydraulic characteristics (the channel file). If the user chooses to use impoundments and/or irrigation then an impoundment file and/or an irrigation file are necessary. As with the hillslope input files, watershed specific files can be created with the file builders in the WEPP interface or they can be edited with a text editor.

The WEPP computer program produces many different kinds of output, in various quantities, depending upon the wishes of the user. The most basic output contains the runoff and erosion summary information, which may be produced on a storm-by-storm, monthly, annual, or average annual basis. The time-integrated estimates of runoff, erosion, sediment delivery, and sediment enrichment are contained in this output, as well as the spatial distribution of erosion on the hillslope. The program predicts detachment or deposition at each of a minimum of 100 points on a hillslope, and the sum totals of these values are divided by the number of years of simulation to give average annual detachment or deposition at each point. Some points on a hillslope may experience detachment during some rainfall events, and deposition during other events. The output file is clearly delineated into two sections, one for on-site effects of erosion, and one for off-site effects. The on-site effects contain the time-integrated (average annual) soil loss estimates over the areas of the hillslope experiencing net soil loss. This output value is the one most closely analogous to USLE erosion estimates, and it is the output most related to on-site loss of productivity. Also included in the on-site effects section are estimates of the average sediment deposition occurring on the hillslope, and the table of detachment/deposition at a minimum of 100 points on the hillslope. The output file section on off-site impacts of erosion includes the estimated average annual sediment delivery from the hillslope, as well as particle size distributions of the detached sediment and sediment leaving the hillslope, and an estimate of the enrichment of the specific surface area of the sediment. This information may be useful in determining potential impacts of different management systems on sediment and sediment-borne pollutants reaching waterways.

In addition to the output files specific to each hillslope, the watershed component of WEPP produces several kinds of output, depending upon the wishes of the user. The most basic information is the erosion and runoff summary output for the whole watershed, which may be produced on a monthly, annual or average annual basis. A summary of runoff and sediment yield estimates for each element of the watershed is included in this output, as well as significant results for the whole watershed: sediment delivery ratio, enrichment ratio, specific surface index, particle size distribution of the sediment leaving the area. If impoundments are present in the watershed, an impoundment output file may be created that details on an annual and average annual basis incoming and outgoing volumes of runoff and sediment. Incoming and outgoing volumes of each sediment particle class are also included in this output.

Abbreviated summary information for each runoff event (rainfall, runoff, soil loss, etc.) can also be generated. This event output file is similar to the event output file that may be created for hillslopes. Similarly, a very large graphical output data file can be created that can be accessed with a graphical program which allows the user to plot different variables. Other outputs include detailed soil, plant, water balance, crop, yield, winter and rangeland files. These files can be useful to the user who would like to study the response of the model under specific conditions.

For each hillslope, spatial information (point values of detachment/deposition) may also be created in a plotting output file, which when used with the plotting program allows the user to see the profile shape and locations of detachment and deposition on the hillslope. Abbreviated summary information for each runoff event (rainfall, runoff, soil loss, etc.) can also be generated, and this information is useful in determining frequency distributions of the runoff and erosion events. A very large graphical output data file can be created which allows detailed examination of many parameter values within the model on a daily basis.

Other outputs include detailed soil, plant, water balance, crop yield, winter, and rangeland files. Most often these files are created and viewed when trying to determine the reasons behind various WEPP model responses. Data from these files can also be imported into spreadsheet programs if the user desires to manipulate or graph these outputs.

The WEPP computer program may also be run in a single storm mode. For these types of simulations, the user must input all of the parameters needed to drive the hydrologic and erosion components of the model for the single day of simulation. Single storm simulations can be quite useful when the purpose is to understand a portion of the hydrologic and erosion processes, and have been used extensively in validation of various parts of the WEPP model. However, single storm simulations have limited value when trying to predict long term average annual detachment.

The purpose of the WEPP model interface, file builders, and graphical viewing programs is to assist the user in easily building their input files, setting up groups of model runs, and examining the model results. This document will provide a step-by-step guide to using the interface and various file builders and running the WEPP model. The interface allows the user to define sets of WEPP simulations, then save these sets as a unique name. For example, someone doing model validation might want to create a set of simulations for experimental location A, and a second set of simulations for experimental location B. Once the run information has been entered, it is likely that little or no changes will have to be made in order to rerun the simulation set (for example with an updated WEPP version). The graphical viewing programs allow the user to rapidly determine the effects of his/her different input sets on runoff, erosion, and sediment delivery.

As a whole, the output provides a potentially powerful tool for conservation planning. The model estimates where and when soil loss problems occur on a given hillslope for a given management system, and allows the user to easily view and interpret the results. The WEPP computer programs provide an inexpensive and rapid method for evaluating various soil conservation options.

Model Components

The WEPP model as applied to hillslopes can be subdivided into nine conceptual components: climate generation, winter processes, irrigation, hydrology, soils, plant growth, residue decomposition, hydraulics of overland flow, and erosion. This section will give a brief description of each component. A detailed description of the model components can be found in the technical model documentation, which is a separate document.

Simulated climate for WEPP model simulations is normally generated using the CLIGEN model, which is a computer program run separately from the WEPP erosion model. CLIGEN creates climate input data files for WEPP which contain daily values for rainfall amount, duration, maximum intensity, time to peak intensity, maximum and minimum temperatures, solar radiation, wind speed, wind direction, and dew point temperature. The rainfall for a day is disaggregated into a simple single-peak storm pattern (time-rainfall intensity format) for use by the infiltration and runoff components of the model. Input climate files to WEPP can also be constructed so as to accept breakpoint rainfall data.

Winter processes modeled in WEPP include soil frost and thaw development, snowfall, and snow melting. Simple heat flow theory is used with the daily information on temperatures, solar radiation, residue cover, plant cover, and snow cover to determine the flow of heat into or out of the soil, and then the subsequent changes to frost and thaw depths. Solar radiation, air temperature, and wind drive the snow melting process.

The irrigation component of WEPP allows simulation of both stationary sprinkler and furrow irrigation systems. The sprinkler irrigation component accommodates solid set, side-roll, and hand-move systems, while the furrow component can simulate uniform inflow, surge, and cutback flows Spatial variations in application rate and depth within a sprinkler irrigation area are assumed to be negligible, and a sprinkler event is simulated as a rainfall event of uniform intensity. The scheduling options available for both sprinkler and furrow irrigation are depletion-level and fixed-date. Depletion-level scheduling determines the date and amount of irrigation based upon the available soil moisture depletion. Fixed-date scheduling uses predetermined irrigation dates and amounts. The user may also use a combination of the two scheduling methods.

The hydrology component of WEPP computes infiltration, runoff, soil evaporation, plant transpiration, soil water percolation, plant and residue interception of rainfall, depressional storage, and soil profile drainage by subsurface tiles. Infiltration is calculated using a modified Green and Ampt infiltration equation. Runoff is computed using the kinematic wave equations or an approximation to the kinematic wave solutions obtained for a range of rainfall intensity distributions, hydraulic roughness, and infiltration parameter values. The water balance routines are a modification of the SWRRB water balance (Williams et al., 1985).

The impacts of tillage on various soil properties and model parameters are computed within the soils component of the WEPP model. Tillage activity during a simulation acts to decrease the soil bulk density, increase the soil porosity, change soil roughness and ridge height, destroy rills, increase infiltration parameters, and change erodibility parameters. Consolidation due to time and rainfall after tillage and its impacts on the soil parameters is also simulated.

The plant growth component for croplands calculates above and below ground biomass production for both annual and perennial crops in cropland situations, and for rangeland plant communities in rangeland situations. Work is underway by the USDA Forest Service to incorporate plant growth routines applicable for forested conditions. The plant growth routines in WEPP are based upon an EPIC (Williams et al., 1989) model approach, which predicts potential growth based upon daily heat unit accumulation. Actual plant growth is then decreased if water or temperature stresses exist. Several different types of management options for cropland and rangeland plants can be simulated.

Plant residue decomposition for croplands is based upon a "decomposition day" approach, which is similar to the growing degree day approach used in many plant growth models. Each residue type has an optimal rate for decomposition, and environmental factors of temperature and moisture act to reduce the rate from its optimum value. The WEPP model tracks the type and amounts of residue from the previous 3 crop harvests. The model also allows several types of residue management, including residue removal, shredding, burning, and contact herbicide application.

For rangelands the plant growth component simulates the aggregate above and below ground biomass production for the entire plant community. The plant growth routines in WEPP are based on the ERHYM-II(White, 1987) and SPUR models (Wight and Skiles, 1987). Plant growth for rangelands are based on a potential growth curve. Actual plant growth is initiated in the spring when temperature is above a threshold and is a function of water stress. Decomposition of surface litter is based on temperature and precipitation. Root biomass decomposition is based on temperature and soil water content.

The impacts of soil roughness, residue cover, and living plant cover on runoff rates, flow shear stress, and flow sediment transport capacity are computed in the hydraulics of overland flow section of the WEPP model. Rougher surfaces, fields with more residue cover, and closely spaced crops tend to increase the soil surface resistance to flow, which in turn decreases runoff rates, decreases flow shear stress acting on the soil, and decreases sediment transport capacity of the flow.

The erosion component of the WEPP model uses a steady-state sediment continuity equation to estimate the change in sediment load in the flow with distance downslope. Soil detachment in interrill areas is modeled as a function of rainfall intensity and runoff rate, while delivery of interrill sediment to rills is a function of slope and surface roughness. Detachment of soil in the rills is predicted to occur if the hydraulic shear stress of the flow exceeds a critical value, and the sediment already in the flow is less than the flow's transport capacity. Simulation of deposition in rills occurs when the sediment load in the flow is greater than the capacity of the flow to transport it. Adjustments to soil detachment are made to incorporate the effects of canopy cover, ground cover, and buried residue. The WEPP model also computes the effects of selective deposition of different sediment classes and estimates a sediment size distribution leaving a hillslope. An enrichment ratio of the sediment specific surface area is also estimated.

In addition to the model components used in hillslope applications, the watershed simulations use three more components: channel hydrology and hydraulics, channel erosion and impoundments. The channel hydrology component computes infiltration, soil evaporation, plant transpiration, soil water percolation, rainfall interception, depression storage and soil drainage in the same way as the hillslope hydrology component. Excess rainfall is then combined with runoff from upstream elements: hillslopes, channels or impoundments. Transmission losses are computed using a modified form of the Green-Ampt infiltration formula. Runoff peaks are then computed using either the CREAMS peak computation method (Knisel, 1980), i.e. an empirical formula that is a function of the volume of runoff, the contributing area and its slope, and the time of concentration, or a modified form of the rational formula as used in the EPIC model (Sharpley and Williams, 1980).

The channel erosion component predicts detachment and deposition in channels in a similar manner as for rills on a hillslope. Detachment occurs if the shear stress is greater than a critical value and if the incoming sediment load from upstream and lateral channels, impoundments and/or hillslopes is less than the transport capacity of the channel. If the sediment load is greater than the transport capacity, deposition is predicted to occur. The particle size distribution of the sediment leaving the channel and an enrichment ratio are also calculated. An enrichment ratio is also computed for the entire watershed.

Downslope damage by detached sediment can be minimized by the use of impoundments. Typical impoundments include terraces, farm ponds, and check dams. Impoundments form small pond areas which reduce the flow velocity, thus decreasing the sediment carrying capacity and allowing sediment to settle out of suspension. Impoundments can significantly impact sediment yield by trapping as much as 90% to 100% of incoming sediment, dependent upon particle size, impoundment size, and inflow and outflow rates (Haan et al., 1994).

The impoundment routines in WEPP route runoff and sediment through an impoundment determining the total amount of runoff leaving the structure, the amount of sediment deposited in the structure, and the amount and size of sediment leaving the structure. Since impoundments are one of the best methods to limit off-site damages from water erosion, the impoundment routines are crucial to the usefulness of WEPP.

User requirements dictate that the WEPP Surface Impoundment Element (WEPPSIE) technology must simulate several types of impoundments including farm ponds, terraces, culverts, filter fences, and check dams. Furthermore the basic framework of the impoundment element requires four sections: 1) daily input, 2) hydraulic simulation, 3) sedimentation simulation, and 4) daily output. The impoundment routines must also include a front end user interface that develops stage-discharge and stage-area relationships for a given impoundment. This section of the User's Guide describes what types of impoundments can be simulated, how to properly represent an impoundment through the required inputs, and how to interpret the output.

The impoundment routines simulate hydraulic routing and sedimentation for situations where ponding occurs, e.g. when runoff enters a farm pond, terrace, check dam, trash barrier, etc. Up to 10 impoundments can be defined in a given watershed simulation. Geometry and the type of outflow structure(s) define an impoundment. Geometry for each impoundment is defined by a series of stage-area and stage-length points input by the user. The outflow structure(s) for each impoundment is defined by the stage-discharge relationship. WEPPSIE contains continuous outflow functions for any combination of the following possible structures: 1) drop spillways, 2) perforated risers, 3) culverts, 4) open channels, 5) emergency spillways, 6) rock fill check dams, 7) filter fence, and 8) straw bale check dams with pertinent information for each structure entered by the user. If the user encounters a structure that is not defined in the WEPPSIE code, a discrete stage-discharge relationship can be entered.

The impoundment component allows calculation of outflow hydrographs and sediment concentration for various types of structures suitable for both large or small impoundments: drop spillways, culverts, filter fences and straw bales, perforated risers, and emergency spillways. Deposition in the impoundment is calculated assuming complete mixing, and later adjusted to take into account stratification, non-homogeneous concentrations, and the shape of the impoundment. The model uses a continuity mass balance equation to predict outflow concentration, assuming complete mixing in the impoundment.

Limits of Application

The erosion predictions from the WEPP model are meant to be applicable to "field-sized" areas or conservation treatment units. When applied to a single hillslope, the model simulates a representative profile, which may or may not approximate the entire field. For large broad zones in which there is a definite slope shape dominating an entire field, one profile representation may be sufficient to adequately model the site. However, for very dissected landscapes, in which several different, distinct slope shapes exist, several hillslopes will need to be simulated(either as separate runs within the Hillslope Interface, or as a single watershed simulation in the Watershed Interface). The maximum size "field" is about a section (640 acres) although an area as large as 2000 acres is needed for some rangeland applications. The model should not be applied to areas having permanent channels such as classical gullies and perennial streams, since the processes occurring in these types of channels are not simulated in WEPP. Use of the watershed application of WEPP is necessary to simulate flow, erosion, and deposition in ephemeral gullies, grassed waterways, terrace channels, other channels, and impoundments.

Because of the greater complexity of watershed applications of the WEPP model and the interface, it is recommended that the user first be familiar and comfortable with hillslope applications and the hillslope interface.

INPUT DATA FILES

The hillslope component of the WEPP erosion model requires a minimum of four input data files to run: 1) a climate file, 2) a slope file 3) a soil file, and 4) a plant/management file. An additional input file can be created which contains the answers to all of the model interactive questions (called a run file), and use of which greatly speeds model runs. For the case of irrigation and/or watershed option applications, additional input files are required.

In addition to the files required to run WEPP on each hillslope, a watershed simulation requires a minimum of seven files: 1) a hillslope information pass file, 2) a structure file, 3) a slope file, 4) a soil file, 5) a management file, 6) a climate file, and 7) a channel file. The pass file is automatically created upon running the WEPP model; the structure file is automatically created by the interface; all other files can be built with the corresponding file builders. Note that the slope, soil, management and climate files are almost identical to corresponding input hillslope files. An impoundment input file is necessary if impoundments are present in the watershed, and when irrigation is used on the channels, an irrigation file is required that is identical to a hillslope irrigation file.

This document will describe the input files specific to the hillslope and watershed applications of the WEPP erosion model. The WEPP interface programs which can be loaded onto a personal computer from the accompanying CD-ROM or diskettes contain samples of all the following data files, as well as file builder programs which allow the user to create (or modify) input data files. A description of the interfaces and file builders follows this section, and example data input files are given in the appendix.

Climate Input File

The climate data required by the WEPP model includes daily values for precipitation, temperatures, solar radiation, and wind information. A stand-alone program called CLIGEN is used to generate either continuous simulation climate files or single storm climate files. To run CLIGEN, a stations file and a state database file are required. Weather data statistics for over 1000 stations within the United States are available to run with CLIGEN. All available state climate data files have been included on the CD-ROM and diskettes.

The CLIGEN program can currently build 3 types of WEPP climate input files: continuous simulation with ip/tp data; single storm with ip/tp data; and TR-55 design single storm with ip/tp data. Those users wishing to use breakpoint rainfall as input to WEPP will need to create their climate files by hand. Table 1 gives the descriptions of the input variables in the WEPP climate input files. Both the continuous and single storm WEPP simulation modes require the same format climate file structure. Sample climate files can be found in the appendix.

Table 1. Climate input file description (CLIGEN V4.0 format).

Line 1:	a) CLIGEN version number - real (datver) 0.0 - use actual storm ip values in this file 4.0 - WEPP will internally multiply ip by a factor of 0.70 to compensate for the steady-state erosion model assumption.
Line 2:	a) simulation mode - integer (itemp) 1 - continuous 2 - single storm b) breakpoint data flag - integer (ibrkpt) 0 - no breakpoint data used 1 - breakpoint data used c) wind information/ET equation flag - integer (iwind) 0 - wind information exists - use Penman ET equation 1 - no wind information exists - use Priestley-Taylor ET equation
Line 3:	a) station i.d. and other information - character (stmid)
Line 4:	variable name headers
Line 5:	a) degrees latitude (+ is North, - is South) - real (deglat) b) degrees longitude (+ is East, - is West) - real (deglon) c) station elevation (m) - real (elev) d) weather station years of observation - integer (obsyrs) e) beginning year of CLIGEN simulation - integer (ibyear) f) number of climate years simulated and in file - integer (numyr)
Line 6:	monthly maximum temperature variable name header
Line 7:	observed monthly average maximum Temp. (degrees C) - real (obmaxt)
Line 8:	monthly minimum temperature variable name header
Line 9:	observed monthly average minimum Temp. (degrees C) - real (obmint)
Line 10:	monthly average daily solar radiation variable name header
Line 11:	observed monthly average daily solar radiation (langleys) - real (radave)
Line 12:	monthly average precipitation variable name header
Line 13:	observed monthly average precipitation (mm) - real (obrain)
Line 14:	daily variables name header

Line 15: daily variables' dimensions

For CLIGEN generated (no breakpoint data) input option

Line 16: ***(repeated for the number of simulation days)***

a) day of simulation - integer (day)
b) month of simulation - integer (mon)
c) year of simulation - integer (year)
d) daily precipitation amount (mm of water) - real (prcp)
e) duration of precipitation (hr) - real (stmdur)
f) ratio of time to rainfall peak/rainfall duration - real (timep)
g) ratio of maximum rainfall intensity/average rainfall intensity - real (ip)
h) maximum daily temperature (degrees C) - real (tmax)
i) minimum daily temperature (degrees C) - real (tmin)
j) daily solar radiation (langleys/day) - real (rad)
k) wind velocity (m/sec) - real (vwind)
l) wind direction (degrees from North) - real (wind)
m) dew point temperature (degrees C) - real (tdpt)

For breakpoint precipitation input option

Lines 16 & 17 are repeated for the number of simulation days.

Line 16:

a) day of simulation - integer (day)
b) month of simulation - integer (mon)
c) year of simulation - integer (year)
d) number of breakpoints - integer (nbrkpt)
e) maximum daily temperature (degrees C) - real (tmax)
f) minimum daily temperature (degrees C) - real (tmin)
g) daily solar radiation (langleys/day) - real (rad)
h) wind velocity (m/sec) - real (vwind)
i) wind direction (degrees from North) - real (wind)
j) dew point temperature (degrees C) - real (tdpt)

Line 17: ***(repeated for number of breakpoints, maximum of 50 points/day***)

a) time after midnight (hours) - real (timem)
b) cumulative precipitation at this time (mm of water)- real (pptcum)

Slope Input File

The WEPP model requires information about the landscape geometry, which is entered by way of the slope input file. Required information includes slope orientation, slope length, and slope steepness at points down the profile. In the profile application of WEPP, the user may visualize the slope profile as a line running up and down the hill, having a representative width which applies to the entire field or a portion of the field.

The WEPP model allows the user to simulate many types of nonuniformities on a hillslope through the use of strips or Overland Flow Elements (OFE's). Each OFE on a hillslope is a region of homogeneous soils, cropping, and management. This current version of the WEPP model allows simulation of up to 10 OFE's on an individual hillslope. All of the remaining input files (slope, soil, management, irrigation) must provide information for each OFE which the user would like to simulate the hydrologic and erosion processes on.

At the top of the slope file is general information on the profile as well as the number of OFE's for which the file contains information. Slope shape is described by using pairs of distance to points from the top of the OFE and the slope at these points. Adjoining OFEs ***must*** have the same point slope at their borders. A typical S-shaped profile, for example, could be described using three input points: zero slope at the hill top, a steep slope somewhere on the center portion of the hill, and a flatter toe slope at the end of the profile. Slope length does not end where deposition begins. The slope profile must be described to the end of the field, or to a concentrated flow channel, grassed waterway, or terrace. The point(s) where detachment ends and deposition begins is calculated by the model and given as output. Table 2 provides a description of the slope input data file. A sample slope data file may be found in the appendix.

Table 2. Slope input file description for hillslope applications.

Line 1:	version control number (95.7) - real (datver)
Line 2:	number of overland flow elements - integer (nelem)
Line 3:	a) aspect of the profile (degrees from North) - real (azm) b) representative profile width (m) - real (fwidth)
	Repeat Lines 4 & 5 for the number of overland flow elements on Line 2
Line 4:	a) number of slope points on the OFE - integer (nslpts) b) length of the overland flow element (m) - real (slplen)
	Repeat 5a) and 5b) for the number of slope points indicated on Line 4a) (user may input up to 20 slope point pairs per OFE and can place on multiple lines)
Line 5:	a) distance from top of OFE to the point (m or m/m) - real (xinput) b) slope steepness at the point (m/m) - real (slpinp) a) distance from top of OFE to the point (m or m/m) - real (xinput) b) slope steepness at the point (m/m) - real (slpinp) a) distance from top of OFE to the point (m or m/m) - real (xinput) b) slope steepness at the point (m/m) - real (slpinp) " " " " " " " " " " " " " " " "

There are two ways of entering distance to the point data (Line 5a): either enter the actual distance in meters or enter the nondimensional distance, which is the actual distance in meters divided by the total slope length of the OFE (however, don't mix the two methods). A minimum of two slope points are required to describe the slope on each OFE - a point at the beginning of the OFE (distance = 0.0) and a point at the end of the OFE (distance = slplen of OFE or distance = 1.0 = slplen/slplen). The user may currently enter up to a maximum of 20 slope points per OFE to describe the slope shape. The slope file builder accessed by the WEPP interface allows the user to easily build and graphically view the slope data files needed by the WEPP model. The version control number on Line 1 should be set to 95.7, though older slope files which do not contain the version control number line can still be used with WEPP version 95.7. The NRCS has developed a program called PROFILE which can create WEPP slope files from slope segment inputs.

Soil Input File

Information on soil properties to a maximum depth of 1.8 meters are input to the WEPP model through the soil input file. The user may input information on up to 8 different soil layers. WEPP internally creates a new set of soil layers based on the original set parameter values. If the entire 1.8 meters is parameterized, the new soil layers represent depths of 0-100 mm, 100-200 mm, 200-400 mm, 400-600 mm, 600-800 mm, 800-1000 mm, 1000-1200 mm, 1200-1400 mm, 1400-1600 mm, 1600-1800 mm. As with the slope file, soil parameters must be input for each and every Overland Flow Element (OFE) on the hillslope profile and for each channel in a watershed, even if the soil on all OFEs is the same. Accurate estimation of soil physical and hydrological parameters is essential when operating the WEPP erosion prediction model. Table 3 lists the input parameters in the soil input file, and the discussion following the table is meant to assist the users in determining input parameter values.

Table 3. Soil input file description.

Line 1:	version control number (95.7) - real (datver)
Line 2:	a) User comment line - character*80, (solcom)
Line 3:	a) number of overland flow elements(OFE's) or channels integer (ntemp) b) flag to use internal hydraulic conductivity adjustments - integer (ksflag) 0 - do not use adjustments (conductivity will be held constant) 1 - use internal adjustments

Lines 4 & 5 are repeated for the number of OFE's or channels on Line 3a.

Line 4:	a) soil name for current OFE or channel - character (slid) b) soil texture for current OFE or channel - character (texid) c) number of soil layers for current OFE or channel - integer (nsl) d) albedo of the bare dry surface soil on the current OFE or channel - real (salb) e) initial saturation level of the soil profile porosity (m/m) - real (sat) f) baseline interrill erodibility parameter ($kg*s/m^4$) - real (ki) g) baseline rill erodibility parameter (s/m) - real (kr) h) baseline critical shear parameter (N/m^2) - real (shcrit) i) effective hydraulic conductivity of surface soil (mm/h) - real (avke)

Line 5: ***(repeated for the number of soil layers indicated on Line 4c.)***
a) depth from soil surface to bottom of soil layer (mm) - real (solthk)
b) percentage of sand in the layer (%) - real (sand)
c) percentage of clay in the layer (%) - real (clay)
d) percentage of organic matter (volume) in the layer (%) - real (orgmat)
e) cation exchange capacity in the layer (meq/100 g of soil) - real (cec)
f) percentage of rock fragments by volume in the layer (%) - real (rfg)

Soil Input Parameter Estimation Procedures

The key parameter for WEPP in terms of infiltration is the Green and Ampt effective conductivity parameter (K_e). This parameter is related to the saturated conductivity of the soil, but it is important to note that it is not the same as or equal in value to the saturated conductivity of the soil. The second soil-related parameter in the Green and Ampt model is the wetting front matric potential term. That term is calculated internal to WEPP as a function of soil type, soil moisture content, and soil bulk density: it is not an input variable.

The effective conductivity (avke) value for the soil may be input on Line 4i of the soil input file, immediately after the inputs for soil erodibility. If the user does not know the effective conductivity of the soil, he/she may insert a zero (0.0) and the WEPP model will calculate a value based on the equations presented here for the time-variable case (see Equation 1 below).

The model will run in 2 modes by either: A) using a "baseline" effective conductivity (K_b) which the model automatically adjusts within the continuous simulation calculations as a function of soil management and plant characteristics, or B) using a constant input value of K_e. The second number in line 3 of the soil file contains a flag (0 or 1) which the model uses to distinguish between these two modes. A value of 1 indicates that the model is expecting the user to input a K_b value which is a function of soil only, and which will be internally adjusted to account for management practices. A value of 0 indicates the model is expecting the user to input a value of K_e which will not be internally adjusted and must therefore be representative of both the soil and the management practice being modeled. It is essential that the flag (0 or 1) in line 3 of the soil file be set consistently with the input value of effective conductivity for the upper soil layer.

"Baseline" Effective Conductivity Estimation Procedures for Croplands

Values for "baseline" effective conductivity (K_b) may be estimated using the following equations:

For soils with ≤ 40% clay content:

$$K_b = -0.265 + 0.0086{*}SAND^{1.8} + 11.46{*}CEC^{-0.75} \qquad \textbf{[1]}$$

For soils with > 40% clay content:

$$K_b = 0.0066\exp(244/CLAY) \qquad \textbf{[2]}$$

where SAND and CLAY are the percent of sand and clay, and CEC (meq/100g) is the cation exchange capacity of the soil. In order for [1] to work properly, the input value for cation exchange capacity should always be greater than 1 meq/100g. These equations were derived based on model optimization runs to measured and curve number (fallow condition) runoff amounts. Forty three soil files were used to develop the relationships (Table 4).

Table 4. Optimized and estimated effective hydraulic conductivity values for the case of constant effective conductivity for fallow soil, K_{ef}, and Baseline K_b.

Soil	Sand Content %	Clay Content %	Organic Matter Content %	CEC meq/100g	Simulator Measured K_e mm/hr	Opt. Constant K_{ef} mm/hr	Est. Constant K_{ef} mm/hr	Opt. Baseline K_b mm/hr	Est. Baseline K_b mm/hr
Sharpsburg	5.2	40.1	2.8	29.4	7.3	1.6	1.8	1.8	1.8
Hersh	72.3	10.9	1.1	7.7	15.8	6.5	6.4	17.6	21.3
Keith	48.9	19.3	1.5	18.3	3.5	4.7	4.8	11.5	10.5
Amarillo	85.0	7.3	0.3	5.1	15.0	7.0	7.3	26.6	28.7
Woodward	51.7	13.0	2.2	11.6	12.0	4.5	4.9	9.2	12.0
Heiden	8.6	53.1	2.2	33.3	4.7	0.3	0.3	0.34	0.45
Los Banos	15.5	43.7	2.0	39.1	3.9	0.8	1.0	1.1	1.1
Portneuf	19.5	11.1	1.2	12.6	7.9	2.0	2.5	2.7	3.0
Nansene	20.1	12.8	1.9	16.6	5.3	2.2	2.6	2.8	3.0
Palouse	9.8	20.1	2.6	19.6	2.6	1.8	1.9	2.0	1.5
Zahl	46.3	24.0	2.5	19.5	5.7	5.0	4.5	14.1	9.5
Pierre	16.9	49.5	2.7	35.7	2.4	0.4	0.3	0.71	0.61
Williams	40.8	26.9	2.6	22.7	8.3	4.4	4.1	12.9	7.7
BarnesND	39.3	26.5	3.9	23.2	16.7	4.4	4.0	11.7	7.2
Sverdrup	75.3	7.9	2.0	11.0	20.3	6.3	6.6	14.5	22.2
BarnesMN	48.6	17.0	3.2	19.5	19.1	4.7	4.7	10.4	10.3
Mexico	5.5	25.3	2.5	21.3	6.2	0.3	0.3	0.34	1.1
Grenada	1.8	20.2	1.8	11.8	3.4	0.6	0.6	0.7	1.6
Tifton	86.4	2.8	0.7	2.1	14.9	6.6	7.4	14.8	32.6
Bonifay	91.2	3.3	0.5	1.7	34.8	14.8	14.2	60.2	36.4
Cecil	69.9	11.5	0.7	2.0	13.3	7.4	6.0	17.2	24.4
Hiwassee	63.7	14.7	1.3	4.4	13.6	6.3	5.8	17.2	18.7
Gaston	37.2	37.9	1.7	9.2	3.6	1.8	1.7	6.3	7.7
Opequon	37.7	31.1	2.3	12.9	7.6	1.9	1.7	6.3	7.3
Frederick	25.1	16.6	2.1	8.2	2.9	2.7	3.0	5.9	4.9
Manor	44.0	25.2	2.5	13.2	10.0	4.6	4.3	14.1	9.2
Collamer	6.0	15.0	1.7	9.2	3.6	0.7	0.7	0.73	2.1
Miamian	31.3	25.9	2.4	14.9	4.4	1.4	1.5	3.3	5.5
Lewisburg	38.5	29.3	1.4	12.5	3.7	1.8	1.8	5.5	7.6
Miami	4.2	23.1	1.3	13.3	0.9	1.6	1.5	1.7	1.5
Colonie	90.5	2.1	0.1	10.0		14.5	14.2	38.3	30.4
Pratt	89.0	2.2	0.4	3.1		13.3	14.2	32.8	32.4
Shelby	27.8	29.0	3.0	16.5		2.9	3.2	7.8	4.6
Monona	7.1	23.5	2.0	20.1		1.7	1.7	1.9	1.2
Ontario	44.2	14.9	4.5	11.8		4.2	4.4	8.6	9.4
Stephensville	73.2	7.9	1.6	7.2		6.2	6.4	13.7	21.9
Providence	2.0	19.8	0.8	9.3		0.7	0.6	0.7	1.9
Egan	7.0	32.2	3.7	25.1		1.7	1.7	1.8	1.0
Barnes	39.4	23.2	3.4	18.4		4.1	4.0	10.0	7.4
Thatuna	28.0	23.0	4.3	16.2		1.3	1.4	2.6	4.6
Caribou	38.8	13.7	3.8	13.2		4.3	4.0	8.2	7.6
Tifton	87.0	5.7	0.7	4.1		7.2	7.4	26.6	30.4
Cecil	66.5	19.6	0.9	4.8		6.3	6.2	29.7	22.8

Table 5 shows the results of comparisons to measured natural runoff plot data from 11 sites. Model efficiency is a quantification of how well the model predicted runoff on an individual storm basis. At each of the eleven sites the model predicted runoff better on a storm-by-storm basis using the estimated K_b values (equations [1] and [2]) than did the curve number approach. For purposes of erosion prediction it is more important to predict the individual storms accurately than to predict the total annual runoff volume, because it is a relatively small number of intense storms which cause most of the erosion

Table 5. WEPP estimated runoff in terms of: A)model efficiency on a storm-by-storm basis and B) in terms of average annual runoff.

A. Comparison of model efficiency

Site	Number of Years	Number of Events	Model Efficiency WEPP Opt. K_b	CN	WEPP Est. K_b
Bethany,MO	10	109	0.82	0.72	0.81
Castana,IA	12	90	0.48	0.10	0.12
Geneva,NY	10	97	0.73	0.58	0.62
Guthrie,OK	15	170	0.86	0.77	0.85
Holly,MS	8	208	0.87	0.79	0.69
Madison,SD	10	60	0.77	0.69	0.74
Morris,MN	11	72	0.59	-1.06	-0.21
Pendleton,OR	11	82	0.06	-0.33	-0.69
Presque Isle,ME	9	99	0.45	-0.25	0.32
Tifton,GA	7	64	0.67	0.44	0.59
Watkinsville,GA	6	110	0.84	0.74	0.84

B. Comparison of annual runoff

Site	Number of years	Rainfall # events	Depth (mm)	Annual runoff (mm) Meas.	CN	WEPP
Bethany,MO	10	109	754	222	175	205
Castana,IA	12	90	747	102*	125	148
Geneva,NY	10	97	828	168*	79	110
Guthrie,OK	15	170	745	154	78	121
Holly,MS	8	208	1328	557	216	299
Madison,SD	10	60	577	61*	69	65
Morris,MN	11	72	604	40*	33	75
Pendleton,OR	11	82	595	72	60	27
Presque Isle,ME	9	99	846	120*	89	47
Tifton,GA	7	64	1227	301	135	171
Watkinsville,GA	6	110	1445	429	395	392

*indicates winter runoff not measured

Physically, the K_b value should approximate the value of K_e for the first storm after tillage on a fallow plot of land. Table 4 lists the optimized K_b versus a measurement of K_b obtained using the data from the WEPP cropland erodibility sites under a rainfall simulator. In general, the rainfall simulator measured K_b values tended to be greater than the corresponding optimum K_b values.

Time-Invariant Effective Conductivity Values for Cropland

For the case of time-invariant effective hydraulic conductivity (K_e-constant) the flag in line 3 of the soil file must be set at 0. In this case the input value of K_e must represent both the soil type and the management practice. This method is corollary to the curve number approach for predicting runoff, and in fact, the estimation procedures discussed here were derived using curve number optimizations, so the runoff volumes predicted should correspond closely to curve number predictions. One difference between this method and the curve number method is that no soil moisture correction is necessary, since WEPP takes into account moisture differences via internal adjustments to the wetting front matric potential term of the Green and Ampt equation.

The estimation procedure involves two steps. In step one a fallow soil K_e (K_{ef}) is calculated. In step 2 the fallow soil K_{ef} is adjusted based on management practice using a runoff ratio to obtain the input value of K_e.

Step 1: Use the hydrologic soil group and percent sand content to estimate K_{ef} (mm/hr):

Hydrologic Soil Group	Formula
A	K_{ef} = 14.2
B	K_{ef} = 1.17 + 0.072(SAND)
C	K_{ef} = 0.50 + 0.032(SAND)
D	K_{ef} = 0.34

Step 2: Multiply K_{ef} by the value in the table below to obtain K_e (mm/hr):

	Hydrologic Soil Group		
	A	B,C	D
Fallow	1.00	1.00	1.00
Conv. Tillage - Row Crop	1.37	1.64	1.87
Conserv. Till. - Row Crop	1.49	1.85	2.35
Small Grain	1.84	2.14	2.48
Alfalfa	2.86	3.75	6.23
Pasture (Grazed)	3.66	4.34	5.96
Meadow (Grass)	6.33	9.03	15.5

For other cases, such as rotations, ratios of K_e/K_{ef} may be estimated from curve number (CN) values using the equation:

$$K_e = \frac{56.82\,K_{ef}^{0.286}}{1 + 0.051e^{0.062CN}} - 2 \qquad [3]$$

Adjustments for Wormholes

Accounting for infiltration differences as a function of wormholes may be made by adjusting the input value of effective hydraulic conductivity. The suggestions listed here are preliminary guidelines which are based on interpretations of personal communications regarding the effects of biopores on permeability classes from the SCS Soil Survey Laboratory Staff. The first step is to identify the biopore influence class from Table 6. Then, the input value of either K_e or K_b as calculated above should be multiplied by the ratio shown in Table 7 below.

Table 6. Classes of biopore influence defined by abundance and size classes.

	Pore Size		
Abundance	Medium	Coarse	Very Coarse
Few	Small	Moderate	Moderately Large
Common	Moderate	Moderately Large	Large
Many	Moderately Large	Large	Very Large

Table 7. Increase in Input K_e or K_b by biopore influence.

Input K_e, K_b (mm/hr)	Biopore Influence	Ratio for K_e, K_d Increase
Very Low	Moderate	12
<0.5	Large	15
	Very Large	18
Low	Moderate	9
0.5-1	Large	12
	Very Large	15
Moderately Low	Moderate	6
1-2	Large	9
	Very Large	12
Moderate	Moderate	3
2-3	Large	6
	Very Large	9
Moderately High	Moderate	2
3-5	Large	2.5
	Very Large	3

Time-Invariant Effective Conductivity Values for Rangelands

For rangeland simulations the user should use a time-invariant effective hydraulic conductivity (K_e-constant) the flag in line 3 of the soil file should be set at 0. In this case, the input value of K_e must represent both the soil type and the management practice. One difference between this method and the curve number method is that no soil moisture correction is necessary, since WEPP takes into account moisture differences via internal adjustments to the wetting front matric potential term of the Green and Ampt equation.

Baseline default effective hydraulic conductivity equations for rangelands were developed from data collected from 34 locations across the western United States as part of a joint Agricultural Research Service and Natural Resource Conservation Service project (Interagency Rangeland Water Erosion Team field experiments). For rangelands the default K_e-constant value is estimated as a function of both abiotic and biotic components and may be computed using the following equations. If the user enters a value of 0.0 for AVKE on line 4I, the model will automatically use the equations.

For plant communities with rill cover less than 45%.

$$K_e = 57.99 - 14.05*\ln(CEC) + 6.2*\ln(ROOT10) - 473.39*BASR^2 + 4.78*RESI \quad [4]$$

For plant communities with rill cover equal to or exceeding 45%.

$$K_e = -14.29 - 3.40*\ln(ROOT10) + 0.3783*SAND + 2.0886*ORGMAT + 398.64*RROUGH - 27.39*RESI + 64.14*BASI \quad [5]$$

where K_e is effective hydraulic conductivity (mm/hr), CEC is the cation exchange capacity (meq/100gm), ROOT10 is root biomass in the surface top 10 cm of the soil profile (kg/m^2), BASR is the fraction of the rill surface area covered by basal area cover, RESI is the fraction of the interrill area covered by litter, SAND is the % sand content, ORGMAT is the % organic matter content of the surface horizon, RROUGH is the random roughness of the soil surface (m), and BASI is the fraction of the interrill surface area covered by basal area cover.

These equations were derived from model optimization runs of measured runoff from rainfall simulation experiments on rangelands. The rainfall simulation experiments consisted of two rainfall events: a dry run (1 hour duration at 57 mm/hr) and a wet run (30 minute duration at 57 mm/hr) on plots 10.7 m long and 3 m wide. The K_e-constant optimization runs were performed on the wet runs. Figure 1 shows the relationship between predicted K_e-constant with the model optimized K_e-constant. Table 8 lists the mean optimized K_e values for the 34 rangeland locations evaluated. Figure 2 shows the results of using model predicted K_e-constant for estimating sediment yield on rangelands. Table 9 through Table 11 provide background information on the type of plant community, average above ground standing and root biomass, canopy cover and the spatial distribution of ground cover, slope, soils, and applied rainfall information. From these tables all the necessary information is available to parameterize the single event version of the WEPP model for these 34 rangeland locations. These values can also be used to initialize the continuous version of the model if the user lacks on-site information about root biomass, spatial distribution of ground cover, plant spacing, and random roughness. It is important to note that these predictive K_e equations were developed for an arbitrarily chosen rainfall event. Thus a constant K_e is predicted for each location with no adjustments for management impacts. In reality, the effective hydraulic conductivity of a hillslope is a non-linear function of rainfall intensity, initial soil moisture, canopy and ground cover and distribution of soil characteristics. These equations, therefore, may not be suitable for rangeland plant communities outside of the range of data the equations were developed from.

Table 8. Soil characteristics and optimized effective hydraulic conductivity from USDA-IRWET[1] rangeland rainfall simulation experiments used to develop WEPP[2].

	Location	Soil family	Soil series	Surface texture	Sand (%)	Clay (%)	Organic matter (%)	CEC (meq/100g of soil)	Effective hydraulic conductivity (mm/hr)
1)	Prescott, AZ	Aridic argiustoll	Lonti	Sandy loam	48.0	18.2	1.3	14.0	7.0
2)	Prescott, AZ	Aridic argiustoll	Lonti	Sandy loam	48.8	17.9	1.3	14.5	5.6
3)	Tombstone, AZ	Ustochreptic calciorthid	Stronghold	Sandy loam	69.1	16.7	1.8	13.0	28.7
4)	Tombstone, AZ	Ustollic haplargid	Forest	Sandy clay loam	70.3	11.2	1.5	9.8	8.7
5)	Susanville, CA	Typic argixeroll	Jauriga	Sandy loam	32.0	18.1	6.4	26.6	16.7
6)	Susanville, CA	Typic argixeroll	Jauriga	Sandy loam	32.0	18.1	6.4	26.6	17.2
7)	Akron, CO	Ustollic haplargid	Stoneham	Loam	50.6	22.7	2.5	19.5	7.3
8)	Akron, CO	Ustollic haplargid	Stoneham	Sandy loam	63.8	17.1	2.4	14.3	16.5
9)	Akron, CO	Ustollic haplargid	Stoneham	Loam	58.8	23.7	2.2	15.5	8.8
10)	Meeker, CO	Typic camborthid	Degater	Silty clay	6.5	44.2	2.4	19.8	8.0
11)	Blackfoot, ID	Pachic cryoborall	Robin	Silt loam	14.3	18.1	7.5	25.0	7.0
12)	Blackfoot, ID	Pachic cryoborall	Robin	Silt loam	14.1	20.1	9.9	30.4	7.8
13)	Eureka, KS	Vertic argiudoll	Martin	Silty clay loam	2.4	46.9	6.0	44.0	2.9
14)	Sidney, MT	Typic argiboroll	Vida	Loam	51.1	14.8	5.2	16.4	22.5
15)	Wahoo, NE	Typic argiudoll	Burchard	Loam	26.1	35.1	5.1	30.8	3.3
16)	Wahoo, NE	Typic argiudoll	Burchard	Loam	35.7	29.5	4.8	25.6	15.3
17)	Cuba, NM	Ustollic camborthid	Querencia	Sandy loam	68.2	8.4	1.5	9.0	16.5
18)	Los Alamos, NM	Aridic haplustalf	Hackroy	Sandy loam	49.8	7.0	1.4	7.2	6.3
19)	Killdeer, ND	Pachic haploborall	Parshall	Sandy loam	68.9	12.6	3.6	14.3	23.2
20)	Killdeer, ND	Pachic haploborall	Parshall	Sandy loam	70.6	11.7	3.5	12.9	22.4
21)	Chickasha, OK	Udic argiustoll	Grant	Loam	53.8	14.4	4.0	13.0	17.8
22)	Chickasha, OK	Udic argiustoll	Grant	Sandy loam[3]	56.6	10.5	2.3	8.3	13.6
23)	Freedom, OK	Typic ustochrept	Woodward	Loam	50.7	12.5	3.1	12.2	14.9
24)	Woodward, OK	Typic ustochrept	Quinlan	Loam	43.7	13.9	2.3	11.6	20.4
25)	Cottonwood, SD	Typic torrert	Pierre	Clay	13.1	49.6	3.2	36.1	9.3
26)	Cottonwood, SD	Typic torrert	Pierre	Clay	22.4	44.2	3.7	31.6	3.6
27)	Amarillo, TX	Aridic paleustoll	Olton	Loam	29.9	27.5	3.0	20.1	8.4
28)	Amarillo, TX	Aridic paleustoll	Olton	Loam	41.7	25.7	2.5	18.4	5.8
29)	Sonora, TX	Thermic calciustoll	Purbes	Cobbly clay	12.3	41.6	8.9	44.5	2.2
30)	Buffalo, WY	Ustollic haplargid	Forkwood	Silt loam	31.9	27.9	2.8	18.3	5.9
31)	Buffalo, WY	Ustollic haplargid	Forkwood	Loam	34.0	34.2	2.4	21.5	4.6
32)	Newcastle, WY	Ustic torriothent	Kishona	Sandy loam	58.6	16.5	1.7	12.3	21.7
33)	Newcastle, WY	Ustic torriothent	Kishona	Loam	55.2	18.8	2.2	14.4	23.1
34)	Newcastle, WY	Ustic torriothent	Kishona	Sandy loam	62.2	14.5	1.4	15.7	9.0

[1]Interagency Rangeland Water Erosion Team is comprised of ARS staff from the Southwest and Northwest Watershed Research Centers in Tucson, AZ and Boise, ID, and NRCS staff members in Lincoln, NE and Boise, ID.
[2]For single event simulations the depth of the soil profile must be greater than or equal to 0.25 m.

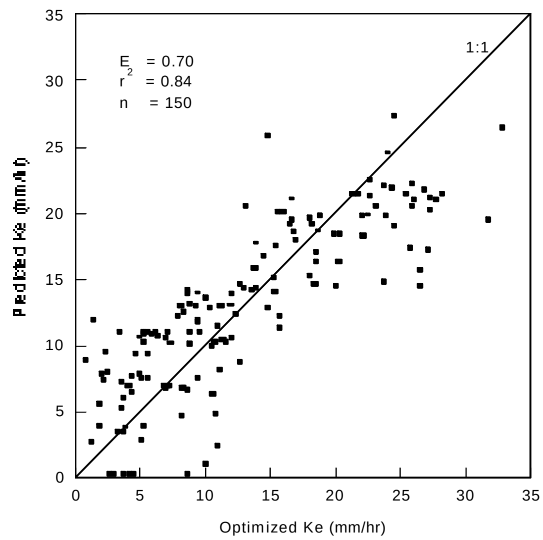

Figure 1. Observed versus WEPP predicted effective hydraulic conductivity (K_e), Nash-Sutcliffe efficiency coefficient (E), and coefficient of determination (r^2) from USDA-IRWET rangeland rainfall simulation experiments used to develop the baseline effective hydraulic conductivity equation for the rangeland component of the WEPP model. The lower limit of predicted K_e is set to 0.2 mm within the model.

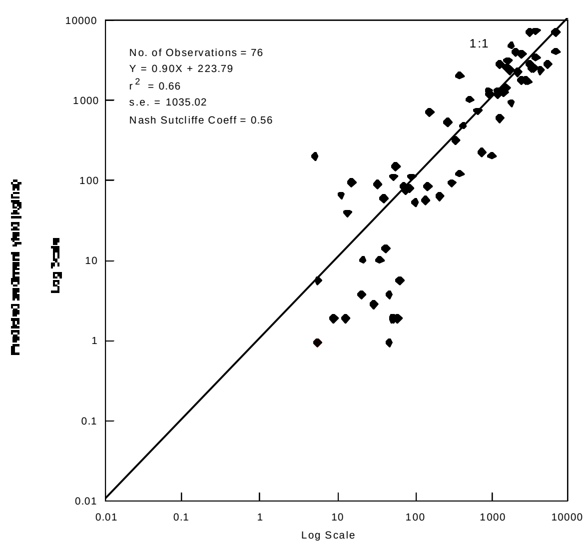

Figure 2. Observed vs. predicted sediment yield for rangeland plant communities with optimized effective hydraulic conductivities (E is the Nash-Sutcliffe efficiency coefficient, r^2 is the coefficient of determination, and s.e. is the standard error).

Table 9. Biotic mean site characteristics from USDA-IRWET [1] rangeland rainfall simulation experiments used to develop the WEPP model.

Location	Rangeland cover type[2]	Range site	Dominant species by weight (descending order)	Ecological status[3]	Biomass			Plant Spacing
					Standing (kg/m^2)	Litter (kg/m^2)	Root (kg/m^2/0.1m)	
1) Prescott, AZ	Grama-Galleta	Loamy upland	Blue grama Goldenweed Ring muhly	54	990	0.03	0.09	1177
2) Prescott, AZ	Grama-Galleta	Loamy upland	Rubber rabbitbrush Blue grama Threeawn	36	2,321	0.09	0.09	530
3) Tombstone, AZ	Creosotebush-Tarbush	Limy upland	Tarbush Creosotebush	38	775	NA[4]	0.12	NA
4) Tombstone, AZ	Grama-Tobosa-Shrub	Loamy upland	Blue grama Tobosa Burro-weed	55	752	NA	0.45	NA
5) Susanville, CA	Basin Big Brush	Loamy	Idaho fescue Squirreltail Wooly mulesears	55	5,743	0.44	2.23	NA
6) Susanville, CA	Basin Big Brush	Loamy	Idaho fescue Squirreltail Wooly mulesears	55	5,743	0.44	2.23	NA
7) Akron, CO	Wheatgrass-Grama-Needlegrass	Loamy plains #2	Blue grama Western wheatgrass Buffalograss	76	1,262	0.24	0.46	157
8) Akron, CO	Wheatgrass-Grama-Needlegrass	Loamy plains #2	Blue grama Sun sedge Bottlebrush	44	936	0.20	0.64	152
9) Akron, CO	Wheatgrass-Grama-Needlegrass	Loamy plains #2	Buffalograss Blue grama Prickly pear cactus	45	477	0.09	1.16	78
10) Meeker, CO	Wyoming big sagebrush	Clayey slopes	Salina wildrye Wyoming big sagebrush Western wheatgrass	60	1,583	0.11	0.36	NA
11) Blackfoot, ID	Mountain big sagebrush	Loamy	Mountain big sagebrush Letterman needlegrass Sandberg bluegrass	15	1,587	0.65	0.31	500
12) Blackfoot, ID	Mountain big sagebrush	Loamy	Letterman needlegrass Sandberg bluegrass Prairie junegrass	22	1,595	0.50	0.74	2527
13) Eureka, KS	Bluestem prairie	Loamy upland	Buffalograss Sideoats grama Little bluestem	45	526	0.04	2.91	91

14) Sidney, MT	Wheatgrass-Grama-Needlegrass	Silty	Dense clubmoss Western wheatgrass Needle & thread grass	58	2,141	0.08	1.82	NA
15) Wahoo, NE	Bluestem prairie	Silty	Kentucky bluegrass Dandelion Alsike clover	11	1,239	0.06	0.48	187
16) Wahoo, NE	Bluestem prairie	Silty	Primrose Porcupinegrass Big bluestem	37	3,856	0.09	0.17	55
17) Cuba, NM	Blue grama-Galleta	Loamy	Galleta Blue grama Broom snakeweed	47	817	0.02	0.90	NA
18) Los Alamos, NM	Juniper-Pinyon Woodland	Woodland community	Colorado rubberweed Sagebrush Broom snakeweed	NA[5]	1,382	0.04	0.12	NA
19) Killdeer, ND	Wheatgrass-Needlegrass	Sandy	Clubmoss Sedge Crocus	43	1,613	0.09	0.75	2402
20) Killdeer, ND	Wheatgrass-Needlegrass	Sandy	Sedge Blue grama Clubmoss	52	1,422	0.13	0.41	2384
21) Chickasha, OK	Bluestem prairie	Loamy prairie	Indiangrass Little bluestem Sideoats grama	60	2,010	0.26	0.97	NA
22) Chickasha, OK	Bluestem prairie	Eroded prairie	Oldfield threeawn Sand paspalum Scribners dichanthelium Little bluestem	40	396	0.07	0.72	NA
23) Freedom, OK	Bluestem prairie	Loamy prairie	Hairy grama Silver bluestem Perennial forbs	30	1,223	0.15	1.16	NA
24) Woodward, OK	Bluestem-Grama	Shallow prairie	Sideoats grama Hairy grama Western ragweed	28	1,505	0.1	0.65	NA
25) Cottonwood, SD	Wheatgrass-Needlegrass	Clayey west central	Green needle grass Scarlet globemallow Western wheatgrass	100	2,049	0.10	3.21	NA
26) Cottonwood, SD	Blue grama-Buffalograss	Clayey west central	Blue grama Buffalograss	30	529	0.03	4.10	NA
27) Amarillo, TX	Blue grama-Buffalograss	Clay loam	Blue grama Buffalograss Prickly pear cactus	72	2,477	0.22	0.47	36

28) Amarillo, TX	Blue grama-Buffalograss	Clay loam	Blue grama Buffalograss Prickly pear cactus	62	816	0.19	0.55	40
29) Sonora, TX	Juniper-Oak	Shallow	Buffalograss Curly mesquite Prairie cone flower	35	2,461	0.15	0.86	NA
30) Buffalo, WY	Wyoming big sagebrush	Loamy	Wyoming big sagebrush Prairie junegrass Western wheatgrass	33	7,591	0.18	0.24	322
31) Buffalo, WY	Wyoming big sagebrush	Loamy	Western wheatgrass Bluebunch wheatgrass Green needlegrass	40	2,901	0.09	0.19	880
32) Newcastle, WY	Wheatgrass-Needlegrass	Loamy plains	Prickly pear cactus Needle-and-thread Threadleaf sedge	21	1,257	0.05	0.49	16
33) Newcastle, WY	Wheatgrass-Needlegrass	Loamy plains	Cheatgrass Needle-and-thread Blue grama	22	2,193	0.12	0.38	83
34) Newcastle, WY	Wheatgrass-Needlegrass	Loamy plains	Needle-and-thread Threadleaf sedge Blue grama	50	893	0.02	0.41	64

[1] Interagency Rangeland Water Erosion Team is comprised of ARS staff from the Southwest and Northwest Watershed Research Centers in Tucson, AZ and, Boise, ID, and NRCS staff members in Lincoln, NE and Boise, ID.

[2] Definition of Cover Types from: T.N. Shiflet, 1994. Rangeland cover types of the United States, Society for Range Management, Denver, CO.

[3] Ecological status is a similarity index that expresses the degree to which the composition of the present plant community is a reflection of the historic climax plant community. This similarity index may be used with other site criterion or characteristics to determine rangeland health. Four classes are used to express the percentage of the historic climax plant community on the site (I 76-100; II 51-75; III 26-50; IV 0-25). USDA, National Resources Conservation Service. 1995. National Handbook for Grazingland Ecology and Management. National Headquarters, Washington, D.C. in press.

[4] NA - Data not available.

[5] Ecological status indices are not appropriate for woodland and annual grassland communities.

Table 10. Mean canopy and ground cover spatial distribution characteristics from USDA-IRWET[1] rangeland rainfall simulation experiments used to develop WEPP.

Location	Interrill cover (fraction)					Rill cover (fraction)					Total ground cover (fraction)	Canopy cover (fraction)
	Litter	Rock	Basal	Crypto	Soil	Litter	Rock	Basal	Crypto	Soil		
1) Prescott, AZ	0.144	0.016	0.121	0.000	0.196	0.123	0.039	0.031	0.000	0.329	0.474	0.477
2) Prescott, AZ	0.164	0.018	0.148	0.000	0.180	0.096	0.041	0.033	0.001	0.318	0.502	0.511
3) Tombstone, AZ	0.110	0.130	0.000	0.000	0.084	0.077	0.487	0.020	0.000	0.094	0.823	0.323
4) Tombstone, AZ	0.052	0.001	0.014	0.000	0.117	0.120	0.033	0.176	0.000	0.488	0.396	0.184
5) Susanville, CA	0.208	0.011	0.044	0.000	0.024	0.371	0.138	0.074	0.000	0.132	0.844	0.286
6) Susanville, CA	0.112	0.013	0.022	0.000	0.038	0.340	0.209	0.063	0.000	0.204	0.758	0.184
7) Akron, CO	0.280	0.000	0.099	0.016	0.048	0.294	0.000	0.120	0.046	0.097	0.855	0.443
8) Akron, CO	0.224	0.000	0.015	0.012	0.028	0.463	0.001	0.056	0.050	0.151	0.821	0.278
9) Akron, CO	0.423	0.000	0.095	0.001	0.019	0.346	0.000	0.088	0.002	0.025	0.956	0.538
10) Meeker, CO	0.074	0.000	0.002	0.000	0.030	0.226	0.000	0.113	0.005	0.550	0.420	0.106
11) Blackfoot, ID	0.634	0.000	0.044	0.000	0.029	0.216	0.000	0.007	0.000	0.070	0.902	0.707
12) Blackfoot, ID	0.760	0.000	0.071	0.000	0.039	0.090	0.000	0.003	0.000	0.037	0.924	0.870
13) Eureka, KS	0.218	0.000	0.006	0.000	0.157	0.334	0.000	0.023	0.000	0.261	0.582	0.382
14) Sidney, MT	0.049	0.001	0.007	0.046	0.019	0.230	0.002	0.159	0.320	0.170	0.812	0.120
15) Wahoo, NE	0.495	0.000	0.121	0.029	0.063	0.199	0.000	0.012	0.028	0.053	0.884	0.707
16) Wahoo, NE	0.450	0.000	0.093	0.127	0.022	0.192	0.000	0.011	0.090	0.016	0.962	0.692
17) Cuba, NM	0.171	0.000	0.006	0.000	0.033	0.663	0.000	0.025	0.000	0.103	0.864	0.209
18) Los Alamos, NM	0.214	0.000	0.011	0.000	0.048	0.515	0.000	0.056	0.000	0.157	0.796	0.272
19) Killdeer, ND	0.495	0.000	0.121	0.029	0.063	0.199	0.000	0.012	0.028	0.053	0.884	0.707
20) Killdeer, ND	0.450	0.000	0.093	0.127	0.022	0.192	0.000	0.011	0.090	0.016	0.962	0.692
21) Chickasha, OK	0.338	0.000	0.096	0.000	0.026	0.395	0.001	0.115	0.000	0.030	0.945	0.460
22) Chickasha, OK	0.064	0.000	0.005	0.004	0.072	0.425	0.001	0.168	0.036	0.225	0.703	0.145
23) Freedom, OK	0.200	0.000	0.114	0.015	0.060	0.294	0.003	0.046	0.045	0.225	0.716	0.388
24) Woodward, OK	0.214	0.001	0.102	0.018	0.117	0.193	0.002	0.049	0.042	0.264	0.619	0.450
25) Cottonwood, SD	0.181	0.000	0.156	0.013	0.110	0.286	0.010	0.034	0.002	0.209	0.682	0.460
26) Cottonwood, SD	0.126	0.004	0.172	0.006	0.034	0.298	0.013	0.171	0.019	0.158	0.808	0.341
27) Amarillo, TX	0.201	0.000	0.030	0.000	0.001	0.631	0.000	0.109	0.000	0.029	0.970	0.231
28) Amarillo, TX	0.101	0.000	0.003	0.000	0.000	0.736	0.000	0.027	0.000	0.133	0.867	0.104
29) Sonora, TX	0.176	0.032	0.005	0.019	0.162	0.139	0.124	0.155	0.031	0.158	0.681	0.394
30) Buffalo, WY	0.362	0.002	0.051	0.000	0.115	0.162	0.004	0.004	0.001	0.299	0.587	0.530
31) Buffalo, WY	0.387	0.025	0.030	0.000	0.242	0.131	0.029	0.004	0.000	0.153	0.605	0.683
32) Newcastle, WY	0.057	0.000	0.014	0.016	0.021	0.343	0.000	0.105	0.233	0.211	0.768	0.108
33) Newcastle, WY	0.474	0.000	0.014	0.002	0.065	0.302	0.000	0.016	0.001	0.125	0.810	0.556
34) Newcastle, WY	0.137	0.001	0.038	0.022	0.126	0.185	0.003	0.045	0.039	0.406	0.468	0.323

[1]Interagency Rangeland Water Erosion Team is comprised of ARS staff from the Southwest and Northwest Watershed Research Centers in Tucson, AZ and Boise, ID, and NRCS staff members in Lincoln, NE and Boise, ID.

Table 11. Precipitation and topographic characteristics from USDA-IRWET[1] rangeland rainfall simulation experiments used to develop WEPP[2].

Location	Precipitation volume (mm)	Precipitation Duration (hr)	Slope (%)	Random roughness (m)
1) Prescott, AZ	28.13	0.49	5	0.015
2) Prescott, AZ	27.00	0.46	4	0.017
3) Tombstone, AZ	25.82	0.44	10	0.013
4) Tombstone, AZ	26.08	0.47	4	0.007
5) Susanville, CA	23.79	0.40	13	0.017
6) Susanville, CA	22.69	0.41	13	0.010
7) Akron, CO	38.47	0.66	7	0.010
8) Akron, CO	32.67	0.58	8	0.009
9) Akron, CO	34.13	0.61	7	0.013
10) Meeker, CO	23.56	0.42	10	0.013
11) Blackfoot, ID	45.19	0.81	7	0.031
12) Blackfoot, ID	36.00	0.62	9	0.026
13) Eureka, KS	26.28	0.44	3	0.009
14) Sidney, MT	21.69	0.42	10	0.006
15) Wahoo, NE	16.66	0.31	10	0.010
16) Wahoo, NE	28.86	0.50	11	0.010
17) Cuba, NM	22.28	0.43	7	0.007
18) Los Alamos, NM	21.81	0.42	7	0.007
19) Killdeer, ND	38.17	0.67	11	0.011
20) Killdeer, ND	33.08	0.57	11	0.010
21) Chickasha, OK	24.39	0.42	5	0.006
22) Chickasha, OK	23.58	0.39	5	0.005
23) Freedom, OK	23.20	0.42	6	0.010
24) Woodward, OK	25.14	0.41	6	0.009
25) Cottonwood, SD	22.87	0.40	8	0.008
26) Cottonwood, SD	21.84	0.40	12	0.006
27) Amarillo, TX	29.72	0.51	3	0.008
28) Amarillo, TX	28.30	0.48	2	0.007
29) Sonora, TX	24.98	0.42	8	0.006
30) Buffalo, WY	25.06	0.44	10	0.027
31) Buffalo, WY	30.53	0.52	7	0.016
32) Newcastle, WY	48.87	0.92	7	0.017
33) Newcastle, WY	39.81	0.68	8	0.019
34) Newcastle, WY	33.80	0.58	9	0.021

[1]Interagency Rangeland Water Erosion Team is comprised of ARS staff from the Southwest and Northwest Watershed Research Centers in Tucson, AZ and Boise, ID, and NRCS staff members in Lincoln, NE and Boise, ID.

[2]For single event model runs from rainfall simulation experiments with a constant rainfall intensity, the coefficients IP and TP are set to 1.0. All slopes were input as uniform.

Baseline Soil Erodibility Parameter Estimation

The soil erodibility parameters are input to the model on Line 4 (f, g, h) of the soil input data file. The WEPP erosion model is very sensitive to the input values for baseline interrill erodibility (K_i), rill erodibility (K_r), and critical hydraulic shear (τ_c). For cropland, the input baseline erodibility values represent those for a freshly tilled soil with no crop residue present. For rangeland, the input baseline erodibility values represent those for a fully consolidated rangeland area which has all surface residue removed. Adjustments to these erodibilities are made internally in the WEPP model to account for effects such as consolidation, incorporated residue, etc. Estimation procedures for baseline erodibilities are not final at this time; however, the following sets of equations are provided as the best estimate for K_i, K_r, and τ_c based upon extensive evaluation of the WEPP cropland and rangeland erodibility experimental results.

For cropland soils containing 30% or more sand, the equations are:

$$K_i = 2728000 + 192100*VFS \qquad [6]$$

$$K_r = 0.00197 + 0.00030*VFS + 0.03863*EXP(-1.84*ORGMAT) \qquad [7]$$

$$\tau_c = 2.67 + 0.065*CLAY - 0.058*VFS \qquad [8]$$

where VFS is percent very fine sand, ORGMAT is percent organic matter in the surface soil (and we assume that organic matter equals 1.724 times organic carbon content), and CLAY is percent clay. In these equations the value for VFS used must be less than or equal to 40% (if your value for VFS is greater than 40%, use 40%), the value for ORGMAT must be greater than 0.35% (if your value for ORGMAT is less than 0.35%, use 0.35%), and the value for CLAY must be less than 40% (if your value for CLAY is greater than 40%, use 40%).

For cropland soils containing less than 30% sand, the equations are:

$$K_i = 6054000 - 55130*CLAY \qquad [9]$$

$$K_r = 0.0069 + 0.134*EXP(-0.20*CLAY) \qquad [10]$$

$$\tau_c = 3.5 \qquad [11]$$

In equations [9] and [10], CLAY must be 10% or greater (if your value for CLAY is less than 10%, use 10% in the equations).

The experimental soil texture parameters for the high (equal to or greater than 30% sand) and low (less than 30 % sand) sand soils are given below:

Table 12. Range of experimental soil texture parameters for cropland erosion studies.

VARIABLE	HIGH SAND SOILS	LOW SAND SOILS
CLAY	3 - 40 %	11 - 53 %
SILT	5 - 44 %	38 - 78 %
VFS	4 - 39 %	1 - 19 %
ORGMAT	0.35 -5.6 %	1.2 - 3.3 %

Table 13. Mean erodibilities and critical shear, soil properties, and number of soils for each textural classification for soil included in the study resulting in equations for baseline erodibility parameters.

TEXTURE	# of SOILS	K_i (kg*s/m^4)	K_r (s/m)	τ_c (Pa)	% CLAY	% SILT	% SAND	% VFS	% OM
Clay Loam	3	4315290	.0048	4.7	33.2	29.6	37.2	8.1	1.9
Loam	9	5434716	.0085	3.3	19.7	35.2	45.3	14.7	2.9
Sand	3	5641494	.0248	2.1	4.5	8.0	87.5	16.9	0.5
Sandy Loam	7	4974960	.0102	2.5	12.4	19.0	68.6	10.2	1.2
Silt Loam	9	5083455	.0121	3.5	18.1	70.7	11.1	7.3	2.1
Clay	1	2154983	.0089	2.9	53.1	38.3	8.6	4.5	2.4
Silty Clay	1	4475042	.0117	4.8	49.5	40.9	9.6	7.3	2.6
Silty Clay Loam	1	3409795	.0053	3.2	39.8	55.4	4.8	4.6	3.3

Experimental K_i values for cropland are usually between 2000000 and 11000000 kg*s/m^4. Experimental K_r values usually are between 0.002 and 0.045 s/m, and values for τ_c are usually between 1 and 6 N/m^2 on cropland soils.

For rangeland soils, the baseline erodibility equations are:

$$K_i = 1810000 - 19100*SAND - 63270*ORGMAT - 846000*\Theta_{fc} \quad [12]$$

$$K_r = [\ 0.000024*CLAY - 0.000088*ORGMAT - 0.00088*BD_{dry} - 0.00048*ROOT10\ ] + 0.0017 \quad [13]$$

$$\tau_c = 3.23 - 0.056*SAND - 0.244*ORGMAT + 0.9*BD_{dry} \quad [14]$$

where Θ_{fc} is the volumetric water content of the soil at 0.033MPa (m^3/m^3), BD_{dry} is the dry soil bulk density (g/cm^3), ROOT10 is the total root biomass within the 0.0 to 0.1 m soil zone (kg/m^2), and the other variables are as defined previously. Equations [12], [13] and [14] may possibly predict negative values for K_i, K_r, and τ_c when applied to rangeland soils greatly different than those in the experimental studies. In these cases, it is recommended that the user abide by these suggested ranges for the rangeland erodibility indices: K_i should range between 10000 and 2000000 $kg*s/m^4$; K_r should range between 0.0001 and 0.0006 s/m; and τ_c should range between 1.5 and 6.0 N/m^2.

Soil Albedo

Albedo is the fraction of the solar radiation which is reflected back to the atmosphere. This parameter is used to estimate the net radiation reaching the soil surface, which is then used in the evapotranspiration calculations within the WEPP water balance routines. The input parameter value for soil albedo on Line 4d of the soil input file is for a bare, dry soil surface. WEPP will internally adjust the albedo value for the effects of soil moisture, vegetation, residue cover, and snow cover.

Soil albedo for a dry surface can be estimated by an equation proposed by Baumer (1990):

$$SALB = 0.6 / \exp(0.4*ORGMAT) \qquad \textbf{[15]}$$

where ORGMAT is the percent organic matter in the surface soil (%). Note that this equation will result in estimating a soil albedo value of 0.60 for soils having zero organic matter, and a value of 0.08 for soils with 5 percent organic matter).

Initial Saturation

The definition of initial saturation ("sat" on Line 4e of soil file) is the fraction of the porosity filled by water at the beginning of the simulation. The continuous option of the WEPP model operates for a minimum of one year with the starting date of January 1. Therefore, "initial" soil water content refers to the soil water content on January 1 of the first simulation year. This parameter is used to initialize the soil water content for each soil layer. The total soil water content (soilwa) and the available soil water content (st) for each layer is calculated in WEPP by using the following equations:

Initial soil water content

$$(SOILWA,\ m/layer)=(SAT*POR*RFG)*DG \qquad \textbf{[16]}$$

Initial plant available water content

$$(ST,\ m/layer)=((SAT*POR*(1-RFG))-thetdr)*DG \qquad \textbf{[17]}$$

where

POR= layer's porosity cm^3/cm^3 = 1-bd/2.65
RFG=correction of porosity for rock content , fraction by volume
DG=thickness of soil layer, m
thetdr= volumetric soil water content at 1500Kpa tension, m^3/m^3

The soil water content of the top soil layer is changed daily depending on the infiltration of the rainfall, irrigation water and/or snow melt and, soil evaporation and percolation to the lower layers. The soil water content of the lower soil layers are subject to change due to the percolation, plant transpiration, and/or flow to the drainage tiles.

Though the value for initial saturation can range between 0.0 and 1.0, more reasonable values would be somewhere between 0.5 and 0.95. Many soils on January 1 might have fairly high moisture contents due to fall and winter rainfall and snow accumulation, thus a value of about 0.9 might be appropriate. For other cases the recommended value would be 0.7, which is about field capacity moisture content for many soils. Another option would be to use the WEPP model to generate the graphical output file, and then view the soil moisture content and soil porosity with time and estimate the initial saturation value based on the values on January 1 for other years during the simulation period.

Cation Exchange Capacity

Cation exchange capacity is the quantity of cations adsorbed on soil particle surfaces per unit of mass of the soil under chemically neutral conditions. Soils range in CEC from almost zero to over 100 meq/100 grams. CEC is used in the WEPP model to estimate baseline effective hydraulic conductivity (Equation [1]). Table 14 and Table 15 contain some typical values for CEC that can be used by WEPP model users. Better values can be obtained from soil testing of the field, since CEC is a commonly reported soil test result.

Table 14. Relation between soil texture and CEC.

Soil texture	Cation Exchange Capacity (milliequivalents per 100 g of soil)
Sands	1-5
Fine sandy loams	5-10
Loams and silt loams	5-15
Clay loams	15-30
Clays	30-150

Source: Donahue et al. 1977.

Table 15. Representative CEC of the common soil colloids.

Soil colloid	Cation Exchange Capacity (meq/100g of colloid)
Humus	100-300
Vermiculite clay	80-150

Montmorillonite	60-100
Illite	25-40
Kaolinite	3-15
Sesquioxides	0-3

Source: Donahue et al. 1977.

Plant/Management Input File

The plant/management input file contains all of the information needed by the WEPP model related to plant parameters (rangeland plant communities and cropland annual and perennial crops), tillage sequences and tillage implement parameters, plant and residue management, initial conditions, contouring, subsurface drainage, and crop rotations.

For readability, the WEPP management file is structured into Sections. A Section is a group of data which are related in some manner.

The management file contains the following Sections in the following order:

- Information Section - contains the WEPP version.
- Plant Growth Section - plant growth parameters.
- Operation Section - tillage and other implement parameters.
- Initial Condition Section - contains initial conditions and parameters which are OFE or channel specific.
- Surface Effects Section - tillage sequences and other surface-disturbing dated-sequences of implements.
- Contour Section - contouring parameters.
- Drainage Section - drainage parameters.
- Yearly Section - management information.
- Management Section - indexes into the Yearly Scenarios.

Within Sections, there may be several instances of data groupings. Each unique data grouping is referred to as a Scenario. For instance, the Contour Section may contain several different groups of contouring parameters. Each unique contour grouping is called a Contour Scenario. Likewise, each unique plant used by WEPP, and its associated parameters is called a Plant Scenario.

By arranging data into Scenarios, information which is accessed frequently by WEPP need only be stored once in the management file. When WEPP needs scenario information, it will access it through an index into the appropriate scenario. Similarly, scenarios may also be accessed by other scenarios within the management file. For example, the Surface Effects scenarios will index into an Operation Scenario when it needs to reference a specific operation. The Yearly Scenario can index into the Surface Effects, and Contouring scenarios.

All scenarios are ultimately used by the Management Section through indices into the Yearly scenarios. With this scenario hierarchy, simple scenarios are found toward the top of the management file; more complex ones below them.

Some management file conventions:

1 At most 10 data values per line.
2. WEPP expects the following to be on lines by themselves: text information (such as scenario names and comments), looping parameters (such as `nini', `ntill', etc.), option flags (such as `lanuse', `imngmt', etc.), dates, and scenario indexes.
3. Anything on a line after the `#' character is a comment. Comments may not follow text information that is read by the model.

Plant/Management Input File Sections

The general form of a Section is:

Scen.number	-the number of scenarios declared.
Scen.loop.name	-the scenario name.
Scen.loop.description	-text comments.
Scen.loop.data	-the scenario data parameters.

To read a scenario, WEPP will loop the number of times specified by the value `Scen.number', reading the "loop" data into memory for future use.

The plant/management file for WEPP v95.7 is described in Table 16. Please note that although this management file convention allows the "mixing" of Scenarios of different land usage, this flexibility is not currently supported by the WEPP erosion model. Also, there are several scenarios that have empty "slots" where information will eventually be placed when WEPP supports those options.

Table 16. Plant/Management input file description.

---------- Information Section --

Info.version:

1.1)WEPP version, (up to) 8 characters(95.7) - (datver)

******Note****** `datver' is used to detect older management file formats, which are incompatible with the current WEPP erosion model and file builder.

Info.header

2.1)number of Overland Flow Elements for hillslopes, integer (nofe), or number of channels for watershed (nchan)

3.1)number of TOTAL years in simulation, integer (nyears * nrots)

---------- Plant Growth Section ---

******Note****** `ncrop' is the number of unique plant types grown during the simulation period. For example if the crops grown during the simulation are corn and wheat, `ncrop' = 2. A different type of residue on a field besides the current crop growth being simulated also needs to be assigned a crop number. For example if you are planting continuous corn into a field that is coming out of set-aside acreage that had a clover cover crop present the fall before that was killed with herbicides that fall, you need to input the clover crop parameters so that the decomposition section of the model will have the correct parameters (thus `ncrop' would be 2)

Plant.number:

0.1)number of unique plant types, integer (ncrop)

Plant.loop.name:

1.1)plant name, (up to) 35 characters (crname)

Plant.loop.description:

2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Plant.loop.landuse:

5.1)for use on land type..., integer - (iplant)

1)crop
2)range
3)forest
4)roads

Plant.loop.cropland:*(read when iplant=1; cropland)*

6.1)harvest units, (i.e. bu/a, kg/ha, t/a etc.) up to 15 characters - (crunit)

7.1)canopy cover coefficient, real - (bb)
7.2)parameter value for canopy height equation, real - (bbb)
7.3)biomass energy ratio, real - (beinp)
7.4)base daily air temperature (degrees C), real - (btemp)
7.5)parameter for flat residue cover equation (m^2/kg), real - (cf)
7.6)growing degree days to emergence (degrees C), real - (crit)
7.7)critical live biomass value below which grazing is not allowed (kg/m^2), real - (critvm)
7.8)height of post-harvest standing residue; cutting height (m), real - (cuthgt)
7.9)fraction canopy remaining after senescence (0-1), real (decfct)
7.10)plant stem diameter at maturity (m), real - (diam)

8.1)heat unit index when leaf area index starts to decline (0-1), real - (dlai)
8.2)fraction of biomass remaining after senescence (0-1), real - (dropfc)
8.3)radiation extinction coefficient, real - (extnct)
8.4)standing to flat residue adjustment factor (wind, snow, etc.), real - (fact)
8.5)maximum Darcy Weisbach friction factor for living plant, real - (flivmx)
8.6)growing degree days for growing season (degrees C), real - (gddmax)
8.7)harvest index, real - (hi)
8.8)maximum canopy height (m), real - (hmax)

9.1)use fragile or non-fragile operation mfo values, integer - (mfocod)
    1)fragile
    2)non-fragile

10.1)decomposition constant to calculate mass change of above-ground biomass (surface or buried), real - (oratea)
10.2)decomposition constant to calculate mass change of root-biomass, real - (orater)
10.3)optimal temperature for plant growth (degrees C), real - (otemp)
10.4)plant specific drought tolerance, real - (pltol)
10.5)in-row plant spacing (m), real - (pltsp)
10.6)maximum root depth (m), real - (rdmax)
10.7)root to shoot ratio, real - (rsr)
10.8)maximum root mass for a perennial crop (kg/m^2), real - (rtmmax)
10.9)period over which senescence occurs (days), integer - (spriod)
10.10)maximum temperature that stops the growth of a perennial crop (degrees C), real - (tmpmax)

11.1)critical freezing temperature for a perennial crop (degrees C), real - (tmpmin)
11.2)maximum leaf area index, real - (xmxlai)
11.3)optimum yield under no stress conditions (kg/m^2), real - (yld)

******Note****** (input 0.0 to use model calculated optimum yield)

Plant.loop.rangeland:*(read when iplant=2; rangeland)*

6.1)change in surface residue mass coefficient, real - (aca)
6.2)coefficient for leaf area index, real - (aleaf)
6.3)change in root mass coefficient, real - (ar)
6.4)parameter value for canopy height equation, real - (bbb)
6.5)daily removal of surface residue by insects, real - (bugs)
6.6)frac. of 1st peak of growing season, real - (cf1)
6.7)frac. of 2nd peak of growing season, real - (cf2)
6.8)c:n ratio of residue and roots, real - (cn)
6.9)standing biomass where canopy cover is 100%,(kg/m^2) real - (cold)
6.10)frost free period, (days) integer - (ffp)

7.1)projected plant area coefficient for grasses, real - (gcoeff)
7.2)average. canopy diameter for grasses, (m) real - (gdiam)
7.3)average height for grasses (m), real - (ghgt)
7.4)average number of grasses along a 100 m belt transect, real - (gpop)
7.5)minimum temperature to initiate growth,(degrees C) real - (gtemp)
7.6)maximum herbaceous plant height (m), real - (hmax)
7.7)maximum standing live biomass, (kg/m^2) real - (plive)
7.8)plant drought tolerance factor, real - (pltol)
7.9)day of peak standing crop, 1st peak, (julian day) integer - (pscday)
7.10)minimum amount of live biomass, (kg/m^2) real - (rgcmin)

8.1)root biomass in top 10 cm, (kg/m^2) real - (root10)
8.2)fraction of live and dead roots from maximum at start of year, real - (rootf)
8.3)day on which peak occurs, 2nd growing season (julian day), integer - (scday2)
8.4)projected plant area coefficient for shrubs, real - (scoeff)
8.5)average canopy diameter for shrubs (m), real - (sdiam)
8.6)average height of shrubs (m), real - (shgt)
8.7)average number of shrubs along a 100 m belt transect, real - (spop)
8.8)projected plant area coefficient for trees, real - (tcoeff)
8.9)average canopy diameter for trees (m), real - (tdiam)
8.10)minimum temperature to initiate senescence, (degrees C) real - (tempmn)

9.1)average height for trees (m), real - (thgt)
9.2)average number of trees along a 100 m belt transect, real - (tpop)
9.3)fraction of initial standing woody biomass, real - (wood)

Plant.loop.forest:*(read when iplant=3; forest)*

******Note****** no values; plants for Forestland not yet supported.

Plant.loop.roads:*(read when iplant=4; roads)*

******Note****** no values; plants for Roads not yet supported.

Note **Plant.loop** values repeat `ncrop` times.

---------- Operation Section --

Op.number:

0.1)number of unique operation types, integer (nop)

Op.loop.name:

1.1)operation name, (up to) 35 characters (opname)

Op.loop.description:

2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Op.loop.landuse:

5.1)for use on land type, integer - (iop)

1)crop
2)range
3)forest
4)roads

Op.loop.cropland:*(read when iop=1; cropland)*

6.1)interrill tillage intensity for fragile crops, real - (mfo1)
6.2)interrill tillage intensity for non-fragile crops, real - (mfo2)
6.3)number of rows of tillage implement, integer - (numof)

7.1)implement code, integer - (pcode)

1)planter
2)drill
3)cultivator
4)other

7.2)cultivator position, integer - (cltpos)
(read when pcode = 3; cultivator)

1)front mounted
2)rear mounted

8.1)ridge height value after tillage (m), real - (rho)
8.2)ridge interval (m), real - (rint)
8.3)rill tillage intensity for fragile crops, real - (rmfo1)
8.4)rill tillage intensity for non-fragile crops, real - (rmfo2)
8.5)random roughness value after tillage (m), real - (rro)
8.6)fraction of surface area disturbed (0-1), real - (surdis)

8.7)mean tillage depth (m), real - (tdmean)

Op.loop.rangeland:*(read when iop=2; rangeland)*

******Note****** no values; operations for Rangeland not yet supported.

Op.loop.forest:*(read when iop=3; forest)*

******Note****** no values; operations for Forestland not yet supported.

Op.loop.roads:*(read when iop=4; roads)*

******Note****** no values; operations for Roads not yet supported.

******Note*** Op.loop values repeat `nop' times.***

---------- Initial Condition Section -------------------------------------

******Note****** `nini' is the number of different initial conditions to be read into the WEPP model. The initial conditions are the conditions which exist at the beginning of the simulation. Estimates of the initial conditions for a continuous simulation can be made by using long term average conditions which exist on January 1st. For a single storm simulation, the user must input the correct values for initial conditions since they will greatly affect the model output. For continuous model simulations, especially ones in which significant soil and residue disturbance are caused by tillage and the simulation is for several years, the effect of initial conditions on model output is minimal.[1]

Ini.number:
0.1)number of initial condition scenarios, integer - (nini)

Ini.loop.name:
1.1)scenario name, (up to) 8 characters (oname)

Ini.loop.description:
2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Ini.loop.landuse:
5.1)land use, integer - (lanuse)

[1]The WEPP Shell Interface can optionally create these scenarios from WEPP model runs.

1)crop
2)range
3)forest
4)roads

Ini.loop.landuse.cropland:*(read when lanuse=1; cropland)*

6.1)bulk density after last tillage (g/cm^3), real - (bdtill)
6.2)initial canopy cover (0-1), real - (cancov)
6.3)days since last tillage, real - (daydis)
6.4)days since last harvest, integer - (dsharv)
6.5)initial frost depth (m), real - (frdp)
6.6)initial interrill cover (0-1), real - (inrcov)

7.1)Plant Growth Scenario index of initial residue type, integer - (iresd)
******Note****** \`iresd' refers to a Plant Growth Scenario.

8.1)initial residue cropping system, integer - (imngmt)
1)annual
2)perennial
3)fallow

9.1)cumulative rainfall since last tillage (mm), real - (rfcum)
9.2)initial ridge height after last tillage (m), real - (rhinit)
9.3)initial rill cover (0-1), real - (rilcov)
9.4)initial ridge roughness after last tillage (m), real - (rrinit)
9.5)rill spacing (m), real - (rspace)

******Note****** if \`rspace' is 0.0 or less, WEPP will set rill spacing to 1.0 meter.

10.1)rill width type, integer - (rtyp)
1)temporary
2)permanent

******Note****** For most cases, input a value of "1" for rill width type. To use a constant rill width, unaffected by flow or tillage, input "2" here for permanent rills.

11.1)initial snow depth (m), real - (snodpy)
11.2)initial depth of thaw (m), real - (thdp)
11.3)depth of secondary tillage layer (m), real - (tillay(1))
11.4)depth of primary tillage layer (m), real - (tillay(2))
11.5)initial rill width (m), real - (width)

******Note****** The primary tillage layer (tillay(2)) is the depth of the deepest tillage operation. The secondary tillage layer is the average depth of all secondary tillage operations. If no tillage, set tillay (1) = 0.1 and tillay (2) = 0.2 The current version of WEPP (v95.7) internally fixes tillay(1)=0.1 and tillay(2)=0.2, so the input values here at present have no impact on model simulations.

Note If rill width type (rtyp) is temporary, WEPP will estimate a value for rill width as a function of flow discharge rate for each storm, and reset rill width to 0.0 when a tillage occurs. If `width' is 0.0 and rill width type (rtyp) is permanent, WEPP will set the permanent rill width to the rill spacing, functionally forcing the model to assume broad sheet flow for flow shear stress and transport computations.

12.1)initial total dead root mass (kg/m^2), real - (sumrtm)
12.2)initial total submerged residue mass (kg/m^2), real - (sumsrm)

Note See page (118) for information on estimating sumrtm and sumsrm.

Ini.loop.landuse.rangeland:*(read when lanuse=2; rangeland)*

6.1)initial frost depth (m), real - (frdp)
6.2)average rainfall during growing season (m), real - (pptg)
6.3)initial residue mass above the ground (kg/m^2), real - (rmagt)
6.4)initial residue mass on the ground (kg/m^2), real - (rmogt)
6.5)initial random roughness for rangeland (m), real - (rrough)
6.6)initial snow depth (m), real - (snodpy)
6.7)initial depth of thaw (m), real - (thdp)
6.8)depth of secondary tillage layer (m), real - (tillay (1))
6.9)depth of primary tillage layer (m), real - (tillay (2))

NoteThe primary tillage layer (tillay (2)) is the depth of the deepest tillage operation. The secondary tillage layer is the average depth of all secondary tillage operations. If no tillage, set tillay (1) = 0.1 and tillay (2) = 0.2 The current version of WEPP (v95.7) internally fixes tillay(1) = 0.1 and tillay(2) = 0.2, so the input values here at present have no impact on model simulations.

7.1)interrill litter surface cover (0-1), real - (resi)
7.2)interrill rock surface cover (0-1), real - (roki)
7.3)interrill basal surface cover (0-1), real - (basi)
7.4)interrill cryptogamic surface cover (0-1), real - (cryi)
7.5)rill litter surface cover (0-1), real - (resr)
7.6)rill rock surface cover (0-1), real - (rokr)
7.7)rill basal surface cover (0-1), real - (basr)
7.8)rill cryptogamic surface cover (0-1), real - (cryr)
7.9)total foliar (canopy) cover (0-1), real (cancov)

Ini.loop.landuse.forest:*(read when lanuse=3; forest)*

Note no values; initial conditions for Forestland not yet supported.

Ini.loop.landuse.roads:*(read when lanuse=4; roads)*

******Note****** no values; initial conditions for Roads not yet supported.

******Note*** Ini.loop values repeat `nini' times.***

---------- Surface Effects Section ---

******Note****** A Surface Effect Scenario is a sequence of surface-disturbing (tillage) operations performed on one field or overland flow element during one calendar year.

Surf.number:
0.1)number of Surface Effect Scenarios, integer (nseq)

Surf.loop.name:
1.1)scenario name, (up to) 8 characters - (sname)

Surf.loop.description:
2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Surf.loop.landuse:
5.1)for use on land type, integer - (iseq)
1)crop
2)range
3)forest
4)roads

Surf.loop.number:
6.1)number of operations for surface effect scenario, integer - (ntill)

Surf.loop.loop.cropland:*(read when iseq=1; cropland)*

7.1)day of tillage (julian), integer - (mdate)

8.1)Operation Scenario index, integer - (op)

******Note****** `op' refers to the Operation Scenario.

9.1)tillage depth (m), real - (tildep)

10.1)tillage type, integer - (typtil)
1)primary
2)secondary

Note Primary tillage is the operation which tills to the maximum depth. Secondary tillage is all other tillage operations.

Surf.loop.loop.rangeland:*(read when iseq=2; rangeland)*

Note no values; surface effects for Rangeland not yet supported.

Surf.loop.loop.forest:*(read when iseq=3; forest)*

Note no values; surface effects for Forestland not yet supported.

Surf.loop.loop.roads:*(read when iseq=4; roads)*

Note no values; surface effects for Roads not yet supported.

Note Surf.loop.loop values repeat `ntill' times. Surf.loop values repeat `nseq' times.***

---------- Contour Section --

Note A Contour Scenario is the combination of slope length, slope steepness, and ridge height which is associated with one (or more) overland flow element(s) or a field in a hillslope simulation. Contour Scenarios are used when the effects of contour farming or cross-slope farming are to be examined. The contour routines within the WEPP model at this time are fairly simple. The inputs for the Contour Scenarios are the row grade of the contours (assumed uniform), the contour row spacing (distance between ridges), the contour row length (the distance runoff flows down a contour row), and the contour ridge height. WEPP computes the amount of water storage within a contour row. If the runoff produced by a rainfall event exceeds the storage the contours are predicted to fail and a message is sent to the output which informs the user that his contour system has failed. The erosion estimates are made continuing to assume that all flow is down the contour rows (even though they were predicted to fail). This is because when contours fail they many times form massive channels or ephemeral gullies, erosion processes that are not modeled as a WEPP Hillslope Profile application. If a user receives a message that his/her contour system has failed, his/her options are to redesign the contour system so that the contour rows are shorter and/or the contour ridge height is greater, or use the watershed application of WEPP to simulate the flow down the contour rows then into the failure channel, gully, or grassed waterway. When the contour option is used, all of the flow and sediment for an overland flow element are assumed to be routed to the side of the slope. When contours hold on an OFE, no sediment will be predicted to exit the bottom of that overland flow element, and an average detachment rate is calculated at the 100 points down the hillside based on the sediment exiting off the side of the OFE. Users are advised not to simulate contoured

OFEs below non-contoured ones, since there is a large likelihood of failure of the contours due to inflow of water from above overtopping the contour ridges.

Cont.number:
0.1)number of Contour Scenarios - (ncnt)

Cont.loop.name:
1.1)scenario name, (up to) 8 characters - (cname)

Cont.loop.description:
2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Cont.loop.landuse:
5.1)for use on land type..., integer - (icont)
1)crop

******Note****** `icont' must be 1, as only cropland supports contouring.

Cont.loop.cropland:*(read when icont=1; cropland)*

6.1)contour slope (m/m), real - (cntslp)
6.2)contour ridge height (m), real - (rdghgt)
6.3)contour row length (m), real - (rowlen)
6.4)contour row spacing (m), real - (rowspc)

******Note*** Cont.loop values repeat `ncnt' times.***

---------- Drainage Section --

Drain.number:
0.1)number of Drainage Scenarios - (ndrain)

Drain.loop.name:
1.1)scenario name, (up to) 8 characters - (dname)

Drain.loop.description:
2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Drain.loop.landuse:

5.1)for use on land type..., integer - (dcont)
1)crop
2)range
4)roads
******Note****** `dcont' must be 1, 2, or 4, as forestland does not support drainage.

Drain.loop.drainage:*(read when dcont=1; cropland)*

6.1)depth to tile drain (m), real - (ddrain)
6.2)drainage coefficient (m/day), real - (drainc)
6.3)drain tile diameter (m), real - (drdiam)
6.4)drain tile spacing (m), real - (sdrain)

Drain.loop.rangeland:*(read when dcont=2; rangeland)*

******Note****** no values; drainage for Rangeland not yet supported.

Drain.loop.roads:*(read when dcont=4; roads)*

******Note****** no values; drainage for Roads not yet supported.

******Note*** Drain.loop values repeat `ndrain' times.***

---------- Yearly Section --

******Note****** `nscen' is the number of management scenarios used by the simulation. A management scenario contains all information associated with a particular Year/OFE/Crop - its Surface Effect, Contour, Drainage, Plant Growth scenarios and management data.

Year.number:
0.1)number of Yearly Scenarios - (nscen)

Year.loop.name:
1.1)scenario name, (up to) 8 characters - (mname)

Year.loop.description:
2.1)description, (up to) 55 characters (may be blank)

3.1)description, (up to) 55 characters (may be blank)

4.1)description, (up to) 55 characters (may be blank)

Year.loop.landuse:

5.1)for use on land type..., integer - (iscen)

1)crop
2)range
3)forest
4)roads

Year.loop.cropland:*(read when iscen=1; cropland)*

6.1)Plant Growth Scenario index, integer - (itype)

******Note****** \`itype' refers to a Plant Growth Scenario. The value for \`itype' corresponds to the order that the plants are read in to WEPP from the Plant Growth Section. For example, if the plants being grown are corn and soybeans and in the Plant Growth Section the first plant read in is corn and the second soybeans, then corn will have a reference index of 1 and soybeans will have a reference index of 2. So for any year when corn is being grown, \`itype' will equal 1 and for any year when soybeans are being grown, \`itype' will equal 2.

7.1)Surface Effect Scenario index, integer - (tilseq)

******Note****** \`tilseq' refers to a Surface Effects Scenario order number index. If nseq = 0, then \`tilseq' must be 0.

8.1)Contour Scenario index, integer - (conset)

******Note****** \`conset' refers to a Contour Scenario order number index. If \`ncnt' = 0 on line 0.1 of the Contour Section, then \`conset' must be 0.

9.1)Drainage Scenario index, integer - (drset)

******Note****** \`drset' refers to a Drainage Scenario order number index. If \`ndrain' = 0 on line 0.1 of the Drainage Section, then \`drset' must be 0.

10.1)cropping system, integer - (imngmt)

1)annual
2)perennial
3)fallow

Year.loop.cropland.annual/fallow:*(read when imngmt=1 or imngmt=3; annual/fallow crops)*

11.1)harvesting date or end of fallow period (julian day), integer - (jdharv)

12.1)planting date or start of fallow period (julian day), integer - (jdplt)

13.1)row width (m), real - (rw)

14.1)residue management option, integer - (resmgt)
1)herbicide application
2)burning
3)silage
4)shredding or cutting
5)residue removal
6)none

Year.loop.cropland.annual/fallow.herb:*(read when resmgt=1; herbicide application)*

15.1)herbicide application date (julian), integer - (jdherb)

******Note****** Herbicide application here refers to use of a contact herbicide which the WEPP model will simulate as immediately converting all standing live biomass to dead residue.

Year.loop.cropland.annual/fallow.burn:*(read when resmgt=2; burning)*

15.1)residue burning date (julian day), integer - (jdburn)

16.1)fraction of standing residue lost by burning (0-1), real - (fbrnag)

17.1)fraction of flat residue lost by burning (0-1), real - (fbrnog)

Year.loop.cropland.annual/fallow.silage:(*read when resmgt=3; silage)*

15.1)silage harvest date (julian day), integer - (jdslge)

Year.loop.cropland.annual/fallow.cut:*(read when resmgt=4; cutting)*

15.1)standing residue shredding or cutting date (julian day), integer - (jdcut)
16.1)fraction of standing residue shredded or cut (0-1), real - (frcut)

Year.loop.cropland.annual/fallow.remove:*(read when resmgt=5; residue removal)*

15.1)residue removal date (julian day), integer - (jdmove)
16.1)fraction of flat residue removed (0-1), real - (frmove)

Year.loop.cropland.perennial:*(read when imngmt=2; perennial crops)*

11.1)approximate date to reach senescence (julian day), integer - (jdharv)

******Note****** Enter 0 if the plants do not senesce. This parameter is only important in situations in which the perennial plant is neither cut nor grazed.

12.1)planting date (julian day) integer (jdplt)

Note Set jdplt =0 if there is no planting date (this means the perennial is already established).

13.1)perennial crop growth stop date, if any (julian), integer - (jdstop)

Note The perennial growth stop date is the date on which the perennial crop is permanently killed, either by tillage or herbicides (not frost). For example, if a bromegrass field is to be prepared for a subsequent corn crop, the date which the bromegrass is plowed under or killed with herbicides must be entered. A zero (0) is entered if the perennial crop is not killed during the year.

14.1)row width (m), real - (rw)

Note (set rw = 0.0 if unknown or seed broadcast - WEPP model then sets rw = pltsp)

15.1)crop management option, integer - (mgtopt)
1)cutting
2)grazing
3)not harvested or grazed

Year.loop.cropland.perennial.cut:*(read when mgtopt=1; cutting)*

16.1)number of cuttings, integer - (ncut)

Year.loop.cropland.perennial.cut.loop:

17.1)cutting date (julian), integer - (cutday)

Note Man.loop.cropland.perennial.cut.loop values repeat `ncut' times.

Year.loop.cropland.perennial.graze:*(read when mgtopt=2; grazing)*

16.1)number of grazing cycles, integer - (ncycle)

Year.loop.cropland.perennial.graze.loop:
17.1)number of animal units, real - (animal)
17.2)field size (m^2), real - (area)
17.3)unit animal body weight (kg), real - (bodywt)
17.4)digestibility, real - (digest)

18.1)date grazing begins (julian day), integer - (gday)

19.1)date grazing ends (julian day), integer - (gend)

Note Year.loop.cropland.perennial.graze.loop values repeat `ncycle' times.

Year.loop.rangeland:*(read when iscen=2; rangeland)*

6.1)Plant Growth Scenario index, integer - (itype)

*****Note***** \`itype' refers to a Plant Growth Scenario order index.

7.1)Surface Effects Scenario index, integer - (tilseq)

*****Note***** \`tilseq' refers to the Surface Effects Scenario order index.

8.1)Drainage Scenario index, integer - (drset)

*****Note***** \`drset' refers to a Drainage Scenario order index. If \`ndrain' = 0 , \`drset' must be 0.

9.1)grazing flag, integer - (grazig)
0)no grazing
1)grazing

Year.loop.rangeland.graze:*(section read when grazig=1)*

10.1)pasture area (m^2), real - (area)
10.2)fraction of forage available for consumption (0-1), real - (access)
10.3)maximum digestibility of forage (0-1), real - (digmax)
10.4)minimum digestibility of forage (0-1), real - (digmin)
10.5)average amount of supplemental feed per day (kg/day), real - (suppmt)

11.1)number of grazing cycles per year, integer - (jgraz)

Year.loop.rangeland.graze.loop:*(section read when grazig=1)*

12.1)number of animals grazing (animal units per year), real - (animal)
12.2)average body weight of an animal (kg), real - (bodywt)

13.1)start of grazing period (julian date), integer - (gday)

14.1)end of grazing period (julian date), integer - (gend)

15.1)end of supplemental feeding day (julian day), integer - (send)

16.1)start of supplemental feeding day (julian day), integer - (ssday)

*****Note***** *Year.loop.rangeland.graze.loop values repeat \`jgraz' times.*

10.1)herbicide application date, integer - (ihdate)

Year.loop.rangeland.herb:*(section read when ihdate > 0)*

11.1)flag for activated herbicides, integer - (active)

12.1)fraction reduction in live biomass, real - (dleaf)
12.2)fraction of change in evergreen biomass, real - (herb)
12.3)fraction of change in above and below ground biomass, real - (regrow)
12.4)fraction increase of foliage, real - (update)

13.1)flag for decomp. of standing dead biomass due to herbicide application, integer - (woody)

11.1)rangeland burning date, integer - (jfdate)

Year.loop.rangeland.burn:*(section read when jfdate > 0)*

12.1)live biomass fraction accessible for consumption following burning, real - (alter)
12.2)fraction reduction in standing wood mass due to the burning, real - (burned)
12.3)fraction change in potential above ground biomass, real - (change)
12.4)fraction evergreen biomass remaining after burning, real - (hurt)
12.5)fraction non-evergreen biomass remaining after burning, real - (reduce)

Year.loop.forest: *(read when iscen=3; forest)*

******Note****** no values; yearly information for Forestland not yet supported.

Year.loop.roads: *(read when iscen=4; roads)*

******Note****** no values; yearly information for Roads not yet supported.

******Note******
Year.loop values repeat `nscen' times.

---------- Management Section --

******Note****** The management scenario contains all information associated with a single WEPP simulation. The yearly scenarios are used to build this final scenario. The yearly scenarios were built from the earlier scenarios - plants, tillage sequences, contouring, drainage, and management practices.

Man.name:
1.1)scenario name, (up to) 8 characters - (mname)

Man.description:
2.1)description, (up to) 55 characters (may be blank)
3.1)description, (up to) 55 characters (may be blank)
4.1)description, (up to) 55 characters (may be blank)

Man.ofes:

5.1)number of ofes in the rotation, integer - (nofe)

Man.OFE.loop.ofe:

6.1)Initial Condition Scenario index used for this OFE, integer - (ofeindx)

******Note****** \`ofeindx' is an index of one of the defined Initial Condition Scenarios. Man.OFE.loop values repeat \`nofe' times.

Man.repeat:

7.1)number of times the rotation is repeated, integer - (nrots)

Man.MAN.loop.years:

8.1)number of years in a single rotation, integer - (nyears)

Man.MAN.loop.loop.crops:

9.1)number of crops per year, integer (nycrop)

******Note****** nycrop is the number of crops grown during the current year for a field or overland flow element. For the case of continuous corn, nycrop=1. If two crops are grown in a year, then nycrop=2. The number of crops for a year, for the purpose of WEPP model inputs, is determined in the following manner: For a single crop planted in the spring and harvested in the fall, the value of nycrop is 1. However, any time during a year that another crop is present on a field, it must be counted as another crop. For example, for a continuous winter wheat rotation, the wheat growing from January 1 to a harvest date in July is crop number 1, while the wheat planted in October and growing to December 31 is crop number 2. Another example would be a perennial alfalfa growing from January 1 to March 30, plowing the alfalfa under on March 30, a corn crop planted on April 25 and harvested on October 11, then planting a winter wheat crop on October 17. Here the alfalfa would be crop number 1, the corn would be crop number 2, and the wheat would be crop number 3. For areas in which the field lies fallow for periods of time in conjunction with planting of winter annuals, care must be taken to include a fallow crop at the beginning of the calendar year as crop number 1, followed by the winter annual planted that fall as crop number 2.

Man.MAN.loop.loop.loop.man:

10.1)Yearly Scenario index used this Year on this OFE with this Crop, integer - (manindx)

******Note****** \`manindx' is an index of one of the defined ordered Management Scenarios.

******Notes******Man.MAN.loop.loop.loop (line 10.1) values repeat for the total number of crops grown during the current year on the current OFE (\`nycrop').

Man.MAN.loop.loop values repeat \`nofe' times.
Man.MAN.loop.loop values repeat \`nyears' times.
Man.MAN.loop values repeat \`nrots' times.

Plant Specific Parameters for Cropland

The WEPP crop growth model is a modification of the EPIC crop growth model (Williams et al., 1989) which accounts for water and temperature stresses on biomass production and harvested yield. The WEPP crop component was designed so that parameters may be adjusted for each different crop and for variations within crop varieties. Included in Table 17 and in the WEPP management file builder are estimates of crop parameters for many of the major crops grown in the United States that should provide realistic results. Since the crop growth component was not intended to serve as a crop yield prediction model, the user is advised to use caution when adjusting parameter values in order to overcome errors. In the cases where actual yield/biomass values are vastly different from those predicted by WEPP or crop parameters are not available for a particular crop of interest, the plant parameters may be adjusted ***WITH CARE***. Other sources of errors should be considered before modifying a cropping and management input due to simulation output discrepancies. Crop inputs are best modified for research or sensitivity analysis purposes.

The crop residue decomposition component of WEPP is based on the RESMAN Residue Management model (Stott and Rogers, 1990; Stott and Barrett, 1993; Stott, 1991). This component estimates the amount of residue present daily as standing, flat, or buried, as well as dead roots. It also determines the amount of surface cover provided by the residue.

When the crop of interest is not listed as a choice in the WEPP management file, it is best to start with the crop parameters of a similar crop that currently exist in the crop file. If that option is not feasible, such as the case with many vegetable crops, the Crop Parameter Intelligent Database System (CPIDS) may be consulted for parameterization assistance. Crop parameters may also be refined to better reflect local growing and seasonal conditions. These refinements should better simulate the growing conditions in the field (canopy cover, height, biomass) and not just adjustments in crop yields. The following section provides details on the individual plant parameters, as well as some suggestions on adjustments to these.

BB - BB describes the relationship between canopy cover and vegetative biomass as shown in Figure 3. This parameter is crop-dependent. Increasing the value of BB in small increments causes two effects in the canopy cover and biomass relationship. In observing a single, constant canopy cover value, the calculated vegetative biomass decreases while the BB increases. When observing a constant vegetative biomass value with an increasing BB, the canopy cover will increase. In other words, as BB increases, the rate of canopy cover development as a function of biomass increases. For example, with a high value of BB (14 for alfalfa, bromegrass, and soybeans), canopy cover approaches 1.0 (100%) very rapidly. On the other extreme, canopy cover for corn increases slowly as biomass increases as shown in Figure 3. When adjusting the BB from a similar crop, if the plant has more canopy cover given less total biomass on the field, increase BB slightly. If the crops have similar canopy covers but the biomass of the crop to be parameterized is less, the BB value may be increased slightly. The crop's biomass and canopy cover, if known, can be plotted as shown in Figure 3 and a linear regression can be performed on the transformed data. Adjustments to this parameter should be made with care and knowledge of the crop under consideration.

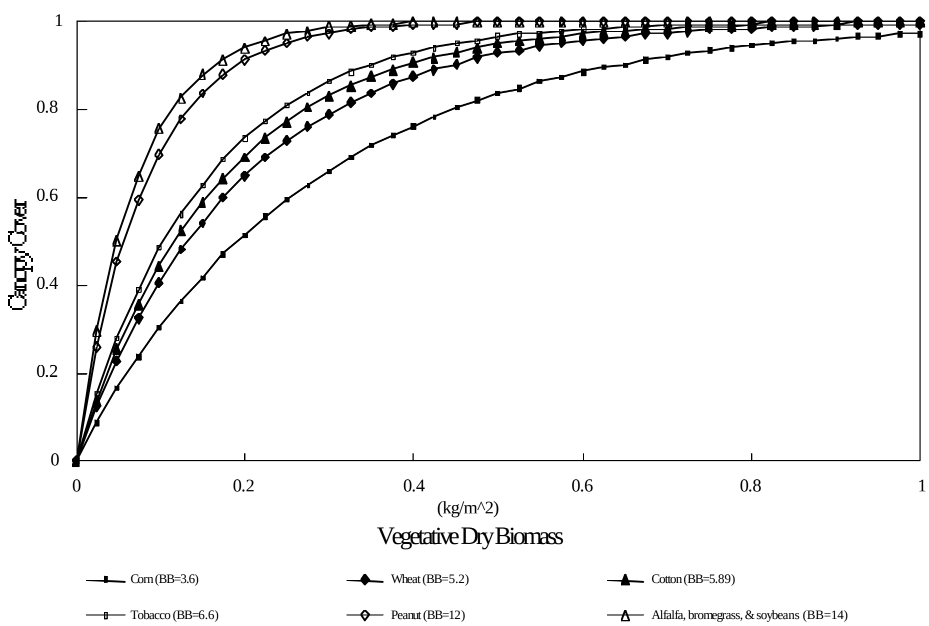

Figure 3. Canopy Cover and Biomass.

BBB - BBB, a canopy height parameter, behaves similarly to BB. BBB defines the relationship between vegetative biomass and canopy height as shown in Figure 4. Note that the Y-axis has been normalized by plotting the ratio of canopy height to the maximum canopy height. Higher BB values indicate greater height for a given biomass. BBB affects the rate that maximum canopy height is reached, not the maximum canopy height (see HMAX). To estimate BBB for a crop not available on the WEPP crop parameter list, values of biomass and canopy cover can be plotted as shown in Figure 4, and a linear regression can be performed on log-transformed data.

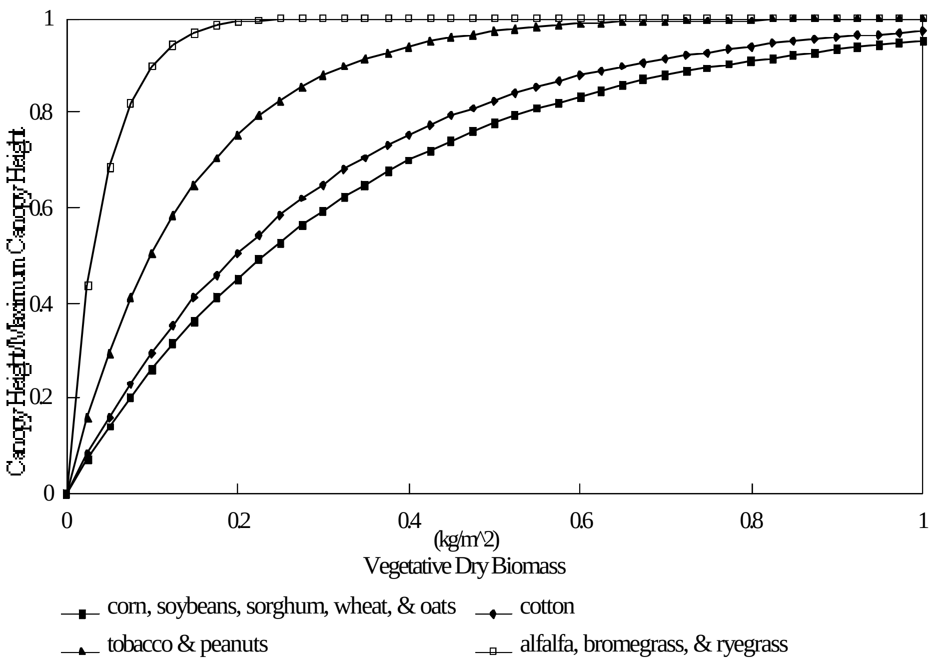

Figure 4. Canopy Height and Biomass Relationship.

BEINP (kg/MJ) - BEINP is the biomass energy ratio of a crop. This crop parameter reflects the potential growth rate of a given crop per unit of intercepted photosynthetically active radiation. BEINP can greatly change the rate of growth, incidence of stress during the growing season, and yield in the model. This parameter should be adjusted only if absolutely indicated and then only based on research results. Data for BEINP should reflect unstressed cropping conditions, i.e., no nutrient, temperature, or water stresses.

Adjusting the BEINP Plant Growth Parameter

In terms of erosion, perhaps the most important factor related to plant growth is the amount of biomass produced by the crop. The BEINP parameter is the biomass energy conversion factor. Increasing the value of BEINP will increase the amount of biomass that the crop produces, which will increase both the residue left at harvest and crop yield. The relative amount of yield to total biomass produced may be adjusted using the harvest index. If the user knows that a particular variety of corn, for example, produces 8000 lbs/acre of residue and 120 bushels per acre of grain on the average, he/she may adjust the BEINP and HI parameter values until the model calculates those amounts over a long-term (e.g., 10 years) simulation. If a variety of corn was bred to have a thicker stalk, so as to produce 12,000 lbs/acre of residue and 120 bushels per acre on the average, the BEINP parameter could be increased and the HI value decreased to reflect that difference. The grain yield does not directly influence erosion calculations, but residue left at harvest will have a significant effect on erosion. The WEPP interface management file builder contains crop parameter data to represent low, medium, and high productivity corn and soybeans, as well as a lodging-resistant corn variety.

BTEMP (°C) - BTEMP reflects the minimum or base daily air temperature required for plant growth. When the average daily air temperature exceeds the base temperature of the plant, growth is initiated for the simulation. Base temperatures are stable for cultivars within a species. It is not recommended that this parameter be changed. To compensate for crop varieties with longer or shorter growing seasons and different geographic locations, the sum of growing degrees to maturity (GDDMAX) may be modified.

CF (m^2/kg) - parameter used to convert residue mass to percent surface cover [NSERL #10, equation 9.3.2]. Crop-specific CF represents the amount of soil surface covered completely by a kilogram of residue. This parameter is extremely important because the WEPP erosion routines are quite sensitive to percent surface cover.

CRIT (°C days) - CRIT represents the accumulation of growing degree days from planting to emergence. When the accumulation of growing degree days after planting has reached this value, the plants emerge and above ground biomass appears. A higher daily average temperature will cause the plant to emerge faster due to a quicker accumulation of growing degree days. The WEPP model will consider the plants emerged when CRIT is reached or at 14 days after planting, whichever comes first.

CRITVM (kg/m^2) - Critical live biomass value of a perennial crop below which grazing is not allowed. If the live biomass value falls below CRITVM, no grazing is allowed on that day. If the live biomass is greater than CRITVM, grazing is allowed and the total biomass removed is calculated by equation 8.3.3, NSERL #10. This is used to 'update' the remaining amount of biomass.

CUTHGT (m) - Height of post-harvest standing residue; cutting height; or cutting height for harvest of perennial crops. This should reflect the amount of standing residue available for conversion to flat residue cover for annual crops. For perennial crops at a cutting harvest, the cutting height determines the amount of plant material harvested.

DECFCT - Fraction of the canopy cover remaining after senescence. If the crop does not reach senescence before harvesting, DECFCT is 1. DECFCT is used to compute the daily decline in canopy cover after senescence begins.

DIAM (m) - Diameter of the stem (stalk, trunk, etc.) at plant maturity. In the case of crops that do not reach maturity before harvest, the maximum stem diameter is used. This value should reflect the portion of the stem at the base of the plant near the soil surface. DIAM is used to initialize residue amounts.

DLAI - DLAI reflects the fraction of the growing season that must be reached before the leaf area index begins declining. The cumulative growing degrees or heat units from planting to leaf area index decline is divided by the total growing degrees accumulated between planting and crop maturity. For vegetables and other annual crops that may be harvested before the leaf area index begins to decline, DLAI is set to 1.0.

DROPFC - DROPFC represents the fraction of live biomass remaining after senescence. It is used to update the decline in crop biomass during senescence.

EXTNCT - EXTNCT is the radiation extinction coefficient. It is used to calculate intercepted photosynthetically active radiation from daily solar radiation and leaf area index.

FACT - Adjustment factor to account for the effect of wind and snow on standing to flat residue conversion. FACT is the fraction of the previous day's residue that remains standing for the current day. This factor is set to a default value of 0.99 in the WEPP Version 95.7 interface file builder for all crops, but the parameter has no effect when all biomass is removed from a field.

FLIVMX - Maximum friction factor (Darcy-Weisbach) for living plant. Used to account for hydraulic roughness for crops such as cotton, small grains, alfalfa, and grasses. Most generally crops are assigned values based on whether they are planted (or drilled) perpendicular or parallel to water flow. For the case of wide-row crops such as corn or crops planted parallel to the flow of water, FLIVMX should be set to 0.0. Crops that are drilled or grown in narrow rows perpendicular to the flow of water, e.g. wheat, should be assigned a FLIVMX of 2.0-3.0. For perennial grasses and pasture situations, FLIVMX should be set to 12.0. When a furrow or rill has more than 50% of the flow impeded due to living plant stems and leaves, set FLIVMX to at least 3.0.

GDDMAX (°C days) -Potential accumulation of growing degree days or heat units from planting to maturity. The growing degrees begin accumulation with the planting date and once GDDMAX is reached, the plant growth is stopped and no updates are made until the start of leaf drop or harvest occurs. If the user does not know the growing degree days to crop maturity, entering a value of 0.0 will cause the model to calculate GDDMAX based on the crop planting date and harvest date. For perennial crops GDDMAX should be set to 0.0. Growth of a perennial crop stops when the average daily air temperature is less than the plant base temperature (BTEMP), and the plant becomes dormant once the five-day average daily temperature drops below the critical minimum temperature (TMPMIN)., Figure 5, Figure 6, and Figure 7show growing degree days and growing season days for corn, sorghum, and soybeans (Kiniry et al., 1991).

HI - HI is the normal harvest index of the unstressed crop (dry crop yield/dry above ground biomass). This crop parameter should be based on experimental data where crop stresses have been minimized to allow the crop to attain its potential. The WEPP crop growth component uses the harvest index and adjustments for water stresses to estimate crop yield. The harvest index concept was originally developed for grain crops and has been extended to tuber crops and crops where vegetative biomass is harvested. WEPP does not use the HI for perennial crops with multiple cuttings. Instead, harvested biomass is estimated as a function of the cutting height and the canopy height.

HMAX (m) - The maximum canopy height (HMAX) of the crop is used in an empirically-based equation with BBB and the above ground biomass to calculate a current canopy height. HMAX may be adjusted after observation of the crop.

ORATEA - ORATEA represents the maximum rate of residue decay that occurs under conditions considered optimum for the soil microbial population. Within the WEPP model, ORATEA is adjusted by an environmental factor (EF) to account for the daily changes in the temperature and soil water content. Since the EF differs for standing, flat, and buried residues, these three pools are kept separate for estimating residue mass. Increasing ORATEA will increase the rate of residue mass lost from a field. The ORATEA value should not be adjusted, however, unless specific field data verifying the need for change exist.

ORATER - ORATER is similar to ORATEA, but is specific to the dead root biomass.

OTEMP (°C) - OTEMP is the optimal temperature for plant growth and is stable for cultivars within a species. It is not recommended that this temperature be changed once it is determined for a cultivar. Differences in varieties and maturity lengths will be accounted for in the growing degree days to emergence (CRIT) and maturity (GDDMAX). Temperature stress is a function of OTEMP. Temperature stress occurs when the air temperature is significantly higher or lower than OTEMP.

PLTOL - Plant specific tolerance to moisture stress. PLTOL is the fraction of total soil porosity that soil moisture must decrease to before water stress occurs, and water uptake is reduced. For example, for PLTOL = 0.25, water uptake by the plant is not reduced until soil water falls below 0.25 times soil porosity. If the user inputs a value of 0.0 for PLTOL, the WEPP model will set PLTOL to 0.25. WEPP internally limits the value of PLTOL to the range of 0.1 to 0.4.

PLTSP (m) - Normal in-row plant spacing. PLTSP is used to calculate the plant population and basal area. PLTSP may be observed and changed to reflect common planting practices. Values for in-row plant spacing may be found in seed catalogs or reference materials such as Lorenz and Maynard (1988).

SORGHUM

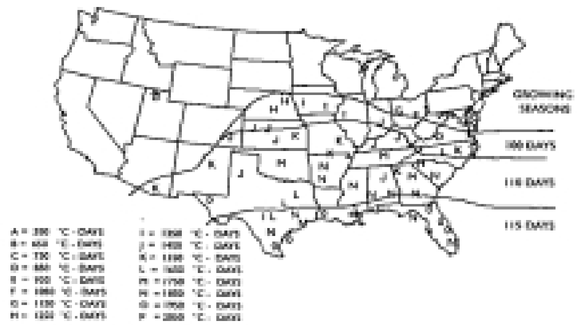

Figure 5. Potential heat units for sorghum--planted two weeks later than corn (Kiniry et al., 1991).

CORN

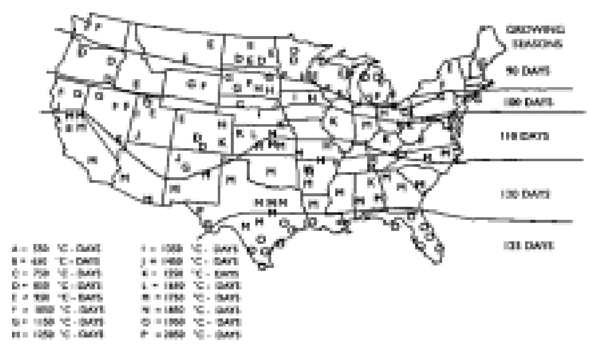

Figure 6. Potential heat units for corn (Kiniry et al., 1991).

SOYBEANS

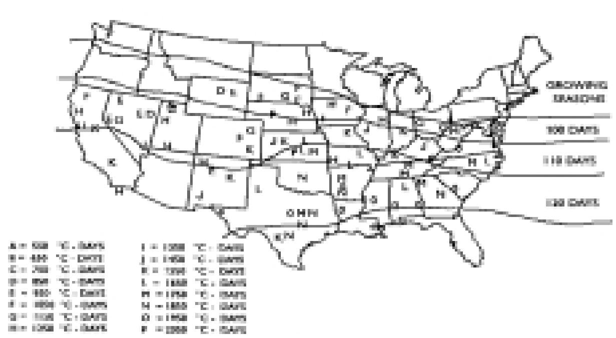

Figure 7. Potential heat units for soybeans--planted four weeks later than corn (Kiniry et al., 1991).

RDMAX (m) - Maximum rooting depth for a crop. RDMAX may be drawn from research or observed in the field. The depletion-level of soil moisture is updated for the current rooting depth which is calculated from RDMAX and the ratio of current growing degree days to GDDMAX.

RSR - Root to shoot ratio is the ratio of root biomass to above ground biomass (both dry weights). This ratio is used to update total plant root biomass for all crops using the increase in the current day's biomass value.

RTMMAX (kg/m^2) - RTMMAX is the maximum root biomass for a perennial crop. Live root biomass will be accumulated until the maximum value is reached. Once this point is reached, the growth and death of the root are assumed equal. RTMMAX should be set to 1.0 for annual crops.

SPRIOD (days) - Number of days over which senescence occurs, i.e., the senescence period for a particular crop. During this time the canopy cover and biomass are linearly decreased using DECFCT and DROPFC, respectively.

TMPMAX (°C) - Maximum temperature that inhibits growth of a perennial crop. Since this parameter is not used for annual crops, 0 may be entered. The growth of a perennial plant will be stopped until the average daily temperature drops below this upper limit.

TMPMIN (°C) - Minimum critical temperature that causes dormancy in a perennial crop. Plant growth stops when the average daily temperature is at or below TMPMIN. This parameter is not used for annual crops, and a 0 may be entered.

XMXLAI - XMXLAI is the maximum leaf area index potential for a specific, unstressed crop. Once a canopy cover exists, the current leaf area index is adjusted using XMXLAI and vegetative

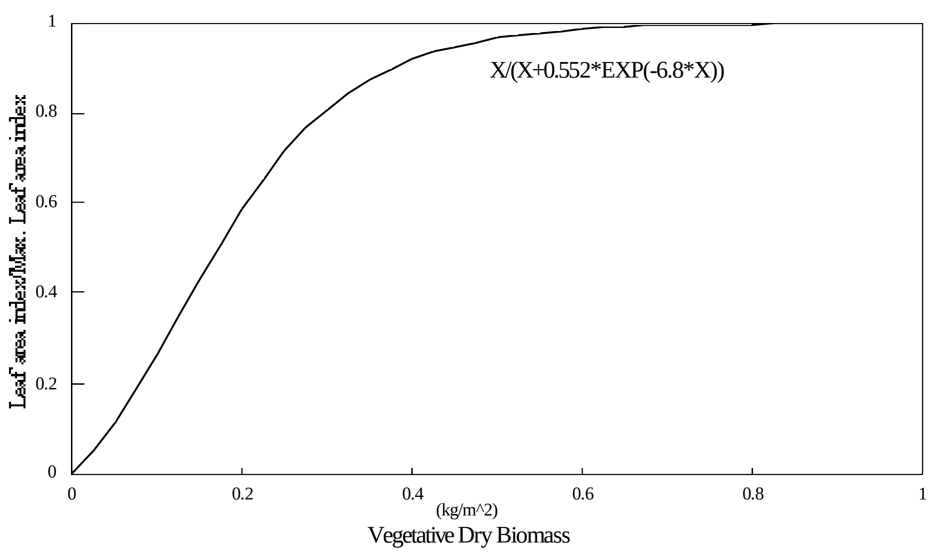

Figure 8. WEPP leaf area and vegetative biomass relationship.

biomass. This value is obtained through research data. The maximum leaf area index for many crops such as corn, soybeans, grain sorghum, cotton, and alfalfa is 5.0. Some crops have higher XMXLAI such as 8 or 9 for wheat, oats, and barley. A typical leaf area index development curve as a function of biomass is shown in Figure 8. XMXLAI affects the rate of biomass development. Also, LAI affects evaporation and transpiration until LAI exceeds 3.0 and the plant transpiration rate equals the potential evaporation rate.

YLD (kg/m²) - YLD is the optimum yield for the specific crop under unstressed conditions. The crop growth model in WEPP does not account for biomass and yield variation due to nutrient, pest, and other management factors. WEPP estimates an unstressed crop yield and compares it to YLD. This ratio is then used to adjust biomass accumulation to simulate unstressed yields equal to YLD. During the simulation the model applies water and temperature stresses to the potential daily increase in biomass. YLD will reflect the sum of multiple harvests or cuttings when applicable (e.g., multiple harvests for vegetable crops). If a 0.0 is entered for YLD, WEPP will calculate and use its internal optimal yield value. For the current version of WEPP (v95.7) it is recommended that the user enter a value of 0.0 here, and control biomass production and yields by altering the BEINP and HI parameters.

Table 17. Suggested values for the cropland plant specific input parameters for the WEPP erosion model (version 95.7).

Symbol	Variable	Winter Wheat	Spring Wheat	Corn	Soybeans	Sorghum	Canola
β_c	BB	5.20	5.20	3.60	14.00	3.60	5.20
β_h	BBB	3.00	3.00	3.00	3.00	3.00	3.00
be_{inp}*	BEINP	25/30/35	25/30/35	18/28/35	20/23/25	12/17/25	30/45/60
T_b	BTEMP (C)	4.00	4.00	10.00	10.00	10.00	2
cf	CF	5.40	5.40	2.30	7.20	3.00	5.0
-	CRIT (C-days)	60.00	60.00	60.00	60.00	60.00	45.00
-	CRITVM (kg m ^{2})	-	-	-	-	-	-
-	CUTHGT (m)	0.152	0.152	0.304	0.152	0.609	0.152
C_{cg}	DECFCT	1.00	1.00	0.65	0.10	0.90	0.10
D	DIAM (m)	0.0064	0.0064	0.0508	0.0095	0.0317	0.0060
D_g	DIGEST	-	-	-	-	-	-
F_{lai}	DLAI	0.80	0.80	0.80	0.90	0.85	0.49
-	DROPFC	1.00	1.00	0.98	0.10	0.98	0.10
-	EXTNCT	0.65	0.65	0.65	0.45	0.60	0.65
F_{ct}	FACT	0.99	0.99	0.99	0.99	0.99	0.99
-	FLIVMX	3.00	3.00	0.00	0.00	0.00	3.00
G_{dm}**	GDDMAX (C-days)	1700	1700	1700	1150	1450	1500
HI	HI	0.42	0.42	0.50	0.31	0.50	0.30
H_{cm}	HMAX (m)	0.91	0.91	2.60	1.01	1.01	0.90
-***	ORATEA	0.0085	0.0085	0.0065	0.0130	0.0074	0.0130
-***	ORATER	0.0085	0.0085	0.0065	0.0130	0.0074	0.0130
T_o	OTEMP (C)	15.00	15.00	25.00	25.00	27.50	21.00
-	PLTOL	0.25	0.25	0.25	0.25	0.25	0.25
P_s	PLTSP (m)	0.005	0.005	0.219	0.025	0.130	0.100
R_{dx}	RDMAX (m)	0.30	0.30	1.52	1.00	1.50	1.40
R_{sr}	RSR	0.25	0.25	0.25	0.25	0.25	0.25
-	RTMMAX (kg m $^{-2}$)	-	-	-	-	-	-
S_p	SPRIOD(days)	14	14	30	14	40	14
T_{cu}	TMPMAX(C)	-	-	-	-	-	-
T_{cl}	TMPMIN(C)	-	-	-	-	-	-
LAI_{mx}	XMXLAI	5.00	5.00	3.50	5.00	5.00	4.5

* Three values of *BEINP* have been provided for most crops illustrated. These values represent the crops grown under Low/Medium/High fertility levels.

** Growing degree days for crops to reach maturity varies by variety and region. Values here are typical for varieties grown near Indianapolis, IN. Values of 0.0 should be input for perennial crops.

*** Values for ORATEA and ORATER are tentative and based on wheat=0.0085, corn=0.0065, soybeans=0.0130 .

Table 17 (cont.). Suggested values for the cropland plant specific input parameters for the WEPP erosion model (version 95.7).

Symbol	Variable	Cotton	Oats	Alfalfa	Brome-Grass	Peanut	Tobacco	Annual Ryegrass
β_c	BB	5.89	5.20	14.00	14.00	12.00	6.60	14.00
β_h	BBB	3.50	3.00	23.00	23.00	6.92	7.00	23.00
be_{inp}*	BEINP	17.50	17/20/23	8/13/15	15/25/35	9/11/13	25.00	20/25/30
T_b	BTEMP (C)	12.00	4.00	4.00	10.00	13.50	10.00	10.00
cf	CF	3.00	5.40	5.00	5.00	2.70	3.00	5.00
-	CRIT (C-days)	90.00	60.00	30.00	30.00	60.00	60.00	30.00
-	CRITVM (kg m $^{-2}$)	-	-	0.10	0.10	-	-	-
-	CUTHGT (m)	0.900	0.152	0.152	0.152	0.000	0.000	0.152
C_{cg}	DECFCT	0.25	1.00	0.70	0.70	1.00	0.75	1.00
D	DIAM (m)	0.0127	0.0079	0.0045	0.0022	0.0090	0.0510	0.0064
D_g	DIGEST	-	-	0.60	0.50	-	-	-
F_{lai}	DLAI	0.85	0.90	0.85	0.85	1.00	0.70	0.85
-	DROPFC	0.10	1.00	0.90	0.90	1.00	0.70	1.00
-	EXTNCT	0.65	0.65	0.65	0.65	0.65	0.90	0.65
F_{ct}	FACT	0.99	0.99	0.99	0.99	0.99	0.99	0.99
-	FLIVMX	3.00	3.00	12.00	12.00	0.00	0.00	3.00
G_{dm}**	GDDMAX (C-days)	2200	1500	0 **	0 **	1500	1500	1000
HI	HI	0.50	0.42	0.90	0.90	0.42	0.90	0.42
H_{cm}	HMAX (m)	1.06	1.14	0.80	0.51	0.66	1.06	0.80
-***	ORATEA	0.0100	0.009	0.015	0.009	0.015	0.0065	0.015
-***	ORATER	0.0065	0.009	0.015	0.009	0.006	0.0074	0.006
T_o	OTEMP (C)	27.50	15.00	20.00	25.00	25.00	25.00	15.00
-	PLTOL	0.25	0.25	0.25	0.25	0.25	0.25	0.25
P_s	PLTSP (m)	0.101	0.005	0.006	0.006	0.076	0.220	0.038
R_{dx}	RDMAX (m)	1.20	0.30	2.43	0.30	1.20	0.76	0.30
R_{sr}	RSR	0.25	0.25	0.33	0.33	0.33	0.33	0.33
-	RTMMAX (kg m $^{-2}$)	-	-	0.60	0.34	-	-	-
S_p	SPRIOD(days)	30	14	14	14	14	14	14
T_{cu}	TMPMAX(C)	-	-	32.0	32.0	-	-	-
T_{cl}	TMPMIN(C)	-	-	0.5	1.1	-	-	-
LAI_{mx}	XMXLAI	6.00	8.00	6.00	9.00	4.50	3.40	6.00

* Three values of *BEINP* have been provided for most crops illustrated. These values represent the crops grown under Low/Medium/High fertility levels.

** Growing degree days for crops to reach maturity varies by variety and region. Values here are typical for varieties grown near Indianapolis, IN. Values of 0.0 should be input for perennial crops.

*** Values for ORATEA and ORATER are tentative and based on wheat=0.0085, corn=0.0065, soybeans=0.0130 .

Irrigation Input Files

Both stationary sprinkler and furrow irrigation can be simulated in a hillslope profile application of the WEPP erosion model. Zero, one, or two irrigation data files may be required to run the WEPP model depending on the irrigation scheduling option chosen. Formats for the data files, dependent on the irrigation method (stationary sprinkler or furrow) and scheduling alternative (soil moisture depletion-level, fixed-date), are discussed in the following sections.

Depletion-level Irrigation Scheduling

Table 18 describes the irrigation input parameters when using depletion-level scheduling for both sprinkler and furrow irrigation. Sample irrigation data files may be found in the Appendix. Lines 1 and 2 contain variables used to determine whether the data file has the correct format. Line 3 contains variables that will not be changed during the simulation. Line 4 defines variables which the model uses to determine the operating parameters each time an irrigation occurs. Note that the formats for lines 3 and 4 differ for stationary sprinkler and furrow systems.

Table 18. Depletion-level scheduling irrigation input data file description.

Line 1: version control number (95.7) - real (datver)

Line 2:
a) number of Overland Flow Elements - integer (itemp)
b) flag indicating type of irrigation system - integer (jtemp)
  1 - stationary sprinkler
  2 - furrow
c) flag indicating irrigation file scheduling type - integer (ktemp)
  1 - depletion

Line 3:
a) minimum irrigation depth (m) - real (irdmin)
b) maximum irrigation depth (m) - real (irdmax)

******Note****** Line 3b is not included in furrow irrigation data files

Stationary Sprinkler Irrigation Systems (jtemp = 1 on Line 2b)

Line 4:
a) flag identifying OFE for with the line applies - integer (ofeflg)
b) application rate of irrigation system (m/s) - real (irrate)
c) ratio of application depth to amount of water needed to fill the soil profile to field capacity - real (aprati)
d) maximum value for the ratio of available soil water depletion to available water holding capacity (depletion ratio at which irrigation will occur) - real (deplev)
e) sprinkler nozzle impact energy factor - real (nozzle)
f) Julian date of the beginning of the period during which irrigation might occur (julian day) - integer (irbeg)
g) year of the beginning of the period during which irrigation might occur (year) - integer (yrbeg)
h) Julian date of the end of the period during which irrigation might occur (julian day) - integer (irend)
i) year of the end of the period during which irrigation might occur (year) - integer (yrend)

Furrow Irrigation Systems (jtemp = 2 on Line 2b)

Line 4:
a) flag identifying OFE for which the line applies - integer (ofeflg)
b) flag identifying the last OFE over which irrigation water should advance when an irrigation occurs - integer (endpln)
c) furrow supply rate (m^3/s) - real (florat)
d) estimate of time duration that water will be supplied to a furrow (s) - real (timest)
e) number of supply rate - duration combinations - integer (depsrg)

1 - continuous,
2 - cutback
4 through 6 - surge

f) ratio of desired application depth at lower end of the furrow to amount of water needed to fill soil profile to field capacity (m/m) - real (filrat)
g) max. value for ratio of available soil water depletion to available water holding capacity (ratio at which irrigation will occur) - real (deplev)
h) Julian date of beginning of the period during which irrigation might occur (julian day) - integer (irbeg)
i) year of beginning of the period during which irrigation might occur (year) - integer (yrbeg)
j) Julian date of the end of the period during which irrigation might occur (julian day) - integer (irend)
k) year of end of the period during which irrigation might occur (year) - integer (yrend)

Note Line 4 is repeated as many times as necessary to define all irrigation periods for all overland flow elements.

The repeated occurrences of line 4 must be carefully organized to simulate the desired irrigation periods. The first "n" occurrences of line 4 must be in order of increasing OFE number, where "n" is the number of overland flow elements. The remaining lines must be in order based on the ending dates of the previous irrigation periods for the overland flow elements with the following additional criteria:

> *If no additional irrigation periods are desired for an overland flow element, all parameter values except the flag identifying the OFE should be zero.*
>
> *If the ending date of the irrigation periods of two or more overland flow elements are the same, subsequent lines of data must occur in order of increasing OFE number.*

To prevent any depletion-level irrigation on a flow element, the only occurrence of line 4 for that OFE should contain all 0.0 values except for the OFE flag.

Fixed-date Irrigation Scheduling

Table 19 contains the input file description for fixed-date scheduling option irrigation files. Sample data files can be found in the appendix. Lines 1 and 2 contain variables used to determine whether the data file has the correct format. Line 3 defines irrigation dates for specific overland flow elements. For a stationary sprinkler irrigation system, line 4 contains an irrigation rate, the amount of water applied, and a nozzle energy adjustment factor (which affects interrill detachment). For furrow systems, line 4 contains a single variable which specifies the number of inflow rate - duration combinations (surges) of the irrigation event. Line 5 provides the inflow rate - duration information and is repeated for the number of "surges" indicated on line 4.

Table 19. Fixed-date scheduling irrigation input data file description.

Line 1	version control number (95.7), real (datver)
Line 2	a) number of overland flow elements - integer (itemp) b) flag indicating irrigation system - integer (jtemp) 1 - stationary sprinkler 2 - furrow c) flag indicating irrigation file scheduling type - integer (ktemp) 2 - fixed-date
Line 3:	a) flag identifying the OFE for which the line applies - integer (ofeflg) b) Julian date of the irrigation event (julian day) - integer (irday) c) year of the irrigation event (year) - integer (iryr)
	For Stationary Sprinkler Irrigation Systems (jtemp = 1 on Line 2b)
Line 4	a) application rate of the system for the current OFE (m/s) - real (irint) b) irrigation depth for the current OFE (m) - real (irdept) c) nozzle energy adjustment factor for the current OFE - real (nozzle)
******Note****** Lines 3 and 4 are repeated as many times as necessary to define all irrigation periods for all overland flow elements	
	For Furrow Irrigation Systems (jtemp = 2 on Line 2b)
Line 4:	a) number of inflow rate - duration combinations - integer (surges)
******Note******	(maximum surges allowed is 20)
Line 5:	a) supply rate to furrow during time period (m^3/s) - real (qspply) b) beginning time (from midnight) of a particular supply rate (s) - real(tstart) c) ending time (from midnight) of a particular supply rate (s) - real (tend) d) duration of the depletion phase (s) - (tdepl)
	******Note****** Lines 3, 4, and 5 are repeated as many times as necessary to define all irrigation periods for all overland flow elements.

The occurrences of lines 3-5 must be carefully organized to simulate the irrigation events as desired. The first "n" occurrences of line 3 must be in order of increasing OFE, where "n" is the number of overland flow elements. To prevent any fixed-date irrigation on an overland flow element, the first (and only) occurrence of line 3 for that element should specify 0 for the irrigation day.

For stationary sprinkler systems, the remaining information in the data file (past the first "n" occurrences of line 3) has pairs of lines, with a line of type 4 followed by a line of type 3. These pairs are in order based on the irrigation dates for the overland flow elements. Thus, the first line of the pair contains the application rate and depth for the current irrigation event while the second line of the pair contains the next irrigation date for the current OFE. If two or more overland flow elements have the same irrigation date, subsequent pairs of lines of data must occur in order of increasing OFE number. To indicate that no additional irrigations are to occur on an OFE, the second line of the pair of lines should have zeroes for irrigation day and year.

For furrow irrigation systems, the remaining information in the data file (past the first "n" occurrences of line 3) consists of groups of three types of lines, with a line of type 4 followed by the proper number (surges) of line type 5, then a single line of type 3. The groups of lines are in order based on the specified irrigation dates for the overland flow elements. Lines 4 and 5 provide information for the current irrigation event and line 3 contains the next irrigation date for the current OFE. To indicate that no additional irrigations are to occur on an OFE, the line of type 3 should have zeroes for irrigation day and year.

Watershed Input Files

Pass File

The pass file contains all information from each hillslope needed by the watershed components of WEPP. To allow more flexibility, three versions of the watershed model can be used: version 1 is the hillslope version, version 2 and 3 both apply to areas with channel and impoundment elements. Version 2 either calculates runoff and erosion on every hillslope or reads information from a corresponding hillslope pass file. It then merges all results from each hillslope in a master pass file (Table 20) that will be used by the watershed component of WEPP. Hillslope pass files can be created either when version 2 of WEPP is run or when the hillslope components are used by themselves (version 1). Version 3 reads hillslope simulation results from the master pass file. In this case, only the channel and impoundment components of the model are run and the master pass file must have been created previously. In other words, version 3 can only be run if version 2 has been run previously for the same watershed and with identical hillslopes and climate files.

Table 20. Watershed master pass file.

Line 1:	General simulation header
Line 2:	blank line
Line 3:	Version number - real (ver)
Line 4:	Number of hillslopes in the watershed - integer (nhill)
Line 5:	Maximum number of simulation years - integer (maxyrs)
Line 6:	Beginning year of watershed climate file - integer (iwsbyr)
Line 7:	blank line
Line 8-10:	Specific simulation header
Line 11:	blank line
Line 12:	a) Hillslope number - integer (ihill)
	b) Hillslope input climate file - string (wshcli(ihill))
	c) Particle diameter for each particle class - real (dia(i), i=1,ncpart)
	d) Hillslope area - real (harea(ihill))
	Note*Line 12 is repeated for the number of hillslopes*
Line 13:	blank line
Line 14:	Header
Line 15:	blank line

NoteLine 16 is repeated for each simulated day*

Line 16: a) “NO EVENT” or “EVENT” header
b) year - integer (year)
c) day - integer (day)

NoteIf there is an event, lines 17 through 24 are added, variables are given for every hillslope*

Line 17: runoff duration (seconds) - integer (dur(ihill))
Line 18: time of concentration (hours) - real (tcs(ihill))
Line 19: alpha value (for EPIC peak calculation) - real (oalpha(ihill))
Line 20: runoff depth (m) - real (runoff(ihill))
Line 21: runoff volume (m^3) - real (runvol(ihill))
Line 22: runoff peak (m^3/s) - real (peakro(ihill))
Line 23: soil detachment (kg) - real (det(ihill))
Line 24: soil deposition (kg) - real (dep(ihill))
Line 25: sediment concentration for each particle class (kg/m^3)
- real (sedcon(i,ihill), i = 1, npart)
Line 26: fraction of sediment in each particle class - real (frcflw(i,ihill), i = 1,npart)

Structure file

The watershed structure file describes the watershed configuration. For each channel element or impoundment, it indicates what hillslopes, channels and/or impoundments are draining into it from the top or laterally from the left or right. For this purpose, each element in the watershed is given an ID number. These numbers need to comply with the following rules:

All hillslope ID numbers are attributed first, i.e. channel or impoundment ID numbers are always greater than those of hillslopes.

Any upstream element of a channel or impoundment has a lesser ID number than the ID number of the channel or impoundment itself.

These rules are illustrated by a typical example of a watershed represented in Figure 9. A channel element is defined as a reach of channel for which the soil conditions, the management practices, the irrigation schedule and the hydraulic characteristics are identical. The direction from which upstream elements drain into a channel is always relative to the direction of flow in the channel element. For an impoundment, it is relative to the direction of flow in the next downstream channel. The structure file lists every channel element and impoundment in the order of increasing ID number. On the same line are listed ID numbers of hillslopes, channels and impoundments draining into it from the left side, the right side or from the top, as explained in Table 21. Table 22 shows the structure file that corresponds the example watershed on Figure 9

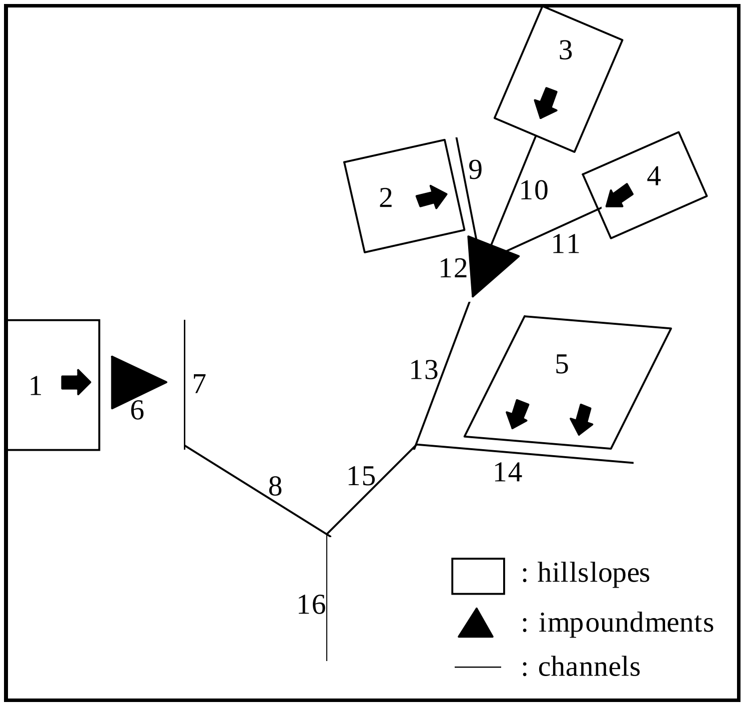

Figure 9. Example of a typical watershed

Table 21. Structure file description.

Line 1:	version number - real (ver)
Line 2:	a) Element type - integer (elmt) 2 if the element is a channel 3 if the element is an impoundment b) ID number of the hillslope draining from the left side - integer (nhleft) c) ID number of the hillslope draining from the right side - integer (nhrght) d) ID number of the hillslope draining from the top - integer (nhtop) e) ID number of the channel draining from the left side - integer (ncleft) f) ID number of the channel draining from the right side - integer (ncrght) h) ID number of the channel draining from the top side - integer (nctop) i) ID number of the impoundment draining from the left side - integer (nileft) j) ID number of the impoundment draining from the right side - integer (nirght) k) ID number of the impoundment draining from the top side - integer (nitop) ***Note****Line 2 is repeated for every channel or impoundment ordered in increasing ID number*

Table 22. Structure file example

95.7										
3	0	1	0	0	0	0	0	0	0	element # 6: impoundment
2	0	0	0	0	0	0	0	6	0	element # 7: channel
2	0	0	0	0	0	7	0	0	0	element #8: channel
2	0	2	0	0	0	0	0	0	0	element #9: channel
2	0	0	3	0	0	0	0	0	0	element #10: channel
2	0	0	4	0	0	0	0	0	0	element #11: channel
3	0	0	0	11	9	10	0	0	0	element #12: impoundment
2	0	0	0	0	0	0	0	0	12	element #13: channel
2	0	5	0	0	0	0	0	0	0	element #14: channel
2	0	0	0	14	13	0	0	0	0	element #15: channel
2	0	0	0	15	8	0	0	0	0	element #16: channel

Some restrictions apply to the watershed configuration for hillslopes, channels and impoundments. Those are explained here and summarized in Table 23.

a) Hillslope rules

1. Up to 3 hillslopes may feed a channel (left and right laterally and from the top)
2. Only one hillslope may feed an impoundment.

b) Channel rules

1. A channel may be fed by up to 3 hillslopes (left and right laterally and from the top)
2. A channel may be fed by up to 3 impoundments (left and right laterally and from the top)
3. A channel may be fed by up to 3 channels. Although they are said to come from the left, the right and the top, all 3 channels come in at the inlet (i.e., at the channel top).
4. If channel A feeds channel B, then a hillslope can not feed channel B from the top.

c) Impoundment rules

1. An impoundment may be fed by up to 3 channels (left and right laterally and from the top), except when it feeds a channel laterally in which case it may be fed by only one hillslope.
2. If fed by a hillslope, impoundments may be fed by only one hillslope
3. Impoundments can not be fed by both hillslopes and channels.

Table 23. Summary of watershed structure rules.

	Fed By	Feed
Hillslopes	Nothing	Channels, impoundments
Channels	Channels, impoundments, hillslopes	Channels, impoundments, nothing (outlet)
Impoundments	Channels, hillslopes	Channels, nothing (outlet)

Channel slope file

The watershed components require information about each channel's length, width, and slope, which is entered by way of the channel input slope file. This file is similar to the hillslope input slope file, with some small differences:

1. Instead of the number of OFE's on the hillslope, the file must contain the number of channels in the watershed.
2. Channel width can be different and is specified for every channel. For a hillslope profile, all OFE's have the same representative width.

At the top of the file is the general information as well as the number of channels for which the file has information. Then each channel element, ordered by increasing ID number, is described by its orientation, its channel width, its length and the slope steepness at points down the channel, as shown in Table 24.

Table 24. Channel slope input file.

Line 1:	version control number - real (ver)
Line 2:	number of channels - integer (nchan)
	Repeat lines 3 to 5 for the number of channels indicated on line 2.
Line 3:	a) aspect of the channel (degrees from North) - integer (azm) b) width of the channel (m) - real (chnwid)
Line 4:	a) number of slope points for the channel - integer (nslpts) b) length of the channel (m) - real (chnlen)
	Repeat 5a) and 5b) for the number of slope points indicated in 4a). A maximum of 20 slope points is allowed for each channel.
Line 5:	a) non dimensional distance from top of channel to point (m/m) - real (xinput) b) slope steepness at point (m/m) - real (slpinp) a) non dimensional distance from top of channel to point (m/m) - real (xinput) b) slope steepness at point (m/m) - real (slpinp) "

Warning : For channels that are laterally fed by hillslopes, the length of the channel must be equal to the width of the hillslope. Having different values may result in erroneous sediment delivery ratios at the outlet of the watershed.

Channel soil file

The channel soil file includes information about each channel's soil characteristics. The file content is identical to the soil file for a hillslope profile in which the number of channels would replace the number of overflow elements. Soils parameters must be input for each and every channel in the order of increasing channel ID number. The user should refer to the description of the hillslope soil input file(Table 3) for a detailed description of the file and an accurate estimation of the soil physical and hydrological parameters.

Channel management file

The channel management soil file includes information about each channel management practices. Each channel may have its own management practices which may also be different from practices in surrounding hillslopes. The channel management file content is identical to the management file for a hillslope profile in which the number of channels would replace the number of overland flow elements(Table 16).

Channel climate file

The channel climate input file is identical to the hillslope climate file. Although climate files of hillslopes in the watershed may be different from one another, only one climate file is allowed for all channels.

Note: The watershed version has not been tested with different climate files on various parts of the watershed. The user is advised to use a single input climate file for all elements of a watershed. Also, the interface uses the climate file specified in the watershed options window for all elements of the watershed.

Watershed channel file

The watershed channel file includes all the information required to perform hydraulic routing in the channels: choice of runoff peak calculation method, channel shape and hydraulic parameters, and control structure parameters. Channel hydraulic parameters must be entered for each and every channel, in the order of increasing channel ID number. Table 25 lists and defines every parameter of the channel file and the discussion that follows gives a more thorough description of them and is intended to assist the user in estimating their correct value.

Table 25. Channel file description.

Line 1:	version control number - real (ver)
Line 2:	number of channel elements - integer (nchan)
Line 3:	flag for the runoff peak calculation method - integer (ipeak) 1 - use modified EPIC computation method 2 - use CREAMS computation method
Line 4:	length to width watershed ratio. ******Note****** Although this value is used only when the CREAMS computation method is selected, a value must be entered on this line.
	Repeat lines 5 to 15 for the number of channels indicated on line 2.
Line 5:	comment line.
Line 6:	comment line.
Line 7:	comment line.
Line 8:	flag to indicate the shape of the channel - integer (ishape) 1 - triangular

2 - naturally eroded channel

Line 9: flag to indicate the type of control section at the channel outlet - integer (icntrl)
0 - no control structure
1 - critical flow
2 - normal flow
3 - normal flow with a different roughness
4 - rating curve at the channel outlet.

Line 10: flag to indicate friction slope calculation method - integer (ienslp)
1 - CREAMS calculation method
2 - the friction slope is equal to the bed slope.

Line 11: flag to indicate the type of channel output - integer (flgout)
0 - this flag is presently overridden by output flags governing the general WEPP model output. A value of 0 nevertheless needs to be input here.

Line 12: a) inverse slope of the channel banks (m/m) - real (chnz)
*****Note***** if the channel is rectangular or naturally eroded, this parameter is not used but a value of 0 must be entered.
b) Manning roughness coefficient for bare soil in the channel - real (chnnbr).

Line 13: a) total Manning roughness coefficient in channel allowing for vegetation - real (chnn).
b) channel erodibility factor (s/m) - real (chnk).
c) channel critical shear stress (N/m^2) - real (chntcr).
d) depth to nonerodible layer in mid-channel (m) - real (chnedm).
e) depth to nonerodible layer along the side of the channel (m) - real (chneds).

Line 14: a) control structure slope (m/m) - real (ctlslp).
b) control structure average inverse side slope (m/m) - real (ctlz).
c) control structure Manning roughness coefficient - real (ctln).

******Note****** if "no control structure" option is chosen on line 9, 14a) is overridden by information in the channel slope file, 14b) is overridden by 12a) and 14c) is overridden by 12b). Nonetheless, this line must be present, even though its values are not used.

Line 15 is only present if a "rating curve" has been selected on line 9.

Line 15: a) rating curve coefficient - real (rccoeff).
b) rating curve exponent - real (rcexp).
c) minimum depth required for discharge (m) - real (rcoset).

To calculate erosion on a channel element, the WEPP model uses the peak runoff rate value. In the watershed version, runoff peaks are calculated at the outlet of each channel element with two possible methods. The first method is a modified expression of the rational formula as used in the EPIC (Erosion Prediction Impact Calculator) model (Sharpley and Williams, 1990). The peak is calculated as the product of a coefficient by the volume of runoff divided by the time of concentration of the watershed at the channel outlet.

$$Peak = \frac{\alpha * volume}{t_c}$$

where *Peak* is the peak runoff rate (m^3/s), volume is the runoff volume (m^3) and t_c if the time of concentration (seconds). The coefficient alpha(α) represents the fraction of rain that falls during the time of concentration. A more detailed discussion about the calculation of this coefficient and how its values for various parts of the watershed are combined is given in the technical documentation(NSERL Report #10).

The second method available to estimate peak runoff rates is the peak calculation model used in the CREAMS model (Knisel, 1980). The peak is calculated with a empirical formula in function of the watershed area (area in acres), its slope (slope (m/m)), the runoff volume (volume (ft^3)) and the length to width ratio of the watershed (lw (m/m)).

$$\text{Peak} = 7.17 * 10^{-4} * \text{area}^{0.7} * \text{slope}^{0.159} * \text{volume}^{0.717\,\text{area}^{0.0166}} * \frac{1}{\text{lw}^{0.187}}$$

where Peak is the peak runoff rate in ft^3/s. This equation has been statistically derived using data from watersheds whose areas ranged from 70 ha to 62 km^2. For smaller areas, it is therefore recommended that the EPIC method be used. The user is cautioned that the CREAMS method will yield unreasonably high estimates of peak runoff rates for small field-scale watersheds.

Although the length to width ratio is only used when the CREAMS calculation method is selected, it needs to be entered for both methods. If the EPIC-modified formula is selected, the value of the length to width ratio is not important and can be zero, for example. The peak calculation method and the watershed length to width ratio are selected only once and cannot vary during the simulation for different sub-watersheds. The length to width ratio needs to be selected so that it represents average conditions for as much as possible of the sub-watersheds.

Channel outlet control structure

The WEPP model needs to know what flow conditions exist at the outlet of a channel in order to calculate the energy gradeline when backwater effects are to be taken into account. If a control structure exists, the flow conditions are specified on line 9 and the control structure parameters (slope, side slope and Manning coefficient) are specified on line 14 for a well defined flow condition or on line 15 if the flow conditions are defined by a rating curve. If a rating curve or no control structure is selected (line 9), the control structure parameters (line 14) are not relevant and can all be zero. However, line 14 must still be present. In the case of a rating curve, the curve parameters will be read on line 15. In case of no control structure, the parameters on line 14 are overridden by the slope of the last segment of the channel element indicated in the slope file, the inverse side slope and the Manning coefficient of the channel (line 12).

Friction slope

WEPP allows for two methods to calculate the friction slope in a channel. Either the friction slope is taken equal to the topographic channel slope or it is calculated to take into account backwater effects as is done in the CREAMS model. Details of the calculation methods are indicated in the technical documentation(NSERL Report #10). In general, backwater effects need to be taken into account for low grade channels (0.1 to 0.5 % slope), for channels with heavy vegetation or for channels with a restricted outlet such as a weir or a ridge.

Side slope of the channel

For triangular channels, the user should enter here the inverse value of the slope of the banks of the channel. For naturally-eroded channels, the inverse side slope is defined as the ratio of half of the channel width by the vertical depth at the center point of the channel bed. Although shear stress components calculations take into account the specified shape of the channel, friction slope calculations assume a triangular shape.

Manning coefficient

Table 26 and Table 27 will guide the user in choosing an accurate Manning coefficient for flow in an ephemeral channel covered with either bare soil or with vegetation. Presently there is no updating of the Manning coefficient with plant growth, the user should therefore choose a value that can be associated with the average vegetation characteristics. If the conditions are not homogeneous within the channel, the user should refer to a hydraulic reference handbook such as Chow (1959) to calculate a global Manning's coefficient.

Table 26. Estimates of Manning "n" for an excavated or dredged channel (Chow, 1959)

Type of channel	Minimum	Normal	Maximum
Earth, straight and uniform			
clean, new	0.016	0.018	0.020
clean, old	0.018	0.022	0.025
gravel, clean	0.022	0.025	0.030
short grass, few weeds	0.022	0.027	0.033
Earth, winding and sluggish			
no vegetation	0.023	0.025	0.030
grass, some weeds	0.025	0.030	0.033
earth bottom, rubble sides	0.028	0.030	0.035
stony bottom, weedy banks	0.025	0.035	0.040
cobble bottom, clean sides	0.030	0.040	0.050
Drag-line excavated or dredged			
no vegetation	0.025	0.028	0.033
light brush on banks	0.035	0.050	0.060
Rock cuts			
smooth and uniform	0.025	0.035	0.040
jagged and irregular	0.035	0.040	0.050
Channels not maintained, weeds and brush uncut			
dense weeds, high as flow depth	0.050	0.080	0.120
clean bottom, brush on sides	0.040	0.050	0.080
same, highest stage of flow	0.045	0.070	0.110
dense brush, high stage	0.080	0.100	0.140

Channel soil parameters

The channel soil erodibility and the channel soil shear stress should be estimated using methods similar to those for hillslope rill erodibility and critical shear stress. The reader should refer to the section on soil parameters for hillslope applications.

Table 27. Estimates of Manning "n" for channel flow and typical soil covers (from the CREAMS manual, Knisel (1980))

Cover	Cover density	Minimum	Normal	Maximum
Smooth, bare soil; some roughness		0.03	0.035	0.045
Corn stalks, residue in place		0.05	0.10	0.13
Wheat straw, residue in place		0.06	0.15	0.25
Grass, higher than flow depth	poor condition	0.04	0.05	0.06
	good condition	0.08	.....	0.10
	dense condition	0.20	.....	0.30
small grain (20% to maturity)	7- in rows with flow	0.13	.....	0.30
	14-in rows with flow	0.13	.....	0.20
	rows across flow		0.30	
sorghum and cotton		0.07	.....	0.09
Sudan grass			0.20	
Lespedeza			0.10	
Lovegrass			0.15	

Rating curve

Instead of entering control structure parameters, the user can enter the parameters of a rating curve for the outlet of the channel. The rating curve is defined by three coefficients: the coefficient (rcoeff), the exponent (rcexp) and the minimum water depth required for discharge (rcoset (m)). The discharge (q(m^3/s)) should be expressed as a function of the water depth (h (m)) by:

$$q = rcoeff * (h - rcoset)^{rcexp}$$

rcoeff and *rexp* values should be set according to rating tables for weirs, flumes, vanes, etc... Their units depend on their values.

Impoundment file

Table 28. Impoundment input file description.

Line 1 : Version number - real (ver)
Line 2 : Number of impoundments in the watershed - integer (npound)

The rest of the file is repeated for each impoundment

Line 3 : Comment lines - character (impdes)
Line 4 : Comment line
Line 5 : Comment line

Drop spillway section

Line 6 : Drop spillway index - integer (ids)

0 : no drop spillway is present, skip the four drop spillway description lines
1 : drop spillway with circular riser and circular barrel
2 : drop spillway with rectangular box riser and circular barrel
3 : drop spillway with rectangular box riser and rectangular box barrel

if ids =1

Line 7 : comment line - character (strdes)
Line 8 : diameter of riser (m) - real (diars)
stage of riser inlet (m) - real (hrs)
weir coefficient - real (coefw)
orifice coefficient - real (coefo)
Line 9 : diameter of barrel (m) - real (diabl)
height of riser above barrel bottom (m) - real (hrh)
length of barrel (m) - real (lbl)
slope of barrel (m/m) - real (sbl)
height of barrel outlet above exit channel bottom (m) - real (hblot)
Line 10 : Entrance head loss coefficient, - real (ke)
Bend head loss coefficient - real (kb)
Friction head loss coefficient - real (kc)

if ids = 2

Line 7 : comment line (strdes)
Line 8 : length of riser box section (m) - real (lenrs)
width of riser box section (m) - real (widrs)
stage of riser inlet (m) - real (hrs)
weir coefficient - real (coefw)
orifice coefficient - real (coefo)
Line 9 : diameter of barrel (m) - real (diabl)
height of riser inlet above barrel bottom (m) - real (hrh)
length of barrel (m) - real (lbl)
slope of barrel (m/m) - real (sbl)
height of barrel outlet above exit channel bottom (m) - real (hblot)
Line 10 : Entrance head loss coefficient, - real (ke)
Bend head loss coefficient - real (kb)
Friction head loss coefficient - real (kc)

if ids = 3

Line 7 : comment line (strdes)
Line 8 : length of riser box section (m) - real (lenrs)
width of riser box section (m) - real (widrs)
stage of riser inlet (m) - real (hrs)
weir coefficient - real (coefw)
orifice coefficient - real (coefo)
Line 9 : height of barrel box section (m) - real (hitbl)
width of barrel box section (m) - real (widbl)
height of riser inlet above barrel bottom (m) - real (hrh)
length of barrel (m) - real (lbl)
slope of barrel (m/m) - real (sbl)

height of barrel outlet above exit channel bottom (m) - real (hblot)
Line 10 : Entrance head loss coefficient, - real (ke)
Bend head loss coefficient - real (kb)
Friction head loss coefficient - real (kc)

Culvert section

Line 11 : Culvert index - integer (icv)
0 : no culvert is present , skip the three culvert lines(12-14)
1 : culvert is present
Number of identical culverts - integer (ncv)
Line 12 : Comment lines - character (strdes)
Line 13 : Cross-sectional area of culvert (m2) - real (arcv)
Cross-sectional height of culvert (m) - real (hitcv)
Stage of culvert inlet (m) - real (hcv)
Flow length of culvert (m) - real (lcv)
Slope of culvert (m/m) - real (scv)
Height of culvert outlet above exit channel bottom (m) - real (hcvot)
Line 14 : Entrance head loss coefficient, - real (ke)
Bend head loss coefficient - real (kb)
Friction head loss coefficient - real (kc)

Repeat lines 11 to 14 for the culvert #2

Rock-fill check dam section

Line 15 : Rock-fill dam index - integer (irf)
0 : no rock-fill check dam is present. Skip the two rock-fill dam description lines
1 : Rock-fill check dam is present
Line 16 : Comment line - character (strdes)
Line 17 : Flow length of the rock-fill check dam (m) - real (lnrf)
Stage at which flow through the rock-fill check dam occurs (m) - real (hrf)
Overtopping stage (m) - real (hotrf)
Cross-sectional width of the rock-fill check dam (m) - real (wdrf)
Average diameter of the rocks forming the dam (m) - real (diarf)

Emergency spillway section

Line 18 : Emergency spillway index - integer (ies)
0 : No emergency spillway is present. Skip the description section.
1 : Emergency spillway or open channel outlet is present
2 : User specified stage-discharge relationship is present

if ies = 1

Line 19 : Comment line
Line 20 : Bottom width of the exit channel (m) - real (bwes)
Side slopes of the exit channel (m/m) - real (sses)
Manning roughness coefficient for the vegetation in the exit channel - real (nes)
Stage of the exit channel (m) - real (hes)
Maximum stage for flow through the exit channel (m) - real (hmxes)
Line 21 : Slope of section #1 of the exit channel (m/m) - real (ses1)

Length of section #1 of the exit channel (m) - real (les1)
Slope of section #2 of the exit channel (m/m) - real (ses2)
Length of section #2 of the exit channel (m) - real (les2)
Slope of section #3 of the exit channel (m/m) - real (ses3)

If ies = 2

Line 19 : Comment line
Line 20 : Number of points of the stage-discharge relationship - integer (npts)
Line 21 : Stage of the beginning of the user defined stage-discharge relationship (m) - real (hes)
Line 22 : Stage of the user defined stage-discharge relationship (m) - real (hest(i), i=1,npts)
Line 23 : Discharge of the user defined stage-discharge relationship (m^3/s) - real (qes(i), i=1,npts)

Filter fence section

Line 24 : Filter fence index - integer (iff)
0: No filter fence straw bale or trash barrier is present. Skip the description section.
1: Filter fence is present
2: Straw bales or trash barrier is present
Line 25 : Comment line
Line 26 : Slurry flow rate (m/s) - real (vsl)
Cross-sectional width of filter fence, straw bales or trash barrier (m) - real (wdff)
Stage at which flow begins (m) - real (hff)
Overtopping stage (m) -real (hotff)

Perforated riser section

Line 27: Perforated riser index - integer (ipr)
0: No perforated riser is present, skip the description section
1: Perforated riser is present.
Line 28: Comment line
Line 29: Stage of riser opening (m) - real (hr)
Height below the datum of the restricting orifice (m) - real (hb)
Height of the slots (m) - real (hs)
Stage of the datum (i.e. bottom of the slots) (m) - real (hd)
Diameter of the riser (m) - real (diar)
Area of the slots (m^2) - real (as)
Diameter of the restricting orifice (m) - real (diab)
Line 30: Height of the riser inlet above barrel bottom (m) - real (hrh)
Flow length of the barrel (m) - real (lbl)
Slope of barrel (m/m) - real (sbl)
Diameter of barrel (m) -real (diabl)
Line 30: Orifice coefficient for the restricting orifice - real (cb)
Weir coefficient - real (coefw)
Orifice coefficient - real (coefo)
Orifice coefficient for the slots - real (cs)
Line 31: Entrance head loss coefficient, - real (ke)
Bend head loss coefficient - real (kb)
Friction head loss coefficient - real (kc)

Miscellaneous and stage-area-length data

Line 32: Stage at which the overtop flag goes off (m) -real (htop)
Stage at which the full of sediment flag goes off (m) - real (hfull)
Stage at the beginning of the simulation (m) - real (h)
Initial time step (hr) - real (deltat)
Infiltration rate (m/d) - real (qinf)

Line 33 : Structure size - integer (isize)
1 : small structure with little to no permanent pool
2 : large structure (>1ac) with a permanent pool greater than 1 meter deep.
Number of particle size subclass divisions - integer (ndiv)

Line 34 : Number of stage-area-length points utilized - integer (nalpts)

Line 35 : Minimum stage (m) - real (hmin)
Area at minimum stage (m^2) - real (a0)
Length at minimum stage (m) - real (l0)

Line 36 Stage at point i (m) (must be > 0.0) - real (hal(i), i=1,nalpts)

Line 37 : Area at point i (m^2) - real (area(i), i=1,nalpts)

Line 38: Length at point I (m) - real (length(i), i=1,nalpts)

Detailed descriptions of the input parameters needed for each outflow structure are presented in the following order:

1. Drop Spillway
2. Perforated Riser
3. Culvert
4. Emergency Spillway or Open Channel
5. Rock Fill Check Dam
6. Filter Fence / Straw Bales / Trash Barriers
7. User Specified Stage-Discharge Relationship

Following the outflow structure input parameter descriptions is a description of general impoundment characteristics; including user-specified stage-area and stage-length relationships. Finally, a description of the WEPPSIE output files is presented.

Drop Spillway

A drop spillway is a common outflow structure used in farm ponds and sediment detention basins. It consists of a vertical riser connected to a horizontal or near horizontal barrel as seen in Figure 10. In order to define the outflow function, the following dimensions must be entered in via the interface or using a text editor:

D_{RS}	Diameter of circular riser (m); for circular risers.
L_{RS}	Length of riser box section (m); for box section risers.
W_{RS}	Width of riser box section (m); for box section risers.
H_{RS}	Stage of riser inlet (m).
C_W	Weir coefficient, usually 3.0 to 3.2.
C_O	Orifice coefficient, approximately 0.6.
D_{BL}	Diameter of barrel (m); for circular barrels.
H_{BL}	Height of barrel box section (m); for box section barrels.
L_{BL}	Length of barrel box section (m); for box section barrels.
H_{RH}	Height of riser inlet above barrel bottom (m).
L_{BL}	Flow length of barrel (m).
S_{BL}	Slope of barrel (m/m).
H_{BLOT}	Height of barrel outlet above the outlet channel bottom (m).
K_e	Entrance loss coefficient; see Figure 11.
K_b	Bend loss coefficient; see Table 29.
K_c	Head loss coefficient; see Table 30.

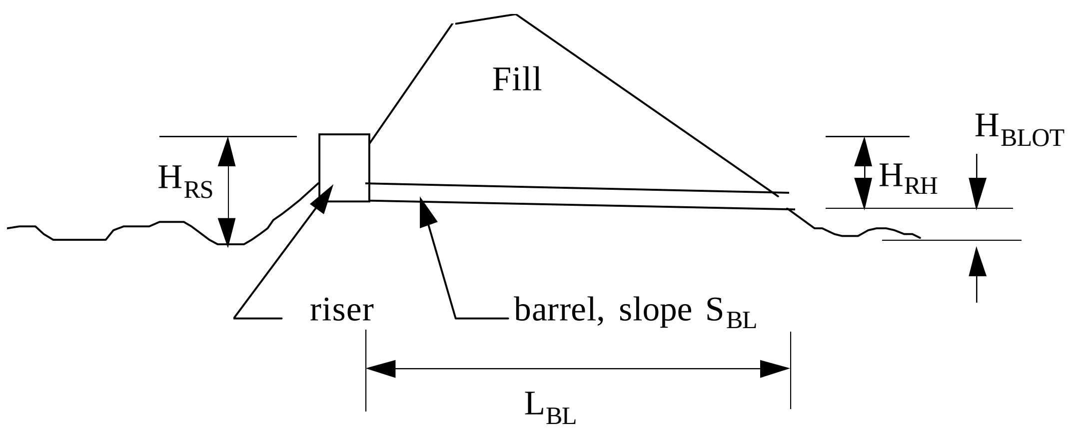

Figure 10. Drop spillway definition sketch.

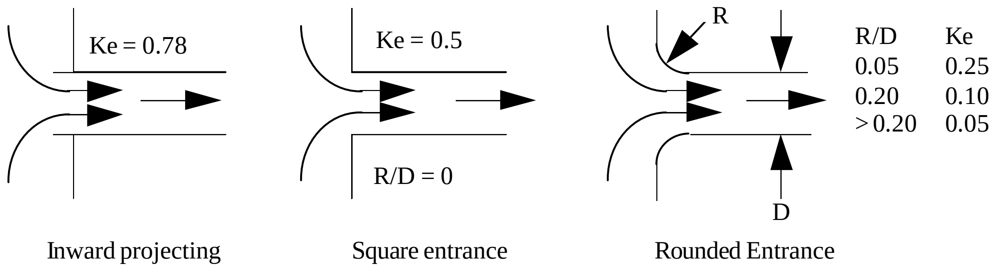

Figure 11. Entrance loss coefficients (Schwab et al., 1966).

Table 29. Bend loss coefficients (Schwab et al.,1981)

$\frac{R}{D} = \frac{\textit{Bend Radius to Pipe Center Line}}{\textit{Pipe diameter}}$	Bend coefficient, K_b	
	45º Bend	90º Bend
0.5	0.7	1.0
1	0.4	0.5
2	0.3	0.4
5	0.2	0.3

Table 30a. Head loss coefficients for circular pipe flowing full (English units)(Schwab et al., 1966).

$$K_c = \frac{5087 * n^2}{d^{4/3}}$$, where d = diameter (in)

Pipe inside diameter		*Flow area*	*Manning coefficients of roughness n*				
mm	in	sq. ft	0.010	0.012	0.014	0.016	0.018
152	6	0.196	0.0467	0.0672	0.0914	0.1194	0.1510
203	8	0.349	0.0318	0.0458	0.0623	0.0814	0.1030
254	10	0.545	0.0236	0.0340	0.0463	0.0604	0.0765
305	12	0.785	0.0185	0.0267	0.0363	0.0474	0.0600
381	15	1.23	0.0138	0.0198	0.0270	0.0352	0.0446
457	18	1.77	0.01078	0.0155	0.0211	0.0276	0.0349
533	21	2.41	0.00878	0.0126	0.0172	0.0225	0.0284
610	24	3.14	0.00735	0.01058	0.0144	0.0188	0.0238
762	30	4.91	0.00546	0.00786	0.01070	0.0140	0.0177
914	36	7.07	0.00428	0.00616	0.00839	0.01096	0.0139
1219	48	12.57	0.00292	0.00420	0.00572	0.00747	0.00945
1524	60	19.63	0.00217	0.00312	0.00424	0.00554	0.00702

Table 30b. Head loss coefficients for square conduits flowing full (English units).

$$K_c = \frac{29.16 * n^2}{R^{4/3}}$$, where R = hydraulic radius (ft)

Conduit size		Flow area	Manning coefficients of roughness n		
m x m	ft x ft	ft2	0.012	0.014	0.016
0.61 x 0.61	2 x 2	4	0.01058	0.01440	0.01880
0.91 x 0.91	3 x 3	9	0.00616	0.00839	0.01096
1.22 x 1.22	4 x 4	16	0.00420	0.00572	0.00746
1.52 x 1.52	5 x 5	25	0.00312	0.00425	0.00554
1.83x 1.83	6 x 6	36	0.00245	0.00333	0.00435
2.13 x 2.13	7 x 7	49	0.00199	0.00271	0.00354
2.44 x 2.44	8 x 8	64	0.00196	0.00227	0.00296
2.74 x 2.74	9 x 9	81	0.00142	0.00194	0.00253
3.05 x 3.05	10 x 10	100	0.00124	0.00168	0.00220

Perforated Riser

Perforated risers are often used to slowly empty terrace systems. A perforated riser is similar to a drop spillway in that both have a riser that empties into a subsurface conduit. The perforated riser includes a bottom orifice plate to limit flow to the subsurface conduit and slots along the riser to allow complete drainage of the terrace.

A typical perforated riser contains N horizontal rows of side orifices spaced a uniform distance S. The side orifices have a total area A_s distributed over a length H_s. This typical perforated riser also incorporates a bottom orifice plate with a flow area A_b located a distance h_b below the slots. An illustration of this typical perforated riser is given in Figure 12. In order to define the outflow function, the following parameters must be entered:

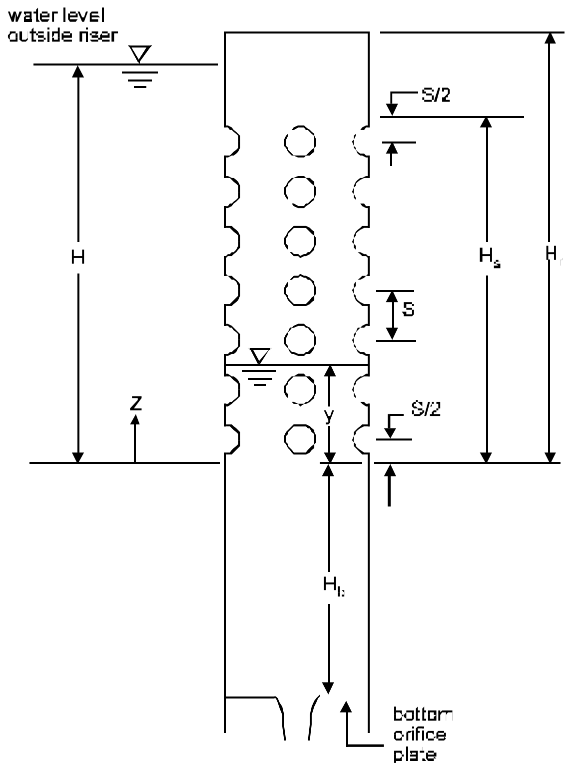

Figure 12. Perforated riser definition sketch.

H_r	Stage of the riser opening (m).
H_b	Height below the datum of the restricting orifice (m).
H_s	Height of the slots (m).
H_d	Stage of the datum (i.e. the bottom of the slots) (m).
D_r	Diameter of the riser (m).
A_s	Area of the slots (m^2). Use the total slot area.
D_b	Diameter of the restricting orifice (m).
C_b	Orifice coefficient for the restricting orifice, approximately 0.6.
C_S	Orifice coefficient for the slots, approximately 0.611.

The next variables are the same as for the drop inlet spillway

H_{rh}	Height of riser inlet above barrel bottom (m).
L_{BL}	Flow length of barrel (m).
S_{BL}	Slope of barrel (m/m).
D_{BL}	Diameter of the barrel (m).
C_W	Weir coefficient, usually 3.0 to 3.2.
C_O	Orifice coefficient, approximately 0.6.
K_e	Entrance loss coefficient; see Figure 11.
K_b	Bend loss coefficient; Table 29
K_c	Head loss coefficient; see Table 30.

Culvert

Culverts (sometimes called trickle tube spillways) can be used as outlet structures for farm ponds and sediment basins as shown in Figure 13. Culverts are also used to control flows under roadways, often resulting in ponding upstream of the culvert forming an impoundment. Often more than one culvert is used to drain an impoundment; sometimes the numerous culverts are identical; and sometimes the culverts have different sizes, shapes, lengths, etc. To cover the many possibilities, WEPP allows the user to enter information on two sets of N_{CV} identical culverts. In order to define the outflow function for each set of identical culverts, the following dimensions must be entered for each set of culverts:

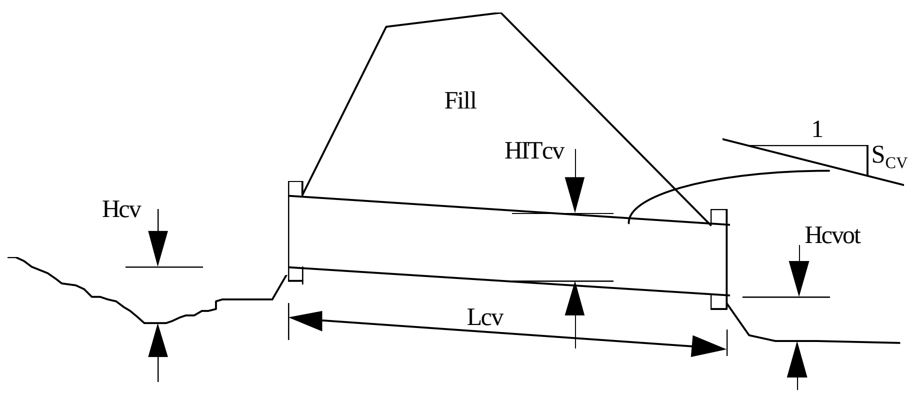

Figure 13. Culvert definition sketch.

N_{CV}	Number of identical culvert outlet structures.
A_{CV}	Cross-sectional area of culvert (m^2).
HIT_{CV}	Cross-sectional height of culvert (m)for square conduits or diameter for circular conduit.
H_{CV}	Stage of culvert inlet (m).
L_{CV}	Flow length of culvert (m).
S_{CV}	Slope of culvert (m/m).
H_{CVOT}	Height of culvert outlet above the outlet channel bottom (m).
K_e	Entrance loss coefficient; see Figure 11
K_b	Bend loss coefficient; see Table 29
K_c	Friction loss coefficient; see Table 30
K, M, c, Y	Inlet control coefficients; see Table 31

Table 31. Inlet control coefficients (FHA, 1985)

Shape and Material	Inlet Edge Description	UNSUBMERGED K	UNSUBMERGED M	SUBMERGED C	SUBMERGED Y
Circular	Smooth tapered inlet throat	0.534	0.555	0.0196	0.89
	Rough tapered inlet throat	0.519	0.640	0.0289	0.90
Elliptical inlet face	Tapered inlet-beveled edges	0.536	0.622	0.0368	0.83
	Tapered inlet-square edges	0.503	0.719	0.0478	0.80
	Tapered inlet-thin edge projecting	0.547	0.800	0.0598	0.73
Rectangular	Tapered inlet throat	0.475	0.667	0.0179	0.97
Rectangular Concrete	Side tapered - less favorable edges	0.56	0.667	0.0466	0.85
	Side tapered - more favorable edges	0.56	0.667	0.0378	0.87
Rectangular Concrete	Slope tapered - less favorable edges	0.50	0.667	0.0466	0.65
	Slope tapered - more favorable edges	0.50	0.667	0.0378	0.71
Rectangular Box	45° wingwall flares d= .043 D	0.510	0.337	0.0309	0.80
	18° to 33.7° wingwall flares d= .083 D	0.486	0.667	0.0249	0.83
Rectangular Box	90° headwall w/ 3/4” chamfers	0.515	0.667	0.0375	0.79
	90° headwall w/ 45° bevels	0.495	0.667	0.0314	0.82
	90° headwall w/ 33.7° bevels	0.486	0.667	0.0252	0.685
Rectangular Box	3/4” chamfers; 45° skewed headwall	0.522	0.667	0.0402	0.73
	3/4” chamfers; 30° skewed headwall	0.533	0.667	0.0425	0.70
	3/4” chamfers; 15° skewed headwall	0.545	0.667	0.0450	0.68
	45° bevels; 10-45° skewed headwall	0.498	0.667	0.0327	0.75
Rectangular Box 3/4” chamfers	45° non-offset wingwall flares	0.497	0.667	0.0339	0.803
	18.4° non-offset wingwall flares	0.493	0.667	0.0361	0.806
	18.4° non-offset wingwall flares with 30° skewed barrel	0.495	0.667	0.0386	0.71
Rectangular Box Top Bevels	45° wingwall flares - offset	0.497	0.667	0.0302	0.835
	33.7° wingwall flares - offset	0.495	0.667	0.0252	0.881
	18.4° wingwall flares - offset	0.493	0.667	0.0227	0.887

Emergency Spillways and Open Channels

In many larger farm ponds and sedimentation basins, emergency spillways are used to route the excess runoff from very large storm events that cannot be routed through the principle spillway (drop inlet or culvert) in order to keep the excess flow from overtopping and breaching an earthen dam. Emergency spillways typically have three sections: 1) a sloped approach, 2) a flat crest and 3) a sloped exit as seen in Figure 14. Sometimes an open channel forms the only outlet structure. In WEPP, open channels are defined as emergency spillways. In order to define the outflow function, the following dimensions must be entered:

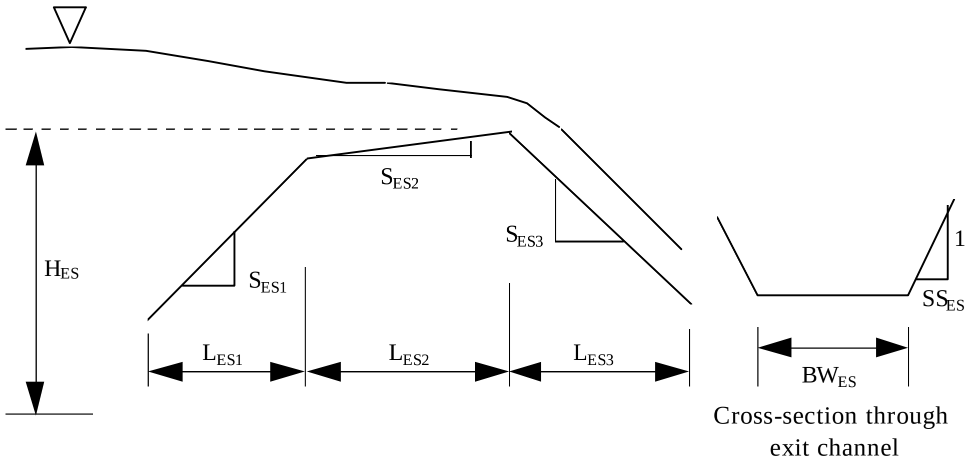

Figure 14. Emergency Spillway and open channel definition sketch.

BW_{ES}	Bottom width of the exit channel (m).
SS_{ES}	Side slopes of the exit channel (m/m).
N_{ES}	Manning's n for the vegetation in the exit channel; see Table 26 and Table 27
H_{ES}	Stage of the exit channel or stage of the beginning of the user defined stage-discharge relationship (m).
H_{MXES}	Maximum stage for flow through the exit channel (m).
S_{ES1}	Slope of section #1 of the exit channel (m/m); note the positive orientation seen in Figure 14.
L_{ES1}	Length of section #1 of the exit channel (m).
S_{ES2}	Slope of section #2 of the exit channel (m/m); note the positive orientation seen in Figure 14.
L_{ES2}	Length of section #2 of the exit channel (m).
S_{ES3}	Slope of section #3 of the exit channel (m/m); note the positive orientation seen in Figure 14.

Rock-Fill Check Dam

Construction, mining, and silviculture operations need inexpensive temporary sediment traps. Porous rock-fill check dams provide an inexpensive, easily constructed solution. A porous rock-fill check dam is simply a pile of rocks obstructing the free flow of sediment laden water. Frequently a rock-fill check dam is constructed with a coarse sand or fine gravel core in order to trap the most sediment and then covered by a larger rip rap used to prevent washout. A schematic of a rock-fill check dam appears in Figure 15. In order to define the outflow function, the following parameters must be entered:

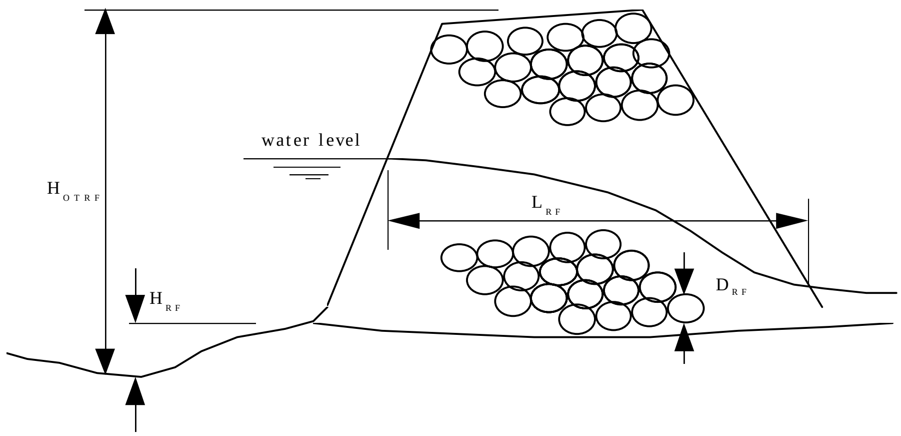

Figure 15. Rock-fill check dam definition sketch.

L_{RF}	Flow length of the rock-fill check dam (m); (estimate the average flow length for the average flow depth during the simulation, Figure 15).
H_{RF}	Stage at which flow through the rock-fill check dam occurs (m).
H_{OTRF}	Stage at which the rock- fill check dam is overtopped (m).
W_{RF}	Cross-sectional width of the rock-fill check dam (m); estimate the average cross-sectional width for the average flow depth during the simulation.
D_{RF}	Average diameter of the rocks forming the check dam (m); for check dams with a fine particle core with a rip rap outer layer, consider only the rock that forms the core of the check dam.

Filter Fence, Straw Bales, and Trash Barriers

Check dams can also be constructed with straw bales or filter fence. Both straw bale and filter fence check dams provide inexpensive, easily constructed sediment trapping structures. A schematic of a straw bale or a filter fence check dam is shown in Figure 16. A slurry flow rate is used to determine the discharge through a filter fence, straw bales, or a trash barrier. It should be noted that slurry flow rates are estimates at best; furthermore for trash barriers engineering judgment must be used in estimating an appropriate slurry flow rate. The user should also note that WEPP will compute outflows when the stage is greater than the overtop stage when in reality most filter fences and straw bales will wash out before overtopping occurs. If overtopping occurs, it is strongly suggested that the user redesigns the outflow structure or switches to a more permanent structure. In order to define the outflow function, the following parameters must be entered:

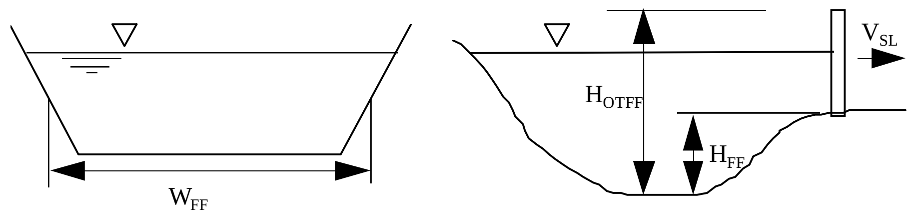

Figure 16. Straw bales and filter fence check dam definition sketch.

V_{SL}	Slurry flow rate (m/s); depends upon the type of material forming the check dam and the sediment composition of the incoming water (see Table 32).
W_{FF}	Cross-sectional width of filter fence, straw bales, or trash barrier (m); use the average cross-sectional width of the check dam at the average flow.
H_{FF}	Stage at which flow through the filter fence, straw bales, or trash barrier begins (m).
H_{OTFF}	Stage at which the filter fence, straw bales, or trash barrier is overtopped (m).

Table 32. Slurry flow rates recommended by state.

	Slurry Flow Rate		
Material	gpm/ft^2	m/sec	Reference
Straw bales	5.6	0.00381	VSWC, 1980[1]
Burlap (10 oz.)	2.4	0.00161	VSWC, 1980[1]
Synthetic fabric	0.3	0.000205	VSWC, 1980[1]; Maryland, 1983[2]

[1] Virginia Soil and Water Commission (1980)
[2] Maryland Water Resources Administration (1983)

General Impoundment Characteristics and Stage-Area-Length relationships

Miscellaneous inputs include those inputs that are not specific to an outflow structure, but are required for the simulation. Stage-area-length relationships take the form of power functions developed from discrete stage-area-length points entered by the user. Since regression routines are used to develop the power functions, it is recommended that the user enters as many points as possible (ideally more than 10). In order to define the miscellaneous inputs and stage-area-length functions, the following parameters must be entered:

H_{OT}	Stage at which the overtop flag goes off (m); set at the discretion of the user. This is a flag variable used to alert the user that the simulated stage was higher than the overtop stage, H_{OT}. This can be used for filter fence and straw bales to alert the user that the stage has reached a point where wash out might occur.

H_{FULL}	Stage at which the full-of-sediment flag goes off (m); set at the discretion of the user. This is a flag variable used to notify the user when sediment has filled the impoundment above the full-of-sediment stage, H_{FULL}. The user can use this flag to determine when an impoundment must be cleaned out, or when an impoundment is full of sediment and no longer operational.
H	Stage at the beginning of the simulation (m); often the permanent pool stage.
DT	Initial time step (hr); 0.1 hr recommended, 0.01 hr for filter fences.
Q_{INF}	Infiltration rate (m/d) defined as either the saturated hydraulic conductivity of a confining layer, or in the case of a very porous layer sitting above an impervious layer, the saturated hydraulic conductivity of the porous layer.
I_{SIZE}	Defines the structure size 1 indicates the structure is a small terrace, filter fence, or porous rock-fill check dam with little to no permanent pool; 2 indicates that the structure is a larger (>1 ac) farm pond with a permanent pool greater than 1 m deep.
N_{DIV}	Number of particle size subclass divisions; 2 is recommended (although increasing above 2 helps the accuracy somewhat).
H_{MIN}	Minimum stage (m); stage forming the bottom of the impoundment at the beginning of simulation.
A_{MIN}	Area at the minimum stage (m^2).
L_{MIN}	Length at the minimum stage (m).
N_{ALPTS}	Number of stage-area-length points used; ideally $N_{ALPTS} > 10$.
$H_{AL}(I)$	Stage at point I, (m); I = 1 to N_{ALPTS}; (must be greater than 0.0).
AREA(I)	Area at point I (m^2); I = 1 to N_{ALPTS}.
LENGTH(I)	Length at point I (m); I = 1 to N_{ALPTS}.

Impoundment Input file

Impoundment Output Files

The output files provide the user with summary information on impoundment performance on a daily, monthly, yearly, and length of simulation basis. There are three impoundment output files: the output summary file whose name is specified by the user or automatically named by the interface, "hydraulc", and "sediment"; these three files are described in the following paragraphs.

Impoundment Summary output file

The file named "output" is created for runs with any number of impoundments, and provides yearly and end of simulation summaries of performance for each impoundment. The "output" file is arranged in the following order:

1. Input data is returned for the user to verify the inputs that describe each outflow structure used on an impoundment and the general impoundment characteristics

including the stage-area-length points entered by the user. This section is repeated for each impoundment included in a watershed simulation.

2. Output summary data for the first year of simulation. First, stage summary data is returned including the maximum impoundment stage for the year, and the stage of deposited sediment for the year are returned. Next, hydraulic summary data are returned including total inflow and outflow volumes for the year, and the peak inflow and outflow rates. Following the hydraulic summary, sedimentation summary data for the year is returned including trapping efficiency, average and peak influent and effluent concentrations, and influent, effluent, and retained sediment mass broken down by size class. The overtop flag and full of sediment flag complete the yearly summary. A yearly summary is repeated for each impoundment.

3. Output summary data for each consecutive year of simulation as described above.

4. Output summary data for the entire simulation in a format similar to (2).

Impoundment File: "hydraulc"

The output file "hydraulc" is created on watershed simulations where there is only one impoundment. The "hydraulc" file provides the user with hydraulic data summarized daily, monthly, yearly, and at the end of simulation. Included in the "hydraulc" file are:

1. The peak inflow and outflow rates for the day, month, year and the length of the simulation.
2. The daily inflow and outflow volume and total inflow and outflow volume for each day, month, year, and the entire simulation.
3. The maximum stage for each day, month, year, and the entire simulation.
4. The average influent and effluent sediment concentration and the peak effluent sediment concentration for each day, month, year, and the entire simulation.
5. The trapping efficiency averaged over each month, year, and the entire simulation.
6. The minimum stage after deposition for each day, month, year, and the entire simulation.

Impoundment File: "sediment"

The output file "sediment" provides the user with a detailed breakdown by particle size class of mass of sediment entering, leaving, and retained in the impoundment. This detailed sediment breakdown is output for each day, month, year, and at the end of the simulation. Given the large amount of output data included in this file, it is created only when there is only one impoundment on the watershed. The sediment retained for each day is the total sediment retained in the impoundment for the entire simulation up to the given day.

Irrigation file

Irrigation files include the information necessary to determine irrigation dates and application rates for each channel element. The format of the channel irrigation file is the same as for a hillslope irrigation file in which overland flow elements would be replaced by channel elements, entered in increasing ID number. The user should refer to the hillslope section for a complete description of these files.

WEPP Hillslope Model Input Run File

The WEPP erosion model may be run in two ways: interactively, with the user manually typing the answers to questions concerning the type of simulation and input/output file names to the computer screen; or automatically, with the user directing the answers to the interactive questions into the WEPP model through use of an input run file. The WEPP hillslope interface program creates these run files automatically for the user based upon the answers on the run description line that the user fills in within the interface. Figure 17 shows the screen input flow structure for the WEPP erosion prediction model (Version 95.7).

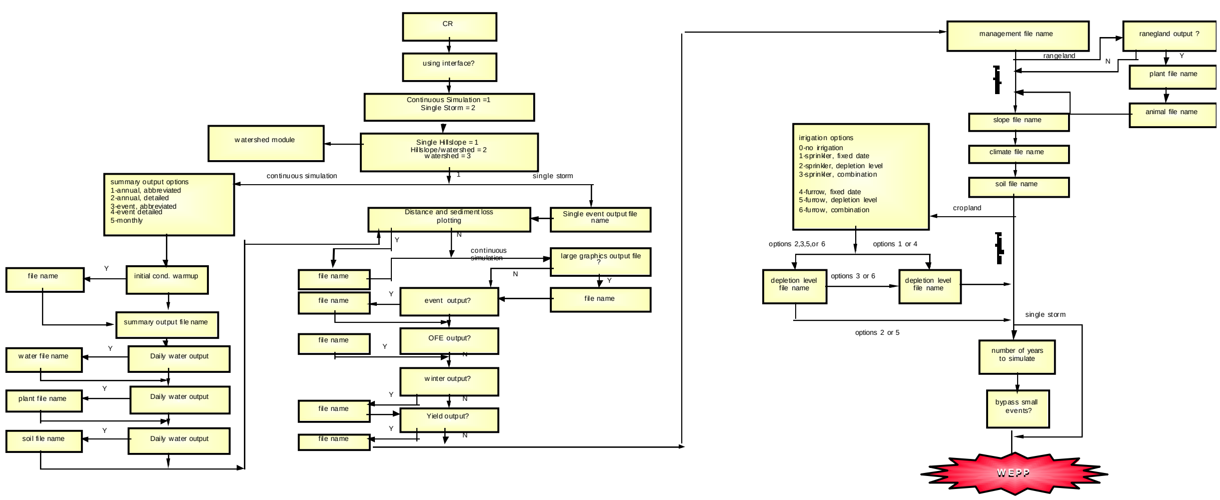

Figure 17. Interactive screen question sequence of WEPP hillslope erosion model version 95.7

WEPP Watershed component Input Run File

Similarly to the hillslope version, the watershed version may be run in two ways: interactively with the user manually typing answers to questions concerning the simulation and input / output file names; or automatically with all user answers being included in a run file. The watershed interface program creates this run file automatically based on the user selections. Figure 18 depicts the input flow structure for the two different options of the watershed version: channel routing only, or hillslope simulation and channel routing.

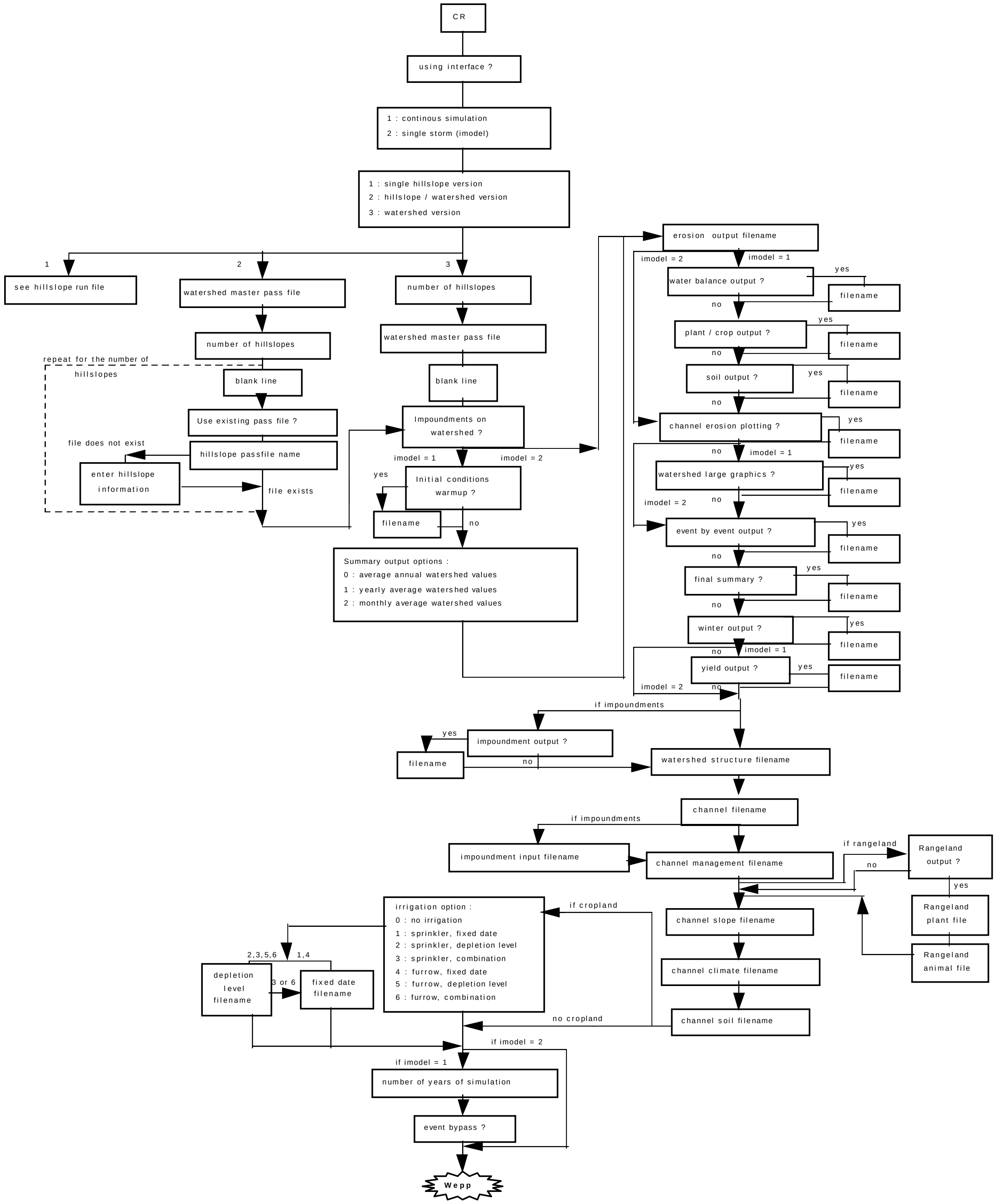

Figure 18. Interactive screen questions sequence for run options 2 and 3 of the WEPP erosion model, version 95.7

WEPP INTERFACE PROGRAMS

Purpose

The purpose of the WEPP interface programs is to allow users to have an easy way to interact with the WEPP erosion model. The interface provides the best available tools to create and modify model input, organize sets of model simulation runs, and rapidly view and interpret model outputs.

Hardware and Setup Requirements

This version of the Water Erosion Prediction Project (WEPP) model is designed to run on IBM and IBM-compatible Personal Computers (PCs) under the DOS operating system. In order to effectively run the WEPP model and associated satellite programs, your computer needs to have at least an 80386 CPU, along with a math coprocessor. A hard drive with at least 10 MB of free space is also required, and depending on the number of WEPP simulations and amounts of input data created and output data generated, free space on your hard drive may need to be larger.

If you are using the EMM386 device driver (for using expanded memory and accessing upper memory), you may need to modify the settings for the driver in your CONFIG.SYS file to allow the cropping and management file builder to execute properly. ***You must not specify the NOEMS option***, because the current versions of the WEPP interface programs require access to both expanded memory and the upper memory area of your PC.

Installation from CD-ROM

Place the WEPP CD in your CD-ROM drive, then on your system move to the CD-ROM drive on your PC. ("**Z:**", where Z is the letter of your CD-ROM drive). Move to the directory containing the WEPP installation programs (**CD WEPPEXE**). Then type: **INSTALL**, the installation program will prompt you for the destination directory and type of installation.

Installation from Diskettes

Place the 3.5" diskette labeled WEPP Installation Disk #1 into your floppy drive, then on your system move to the floppy drive. Type: **INSTALL** . The installation program will then ask you on which hard drive partition you wish to install the WEPP programs and files. Enter your choice, then the installation program will proceed to install all necessary directories and files in a directory **\WEPP** on the selected drive partition. You will be prompted for any additional diskettes.

To start the WEPP hillslope version of the WEPP interface program from the \WEPP directory, type:

HILL

to start the WEPP watershed version from the \WEPP directory, type:

SHED

WEPP Hillslope Interface Structure

The hillslope interface program is designed so that the user can construct a set of WEPP runs using his/her desired names, input files, and output options. The interface accesses file builders which can be used to create the climate, slope, soil, plant/management, and irrigation input files for the WEPP erosion model. Since the WEPP model allows the user to create many different types of output files, the interface allows the user to specify which ones he/she wants - these output types include erosion summary output, profile plotting output, storm by storm summaries, and a large graphical data file. The interface automatically creates an input run file based upon the user's answers on the run definition line in the interface (Figure 19). The output viewing

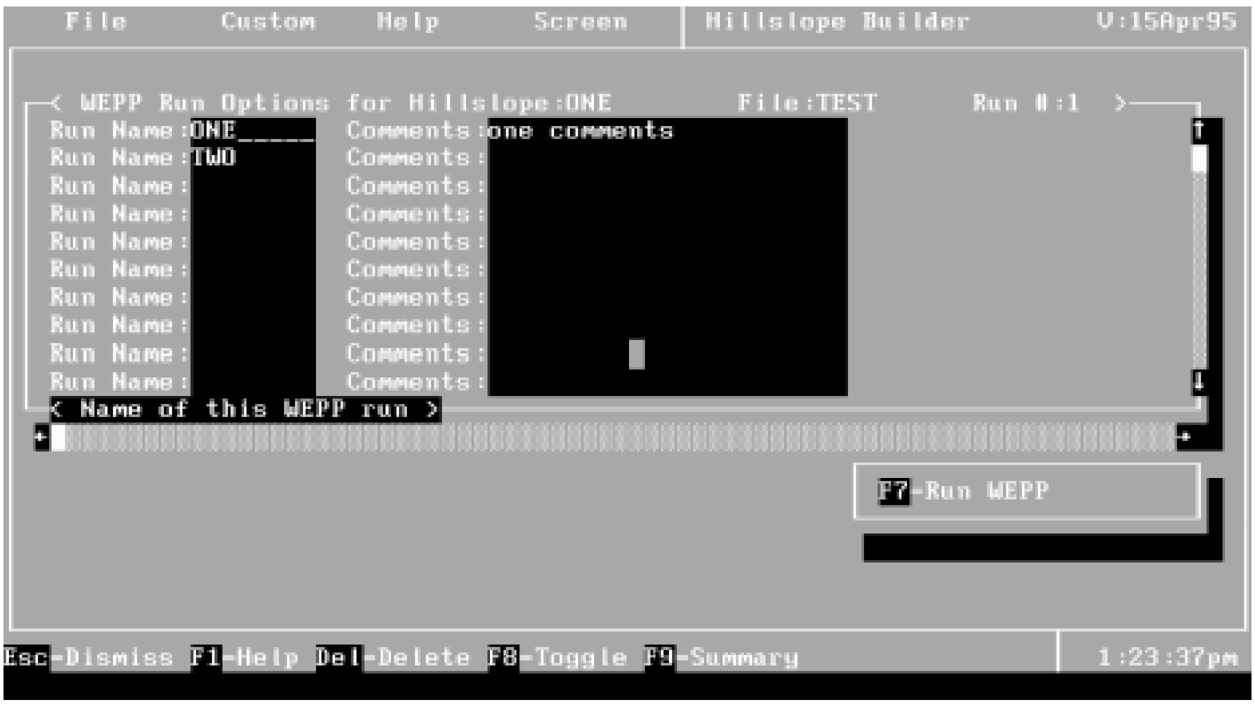

Figure 19. Portion of the WEPP Interface run definition in table mode showing beginning of run definition lines, with sample run name "ONE" entered.

options of the interface allow the user to examine the model output file text (using their text editor of choice), and in some cases graphically examine the spatial and temporal simulation results (detachment on profile; daily parameter/soil loss values). There is extensive on-line help in the interface, which may always be accessed by pressing the F1 key.

Hillslope Interface Run Definition

Figure 19 shows part of the WEPP hillslope Interface in line mode with a portion of an interface run definition line in the main interface table. The first information needed on this line is the run name - by providing this the user is providing all of the needed output file name prefixes (the interface automatically provides the name suffixes). Figure 20 illustrates the form mode of the main screen with identical choices and information as the line mode.

The WEPP model may be run in either a single storm or a continuous simulation mode. For most model applications, a user should select continuous simulation, since the model will be run for multiple years to calculate average annual erosion results. In some instances, such as model validation with rainfall simulator data, or use of application of the model with some type of design storm, the user may want to perform a single storm simulation. When using the single storm option, the user must be sure that his initial values for soil and residue conditions in the soil and plant/management files are as accurate as possible, since the model simulation will use these values directly. The remainder of this section will discuss the continuous simulation run line columns.

Single Run Definition Screen

The user has the option of toggling (using the F8 key) between the run definition table and a single run definition screen for the current run line while in the Hillslope Interface. This screen option (Figure 20) allows the user to view and alter the run settings on a single screen. Also the Page Up and Page Down keys can be used to move from run to run.

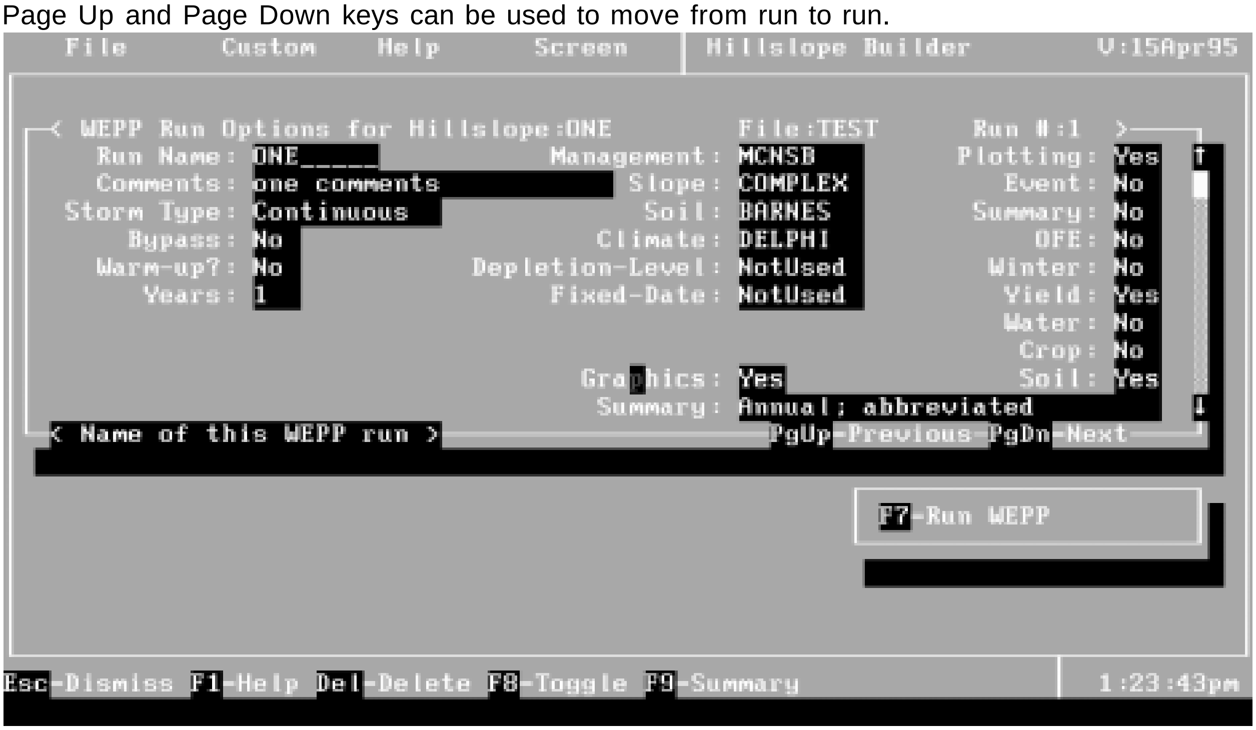

Figure 20. WEPP Shell Interface single run definition showing all input options for a single simulation, with sample run name "ONE" entered.

The next column in the run table is labeled "Bypass". Answering "Yes" to this question will cause the erosion model to bypass erosion calculations for small storms (which are currently defined as storms having runoff less than 10 mm and peak runoff rate less than 10 mm/hr). The default setting for this option is "No", and the user is advised to answer "No" to this unless he/she is experiencing large problems with model execution time. Also, if the user does use the bypass option, they should examine the impact on model results for their simulation locations. In some regions (arid and semi-arid zones), this option may result in all runoff and erosion events being bypassed. In humid areas, bypassing small storm events may reduce the erosion estimates only slightly, but can eliminate erosion computations for 10-40% of the runoff events.

The “Warm-up” column allows the user to instruct the WEPP model to create an initial condition scenario output file, which can then be used when altering the plant/management files. The information created is based on the final values associated with the first OFE in the simulation run.

In the "Years" column, the user must indicate how many years the WEPP model is to simulate. The number entered here can not be larger than the total number of years in the management and/or climate input data files.

The "Management" column is where the name of the input management file is selected. With the cursor on this column, the user may press F4 (or click with the left mouse button) to see the list of existing management files (Figure 21), press F5 to use a text editor to examine the actual

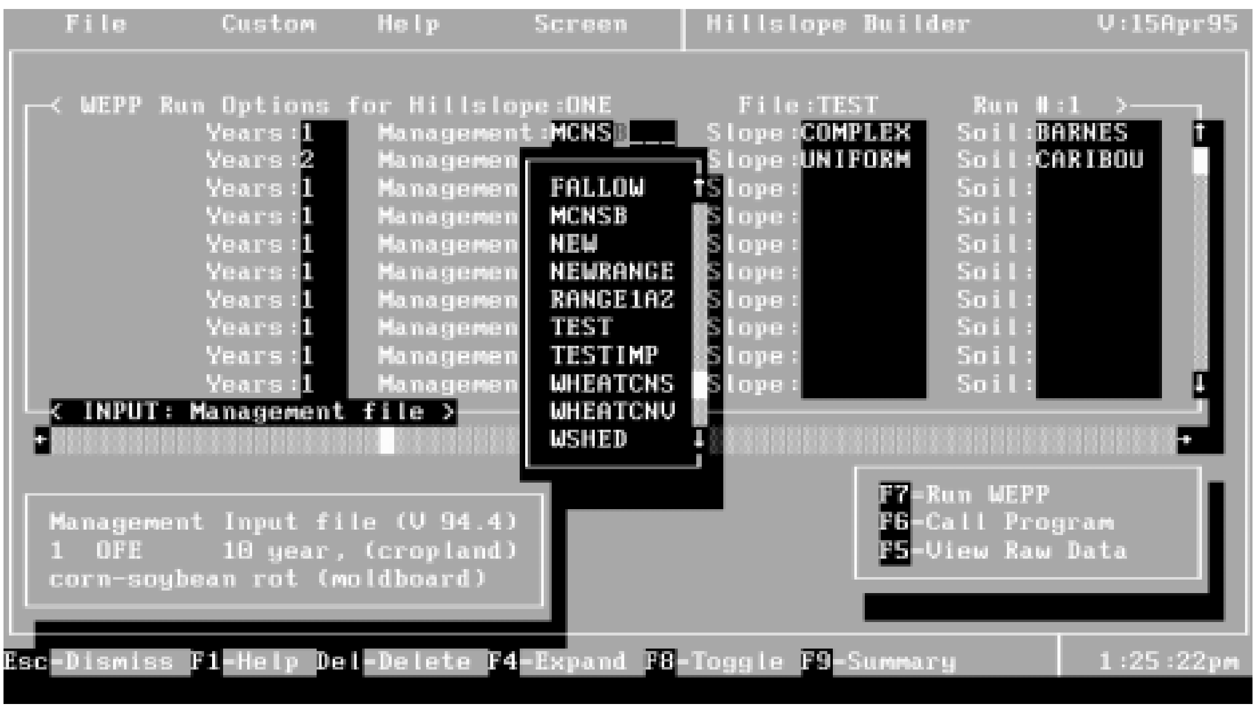

Figure 21. Portion of the WEPP Hillslope Interface run definition table with WEPP input data fields and expanded plant/management file selection list.

WEPP plant/management input file, or press F6 (or click the right mouse button) to access the underlying plant/management file builder. A set of about 30 sample plant/management input files has been included in the interface with parameter values for common crops and tillage sequences. The suggested crop parameters shown in Table 17 are used in these sample files.

The "Slope" column is where the name of the input slope file is selected. The user may press F4 to see a list of existing slope files, press F5 to use a text editor to view or edit the actual WEPP slope input file, or press F6 to access the underlying slope file builder (or use same mouse actions as before). The "Soil" column is where the user selects the soil input file for the run definition line. The user may press F4 to see a list of existing soils input data files, may press F5 to edit an existing WEPP soil input file, or press F6 (or point and click the mouse) to access the soil file builder program. A list of about 40 sample soil files (with parameter values based on experimental observations and parameter optimization) is included with this release.

WEPP Climate Input Files are selected in the "Climate" column. Existing climate files are listed by pressing F4, an existing file can be edited by pressing F5, and a new climate file may be built by pressing F6 to access the CLIGEN program through the climate file builder (again, mouse point and clicks also work, and are much quicker). The entire set of CLIGEN state database files and map files are included on the CD-ROM or diskettes.

The next two columns on the run definition line are for identifying the irrigation input files (Depletion-level Scheduling and Fixed-date Scheduling options). The irrigation input file builders are still under development. An initial prototype irrigation file builder is included with the current interface (WEPP V95.7). The function keys and mouse actions work the same way as in the other file builders. The irrigation input file columns complete the input file specification section of the run definition line.

The remaining columns on the run definition line allow the user to specify the types of output that he/she would like to generate. The "Plotting" column allows the user to direct the WEPP model to create an output data file containing horizontal distance, relative elevation, and net detachment (or deposition) at 100 points per OFE down the hillslope. Once a plotting output file has been created, the user may either view the file using a text editor (hit F5 key), or may graphically display the profile and detachment/deposition information by pressing the F6 key or clicking the right mouse button. The information displayed represents the spatially varying average annual detachment (and deposition) estimated by the WEPP model over the simulation period. The next 3 columns can be used to direct the WEPP model to create "Event by Event" summary output. The user can choose to create - an event by event summary of rainfall, runoff, detachment, deposition, sediment loss, and sediment enrichment, an event by event summary of important hydrologic and erosion parameters by OFE, and a summary of various hydrologic and erosion parameters averaged by month, year, and overall, depending on the summary output option selected (see below) . Once generated, these output may be viewed with a text editor by using the F5 key (or clicking the right mouse button). The output provides temporal information on important erosion parameters and as well as runoff and soil loss values through time.

The next column on the interface run definition line is titled "Winter". When the user specifies "Yes", the winter output data file is created, which contains daily and hourly information on snow fall, snow depth, snow melting, and frost and thaw layers in the soil. ***The user is STRONGLY cautioned that this file can become extremely large for multiple year simulations***. To view this file, once created, press the F5 key, or click the right mouse button.

The "Yield" column allows the user to create and view crop yield output. Yields in this output file are always reported in kilograms of dry matter per square meter, so the user will need to make the appropriate conversion to their yield units of choice.

The column entitled "Summary" controls the type of summary runoff and erosion output that the user would like to generate(Figure 22). This is the main text output file of the WEPP erosion prediction model, and it must be generated in some form (all other output files can be disabled). The output options are: Annual: abbreviated (which is the smallest output file and provides the

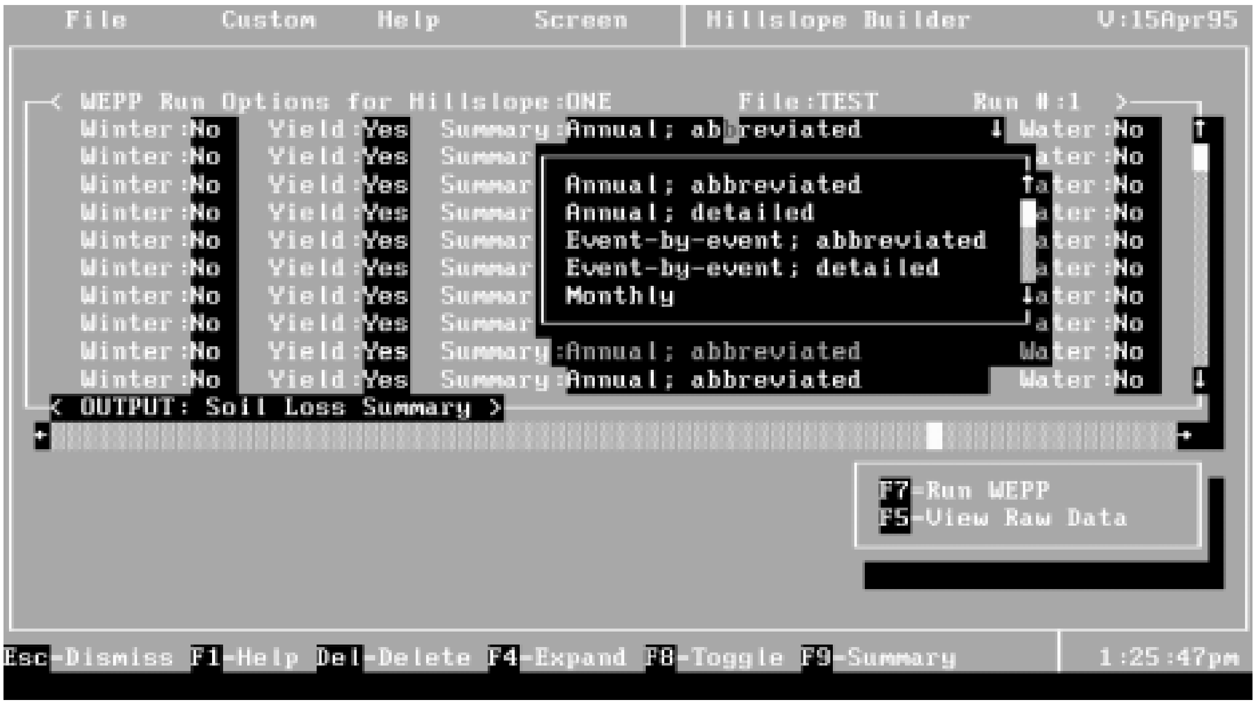

Figure 22. Portion of the WEPP Hillslope Interface run definition table showing the WEPP model output option selection and expanded list for the runoff/erosion summary output type.

average annual soil loss); Annual: detailed (which provides summary information for each year of simulation); Event-by-event: abbreviated (which provides information for each runoff event); Event-by-event: detailed (which provides very detailed information for each event); and Monthly (which provides month by month summaries of the runoff events). ***The user is strongly cautioned to be aware of the amount of output that he/she is instructing the WEPP model to create***. Event by event output files generated over periods of years can potentially fill all available space on your hard disk drive.

The "Water" output column allows the user to create detailed daily water, crop/residue, and soil output files. The three output files created will contain information on the soil water balance, living plant biomass, residue masses above and below the soil surface, etc., for each day on each OFE. Again, ***the user is strongly cautioned to be aware of the amount of output that they are instructing the WEPP model to create***. These output files can become very large and can easily fill up a hard disk drive.

The last column in the interface run file definition line is the "Graphics" output file creation question. The WEPP erosion model can create a very large output data file that contains daily parameter / erosion output results for every OFE. Approximately 100 different variables are output to this file. Once the user has created one of these output files, they can access the graphical viewing program by pressing the F6 key or by clicking the right mouse button. The graphics viewer allows the user to evaluate the effects of different inputs to WEPP simulation runs on temporal soil loss output and the parameters that affect this output. The graphics output file can become extremely large(~360 kilobytes/OFE-year) due to the many parameters being output, thus ***the user is again strongly cautioned to be aware of the amount of output which he/she is requesting the WEPP erosion model to create***. These files are normally so large that they can not be viewed with a simple text editor (though they can be imported into spreadsheet programs). The user may want to delete these files after creating and viewing them, to prevent using up too much space on his/her hard disk drive.

Saving and Loading Tables of Defined Runs

The interface allows the user to set up groups or tables of model runs, then save these tables for later use. To do this, use the ALT key to get to the Action Bar at the top of the interface screen. Under the "File" header is a "Save" option; enter "Save" or "S" or use the arrow keys to move down to the field, then press Return (If you have a mouse on your computer, just point and click). You will then be prompted for the name that you want to save the run group under.

To load a previously saved table of model runs, use the ALT key to get to the top Action Bar, then select the "Load" option under the "File" header. A list of previously saved group files will appear. Choose one of these, and it will be loaded into the interface. Be sure to save any existing table that you have been working on before loading a different one, because once you load an existing set you lose your current table.

Running the WEPP Erosion Model

Once the run definition line has been completed, the user may then run the WEPP erosion model simply by pressing the F7 key, or by clicking on the "Run WEPP" text on the interface screen with the left mouse button. The interface will ask whether the WEPP model should be run for just the current run (which the mouse cursor was last residing on) or for all named runs. Once this question has been answered the interface will run the WEPP erosion model simulations for the desired run lines. Once the simulation(s) is complete, the interface will beep, then the user may view the output files created.

Key and Action Bar Functions

Several of the keys on the keyboard have special functions within the WEPP Shell Interface programs and are not always active in each application. The **arrow keys** can be used to move around the screen, through expandable lists, or across and up and down the Action Bar. The **Escape key** is used to remove pop-up screens and to dismiss actions. The **Delete key** allows the user to delete the current run line. The **F1 key** will always provide the user with help information. The **F2 key** clears entries in the Management, Channel, Irrigation, and Climate file builders and is used to reset entries to default values in the Soil and Slope file builders. The **F3 key** is used to instruct the interface to accept an entry value and continue, and is mainly used in the customization portion of the action bars. The **F4 key** allows the user to expand lists of input or output data files. The **F5 key** allows the user to view an input or output file using the text editor of choice. The **F6 key** is used to call an utility program which is underlying the Shell Interface. F6 allows the user to call the Plant/Management, Slope, Soil, Climate, and Irrigation File Builders. F6 also is used to call the profile detachment plotting program and the graphics output program. The **F7 key** is used to run the WEPP Erosion Model once a line of run information has been entered. The **F8 key** is a toggle between the single run screen(Figure 20) and the multiple run screen(Figure 19) in the hillslope interface. The **ALT key** is used to move the cursor to the Action Bar at the upper left hand corner of the screen. Pressing the **Enter key** causes the Interface to accept a piece of information, such as a data file name, and then move the cursor to the next column. The **Home key** can be used to move the cursor to the beginning of the current line, then to the beginning of the run table. The **End key** will move the cursor to the end of the current line, then to the end of the run table. The **Page Up key** and **Page Down key** allow rapid movement up and down through the run table and also in expandable lists. When in the single run definition screen **Page Up** and **Page Down** allow movement to previous and next runs in the table.

The **Action Bar** is a set of special functions that is at the top of each WEPP interface screen and most of the file builder screens. To get to the Action Bar, press the ALT key, or simply point and click with the mouse on one of the column headers in the Action Bar. The column headers are titled: File, Custom, Copy, Screen. In the interface, the **File list** expands to the functions: Load, Save, File Utilities, Exit to Shell, and Quit. Selecting **Load** allows the user to load a previously defined run table into the hillslope interface or a previously defined watershed into the watershed interface. Selecting **Save** allows the user to save the current run table or watershed so that it may be reloaded at a later time. The **File Utilities** allow deletion or printing of any input or output file. **Exit to DOS** allows the user to temporarily leave the Interface program and work under the DOS Shell. **Quit** allows the user to exit the WEPP Interface program.

The **Custom list** expands to the functions: WSHELL Preferences and WEPP/Shell Preferences. **WSHELL Preferences** allows the user to specify the paths to the various executable programs, and input and output files. **WEPP/Shell Preferences** allows the user to specify any of the paths to the interface programs and files, as well as alter some of the default values for some of the WEPP Shell input fields. Another way of altering the paths is to edit the file \WEPP\weppkids.def file with a text editor outside of the Interface.

The Screen list expands to the functions: Change Colors and Screen Dump. The **Change Colors function** allows the user to customize the WEPP Shell Interface program colors. This can be particularly important for someone using a monochrome screen. Changing the color settings here will change the color settings for all of the subprograms accessed by the interface. The **Screen Dump function** allows the user to take a snapshot image of any particular part of the interface screen and place this view of the screen in a file. This may be helpful when questions arise within the interface or one of the subprograms.

Input File Builders

Each of the input files has its own file builder, which may be accessed from the WEPP interface by pressing the F6 key or clicking the right mouse button while the screen cursor is on the input field of choice. The file builders have the same look and function keys as the main interface - thus the Action Bar is available to load and save files, to quit the program, to duplicate the programs, and to customize the builder screens. A brief introduction to the different input file builders will be given here - more detail and on-line help is available while actually running the interface and file builders.

Climate Input File Builder

The climate input file builder accesses the CLIGEN program to create either WEPP single storm or continuous simulation climate input files. Figure 23 shows the main screen of the builder. The first line is an expandable list (F4 or mouse click) which will show all of the available state climate database files. Once the state has been chosen, the user must select a station within

Figure 23. Main Screen of the climate input file builder.

that state. The second line is also an expandable list (F4 or mouse click) which will show all of the available weather stations. Another option is for the user to use the map function to determine the nearest station to his/her desired location. The map for the selected state can be accessed by pressing the F6 key or clicking the right mouse button. The third line in the file builder asks for the "Storm Type", and this is referring to the type of simulation: Single Storm, Continuous, or TR-55 single storm. After entering a choice of storm type, several questions in the bottom half of the screen will have to be answered, dealing with the date and precipitation information for the single storm file types, and dealing with beginning year of simulation and number of years to simulate for the continuous simulations. To run the CLIGEN model and create a WEPP erosion model climate input file, press the F7 key.

Slope Input File Builder

The main screen of the slope input file builder is shown in Figure 24. The user must specify on the first line the number of overland flow elements to be simulated, then the appropriate number of OFE length rows will be created. Data for the slope shape of every OFE for the hillslope must be entered, and end slope values for adjacent OFEs must be equal. Information for the entire hillslope, such as aspect and representative profile width is entered after the number of OFEs.

The length of the individual overland flow elements is entered on the last lines on the left side of the screen. After a value for length is entered, the pop-up screen for entering distance from the top of the OFE to the points, and the slope at the points appears. The user must enter distance values in increasing order, the first distance value must be 0 % of the OFE length, and the last

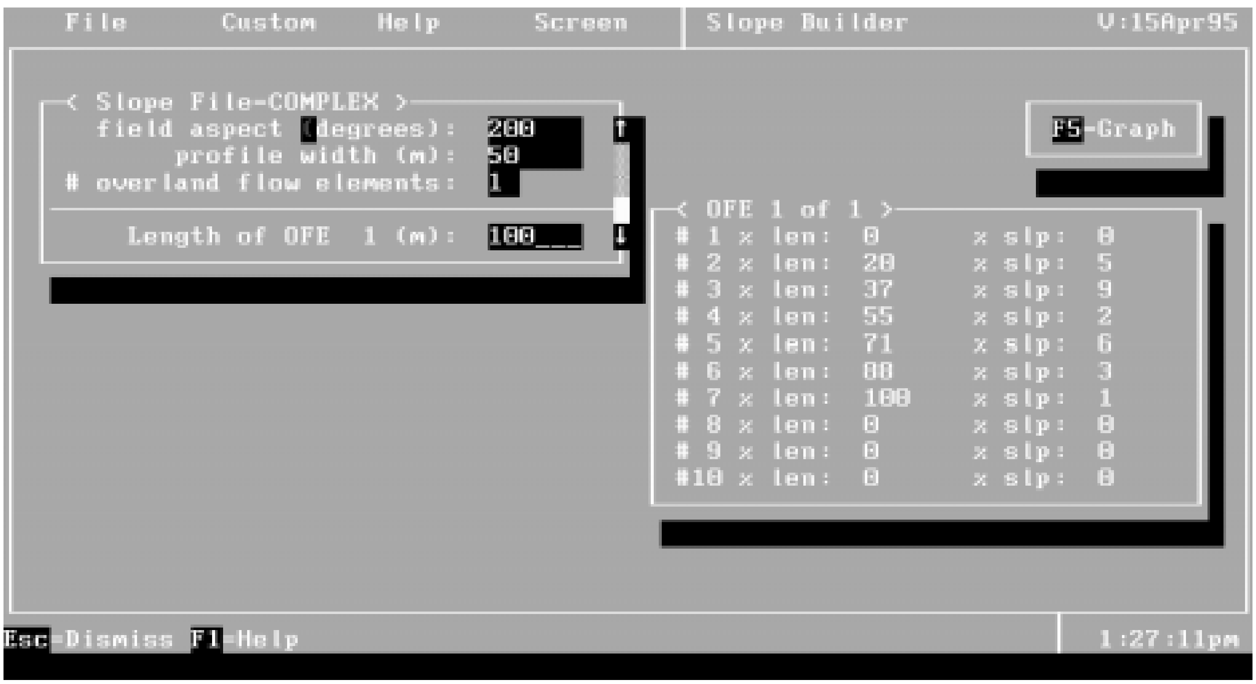

Figure 24. Main screen of slope input file builder with pop-up screen for point slope entry for OFE 1 shown in lower right hand corner.

distance point must be 100% of the OFE length. The slope steepness at the endpoints of adjacent OFEs ***must be equal***. The slope file builder has a graphical viewing function (press F5 key) which allows the user to view his/her input slope data for the hillslope and for the individual OFE's.

Soil Input File Builder

The soil input file builder allows the user to describe the soils present on the different overland flow elements of a hillslope or channel elements in a watershed. The user may load existing soil files using the action bar menu. The main screen of the soil file builder is shown in Figure 25. Again, the first data entry is the number of OFEs, which allows the builder to determine the number of data entry columns in the soil definition table. Each OFE can be loaded from 1 OFE soil files. With the cursor on the OFE column, the user may press File Load from the action bar to load any single OFE soil file available. Each soil associated with an OFE may be saved back as a single OFE soil file when the cursor is on that OFE using File Load from the action bar. Input values on the main screen deal with parameter values which are unique to each OFE and are not soil layer dependent. The last entry on the main screen is the number of soil layers for the OFE. The user may input up to 8 soil layers. To change the soil layer information, the user may press the F6 key or click the right mouse button to gain access to the soil layer pop-up screen. A soil textural triangle is also available (with another F6 or mouse click), which allows the user to point to his/her soil texture, and have the values automatically filled in the soil layer column.

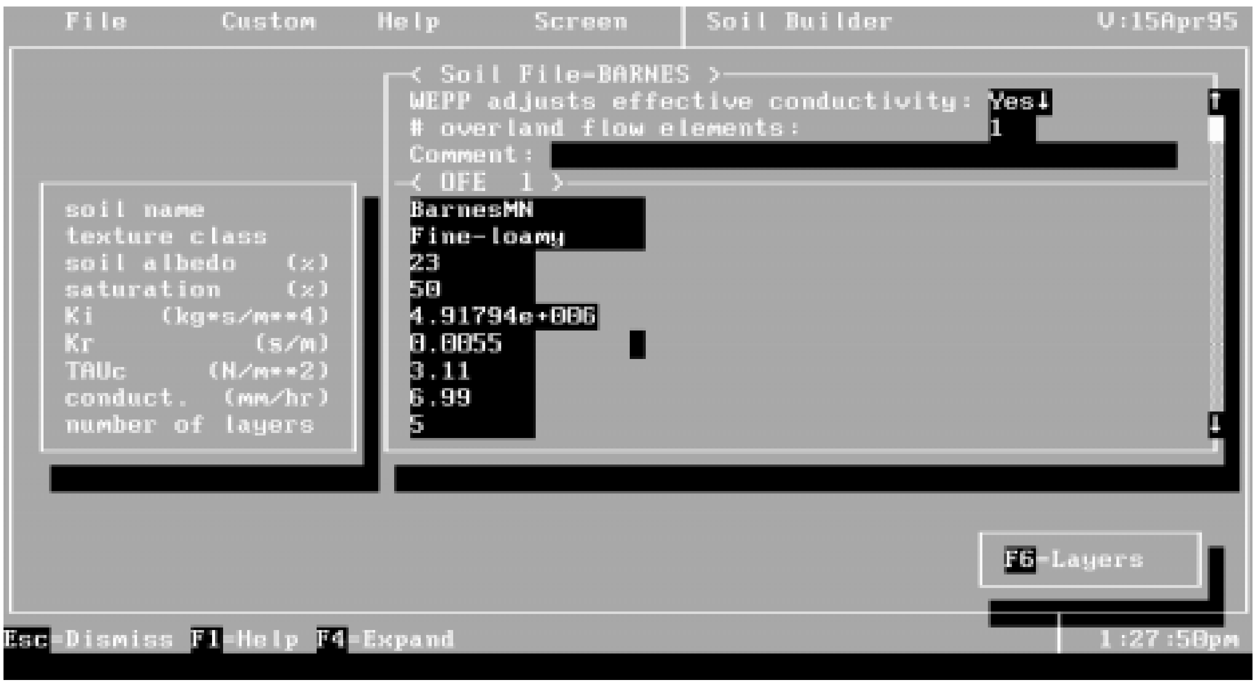

Figure 25. Main screen of the soil input file builder.

Plant/Management Input File Builder

The plant/management file builder allows the user to create and modify files for cropland and rangeland simulations. The structure of the file builder roughly follows that described in the input file descriptions. Figure 26 shows the general structure of the builder, and illustrates one of the helpful features of the builder - the "Where am I?" function (F5 key). Given the large size of the plant/management input file, the file builder is large and at times difficult to follow, so this location feature was created to help the user find themselves. Figure 27 shows the main screen of the plant/management input file builder.

On the main screen (Figure 27) of the plant/management input file builder is a place to enter three lines of notes. These notes will be printed out in any summary output file using this file as input to the WEPP erosion model. The number of OFEs is the second input parameter on the main screen, followed by the number of simulation years in the file, and the number of years in a single crop rotation. The OFE and year values set up the most important screen in the builder - the rotation table(Figure 28). The rotation table in the Plant Management input file defines the plants on the various flow elements (left to right across the top of the table screen), and the change in plants/management with time through the rotation (up and down the left column).

By correctly filling in this simple grid of OFEs and years with the appropriate crop or rangeland community scenarios, the builder has all the information needed to create a WEPP input plant/management file. One to five crops may be entered for each year of simulation, and the user may decrease the number of blanks per year displayed in the rotation table on the screen (under the Custom column of the Action Bar). The scenarios which make up the yearly crop scenarios can be edited by pressing the F6 key (or clicking the right mouse button) to move downward into the Cropland Yearly screen). Placing the cursor on one of the component lines (Plant, Surface Effects, Contouring, and Drainage scenarios) then pressing F6 or clicking the right mouse button allows access to and editing of those scenarios. The management option for cropland allows the user to define the needed inputs for annual, perennial and fallow cropping.

Figure 26. "Where am I" feature of the plant/management input file builder shows the user his/her current location as well as illustrates the builder structure.

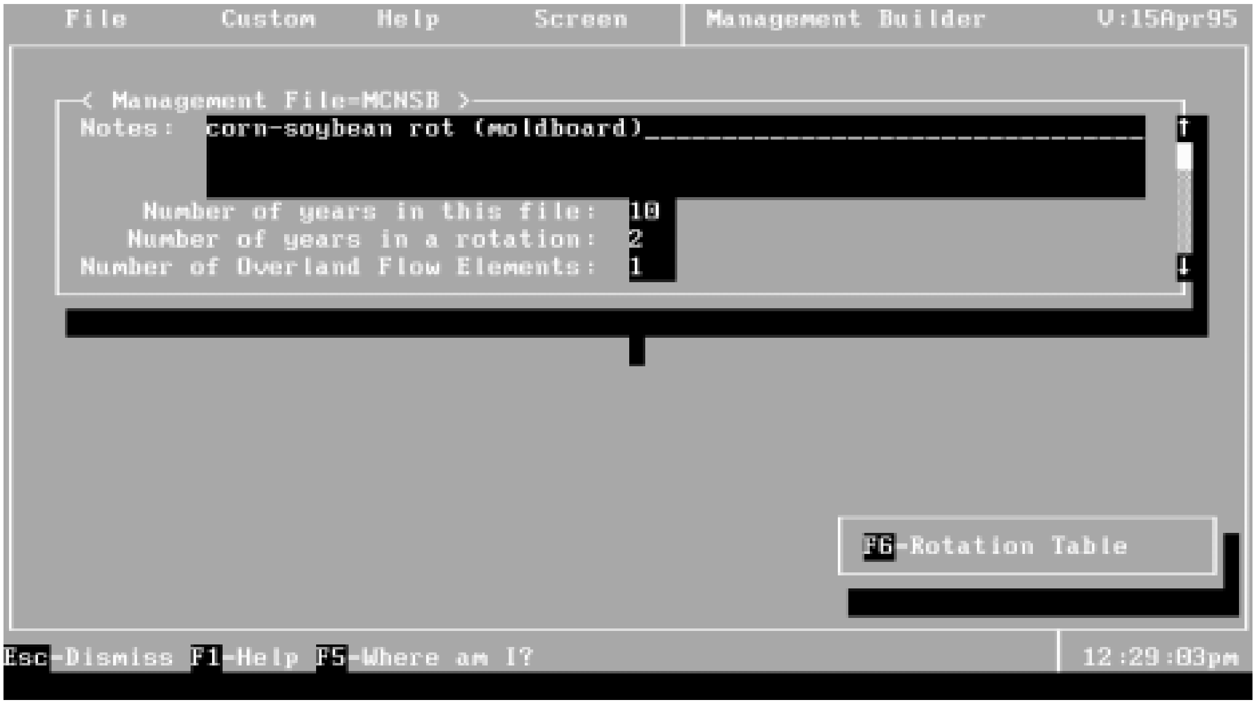

Figure 27. Main Screen of plant/management input file builder.

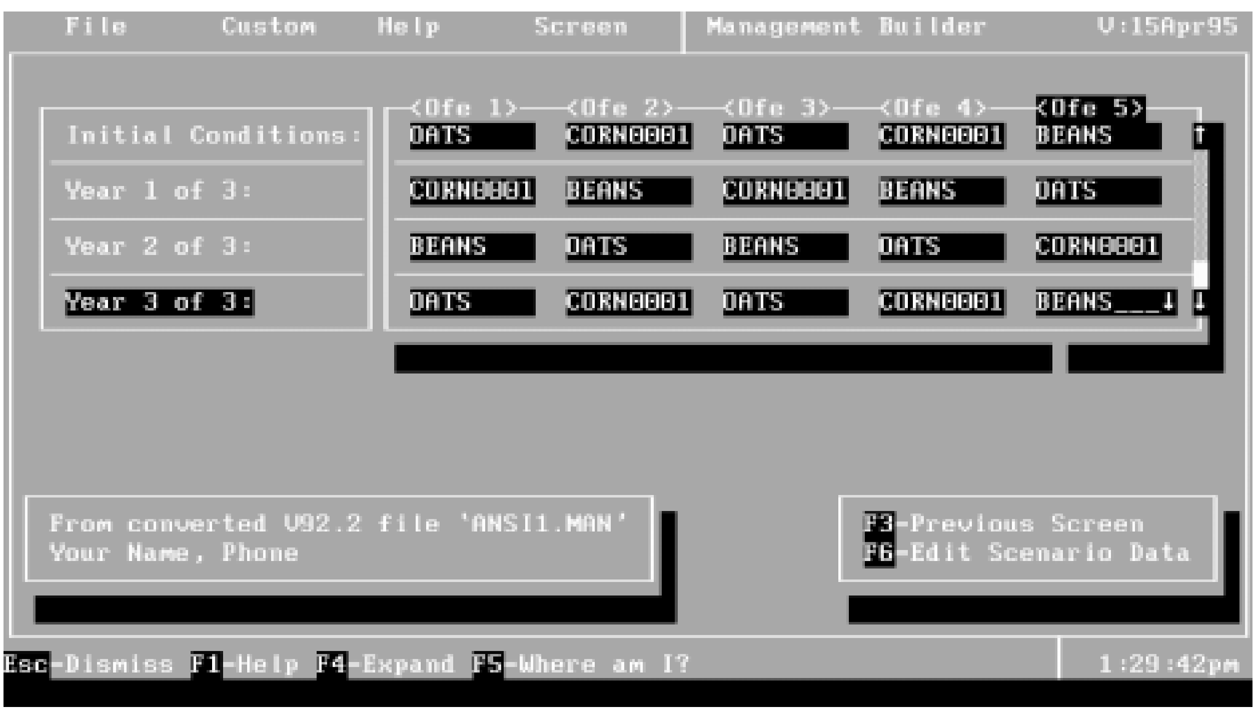

Figure 28. Rotation Year / OFE table screen of the plant/management file builder.

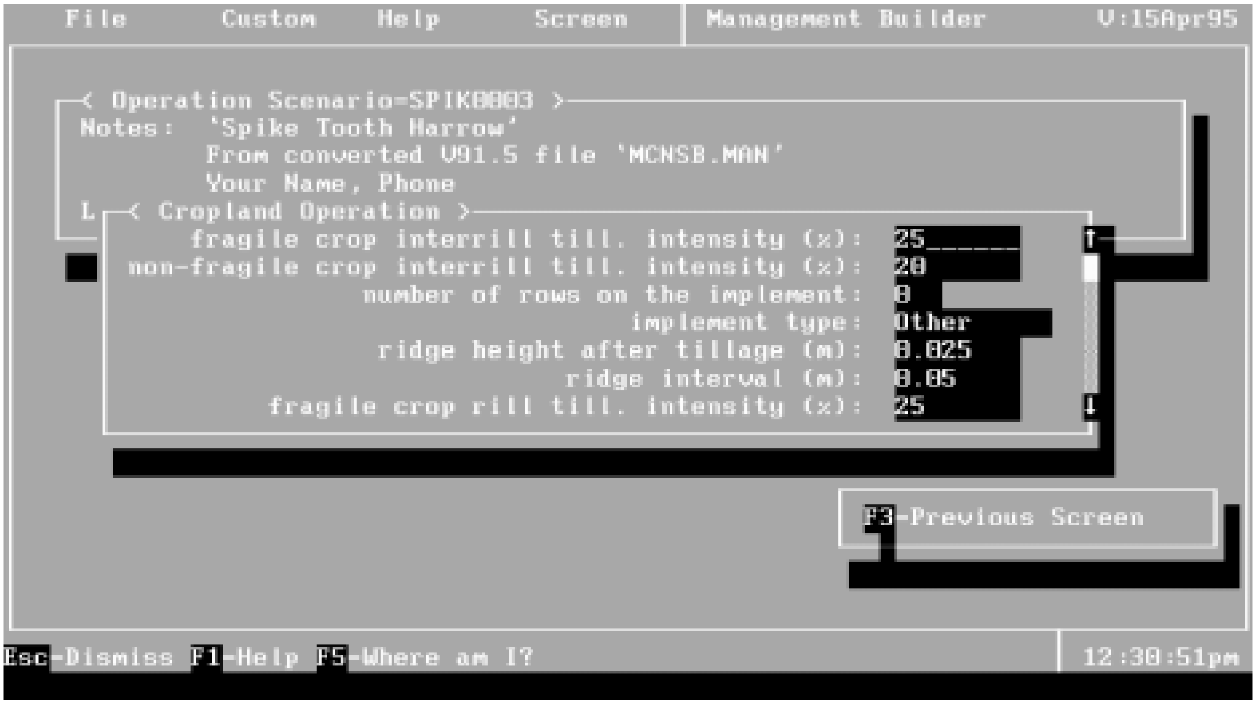

Figure 29. Tillage Operation Scenario edit screen.

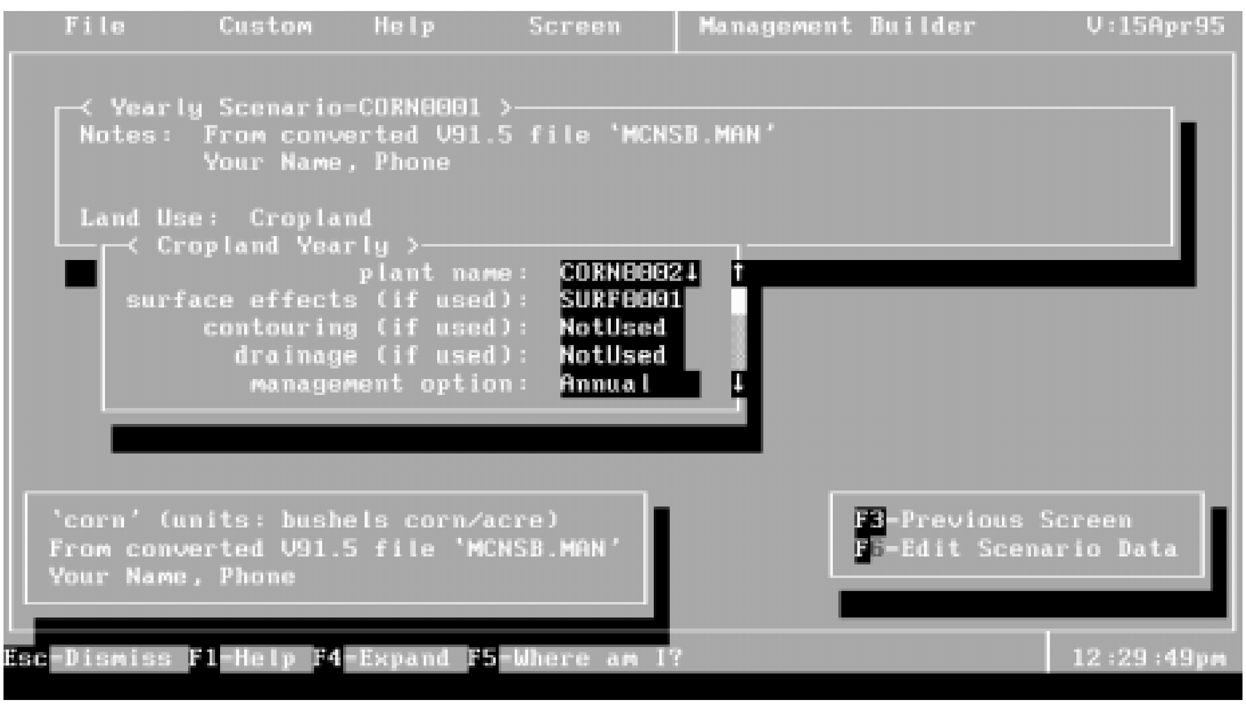

Figure 30. Cropland Yearly edit screen, which is accessed directly below the yearly crop name of the plant/management OFE rotation summary table.

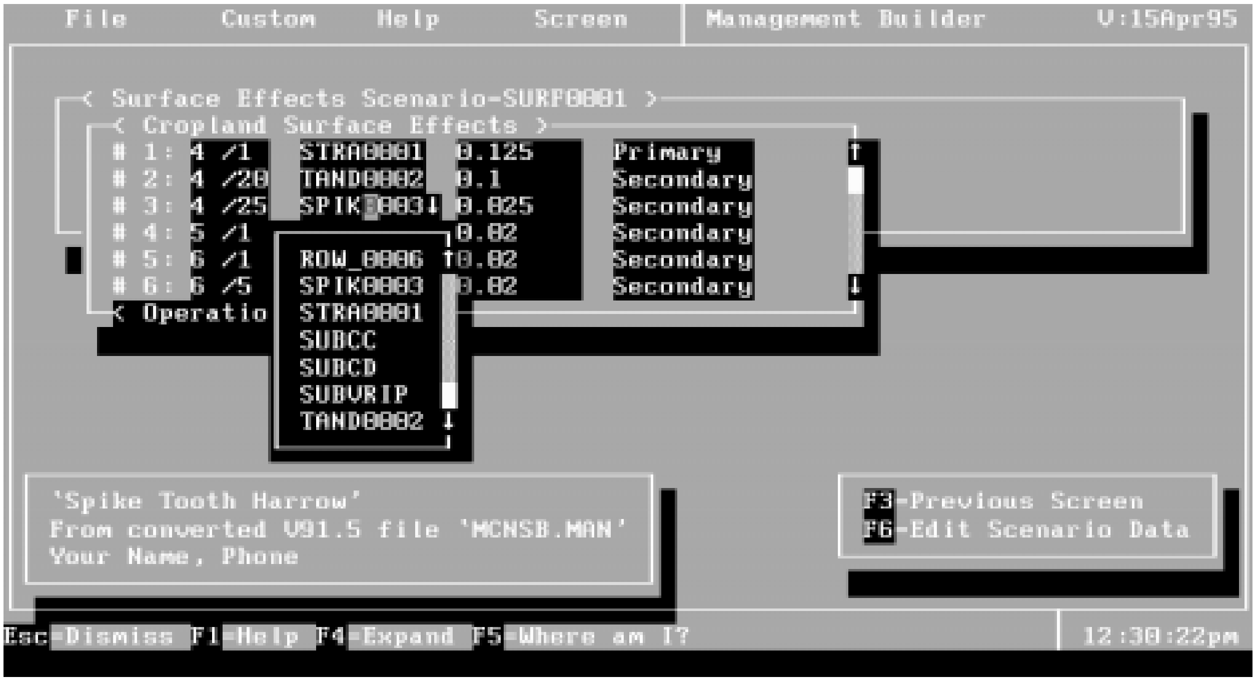

Figure 31. Surface Effects Scenario subscreen of the Plant/Management file builder.

Figure 31 shows an example of one of the subscreens - the Surface Effects Scenario edit screen. Here the user may enter tillage implements into a sequence for the crop, selecting from a list of pre-defined implements (F4 key). The parameter values for the individual tillage implements(Figure 29) may also be edited by pressing the F6 key, or clicking with the right mouse button while on the implement name. Similar types of subscreens exist to define the plant specific parameters, the contour sets, the drainage sets, and the annual crop and residue management.

Irrigation Input File Builder

The irrigation file builder is accessed from either the Depletion-Level or Fixed-Date entry fields in the main interface screen, by pressing the F6 key or clicking with the right mouse button.

The user may choose to create any of four different types of irrigation input files: Fixed-Date Sprinkler, Fixed-Date Furrow, Depletion-Level Sprinkler, Depletion-level Furrow. The user may perform WEPP simulations with a combination of fixed-date and depletion scheduling for a single type of irrigation (sprinkler or furrow), but may not use both sprinkler and furrow at the same time.

On the first line of the main screen of the irrigation file builder (Figure 32) the user must enter the number of overland flow elements, the number of irrigation simulation years, and the type of irrigation file to be created. The answers to these questions determine the layout of the remaining screens.

A simulation year-OFE table containing irrigation scenario entries fills the remainder of the main screen (Figure 32). Here the user can create, save, or load existing irrigation scenarios, which contain all the information needed to describe the irrigations to occur for a given year. By moving

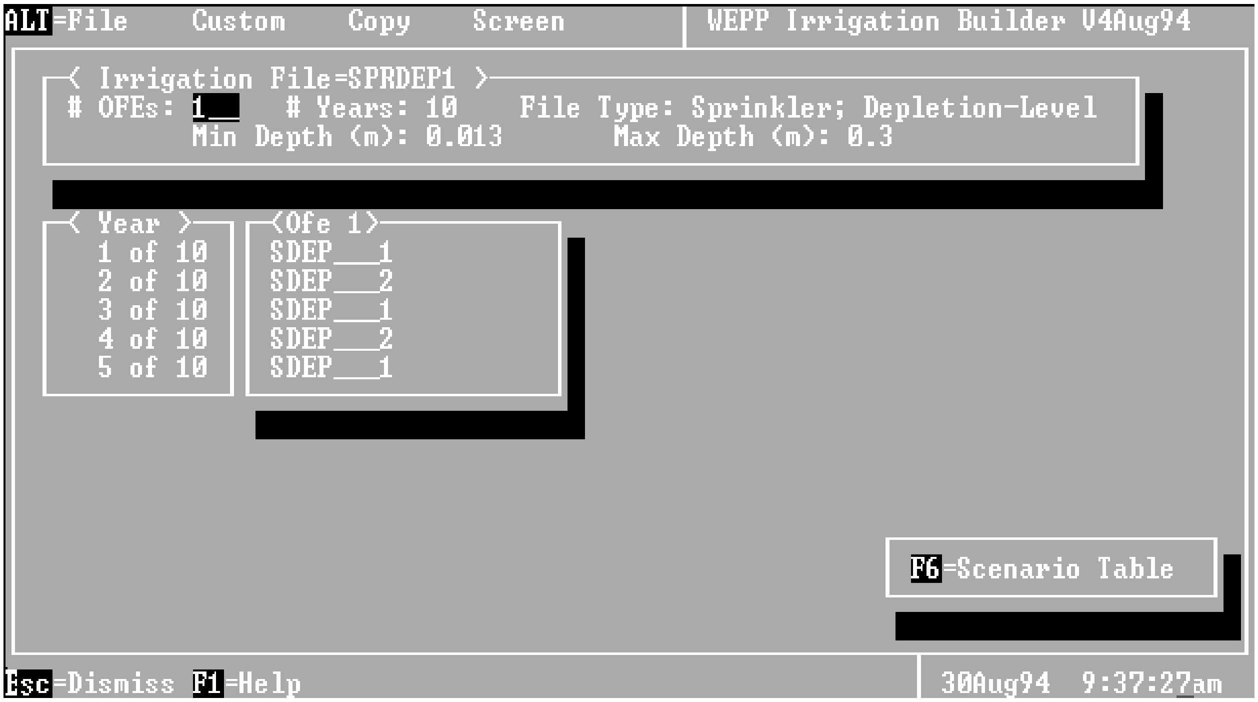

Figure 32. Main screen of the Irrigation File Builder with a Depletion-level Sprinkler file type.

the active cursor to one of the scenario names, then pressing the F6 key or clicking with the right mouse button, the user can edit the data entry fields for that particular scenario (Figure 33). A useful feature of the irrigation file builder is the rapid fill option, available by pressing the F5 key while on the first subscreen (Figure 34) allows the user to quickly enter data for an entire set of irrigation events that are planned for regular time periods (Daily, weekly, monthly, or custom number of Days.).

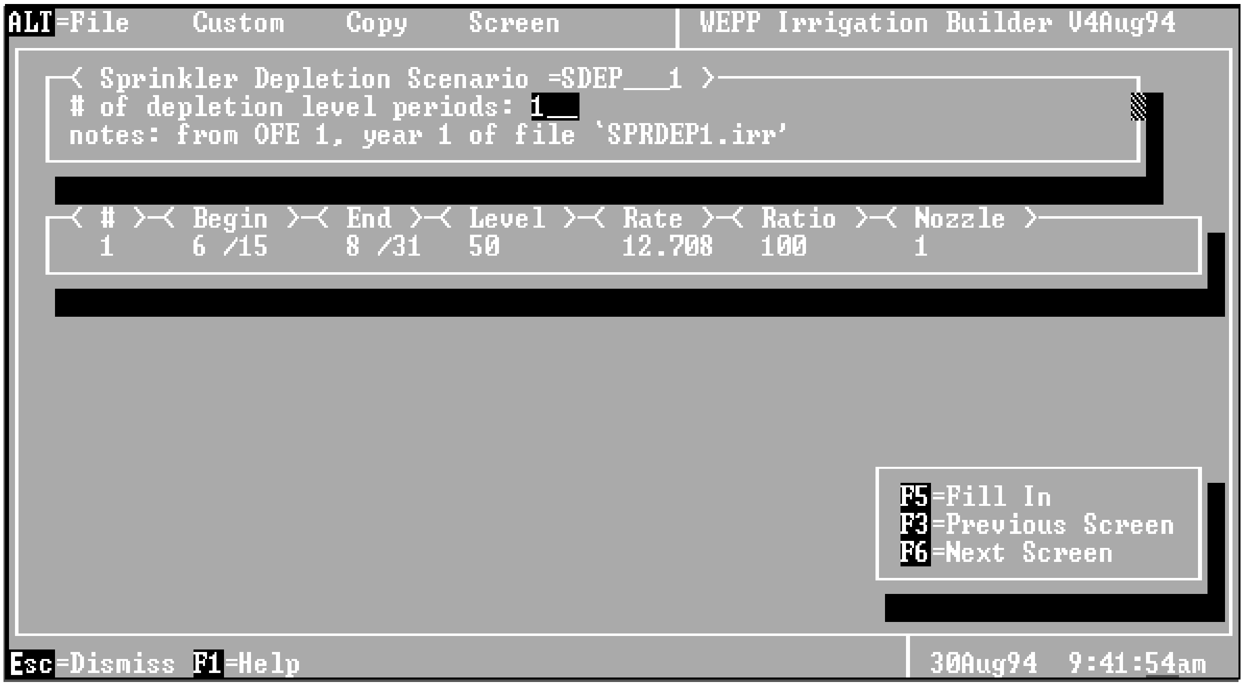

Figure 33. Irrigation file subscreen illustrating the table of values required for Depletion-level Sprinkler irrigation.

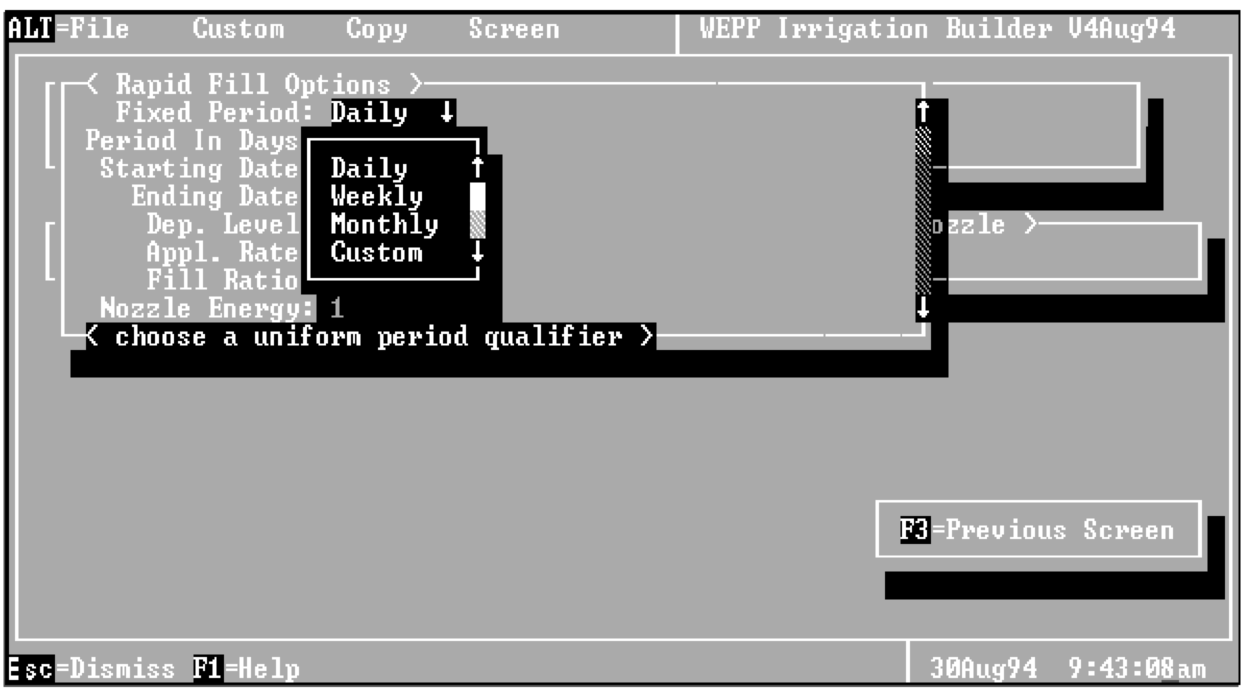

Figure 34. Irrigation file subscreen illustrating the rapid fill feature under Depletion-level Sprinkler irrigation

WEPP Watershed Interface Structure

The watershed shell interface program is designed so that the user can construct a watershed consisting of hillslopes, channels and impoundments using his/her desired names, input files, and output options. The interface accesses file builders which can be used to create the climate, slope, soil, plant/management files and irrigation files for each hillslope or channel as well as impoundment input files and channel files.

Figure 35 shows the main screen of the watershed interface program. The information that first appears on this screen when the program is started corresponds to either the last work that was done with the interface or to one single channel if the program is started for the first time. The top part of the screen describes the structure of the watershed. The middle part describes all

Figure 35. Main screen of the watershed interface program

the options for the simulation run. The right bottom frame indicates possible actions the user may take either by pressing the corresponding key or by clicking the left mouse button on the corresponding line. The left bottom frame gives a short description of the action field when it is appropriate.

A watershed must have at least one channel and one hillslope. It is built from the outlet channel or impoundment to the upstream hillslopes along each branch. For each channel or impoundment element, feeders are defined by clicking on the feeder to be defined (laterally left or right, or top for hillslopes and impoundments, diagonally left or right, or top for channels). A list of available and possible feeders appears from which the user must choose one. This list includes all elements that are already defined and that are consistent with the watershed structure rules (i.e.: the interface will not allow a channel to feed an impoundment if a hillslope has already been defined as feeding the impoundment). If the characteristics of the feeder (slope file, soil file, etc... for channels or hillslopes or impoundment input file) have not been defined previously as part of another watershed or need to be modified, the user needs to move it to the center of the window (by highlighting and clicking the right mouse button or pressing the F6 key) and call the file builder program (F6 key again). If the feeder is a hillslope, pressing or clicking the F6 key only once will call the program. To return to the previous level of branching, the user may either press the Esc key or click on the area outside the two main frames of the screen.

The middle part of the screen displays all the options to run the simulation. In the first field, called "Years", the user must enter the number of years the WEPP model is to simulate. This number cannot be larger than the number of years simulated for any of the hillslopes or the total number of years in any of the management or climate input data files. Although the WEPP model supports single event simulation, the shell interface does not at this time; only continuous simulation for a minimum of one year can be performed with the interface. Also, regardless of the value entered in this field, when it is too large, the model will run only for the number of years which is the minimum from all of the climate and management files within the entire watershed.

The following field, which is entitled "Warmup" allows the user to instruct the WEPP model to create an initial condition scenario file, which can be then used to alter the channel management file. The information that is created is based on final values associated with the first channel in the simulation run. The file that is created will be located in the "\WEPP\input\man\scenario" directory and have the suffix ".ini".

The next field in the run-option frame is labeled "Bypass". It allows the user to instruct the model to bypass hydraulic and erosion routing for small events (currently defined as having runoff less than 10 mm and peak runoff rates less than 10 mm/hr anywhere in the watershed). It should be noted that for the watershed version, hillslope simulations are not allowed to be performed with the bypass option as the criteria for small storms requires the consideration of the whole watershed. However, concentrated flow calculations can be performed with the bypass option on. If the user does choose to use the bypass option, the impact on the model results should be investigated.

In the following field entitled "Climate", the user needs to enter the name of the watershed climate file. Existing climate files are listed by pressing F4, an existing file can be edited by pressing F5, and a new climate file can be built by pressing F6 to call the climate file building program and CLIGEN (pointing and clicking with the mouse also works and is quicker). At this time, only one climate file is allowed for all elements of the watershed. If it is different from the climate files specified for some or all of the hillslopes, those are reset to the watershed climate file indicated in this field. The climate files are located in the directory "WEPP\input\climate\data" and have the suffix ".cli".

The next field is labeled "Plotting". This option is not supported by WEPP at this time for the watershed version and the only possible answer is "No"..

The "Water", "Crop" and "Soil" fields allow the user to create detailed water, crop/residue and soil data output files. These files are similar to the water, crop and soil output file created for hillslopes. The only difference is that information is given per channel instead of per OFE. The user is ***strongly cautioned to be aware of the amount of output that is demanded from a WEPP simulation.*** All these files can be viewed with a text editor by pressing the F5 key or by clicking on the right button mouse. They will be located in the "WEPP\output\water" directory, and have the following suffixes: ".wat", ".crp" and ".soi".

If the watershed includes any impoundments, the next field "Impound" must be answered with "Yes", otherwise with a "No".

The "Graphics" field allows the user to generate large graphics files similar to the graphics files that can be created for hillslopes. Once created, the user can access the graphical viewing program by pressing F6 or by clicking the right mouse button. The graphics output file can become **extremely large** (~360 kilobytes/ channel/year) due to the many parameters being output. The file itself will be located in the following directory "\WEPP\output\wgr" and will have the suffix ".wgr".

The "Event" field can be used to create "event by event" output similar to the event by event output file that can be created for hillslopes. The output file will have the suffix ".evo" and will be in the following directory "\WEPP\output\event". It can be accessed from the interface by pressing the F5 key or clicking the right mouse button.

The "Winter" field controls the creation of a winter output data file that is similar to the winter file created for a hillslope. Information about winter specific variables is given **hourly** for every channel. ***The user must be cautioned that this output file can become extremely large for multiple years simulations and if the watershed includes several channels.*** The file can be viewed with a text editor by pressing F5 or by clicking the right mouse button. It will be located in the directory "WEPP\output\winter" and have the suffix ".wnt".

The next field is entitled "Yield" and it allows the user to create a crop yield output for the channels. Channels can be farmed (channels with flatter banks) and therefore can generate a yield. As for hillslopes, yields in this output are reported in kilograms of dry matter per square meter. The file can be viewed by pressing the F5 key or clicking on the right button. It is located in the "\WEPP\output\yield" directory and has the suffix ".yld".

The last field is called "Summary" and allows the user to indicate the level of detail desired in the runoff and erosion summary output file. This output file contains the most important information generated by the WEPP model and must be present at every run. However, the user can control the amount of results that will be generated. The options are: Average Annual, watershed (which provides average annual runoff and erosion information at the outlet of the watershed); Yearly averages, watershed(which provides yearly runoff and erosion information at the outlet; monthly averages, watershed (which provides monthly information at the outlet; average Annual, Sub-watersheds, Yearly average, sub-watersheds and monthly averages, sub-watersheds (which provides average annual, yearly and monthly information for each channel element outlet. ***The user is <u>strongly cautioned</u> to be aware of the amount of output that can be created for the more detailed files***. The summary file can be viewed from the interface by pressing the F5 key or by clicking on the right mouse button. It is located in the "WEPP\output\summary" directory and has the suffix ".sum".

The Channel Scenario Builder

Each channel needs to have slope, soil, management, channel and potentially irrigation characteristics. To each channel is associated a scenario which can be viewed by pressing or clicking on F6 when the active field is the channel element. Figure 36 shows the channel scenario builder screen. It displays the name of the channel element, one line of comments and the names of the management, slope, soil, irrigation (depletion-level and/or fixed-date) and

Figure 36. Screen of the channel scenario builder

channel characteristics. For each input file, one can either choose a different input data file name (a list of existing files can be viewed by pressing F4 or pointing and clicking the field name), view the input data by pressing or clicking on F5 or edit the data file by calling the corresponding file builder (F6). If any of the characteristics are modified, then they need to be individually saved. If the scenario is modified (different names of slope, soil, etc..., characteristics), it needs to be saved too.

The channel slope, soil, management and irrigation input files are built with the same file builders as for the hillslope files. The reader can refer to the corresponding paragraphs concerning the hillslope. The channel file being specific to channels, the channel input file builder is presented in the next paragraph.

The Channel Input File Builder

Figure 37 shows the top of the channel builder screen. Each field needs to be filled in. If several choices are possible, a list of them can be obtained by pressing F4 or pointing on the field and clicking. For numerical parameters, a range of possible values is indicated in the lower left corner of the frame. The user should be aware that it is necessary that the peak runoff rate calculation, the method to calculate the friction slope and the length/width ratio be the same for all channels in the watershed. However, the interface will not test those values and it is the responsibility of the user to ensure that they are consistent between each channel element.

Figure 37. Top portion of the main screen of the channel input builder.

The specification of values for the two Manning's n coefficients (total Manning coefficient taking into account the vegetation and for bare soil) requires two steps. First the user needs to specify in the first field of the line the nature and the conditions of the channel. Then the coefficient value is specified in the second field. Depending on the nature of the channel, different ranges of coefficient values are allowed. These ranges are indicated in the lower left corner of the frame. When changing the nature of the channel, the Manning coefficient is automatically set to the normal value that corresponds to these conditions. It can then be modified by the user within the range of values indicated.

Not shown on these figures are the fields for total Manning's n (conditions and value), channel erodibility factor, critical shear stress, nonerodible layer depth at channel center and nonerodible layer depth at channel edges. The user must press or click on the down arrow to get to these lines.

Although the type of channel output needs to be specified, this output option is currently overridden by the general output options specified in the main screen of the watershed builder.

The type of control structure is defined by either answering there is no specific outlet control structure at this point or by specifying the type of flow existing at the outlet of the channel: normal depth flow, critical flow or flow defined by a rating curve. For any option other than “no outlet structure”, the user must characterize the outlet structure. This is done by pressing F6 or clicking on the right mouse button. The screen shown on Figure 38 appears and the user must specify the lengthwise slope, the inverse value of the side slopes and the Manning coefficient for the outlet structure.

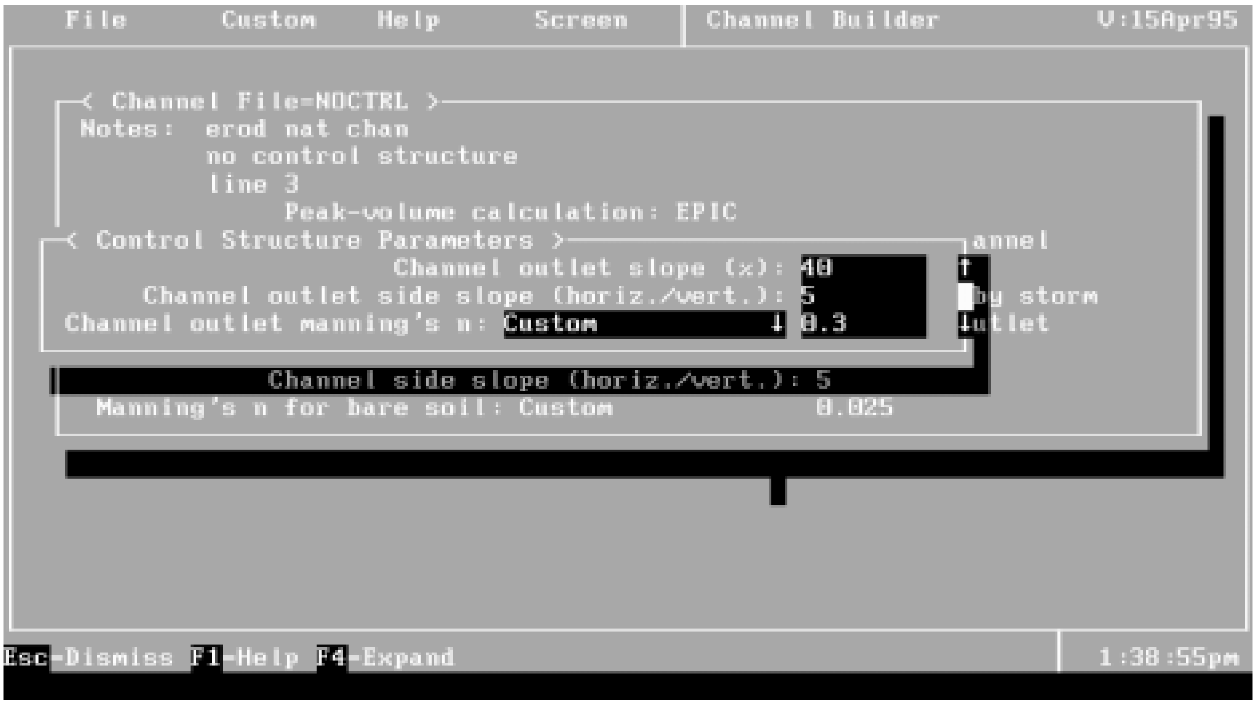

Figure 38. Outlet structure definition screen of the channel input file builder.

The Impoundment Input File Builder

The impoundment input file builder is called by moving the impoundment element to the center of the watershed structure screen and pressing F6 or clicking on the right mouse button. Figure 39 shows the main screen of the impoundment file builder. It displays the name of the impoundment file in the upper left corner of the frame. In the frame, the user can describe the file and its contents with up to three lines of comments. When the active field is one of these three lines, the user must call the miscellaneous data program that will allow the input of all data that are independent of the outflow structure. This can be done by either pressing F6 or clicking with the right mouse button.

Figure 40 shows the miscellaneous data screen. Every field must be answered. The last field concerns the stage-area-length relationship that characterizes the impoundment itself. After having entered the number of points to define the curve, the user must either press F6 or click on the right mouse button to define each point of the curve (Figure 41).

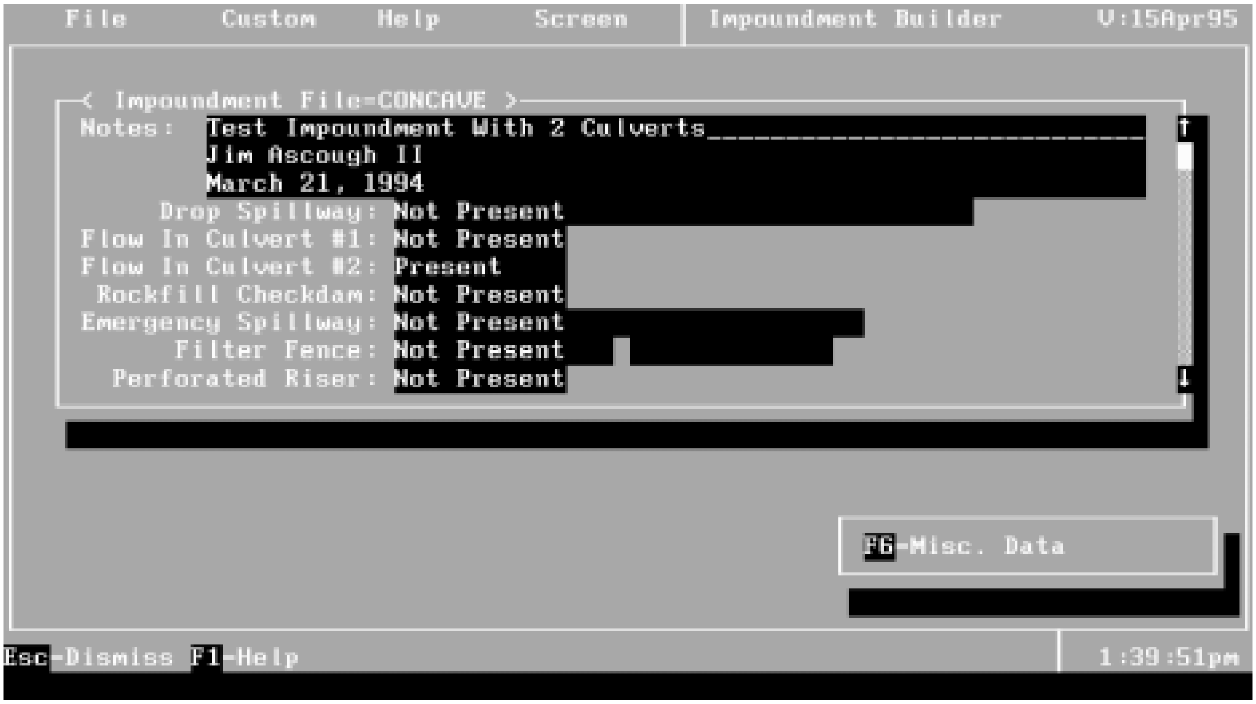

Figure 39. Main screen of the impoundment input file builder.

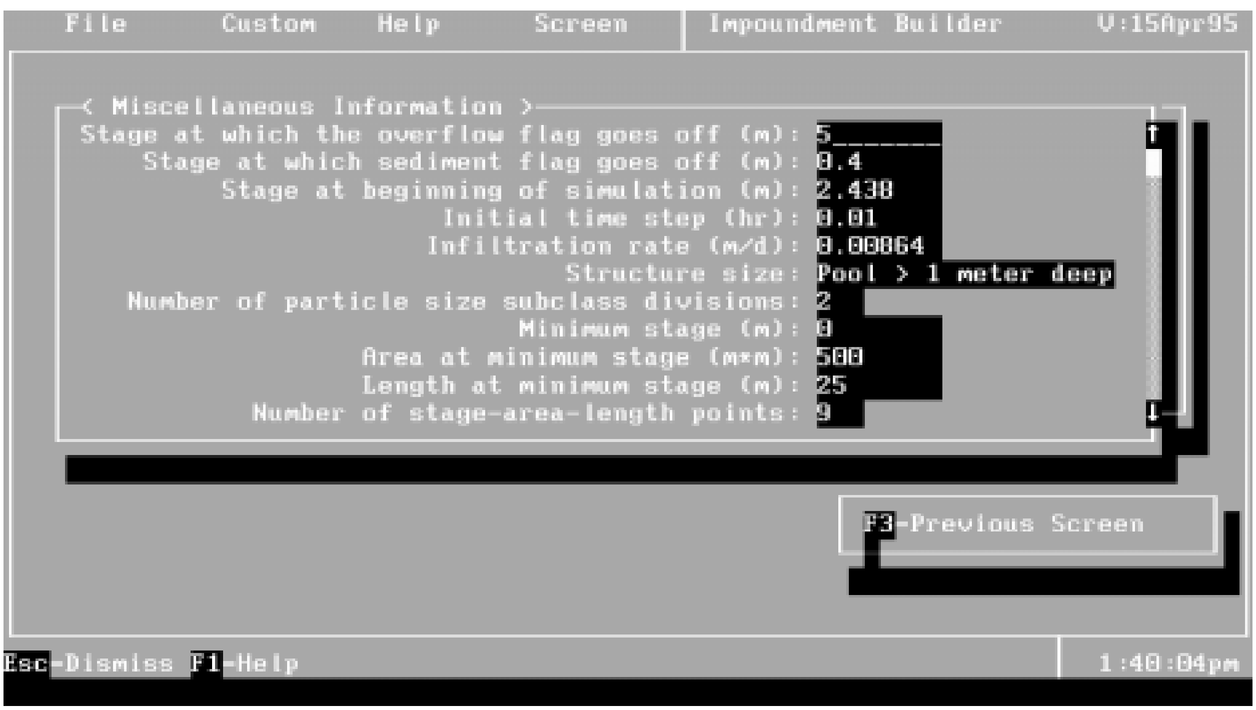

Figure 40. Miscellaneous data screen of the impoundment file builder.

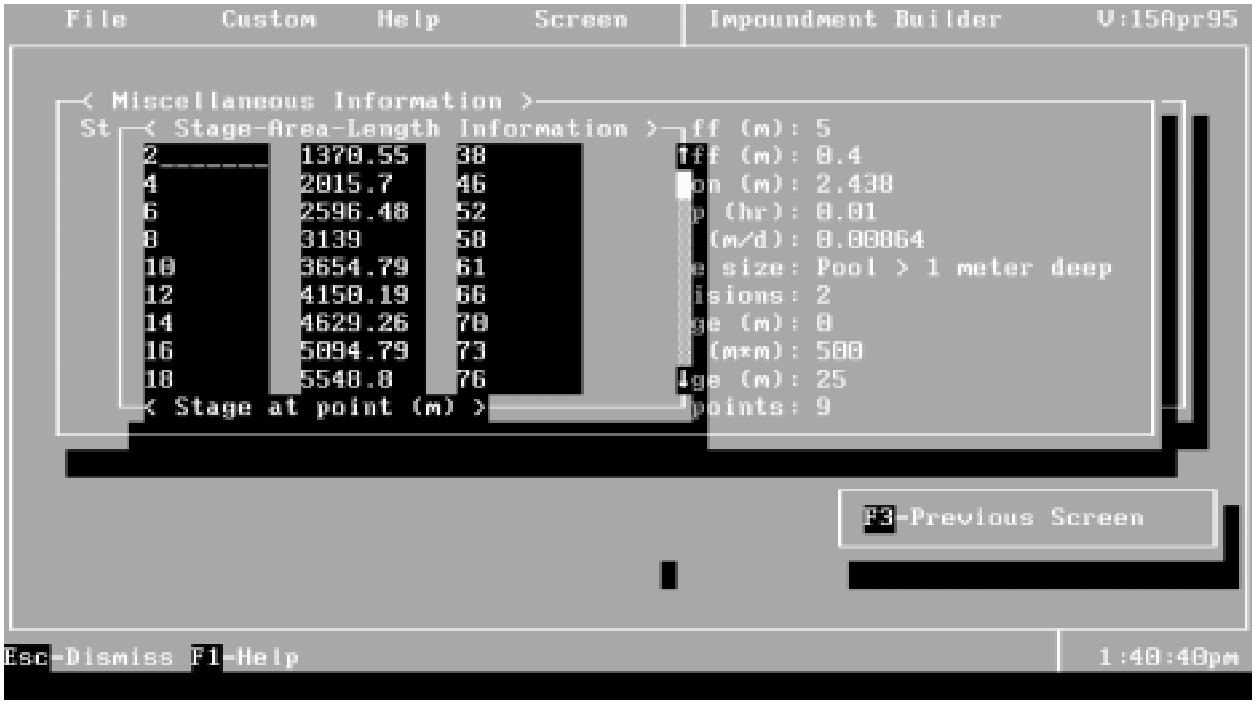

Figure 41. The stage-area-length definition sub-screen in the impoundment file builder

Each outlet outflow structure present in the impoundment needs to be specified and defined. To indicate that a certain type of outflow structure is present, the user must answer by either “Present” or by being more specific when several types of structures do exist. Otherwise, the answer is “Not Present”. For example for the drop spillway, the possible answers (one may list them by pressing F4) are “Not Present”, “Rectangular Riser and Barrel”, “Rectangular Riser and Circular Barrel” and “Circular Riser and Barrel”. For the rock-fill check dam, the answers are simply “ Present” or “Not Present”. Several structures may be present for the same impoundment: for example a culvert for low flows, a drop spillway for medium flows and an emergency spillway for very high flows.

When a given outflow structure is present, its characteristics need to be defined. Figure 42 shows the structure definition screen for a rock-fill check dam. The structure definition program is called by pressing F6 or clicking on the right mouse button. The user needs to answer all questions. For structures that require more data that can be shown in just one screen, the user must be sure all questions are answered by clicking on or pressing the down arrow.

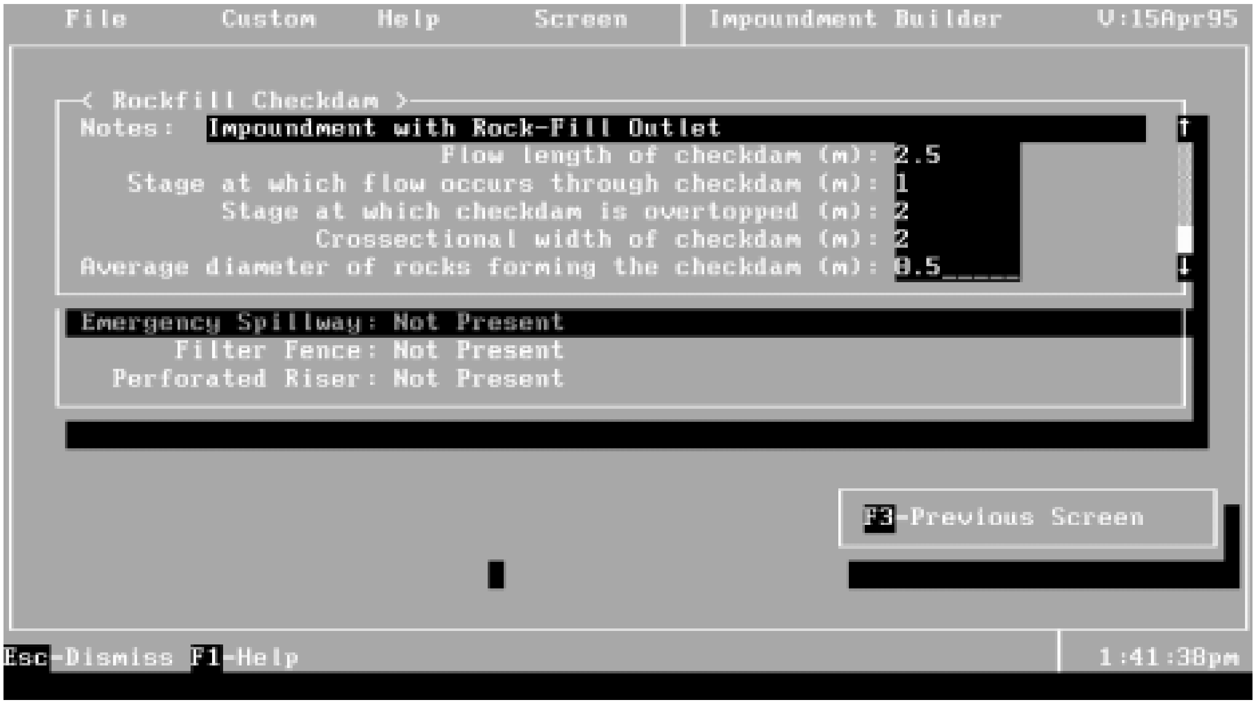

Figure 42. Rock-fill check dam definition screen of the impoundment builder

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APPENDIX

Estimated values for variables SUMRTM and SUMSRM

West Lafayette, Indiana, continuous simulations on a silt loam soil.

Cropping Management System	SUMRTM (kg/m^2)	SUMSRM (kg/m^2)
Continuous Tilled Fallow	0.0	0.0
Fall Moldboard Plow, Corn	0.03	0.18
Spring Chisel Plow, Corn	0.03	0.65
No-till Corn w/anhydrous app.	0.26	0.12
Fall Moldboard plow, Soybeans	0.03	0.13
Spring Chisel Plow, Soybeans	0.03	0.02
No-till, Soybeans	0.03	0.0
Continuous alfalfa	0.0	0.0
Continuous winter wheat	0.10	0.40

***Note**: Users can obtain values for their location by using the warm-up feature of the WEPP/Shell Interface and obtaining the SUMRTM and SUMSRM values from the created initial condition files.

Example Plant/Management Input Data File (1 ofe)

```
95.7
#
#       Created on 1Mar94 by `wman', (Ver. 24Feb94)
#       Author: Mark Nearing
#

1       # number of OFEs
5       # (total) years in simulation

##################
# Plant Section #
##################

1       # looper; number of Plant scenarios

#
#       Plant scenario 1 of 1
#
CORN2
 `Corn - Medium Fertilization Level'
 (from WEPP distribution database)

1       # `landuse' - <Cropland>
WeppWillSet
3.6     3       28      10      3.2     60      0       0.304   0.65    0.051
0.8     0.98    0.65    0.99    0       1700    0.5     2.6
2       # `mfo' - <Non-fragile>
0.016   0.016   25      0       0.219   1.52    0.25    0       30      0
0       3.5     0

######################
# Operation Section #
######################

1       # looper; number of Operation scenarios

#
#       Operation scenario 1 of 1
```

```
#
PLNTSC
 `Planter, no-till with smooth coulters'
 (from WEPP distribution database)

1        # `landuse' - <Cropland>
0.1      0.05     0
4        # `pcode' - <Other>
0.025    0.75     0.1      0.05     0.012    0.15     0

################################
# Initial Conditions Section #
################################

1        # looper; number of Initial Conditions scenarios
#
#        Initial Conditions scenario 1 of 1
#
NOTLCORN


1        # `landuse' - <Cropland>
1.2      0        999      77       0        0.95
1        # `iresd' - <CORN2>
1        # `mgmt' - <Annual>
999      0.05     0.95     0.034    1
1        # `rtyp' - <Temporary>
0        0        0.1      0.2      0
0.5      0
#############################
# Surface Effects Section #
#############################

1        # looper; number of Surface Effects scenarios

#
#        Surface Effects scenario 1 of 1
#
NOTLCORN



1        # `landuse' - <Cropland>
1        # `ntill' - <number of operations>
         130      # `mdate' - <5 /10>
         1        # `op' - <PLNTSC>
         0.1
         1        # `typtil' - <Primary>

#######################
# Contouring Section #
#######################

0        # looper; number of Contouring scenarios

#####################
# Drainage Section #
#####################

0        # looper; number of Drainage scenarios

###################
# Yearly Section #
###################

1        # looper; number of Yearly scenarios

#
```

```
#        Yearly scenario 1 of 1
#
CORNNOTL


1        # `landuse' - <Cropland>
1        # `itype' - <CORN2>
1        # `tilseq' - <NOTLCORN>
0        # `conset' - <NotUsed>
0        # `drset' - <NotUsed>
1        # `mgmt' - <Annual>
         250      # `jdharv' - <9 /7 >
         130      # `jdplt' - <5 /10>
         0.7
         6        # `resmgmt' - <None>

#######################
# Management Section #
#######################
CORNNOTL
No-till Corn

Medium Productivity Level
1        # `nofe' - <number of Overland Flow Elements>
         1        # `Initial Conditions indx' - <NOTLCORN>
5        # `nrots' - <rotation repeats..>
1        # `nyears' - <years in rotation>
#
#        Rotation 1 : year 1 to 1
#
         1        # `nycrop' - <plants/yr; Year of Rotation :  1 - OFE : 1>
                  1        # `YEAR indx' - <CORNNOTL>
#
#        Rotation 2 : year 2 to 2
#
         1        # `nycrop' - <plants/yr; Year of Rotation :  1 - OFE : 1>
                  1        # `YEAR indx' - <CORNNOTL>
#
#        Rotation 3 : year 3 to 3
#
         1        # `nycrop' - <plants/yr; Year of Rotation :  1 - OFE : 1>
                  1        # `YEAR indx' - <CORNNOTL>
#
#        Rotation 4 : year 4 to 4
#
         1        # `nycrop' - <plants/yr; Year of Rotation :  1 - OFE : 1>
                  1        # `YEAR indx' - <CORNNOTL>
#
#        Rotation 5 : year 5 to 5
#
         1        # `nycrop' - <plants/yr; Year of Rotation :  1 - OFE : 1>
                  1        # `YEAR indx' - <CORNNOTL>
```

Example 1 year Climate Input Data File (partial)

```
 4.10
   1   0   0
   Station:  DELPHI IN                                        CLIGEN VERSION 4.1
 Latitude Longitude Elevation (m) Obs. Years   Beginning year  Years simulated
    40.58   -86.67         204          44          95              1
 Observed monthly ave max temperature (C)
   1.4   3.8  10.1  17.7  23.6  28.5  30.1  28.9  25.7  19.3  10.9   3.7
 Observed monthly ave min temperature (C)
  -8.0  -6.2  -1.2   4.5   9.9  15.1  17.1  15.9  11.9   5.8   0.6  -5.1
 Observed monthly ave solar radiation (Langleys/day)
 125.0 189.0 286.0 373.0 465.0 514.0 517.0 461.0 374.0 264.0 156.0 111.0
 Observed monthly ave precipitation (mm)
  51.4  49.0  67.4  91.3  94.4 100.3 108.9  93.0  72.5  69.3  71.3  65.3
 da mo year  prcp  dur   tp     ip  tmax  tmin  rad  w-vl w-dir  tdew
             (mm)  (h)               (C)   (C) (l/d) (m/s)(Deg)   (C)
  1  1   95   8.7  2.42 0.02   1.01  -1.1  -8.9  54.  6.2  286.  -5.1
  2  1   95   0.0  0.00 0.00   0.00  -6.4 -13.7  95.  6.4  271. -10.1
  3  1   95   3.2  1.64 0.07   1.01  -4.1 -13.3 146.  3.6  142. -19.4
  4  1   95   0.0  0.00 0.00   0.00  10.4 -14.7 117.  6.7  292. -18.8
  5  1   95   0.0  0.00 0.00   0.00   0.9  -0.4  89.  6.1  257.  -0.4
  6  1   95   0.0  0.00 0.00   0.00   8.4   3.1  82.  6.6  264.   1.1
  7  1   95   0.0  0.00 0.00   0.00  -3.9  -6.7 103.  4.1   68.  -7.5
  8  1   95   0.0  0.00 0.00   0.00   7.2  -2.3 151.  2.8  187.  -6.1
  9  1   95  21.9  0.86 0.80   4.80   1.5  -0.9 143.  6.1    9.  -2.9
 10  1   95   0.0  0.00 0.00   0.00   4.1 -10.9 134.  4.3  311.  -3.6
 11  1   95   0.0  0.00 0.00   0.00   4.0 -13.5 163.  0.0    0. -13.0
 12  1   95   0.0  0.00 0.00   0.00  -2.0 -12.2 189.  3.6  335.  -7.2
 13  1   95   0.0  0.00 0.00   0.00  -4.6  -7.2 119.  8.2  301.  -6.0
 14  1   95   0.0  0.00 0.00   0.00  -7.6 -10.1  79.  5.7  235. -11.7
 15  1   95   0.0  0.00 0.00   0.00  -5.8  -8.8  94.  4.4  326. -21.2
 16  1   95   0.0  0.00 0.00   0.00  -3.8 -12.1  98.  4.6   99. -14.3
 17  1   95   0.0  0.00 0.00   0.00   0.6  -4.0 121.  3.8  270. -12.0
 18  1   95   0.0  0.00 0.00   0.00   2.2 -15.2 104.  9.5  298. -14.1
```

Example single storm Climate Input Data File

```
 4.10
   2   0   0
   Station:  DELPHI IN                                        CLIGEN VERSION 4.1
 Latitude Longitude Elevation (m) Obs. Years   Beginning year  Years simulated
    40.58   -86.67         204          44           1              1
 Observed monthly ave max temperature (C)
   1.4   3.8  10.1  17.7  23.6  28.5  30.1  28.9  25.7  19.3  10.9   3.7
 Observed monthly ave min temperature (C)
  -8.0  -6.2  -1.2   4.5   9.9  15.1  17.1  15.9  11.9   5.8   0.6  -5.1
 Observed monthly ave solar radiation (Langleys/day)
 125.0 189.0 286.0 373.0 465.0 514.0 517.0 461.0 374.0 264.0 156.0 111.0
 Observed monthly ave precipitation (mm)
  51.4  49.0  67.4  91.3  94.4 100.3 108.9  93.0  72.5  69.3  71.3  65.3
 da mo year  prcp  dur   tp     ip  tmax  tmin  rad  w-vl w-dir  tdew
             (mm)  (h)               (C)   (C) (l/d) (m/s)(Deg)   (C)
  1  1    1 160.0  6.00 0.40   2.86  -1.1  -8.9  54.  6.2  286.  -5.1
```

Example Slope Input Data File (1 ofe)

```
95.7
1
100      100
3        100
0.0,0.0   0.5,0.09   1.0,0.0
```

Example Soil Data File (1 ofe)

```
95.7
#
#        Created on 06Jul95 by `WSOL', (Ver. 15Apr95)
#        Author: me
#
Soil Example comment line
1        1
'CARIBOU' 'loam'   6        0.14     0.34     4.78317e+006        0.00523  2.93     5.95
200      38.8     13.7     3.76     13.2     32.9
300      44.7     14       2.31     12.5     38.9
400      43.2     12.3     1.49     9.8      53
640      64.5     7.7      0.73     6.6      48.8
1040     36.3     19.2     0.37     10.8     63
1430     36.3     19.2     0.41     10.2     46
```

Example Depletion-level Sprinkler Irrigation Input File (2 year, 2 ofe)

```
95.7
   2    1    1
0.013 0.025
   1 0.176E-05 1.3  0.5  1.0  175   94  185   94
   2 0.176E-05 1.3  0.5  1.0  175   94  185   94
   1 0.176E-05 1.3  0.5  1.0  185   94  195   94
   2 0.176E-05 1.3  0.5  1.0  185   94  195   94
   1 0.176E-05 1.3  0.5  1.0  175   95  185   95
   2 0.176E-05 1.3  0.5  1.0  175   95  185   95
   1 0.176E-05 1.3  0.5  1.0  185   95  195   95
   2 0.176E-05 1.3  0.5  1.0  185   95  195   95
   1 0.000E+00 0.0  0.0  1.0    0    0    0    0
   2 0.000E+00 0.0  0.0  1.0    0    0    0    0
```

Example Fixed-date Sprinkler Irrigation Input File (2 year, 2 ofe)

```
95.7
   2    1    2
   1  175   94
   2  175   94
.176E-05 0.0032  1.0
   1  185   94
.176E-05 0.0032  1.0
   2  185   94
.176E-05 0.0032  1.0
   1  195   94
.176E-05 0.0032  1.0
   2  195   94
.176E-05 0.0032  1.0
   1    0    0
.176E-05 0.0032  1.0
   2    0    0
```

Example Depletion-level Furrow Irrigation Input File (2 year, 2 ofe)

```
95.7
   2    2    1
0.013
   1    2 0.315E-04 14400.  1  0.9  0.5  175   94  185   94
   2    2 0.315E-04 14400.  1  0.9  0.5  175   94  185   94
   1    2 0.315E-04 14400.  1  0.9  0.5  195   94  205   94
   2    2 0.315E-04 14400.  1  0.9  0.5  195   94  205   94
   1    2 0.315E-04 14400.  1  0.9  0.5  175   95  185   95
   2    2 0.315E-04 14400.  1  0.9  0.5  175   95  185   95
   1    2 0.315E-04 14400.  1  0.9  0.5  195   95  205   95
   2    2 0.315E-04 14400.  1  0.9  0.5  195   95  205   95
   1    0 0.000E+00    0.  0  0.0  0.0    0    0    0    0
   2    0 0.000E+00    0.  0  0.0  0.0    0    0    0    0
```

Example Fixed-date Furrow Irrigation Input File (2 year, 2 ofe)

```
95.7
   2    2    2
   1  175   94
   2  175   94
   2
.315E-03    0. 14400.
.315E-03 43200. 57600.
   1  185   94
   2
.315E-03    0. 14400.
.315E-03 43200. 57600.
   2  185   94
   1
.158E-03    0. 14400.
   1  195   94
   1
.158E-03    0. 14400.
   2  195   94
   1
.710E-04    0. 28800.
   1  175   95
   1
.710E-04    0. 28800.
   2  175   95
   2
.315E-03    0. 14400.
.315E-03 43200. 57600.
   1  185   95
   2
.315E-03    0. 14400.
.315E-03 43200. 57600.
   2  185   95
   1
.158E-03    0. 14400.
   1  195   95
   1
.158E-03    0. 14400.
   2  195   95
.710E-04    0. 28800.
   1    0    0
   1
.710E-04    0. 28800.
   2    0    0
```

Sample hillslope run input file

```
         1         2         3         4         5
1234567890123456789012345678901234567890123456789012345678 90
95.7                                                # WEPP: version
Yes                                                 # WEPP: Exit on errors?
1                                                   # WEPP: Continuous simulation
1                                                   # WEPP: Mode
Yes                                                 # Hill: Create pass file?
E:\WEPP\INPUT\HILL\PASS\TWO.hil                     # Hill: Pass output
1                                                   # Hill: Annual; abbreviated
No                                                  # Hill: Warmup output?
E:\WEPP\OUTPUT\SUMMARY\TWO.sum                      # Hill: Summary output
No                                                  # Hill: Water output?
No                                                  # Hill: Crop output?
No                                                  # Hill: Soil output?
Yes                                                 # Hill: Plotting output?
E:\WEPP\OUTPUT\PLOT\TWO.plo                         # Hill: Plotting output
Yes                                                 # Hill: Graphics output?
E:\WEPP\OUTPUT\WGR\DATA\TWO.wgr                     # Hill: Graphics output
No                                                  # Hill: Event/OFE output?
No                                                  # Hill: Event/OFE output?
No                                                  # Hill: Event/OFE output?
No                                                  # Hill: Winter output?
Yes                                                 # Hill: Yield output?
E:\WEPP\OUTPUT\YIELD\TWO.yld                        # Hill: Yield output
E:\WEPP\INPUT\MAN\DATA\CBWNTMF.man                   # Hill: Management input
E:\WEPP\INPUT\SLOPE\DATA\UNIFORM.slp                # Hill: Slope input
E:\WEPP\INPUT\CLIMATE\DATA\WEST_LAF.cli             # Hill: Climate input
E:\WEPP\INPUT\SOIL\DATA\CARIBOU.sol                 # Hill: Soil input
0                                                   # Hill: No irrigation
2                                                   # Hill: Number of years
0                                                   # Hill: All events
```

Complex Slope File for 2 Channel Watershed

```
95.7
#
#       Created on 11Mar94 by `WSLP', (Ver. 11Mar94)
#       Author: Your Name, Phone #, e-mail address, etc..
#
2
200     5
7       100
0,0 0.2,0.05 0.37,0.09 0.55,0.02 0.71,0.06 0.88,0.03 1,0.01
200     5
7       100
0,0 0.2,0.05 0.37,0.09 0.55,0.02 0.71,0.06 0.88,0.03 1,0.01
```

Structure File with 2 Channels

```
95.7
2        # number of channels
1        # IPEAK : EPIC
1.50     # Length to width ratio
First channel
First series of tests

1        # shape : triangular
2        # control structure : uniform
1        # friction slope : CREAMS
4        # output type
5.0      0.030
0.040    0.0082    3.5     0.3      0.3
0.026    5.0      0.060
Second channel
First series of tests

1        # shape : triangular
2        # control structure : uniform
1        # friction slope : CREAMS
4        # output type
5.0      0.030
0.042    0.0082    3.5     0.3      0.3
0.026    5.0      0.060
```

Impoundment File with 2 Impoundments

```
95.7
2   Number of Impoundments
Test Impoundment With Rock Fill
Test file
August 1995
    0
    0    0
    0    0
    1
Impoundment With Rock Fill Outlet
       2.5       1.0       2.0       2.0      0.50
    0
    0
    0
      2.00       1.0      0.00       0.1     0.009
    2    2
   14
       0.0     250.0      12.0
# Stage data
       1.0       2.0       3.0       4.0       5.0       6.0       7.0
       8.0       9.0      10.0      12.0      14.0      16.0      18.0
# Area data
    450.00     650.0     825.0    1000.0    1125.0    1250.0    1375.0
   1500.00    1650.0    1800.0    2075.0    2315.0    2545.0    2775.0
# Length data
      16.0      19.0     21.00      23.0      24.5      26.0      27.5
      29.0      30.0      31.0      33.0      35.0      37.0      38.0
Test Impoundment With Emergency Spillway Only
Test file
```

```
August 1995
0      # Drop Spillway: Not Present
0      0      # Culvert: Not Present
0      0      # Culvert: Not Present
0      # Rock-fill Check dam: Not Present
1      # Emergency Spillway: Open Channel
Impoundment With Open Channel Outflow Structure
       6.0957 3      0.1    4.87656       6.0957
       0.04   12.191 0      3.048  0.25
0      # Filter Fence: Not Present
0      # Perforated Riser: Not Present
6.1    0.876  4.75   0.1    0.00086
2      2
   14
      0.0     250.0      12.0
# Stage data
      1.0       2.0       3.0       4.0       5.0       6.0       7.0
      8.0       9.0      10.0      12.0      14.0      16.0      18.0
# Area data
   450.00     650.0     825.0    1000.0    1125.0    1250.0    1375.0
  1500.00    1650.0    1800.0    2075.0    2315.0    2545.0    2775.0
# Length data
     16.0      19.0     21.00      23.0      24.5      26.0      27.5
     29.0      30.0     31.0       33.0      35.0      37.0      38.0
```

FALLOW DEFAULT SCENARIO-100 YEAR FILE

DATE	OPERATION	OPERATION NAME IN WEPP LIST
2/15	Tandem disk	DITAF19
3/15	Tandem disk	DITAF19
4/15	Tandem disk	DITAF19
5/15	Tandem disk	DITAF19
6/15	Tandem disk	DITAF19
7/15	Tandem disk	DITAF19
8/15	Tandem disk	DITAF19
9/15	Tandem disk	DITAF19
11/1	Moldboard plow	MOPL
11/1	Tandem disk	DITAF19

File name: FALLOW

WEPP DEFAULT SCENARIOS-100 YEAR CORN-BEAN ROTATIONS

Corn-Bean rotation. 100 year data files. Three levels of productivity. Three tillage systems. Corn first year of rotation.

LOW RESIDUE, HIGH TILLAGE SCENARIO AND FILE NAMES

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	4/15	Tandem disk	DITAF19
	4/25	Tandem disk	DITAF19
	5/1	Plant corn	PLDDO
	6/1	Cultivate	CULTMUSW
	6/15	Cultivate	CULTMUSW
	10/15	Harvest corn	
	11/1	Moldboard plow	MOPL
Year 2	4/15	Tandem disk	DITAF19
	5/5	Tandem disk	DITAF19
	5/10	Plant soybeans	PLDDO
	6/10	Cultivate	CULTMUSW
	6/25	Cultivate	CULTMUSW
	10/1	Harvest soybeans	
	11/1	Chisel plow	CHISCOTW

File name: CBCOLF Low fertilization, low productivity
File name: CBCOMF Medium fertilization, medium productivity
File name: CBCOHF High fertilization, high productivity

MEDIUM RESIDUE, MEDIUM TILLAGE SCENARIO AND FILE NAMES

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	4/15	Field Cultivate	FCPTS12+
	5/1	Plant corn	PLDDO
	10/15	Harvest corn	
	11/1	Chisel plow	CHISCOTW
Year 2	4/25	Tandem disk	DITAF19
	5/10	Plant soybeans	PLDDO
	10/1	Harvest soybeans	

File name: CBMULF Low fertilization, low productivity
File name: CBMUMF Medium fertilization, medium productivity
File name: CBMUHF High fertilization, high productivity

HIGH RESIDUE, NO-TILL SCENARIO AND FILE NAMES

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	5/1	Plant corn	PLNTRC
	6/1	Anhydrous applied	ANHYDROS
	10/15	Harvest corn	
Year 2	5/10	Plant soybeans	DRNTFLSC
	10/1	Harvest soybeans	

File name: CBNTLF Low fertilization, low productivity
File name: CBNTMF Medium fertilization, medium productivity
File name: CBNTHF High fertilization, high productivity

WEPP DEFAULT SCENARIOS-99 YEAR CORN-BEAN-WHEAT ROTATIONS

Corn-Bean-Wheat rotation. 99 year data files. Three levels of productivity. Three tillage systems. Corn first year of rotation.

LOW RESIDUE, HIGH TILLAGE SCENARIO AND FILE NAMES

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	4/15	Tandem disk	DITAF19
	4/25	Tandem disk	DITAF19
	5/1	Plant corn	PLDDO
	6/1	Cultivate	CULTMUSW
	6/15	Cultivate	CULTMUSW
	10/15	Harvest corn	
	11/1	Moldboard plow	MOPL
Year 2	4/15	Tandem disk	DITAF19
	5/5	Tandem disk	DITAF19
	5/10	Plant soybeans	PLDDO
	6/10	Cultivate	CULTMUSW
	6/25	Cultivate	CULTMUSW
	10/1	Harvest soybeans	
	10/5	Chisel plow	CHISCOTW
	10/10	Tandem disk	DITAF19
	10/12	Field cultivate	FCSTACDS
	10/15	Drill wheat	DRSDO
Year 3	7/1	Harvest wheat	
	9/1	Moldboard plow	MOPL

File name: CBWCOLF Low fertilization, low productivity
File name: CBWCOMF Medium fertilization, medium productivity
File name: CBWCOHF High fertilization, high productivity

MEDIUM RESIDUE, MEDIUM TILLAGE SCENARIO AND FILE NAMES

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	4/25	Tandem disk	DITAF19
	5/1	Plant corn	PLDDO
	10/15	Harvest corn	
	11/1	Chisel plow	CHISCOTW
Year 2	5/5	Tandem disk	DITAF19
	5/10	Plant soybeans	PLDDO
	10/1	Harvest soybeans	
	10/12	Field cultivate	FCSTACDS
	10/15	Drill wheat	DRSDO
Year 3	7/1	Harvest wheat	
	9/1	Chisel plow	CHISCOTW

File name: CBWMULF Low fertilization, low productivity
File name: CBWMUMF Medium fertilization, medium productivity
File name: CBWMUHF High fertilization, high productivity

HIGH RESIDUE, NO-TILL SCENARIOS

	DATE	OPERATION	OPERATION NAME IN WEPP LIST
Year 1	5/1	Plant corn	PLNTRC
	6/1	Anhydrous applied	ANHYDROUS
	10/15	Harvest corn	
Year 2	5/10	Plant soybeans	DRNTFLSC
	10/1	Harvest soybeans	
	10/15	Drill wheat	DRNTFLSC
Year 3	7/1	Harvest wheat	

File name: CBWNTLF Low fertilization, low productivity
File name: CBWNTMF Medium fertilization, medium productivity
File name: CBWNTHF High fertilization, high productivity

Files and Directory Structure Installed with the WEPP Shell Interface

\WEPP\HILL.BAT	-entry-point for using the WEPP hillslope shell	
\WEPP\SHED.BAT	-entry-point for using the WEPP watershed shell	
\WEPP\KIDS.BAT	-Utility that creates WEPP configuration file(WEPPKIDS.DEF)	
\WEPP\WEPPKIDS.DEF	-common paths and defaults file	
\WEPP\XIP.BAT	-required installation file	
\WEPP\NEWINFO.TXT	-installation information	
\WEPP\UTIL	<DIR>	Utilities required by interface
\WEPP\\INPUT\SHED	<DIR>	- the WEPP watershed interface program
\DATA	<DIR>	-Structure files for watershed program
\PASS	<DIR>	-Files passed from hillslope to watershed portions of WEPP
\RUN	<DIR>	-runfiles and temp files for interfacing with WEPP watershed
WEPP\INPUT\HILL	<DIR>	
\DATA	<DIR>	-Hillslope scenario information
\PASS	<DIR>	-Files passed from hillslope to watershed portions of WEPP
\RUN	<DIR>	-runfiles and temp files for interfacing with WEPP hillslope
\MAN	<DIR>	- WMAN management file builder and files
\SLOPE	<DIR>	- WSLP slope builder and files
\SOIL	<DIR>	- WSOL soil builder and files
\CLIMATE	<DIR>	- CLIGEN climate builder and files
\SHED	<DIR>	- WSHD watershed builder and files
\IRR	<DIR>	- WIRR irrigation builder and files
\IMPOUND	<DIR>	- WIMP impoundment file builder and files
\CHANNEL	<DIR>	- WCHN channel file builder and files
\WEPP\OUTPUT	<DIR>	- output files and viewers...
\WGR	<DIR>	- WWGR graphical viewer
\PLOT	<DIR>	- EGRAPH graphical viewer
\EVENT	<DIR>	- event/ofe output files
\WINTER	<DIR>	- winter routine output files
\YIELD	<DIR>	- plant yield output files
\ERROR	<DIR>	- error/warning output files
\SINGLE	<DIR>	- single-storm output files
\SUMMARY	<DIR>	- soil loss summary output files
\SOILS	<DIR>	- water/plant/soil output files
\RANGE	<DIR>	- rangeland/animal output files
\WSHED	<DIR>	- watershed output files
\DUMPS	<DIR>	- destination of graphic dumps from Graphics output.
\WEPP\WEPP	<DIR>	- WEPP program location

Sample Minimum Configuration Files

AUTOEXEC.BAT

```
SET MOUSE=C:\WINDOWS\MOUSE
LH C:\WINDOWS\MOUSE
SET PATH=C:\DOS;C:\;........
SET WEPP_KIDS_DEF=C:\WEPP\DIST
```

CONFIG.SYS

```
DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE ram
BUFFERS=20,0
FILES=50
DOS=HIGH,UMB
LASTDRIVE=K
FCBS=4
DEVICE=C:\DOS\SETVER.EXE
DEVICE=C:\DOS\ANSI.SYS
STACKS=0,0
SHELL=C:\DOS\COMMAND.COM C:\DOS /E:3500 /P
```

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RESEARCH ARTICLE

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Predicting gully erosion using landform evolution models: Insights from mining landforms

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Abstract

Incision as a result of fluvial erosion is an important process to model when simulating landform evolution. For gullies, it is apparent that coupled with the processes that cause incision there must be a range of processes that stop incision. Once started, rills and gullies will grow infinitely without a reduction in support area and/or being arrested by deposition and armouring. Some of these processes have been well studied under the heading of inter-rill erosion. Other limiting processes are related to the shape of the landform and how downstream deposition areas are linked geomorphically to the upstream gullies. Armouring is also an important process that reduces gully incision and extension, where the gully erodes to bedrock and the resistant base limits further development. Post-mining landscapes are new surfaces with new materials and provide the opportunity to examine gully initiation, extension and stabilization. The work presented here has largely been driven by the mining industry, where there has been a need to assess erosion over hazardous wastes like mine tailings and low-level nuclear waste. We demonstrate the usefulness of computer-based landscape evolution models and the more recent soilscape models (that include both surface and subsurface processes) to understand both fluvial and diffusive processes as well as armouring in a digital elevation model framework (as well as landscape evolution). Landscape evolution models provide insights into complex non-linear systems such as gullies. A key need is that of field data to parameterize and validate the models. It is argued that current models have more capability than field data available for parameterization and importantly the validation of model outputs.

KEYWORDS
armouring, diffusion, mine rehabilitation, mining, SIBERIA, soil erosion, weathering

1 | INTRODUCTION

Gullies are a global phenomenon and produce large volumes of sediment with the resultant excessive loads polluting local waters, having both short and long-term consequences. (Castillo & Gómez, 2016; Valentin et al., 2005). In the case of large gullies, they also prevent access across affected hillslopes and reduce landscape productivity (Blanco & Lal, 2008). They can also depressurize shallow groundwater systems, leading to a loss of soil water (Morisawa, 1968) and nutrients, with all the above factors leading to a loss of landscape functionality and productivity (Maurer & Gerke, 2016). There has been a large amount of global research to understand gullies in both the field and using models, and this work continues. However, for the majority of cases the exact cause of gullying may not be clear (Poesen et al., 2003; Rengers & Tucker, 2014; Vanmaercke et al., 2016; Willgoose, 2018).

There are a number of ways a gully can be defined. A gully is usually defined as a channel formed by erosion that hinders the movement of agricultural equipment and cannot be removed by tillage. A more numerical definition is that of a channel formed by erosion with a cross-sectional area of >0.09 m^2 (or 1 ft^2) (FAO, 1965; Poesen et al., 1996; USDA-SCS, 1966). The definition is extended here to include a well-defined channel with readily observable headcut and banks. What is clear, is that a gully will occur where there is concentrated flow and the shear stress of the flow is greater than the shear strength of the soil and underlying horizons. The gully will continue to incise and grow headwards until the supporting flow reduces (as supporting catchment area reduces) and there is insufficient sediment transport capacity. Lowering or incision will continue until the shear strength of the material prevents lowering by (1) bedrock being reached (in the case of natural systems) or (2) an armoured layer being generated (often the case in mining landscapes) on the floor and walls of the gullies. The gully channel can also widen and the slope reduce, with a resultant reduction in shear stress on the material. Lowering of the gully will also be prevented by the depositional material at the gully outlet (i.e. a fan), which controls the base level. It should also be recognized that tillage and plough layers can produce gullies in agricultural fields. However, we do not examine this issue here.

Attempts at understanding gully initiation, growth and stabilization, and ultimately removal have involved a range of approaches (Castillo & Gómez, 2016). These include empirical relationships examining slope, upslope area, soil properties, vegetation and soil shear strength coupled with hillslope and catchment topography. Coupled, physical and empirical models have been developed mostly focusing on one site or region (Castillo & Gómez, 2016; Douglas-Mankin et al., 2020; Poesen et al., 2003; Rengers & Tucker, 2014; Rodríguez-Iturbe & Rinaldo, 1997). A new quasi-physical/empirical avenue appears to be machine learning and other mechanistic/statistical approaches such as neural networks (Conoscenti & Rotigliano, 2020; Rodríguez-Iturbe & Rinaldo, 1997), which are more attuned to prediction rather than understanding. The above approaches all provide valid and viable pathways to better understand and manage gullies, but a universal model that captures the complexity of gully initiation, growth and stabilization is yet to be developed.

Conceptually a gully occurs as a result of the catchment attempting to achieve a new equilibrium (Martín-Moreno et al., 2018; Poesen et al., 2003; Rengers & Tucker, 2014; Zapico et al., 2018b). The local hydrology has been disrupted by removal of vegetation, overgrazing and compaction, tillage (or a combination of these factors) or, in the case of post-mining landscapes, a new landscape has been created with material properties not suited to the imposed topography and climate. The gully will erode and the surrounding hillslope lower until the gully head ceases movement and the gully head and banks merge with the surrounding hillslope. However, in some cases, gullies pre-date knowledge of the area and it is not known why gullies occurred and continue to grow (Hancock & Evans, 2010). It could be that in some environments, such as badlands (Howard, 1994; Howard & Kerby, 1983) and other areas, gullies are part of the natural (non-human) system. While considerable effort has focused on gullies, there is a lack of detailed long-term studies that follow initiation, growth and stabilization.

FIGURE 1 A large gully on a rehabilitated mine caused by concentrated flow collected on top of the landscape being greater than the capacity of the contour bank. Runoff erodes the bank and moves downslope to the next contour bank, which is also unable to contain the increased flow as a cascading failure and is common on mine sites [Color figure can be viewed at wileyonlinelibrary.com]

Of particular focus here are mine sites, which in the case of most modern mines have large volumes of unconsolidated waste rock removed to access the economic material (e.g. coal, gold, iron ore). This material, while part of the natural environment, is a heterogeneous mix that has different mineralogy, chemistry and particle size to that of the surface of the pre-mining landscape. Post-mining, the landscape is required to be reconstructed so that at the most basic level, the newly created landscape is safe, stable and non-polluting, and geomorphologically and ecologically integrates with its surroundings. However, the majority of these landforms are constructed with linear hillslopes and engineered structures such as contour drains to manage runoff. These are considered to be transient landforms (Hancock & Willgoose, 2002), which are defined as a landform not in an equilibrium or time-invariant form (Strahler, 1952, 1964). Gullying is an erosion process by which the transient landform evolves towards a more stable form.

An issue with mining is that in the majority of cases (except quarries and iron ore mines) the mineral of economic interest is a small fraction of the volume of material exhumed. The removal of the waste increases the volume of material by approximately one-third, resulting in a landscape that has considerably more volume than that of the pre-mine landscape. It is often not economic to place the exhumed material in the mined-out pit. This results in a landscape with greater relief, longer and steeper slopes, and often comprised of a material that has a coarse texture with low water-holding capacity, few plant nutrients and in some cases it may be chemically hostile (i.e. high salt content, high sulphide content). Therefore, these post-mining landscapes can be highly erodible and prone to gullying (Figure 1).

Post-mining landscapes are commonly constructed with linear hillslopes, with runoff controlled by engineered structures such as contour banks (Figures 1 and 2). Linear hillslopes are simple to construct and the use of contour banks to control erosion comes from agriculture, where they are constructed to control water and sediment and are managed by the landholder. It is well recognized that the contour banks will concentrate flow and over time the contour bank will overtop with concentrated flow, creating gullies (Figure 1). This requires remedial work, which is ongoing for the landholder. There are few landscapes in nature that have linear hillslopes and contour banks, and the gullying that occurs on these landscapes is the hillslope evolving to a new and more stable form (Martín-Moreno et al., 2018).

Understanding the cause and growth of gullies has been attempted by a variety of approaches (Castillo & Gómez, 2016; FAO, 1965; USDA-SCS, 1966). This paper focuses on numerical approaches and models. Numerical models use relationships between sediment fluxes and erosion control factors such as rainfall, runoff velocity and soil shear stress.

Computer-based landscape evolution models (LEMs) are a further modelling tool to assess the evolution of gullies (with the

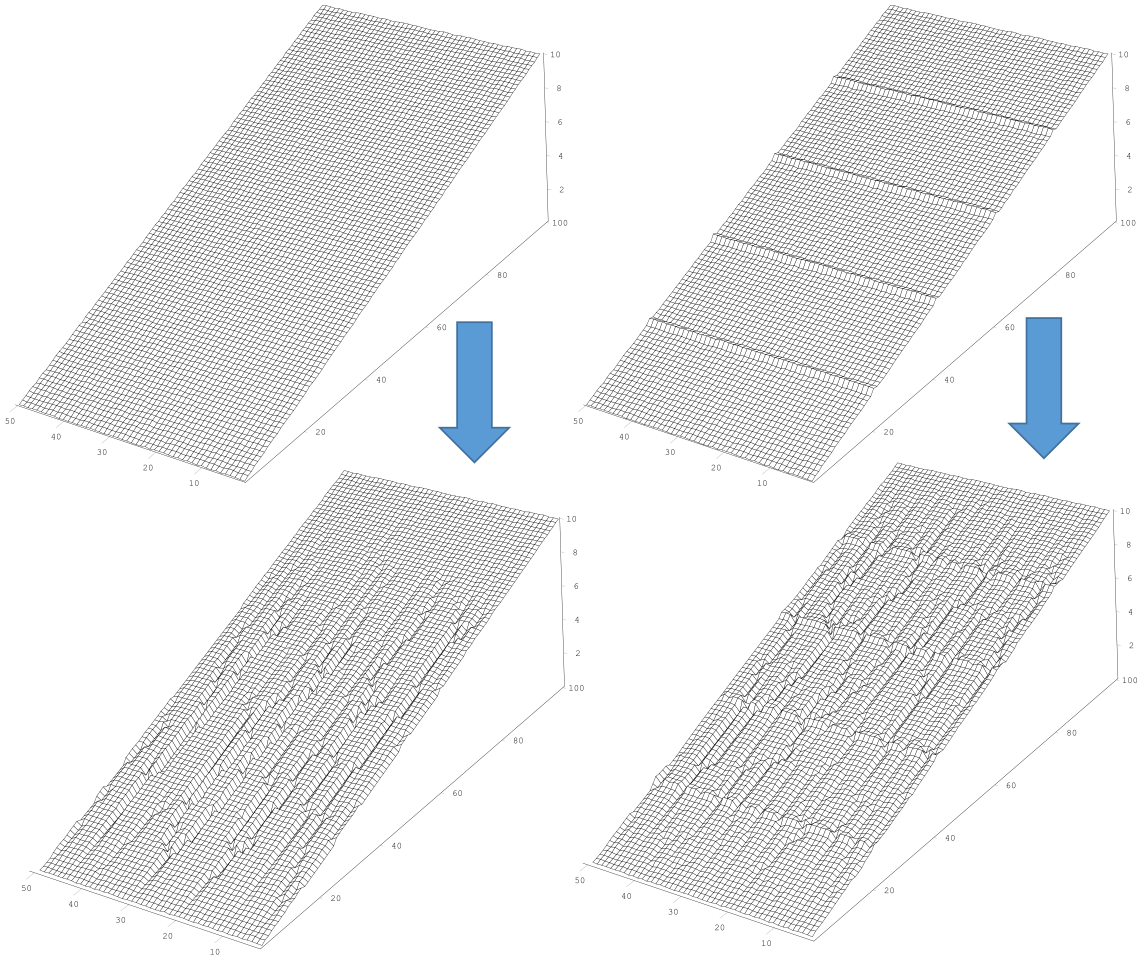

FIGURE 2 A simple linear hillslope (left) and the same landscape with contour banks (right) proposed for a post-mining landscape. The SIBERIA model was run for 100 years with material properties calibrated for the site. The results demonstrate extensive gullying for both slopes. In this case, contour banks are demonstrated to have little effect on erosion control (assuming no maintenance) [Color figure can be viewed at wileyonlinelibrary.com]

focus here being post-mining landscapes). For mining landscapes, a current or proposed design can be examined and potential failure points and timescales of erosion (gullies) in the landscape can be highlighted. These models provide further ability to understand gullying in terms of the science of initiation through to stabilization, as well as being valuable for environmental management. The aim of this paper is to review and demonstrate the use of LEMs for qualitatively and quantitatively predicting gully initiation, growth and stabilization, with a focus on highly disturbed mining environments. Mining environments provide a 'new' surface without many of the complexities of natural systems. They therefore both offer insights into the gully process and provide the ability to test and develop our models.

The work presented here represents several decades of development, testing and application of LEMs to better understand both natural and disturbed landscapes (the focus here being post-mining landscapes). The paper is structured such that models and modelling approaches are discussed next, then gully definitions. Model form, model inputs and calibration, highlighting LEM features and functionality are then described. We provide a background to testing and evaluating LEMs, an important aspect given that these models are now routinely used by industry. Examples of the use of LEMs for assessing post-mining landscapes are provided, then we demonstrate how LEMs can be used to better design post-mining landscapes. Finally, suggestions for model development and data needs are discussed, before concluding.

2 | MODELLING APPROACHES

Numerical models have long been used to predict soil erosion. Models such as the Revised Universal Soil Loss Equation (RUSLE) and Water Erosion Prediction Program (WEPP) have been used in a variety of agricultural and other environments (Brooks et al., 2014; Evans, 2000; Evans & Loch, 1996; Hazelton & Murphy, 2007; Wischmeier & Smith, 1978; https://www.fs.usda.gov/ccrc/tools/watershed-erosion-prediction-project). Other models include CREAMS (Knisel, 1980), GUEST (Misra & Rose, 1995), EUROSEM (Morgan et al., 1993), LISEM (De Roo et al., 1995), KINEROS (Woolhiser et al., 1990), WEPP (Flanagan & Nearing, 1995; Lane & Nearing, 1989) and the models of Sidorchuk (1999). More advanced and integrated models such as SedNet (Gibson & Hancock, 2019; Kinsey-Henderson et al., 2005; Wilkinson et al., 2008) allow a catchment focus at spatial scales far greater than that using the RUSLE or WEPP.

Other approaches use a topographic threshold to predict gully location based on local slope gradient (S) versus upslope contributing area (A) (Montgomery & Dietrich, 1992; Nachtergaele et al., 2001; Patton & Schumm, 1975; Wilson & Gallant, 2000) (as they act as proxies for flow velocity and discharge). Other approaches based on volume and length of the gully channels have been used to predict gully location (Desmet et al., 1999; Moore et al., 1988; Vandaele et al., 1996).

These approaches have all led to greater understanding and insights into both soil erosion and gullying. However, many of these models cannot simulate incision (by gullies) and deposition, which may constrain predictive capacity.

2.1 | Modelling gullies using landscape evolution models

One avenue for understanding gully initiation, expansion and evolution is to employ computer-based LEMs. A summary of LEMs, together with strengths and weaknesses, can be found in the following references: Barnhart et al. (2020a), Coulthard (2001), Coulthard and Skinner (2016), Temme et al. (2013), Tucker (2009), Tucker and Hancock (2010) and Willgoose (2018). LEMs have been used extensively to provide predictions of long-term landscape development (Barnhart et al., 2020b,c,d; Hobley et al., 2017; Schoorl et al., 2000, 2002; Temme et al., 2011; Tucker & Hancock, 2010; Tucker et al., 2001; Willgoose, 2005, 2018). Other long-term applications of LEMs include nuclear waste repositories, where materials need to be contained for millennia (Atchley et al., 2019). These studies also have a focus on gullies. Here we argue that LEMs are well placed to be a valuable predictive tool for gully initiation and evolution. At the most basic level, LEMs provide erosion rates (i.e. t ha^{-1} $year^{-1}$) as well as predictions of points of initiation based on topography derived from a digital elevation model (DEM) (Figure 2).

A strength of using LEMs is that they use a DEM to represent the landscape surface. This has the advantage that the landscape can be visualized through time as the model erodes some areas and deposits sediment in others, producing an evolving landform. This allows volume calculations, erosion rates, gully location and extent to be determined, something not possible with other models such as the RUSLE and WEPP. Depending on the site and process of interest, LEMs can reproduce rill erosion, gully erosion and sheetwash erosion, all of which are integrated across a landscape to predict landscape evolution at temporal resolutions varying from hourly to geological timescales.

From an engineering design perspective, LEMs allow landscapes to be designed and evaluated to reduce erosion and assess long-term landscape behaviour. For example, a landscape can be assessed for its behaviour over a range of slope angles and slope lengths and the design landscape modified accordingly based on the model predictions to optimize construction costs and erosional stability. A case study where linear hillslopes were to be employed demonstrates the usefulness of LEMs (Figure 2). Here, a hillslope 100 m long with a 10% slope was examined for the cost-effectiveness of erosion control structures such as contour banks. The result at 10 years demonstrates that similar erosion occurs with or without contour banks. Concave slopes (without a drainage line imposed) were also found to significantly reduce erosion, including gullying. The modelling assumed there would be no maintenance post-mine closure. Therefore, in this environment, contour banks add cost but are ineffective erosion control structures for a walk-away (no maintenance) landscape.

Many post-mining landforms are standalone structures with material dumped at angle of repose. The main issue with many of these landscapes is controlling runoff from the flat cap on the top of the structure (e.g. McGuire, 2017; Vincent, 2018). Figure 3 demonstrates a landscape where a safety bund has been placed on the edge of a waste rock dump and one without. Both demonstrate that the landscape will produce gullies over a 10-year period matching field observation (Figure 4). Considerable deposition can be observed at the foot of the slope. The model predictions qualitatively match those of many waste rock dumps.

Many landscapes, both natural and post-mining, consist of a variety of surfaces with different hydrological and erosion properties. LEMs allow spatially variable hydrology and erosion properties to be distributed across a landscape. This is particularly important for mine sites, with a variety of both natural (undisturbed) surfaces as well as those constructed of mined materials. This capability allows an assessment of the mine in the context of the greater landscape. Hancock

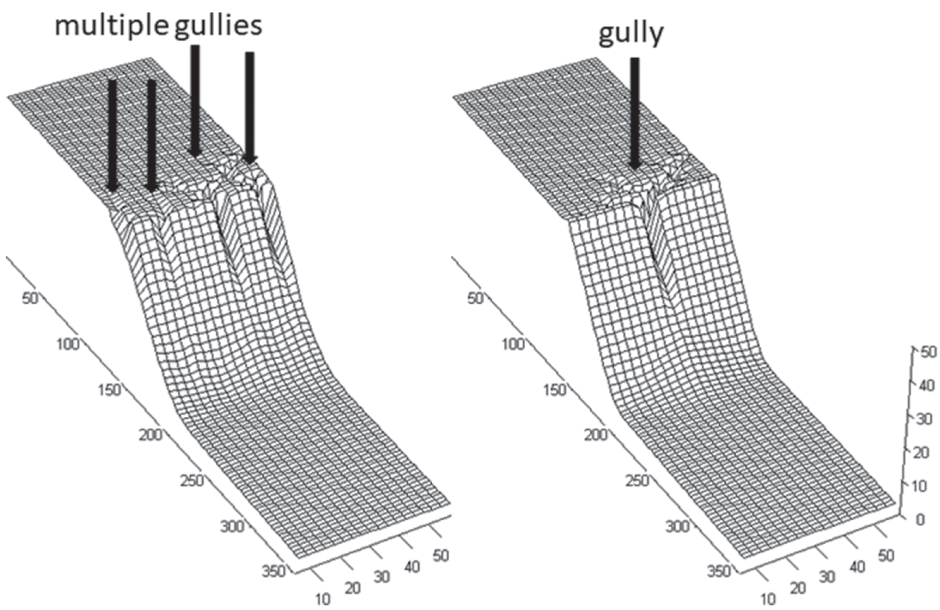

FIGURE 3 Angle of repose post-mining landform (left) and same landscape with a bund (raised bank) on the edge of the break in slope (right). All runoff is directed to the edge of the landscape and gullying occurs as a result of having a sufficiently large catchment area on top of the waste rock dump and directs it over the edge of the slope. Differences in deposition can be observed at the foot of the slope for the no raised bank and raised bank landform

FIGURE 4 (Top) Gullying on a post-mining landform with material placed at angle of repose. Runoff has collected on the flat cap and directed down the face of the unconsolidated material. (Bottom) Deposition is evident, which exerts base level control [Color figure can be viewed at wileyonlinelibrary.com]

et al. (2008a) demonstrated this capacity for a rehabilitated site and demonstrated that it was largely erosionally stable. This was the first demonstration of a LEM in an environment that consists of both natural and post-mining surfaces.

Topographically complex landscapes can be examined with LEMs. Many mining landscapes are constructed in a series of 'lifts', usually around 10 m in height (Figure 5). These, while simple and cost-effective to construct, bear little resemblance to a natural landscape. They consist of a series of linear hillslopes with an access road usually maintained at the base of each lift. The top of the waste rock dump (WRD) (cap) is usually a low-slope area (i.e. slopes 1–3%), designed to manage any rainfall (e.g. a store and release cover) (http://www.gardguide.com). Often, these landscapes encapsulate materials that need to be isolated from the surrounding environment (i.e. tailings, acid-generating material). Therefore, erosional stability and containment of any internally encapsulated material are of great importance. Figure 5 demonstrates a section of a standalone waste rock dump (i.e. it sits above the surrounding landscape) constructed of four lifts. Modelling demonstrates an extensive gully network (at 50 years) on the flat cap, with gullies occurring down the face of each lift. The gullying grows through time. Extensive deposition can be observed at the base of the slope, with armour at the base of the channel (Figure 6).

3 | DEFINING A GULLY: A LANDSCAPE EVOLUTION MODEL FRAMEWORK

The distinction between channels and hillslopes has long been discussed. A challenge has been to identify where channels and gullies start; the hillslope–channel transition (Willgoose, 2018). For the purposes here, a gully is defined as an erosion feature where the head and banks have a clear difference in slope from the surrounding ungullied hillslope and channel and can readily be discerned from the surrounding ungullied hillslope.

3.1 | Gully stability

The concept of a transition to gullying—or gully initiation threshold—was recognized by Horton (1945), followed by the work of Melton (1957). Morisawa (1968) presented a comprehensive examination of hillslope, channel and catchment processes, with gully initiation described in terms of thresholds. One of the earliest works to numerically address gully stability was Smith and Bretherton (1972), who determined a stability criterion that differentiated areas of the catchment where a small surface perturbation would grow (i.e. form a rill) and those areas where a small perturbation would disappear over time (i.e. the rill would infill). However, Smith and Bretherton's (1972) analysis focused on the process dominance not landform shape. Loewenherz-Lawrence (1991, 1994) advanced the work of Smith and Bretherton and demonstrated that upslope incision is dependent upon the diffusion coefficient for the surface material. The approach was useful for identifying rill initiation. Izumi and Parker (2000) and Parker and Izumi (2000) examined stability analysis of headcuts and channelization on hillslopes and found that a uniform approach does not work for all hillslope and channelized flow situations. Consequently, head identification and location are still an unresolved issue for temporally variable processes, where the regions of process dominance fluctuate depending on rainfall variability (i.e. climate variability) and where the hillslope shape (convexity and concavity) form lags these process variations (Bull & Kirkby, 1997).

An alternative (and simpler) approach for gully formation is when a runoff (*Q*), slope (*S*) and material properties (shear stress) threshold is exceeded (Bull & Kirkby, 1997). Upslope contributing area and slope have been examined in some detail in the context of channel and gully identification and initiation. Montgomery and Dietrich proposed an identification threshold for channels (Montgomery & Dietrich, 1988, 1989, 1992). Kirkby (1967) suggested that identification of channels and gully heads is not straightforward for all situations, with this topic involving considerable debate. However, a pragmatic consideration suggests that gully initiation must be driven by some relationship between area and slope. Assuming *S* and material properties are constant, only discharge needs to be determined to define the threshold of transition to a channel (i.e. the mean or dominant 1 in 2-year discharge) (Boardman et al., 2003). This dominant discharge will influence both runoff rate and peak discharge [β_3 and m_3; Equation 4)] and reflects the catchment area–slope relationship (Flint, 1974) rather than any change in channel head dynamics (e.g. Kirkby et al., 2003; Poesen et al., 2003).

Discharge is not commonly measured (for most gullies other than those being studied) and has made it difficult to identify a channel

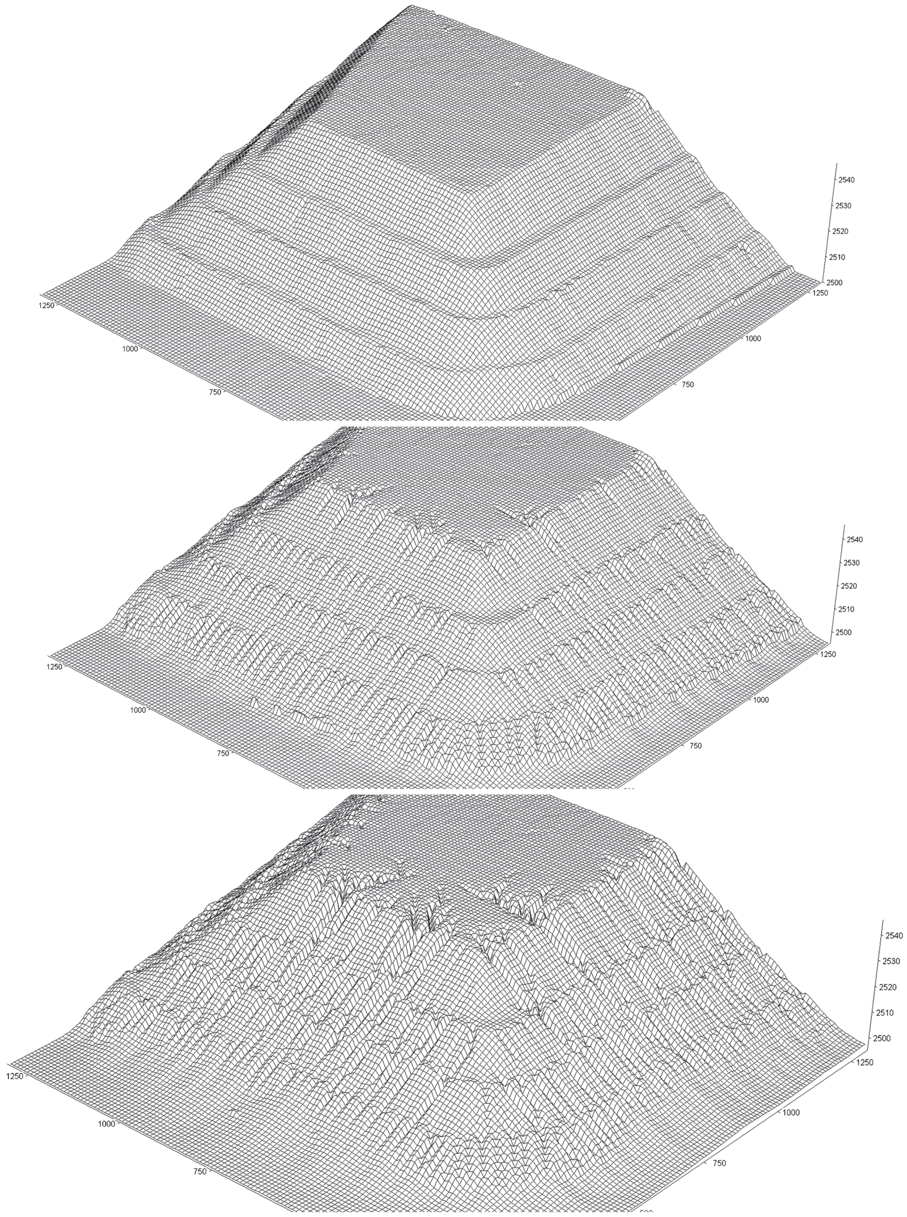

FIGURE 5 A section of a standalone waste rock dump constructed in a series of 10 m 'lifts' (top). The landscape after 50 years (middle) and 250 years (bottom) of erosion. Extensive gullying occurs on the top as well as the slopes. Considerable deposition can be observed at the base of the landscape

FIGURE 6 Armour developed at the base of a gully on a recently constructed post-mining landform. The surface is approximately 9 years old [Color figure can be viewed at wileyonlinelibrary.com]

head, with most typically defined in terms of contributing area and slope (e.g. Dewitte et al., 2015). Many have reported a similar relationship using the support area concept (e.g. Placzkowska et al., 2015) and use of a 'support area' with no slope dependency to define the hillslope–channel transition. In promotion of this concept, Prosser and Abernethy (1996) found a relationship between channel heads and shear stress if runoff was determined using saturation-excess generation rather than infiltration-excess runoff (i.e. discharge was not proportional to area). In general, most studies have demonstrated a channel head relationship related to area and slope, or some combination (Kirkby et al., 2003; Montgomery & Dietrich, 1988, 1989; Montgomery & Foufoula-Georgiou, 1993; Placzkowska et al., 2015; Torri & Poesen, 2014). However, there are questions as to whether this provides a gully head location (based on area and slope supporting the gully head), or the area and slope of the gully head simply exist within the generality of the catchment area–slope relationship.

Diffusive transport processes also require some consideration. Rain splash diffusion will suppress rilling in areas where diffusive transport is greater than the fluvial erosion. Typically, those regions are near the slope divide. Proceeding downslope, and as area draining through that point increases, fluvial erosion and water depth increase. At some point fluvial erosion dominates and rills are created (Loewenherz-Lawrence, 1994; McGuire et al., 2013; Smith & Bretherton, 1972). Further work is needed to resolve threshold and stability criteria, which include both fluvial and diffusive processes.

3.2 | Gully expansion

Gully/channel networks can expand rapidly (i.e. drainage density increases) after land disturbance (Poesen et al., 2003; Prosser et al., 1995; Wasson et al., 1998). During this extension, the majority of sediment comes from gully excavation. That is, land disturbance may result in either a higher discharge or a lower threshold. Therefore, if discharge increases then the region subjected to incision expands, with the potential for more gullies.

The strongest variable for gully advance rate is the contributing area to the gully head (Radoane et al., 1995; Rengers & Tucker, 2014; Vandekerckhove et al., 2001, 2003; Vanmaercke et al., 2016). Head-cut erosion will influence the velocity of the hillslope–channel transition of the extending networks, and the rate of infilling of a retreating network. However, there is no consensus about the details of gully extension dynamics (Poesen et al., 2003; Valentin et al., 2005).

For the gully to extend and maintain a well-defined headcut, there must be a step change in sediment transport at the gully head (to maintain the distinct head) and sediment downstream of the head must be removed from the extending gully head (e.g. Prosser et al., 1995). For the termination of gully advance, a change in slope and/or area, or some combination of the two (e.g. the gully continues to widen downstream of the head), must occur. While other factors—such as change in soil type and depth, together with the effect of vegetation (i.e. vegetation being breached/vegetation change) (Horton, 1945; Patton & Schumm, 1975; Prosser et al., 1995; Rengers & Tucker, 2014)—are recognized, they are mostly not considered. A point to note here is that many LEMs can be parameterized for such field complexity, but there is a paucity of field data to better understand these first-order controls. In many ways, mine sites with their infinite soil/material depth, uniform materials and absence of vegetation provide a simplified experimental environment.

To simulate these processes using a LEM is a simple process of determining where channels occur and then changing the dominant process modelled (keeping in mind the discussion above). However, a channel also has width and depth dimensions, and channel width is usually less than the grid resolution of the DEM—an issue that is not explicitly resolved (discussed later). LEMs have flow-routing algorithms (D8 and D-Infinity) (Tarboton, 1997). D8 routes water and sediment in the steepest downslope direction, where the choice is one of eight directions: N, S, E, W, NE, NW, SE, SW (hence the name D8). D-Infinity also determines the steepest downward slope using triangular facets centred on the grid cell of interest, with flow being proportioned between the two neighbouring cells that define the triangular facet. Using either of these methods, the LEM will adjust the flow direction according to erosion and deposition at each grid cell and for each time step. Several models use such flow direction algorithms together with independent hydrology models within the LEM. Therefore, DEM grid scale is important for modelling gullies such that landscape features are represented to best delineate and channel water and sediment routing (grid-scale issues are discussed later).

4 | MODEL FORM, INPUTS AND CALIBRATION

LEMs are discretized in both space and time. An important issue is the appropriate resolution required so that field processes are faithfully reproduced. At the basic level, a LEM requires two inputs. Firstly, hydrology and sediment transport data for calibration and secondly, a DEM of the landscape of interest are needed.

4.1 | Hydrology and sediment transport

A LEM generally involves an erosion model, such as

$$q_s = q_{sf} + q_{sd} \tag{1}$$

where q_s represents the rate of sediment transport per unit width, q_{sf} is the fluvial sediment transport term and q_{sd} is the diffusive transport term. All three terms generally have units of m^3 s^{-1} m^{-1} width.

Fluvial sediment transport (q_{sf}) is modelled via a formulation such as

$$q_{sf} = \beta_1 Q^{m_1} S^{n_1} \tag{2}$$

where Q represents the discharge per unit width (m^3 s^{-1} m^{-1} width), S is the slope in the steepest downslope direction (m m^{-1}), while n_1, m_1 and β_1 are calibrated parameters.

The diffusive creep or erosion term, q_{sd}, is defined as

$$q_{sd} = \begin{cases} D\left(\dfrac{S_t S}{S_t - S}\right) & \text{for all slopes} \\ DS & \text{for low slopes where } S \ll S_t \end{cases} \tag{3}$$

where D represents the diffusivity (m^3 s^{-1} m^{-1} width) which models land surface smoothing combining the effects of rain splash and creep, and S_t is usually the angle of repose of the material but can be set to any angle if required.

Many models do not directly calculate runoff (Q) and employ a relationship based on area (A) draining through a point via

$$Q = \beta_3 A^{m_3} \tag{4}$$

where β_3 represents the runoff rate constant while m_3 is the area exponent. Both factors require calibration for the particular field site with the parameters determined for the most geomorphical event (Knighton, 1998; Leopold et al., 1964; Willgoose, 2018). Consequently, models such as SIBERIA, which uses this approach, describe how the catchment is expected to look, on average, at any given time (Willgoose, 2012; Willgoose et al., 1991a,b,c). Other models, such as CAESAR-Lisflood (Coulthard et al., 2013), employ site rainfall at hourly time steps and can provide hourly timescale landscape detail.

TABLE 1 Effect of different erosion model parameters on erosion process (from Kirkby, 1971)

Erosion parameter		
m_1	n_1	Erosion process
1	1–2	soil wash without gullying
2	2	soil wash with gullying
>2	>2	gullying

The form of erosion is controlled by the exponents on discharge and slope [Equation 2)]. The values of m_1 and n_1 vary widely but mostly range between 1 and 3 (Kirkby, 1971). Ideally, these values should be determined from catchments and long-term field plots, however these data are rare for natural catchments, as they require multiple years of data to be collected covering a range of rainfall and runoff events. For disturbed landscape systems such as mine sites, there is also a dearth of long-term data, with many short-term studies available (Evans, 2000; Evans & Willgoose, 2000; Evans et al., 1995, 1999, 1998, 2000). This calibration process has been well described elsewhere (Willgoose, 2018). As a general rule, the values of $m_1 > 1.5$ and $n_1 > 1.5$ are indicative of a surface dominated by fluvial (incisive) processes (Table 1) (Kirkby, 1971). Values <1.5 are more indicative of sheetwash. How these parameters change through time is an open question, discussed below.

4.1.1 | The evolution of the soil surface

It has been well recognized that one of the long-term impacts of fluvial erosion is that the fine material on the surface is winnowed out, leaving behind coarser surface material that protects against further erosion (Parker, 1990; Parker & Klingeman, 1982; Sweeney et al., 2015; Willgoose, 2018). If this armour is undisturbed, the erosion rate can reduce to near zero when all the entrainable material is removed. This mechanism has been widely studied both theoretically and experimentally for streams and aeolian erosion, but there has been a lack of comparable quantitative work for hillslopes subject to fluvial erosion.

Willgoose and Sharmeen (2006) tested a number of river armouring models, using their ARMOUR1D model, against rainfall simulator field trial data at Ranger mine (Riley et al., 1991). ARMOUR1D had a discretized surface layer particle size distribution and a semi-infinite layer underneath, and used observed rainfall and runoff for the study site. They used a variety of published detachment and entrainment processes (Parker, 1990; Parker & Klingeman, 1982; Proffitt & Sutherland, 1983) to entrain the size fractions into the flow while recharging the surface layer from below, maintaining a mass balance. The model evolved the surface grading as a result of the rainfall-runoff events.

The Parker and Klingeman (1982) model provided the best fit to the data, however, not only did the erodibility constant (β_1) decline with time, but the parameters m_1 and n_1 also changed significantly with time, matching the Ranger mine-field data (Evans & Loch, 1996; Willgoose & Riley, 1998). However, the applicability of the Parker and Klingeman (1982) model to hillslope erosion is different from channels (on which Parker and Klingeman developed their insights), as hillslope surfaces are unlike river channel bottoms (they do not have constant flow, vegetation is usually present and the ratio of the surface roughness height to depth of flow is higher) so will have different surface sorting and hiding behaviour and requirement for a hiding function (Michaelides & Martin, 2012). A hiding function modifies transport such that while small particle sizes are more mobile than larger ones, they may be trapped between larger material. This highlighted the need for site-specific calibration of the hiding function for hillslope erosion and armouring studies. In summary, this work demonstrated that a set of parameters determined for a post-mining surface, for example, in year one may be very different from that of those determined 10 years later. That is, hydrology and sediment transport parameters may not be constant.

The changes in m_1 and n_1 resulted from slopes developing a coarser armour (so becoming relatively less erodible) and meant that initial fluvial erosion model parameters may not be suitable for long-term assessment (Willgoose & Sharmeen, 2006). Their results indicated that it would take approximately 200 years to reach an equilibrium surface grading, by which time considerable erosion would have occurred. Cohen et al. (2009), using a new, more efficient approach (the mARM1D model), which included a calibrated weathering model, found that an equilibrium surface grading occurred in the order of 500 years for the same surface.

The important issue on mine sites is that the erosion rate usually reduces rapidly as the most easily transportable material is removed and an armour develops (Sharmeen & Willgoose, 2007; Willgoose, 2018). Several authors have recognized the complexity of this gully armouring process (Maurer & Gerke, 2016; Sawatsky & Beckstead, 1996; Zapico et al., 2018b). If calibration was based on the early data with a relatively high erosion rate (with the potential for rills and gullies), then parameters likely representing a higher erosion rate would be determined, which does not reflect long-term behaviour (centennial timescales as suggested by Cohen et al., 2009 and Willgoose & Sharmeen, 2006). How parameters temporally change is of considerable interest, as any prediction made by a LEM may overestimate erosion (and result in over-engineered earthworks and increased costs) or underestimate erosion leading to unplanned remedial works later. ARMOUR1D and mARM only partially address the issue, and the goal is for incorporation of weathering and armouring processes in new models. This is discussed further later on.

4.1.2 | Model parameters (fluvial)

There are five parameters that need to be determined. β_1 determines the rate of erosion for a given discharge, while β_3 determines the runoff rate for the catchment so that the combined parameter $\beta_1\beta_3$ determines the rate of erosion per unit area. As above, the combined parameter m_3m_1 determines the rate at which erosion increases as contributing area increases, and the parameter n_1 determines how the erosion rate changes with hillslope gradient.

An important consideration is the ratio of m_1 to n_1, which has a significant effect on the long-term topography and drainage network generated (Solyom & Tucker, 2004; Willgoose & Gyasi-Agyei, 1995). Agricultural erosion models (e.g. USLE, RUSLE, WEPP) have a fixed relationship between area and slope (i.e. ratio m_1:n_1). This may not represent long-term spatial changes in erosion rate due to armouring. The ratio m_1:n_1 makes little difference to short-term agricultural applications (for which the traditional models have been optimized), but is very important for long-term predictions when landform change modifies the drainage network and the spatial distribution of discharge.

The simplest method to calibrate Equation 2 is to quantify erosion from field erosion plots with different areas and slopes over the long term (here we refer to the long term as years). Using different areas allows calibration of the power on area (m_3, m_1) and the different slopes allow calibration of the power on slope (n_1).

4.1.3 | Model parameters (soil creep)

Soil creep (also known as hillslope diffusion) has a strong influence on landscape evolution (Culling, 1960, 1963; Kirkby, 1967; Pelletier, 2008; Rodríguez-Iturbe & Rinaldo, 1997). Soil creep is a complex process that includes rain splash, slumping, landsliding as well as biological agents such as ants, termites, pigs and tree throw (Furbish & Fagherazzi, 2001; Furbish et al., 2007, 2009; Hancock et al., 2017a). There have been many field and modelling examinations of diffusive processes (Culling, 1963; Dunne et al., 2010, 2016; Fernandez & Dietrich, 1997; Furbish & Fagherazzi, 2001; Furbish et al., 2007, 2009; Gabet et al., 2003; Kirkby, 1967; Loewenherz-Lawrence, 1991, 1994).

Hancock et al. (2002), using fitted parameters, demonstrated that soil creep is required for a geomorphically reliable catchment scale prediction to be obtained. Other studies have found that soil creep is required to produce rills and gullies with the correct form that matches field observation (Hancock et al., 2000, 2007, 2019). At these sites, again the value is fitted by observation. Considerable work is needed to quantify these processes and parameterize them for LEMs (Dunne et al., 2010, 2016; Gabet et al., 2003). Dunne et al. (2010, 2016) suggest that rain splash creates convex hillslopes on short, steep hillslopes such as the margins of gullies in unconsolidated sediments (i.e. mine materials). However, sheetwash is the dominant process for other landscapes and longer hillslopes.

While natural and agricultural environments are important, of particular interest here are mine sites where the materials are unconsolidated, the slopes are likely to be linear and steep (some at angle of repose) and there will be an absence of vegetation or other biological agents (i.e. ants and termites). At such sites, the influence of rain splash will be at its maximum (due to the unconsolidated nature of the material and absence of vegetation). However, the drainage network will not be integrated and will be controlled by surface roughness and slope.

Small-scale surface roughness will play a significant role in landscapes that have been 'ripped' by a large tyne pulled by a tractor or bulldozer to increase surface roughness and reduce hillslope connectivity. Ripping to increase surface roughness (usually along the contour) is a common practice on mine sites. Modelling work described above suggests that it is not one process operating—it is the combination of both creep and fluvial processes that is important (Dunne et al., 2010), particularly at the short length scales of ripping. Further understanding and quantification of creep is needed for these rapidly evolving landscapes to better parameterize our models (Dunne et al., 2010, 2016; Gabet et al., 2003). At present, creep is parameterized based on existing field knowledge (previously fitted data) without any sound method for the determination of both process and data.

4.1.4 | Alternative calibration methods

While field data from catchments and plots provide the most robust calibration, other methods can be successfully employed for post-mining landforms. Alternative methods for calibration are using DEMs of the eroded surface and differencing them (Koci et al., 2019; Koci et al., 2017). This requires knowledge of the initial surface as well as accurate DEMs of the eroded surface, and any surface change due to settlement and/or shrink/swelling processes (Eltner et al., 2018; Gong et al., 2019; Vericat et al., 2014; Zapico et al., 2018b). By differencing two surfaces, the location and volume of eroded material can be determined and multiple regressions of the model parameters performed with the parameters optimized. However, unless multiple (i.e. sequential) DEMs are obtained (i.e. annually or after a major rainfall event), the erosion rate will be an average over this period.

Other methods include estimating the topography of the original surface and then infilling any erosion features such as rills and gullies (Hancock et al., 2000, 2007). The landscape is then input to the LEM as the original surface and the parameters adjusted until the model predicts erosion form and rate similar to that of the existing surface. An advantage is that this method uses a field landscape and parameters are being determined for field conditions (i.e. materials and climate). The disadvantage is that if there are no immediate post-construction survey data, there is some uncertainty in the starting surface (i.e. original topography).

Laboratory flumes and rainfall simulators can also be used (Meyer, 1988; Sheridan et al., 2000). These have the advantage that site material can be assessed under controlled laboratory conditions. A flume can be adjusted to the required slope (or slopes) and subjected to a series of rainfall-runoff events. The evolving surface and sediment transport rate can be assessed. Parameters can be determined quickly (i.e. in a few weeks) rather than months to years for field plots. The disadvantages of flumes are questions surrounding (1) the representativeness of the supply at the scale of large mine sites and (2) scaling up data from a small-scale laboratory plot to the field scale. However, any erosion data determined from a flume can be checked against material properties (i.e. the RUSLE K factor) as well as independent analysis performed using a separate model such as the RUSLE.

4.2 | Landscape input

All LEMs use a DEM to represent the landscape surface. The DEM has to capture the overall curvature and shape of the hillslope and catchment as well as any features such as contour banks, benches or other flow control structures. The model will directly route water and sediment based on the landscape as defined in the DEM. The initial DEM therefore needs to represent the position and form of these features. If they are not there, in the wrong place or poorly represented in the DEM, an unsatisfactory prediction will occur. In summary, the DEM needs to be at a grid scale that represents the landscape feature of interest.

For example, if the model is to be run to examine a landscape with contour banks and benches (a typical scenario for a post-mining landscape), then a grid scale of 1–2 m is required (Figures 1–3). Gullies commonly break through and incise features such as contour banks. If the grid scale is larger than these features, they will not be correctly represented in the DEM and water and sediment movement will be incorrect. Therefore, contour bank stability or incision by gullying will not be able to be predicted. A rule is that, if the feature cannot be observed in the DEM using visualization software, then the LEM will not model its influence. Cross-sections extracted from the DEM, which contain a feature such as a contour bank, provide a further means to check for the presence of such features.

DEMs of the landscape surface may need to be complemented by other DEM data. Of particular relevance for gully modelling is the depth to bedrock. Depth to bedrock can be important where mining waste presents as a relatively thin cover over bedrock. For many sites (both mining and non-mining), bedrock prevents the gully lowering and without this included in the model a gully can be predicted to be deeper than possible in reality. Most models have this capability for including a bedrock layer or maximum depth of erosion (Coulthard et al., 2013; Willgoose, 2005). However, for many landscapes, depth to bedrock is not known. This highlights the need for more field data on this issue.

5 | MODEL FEATURES AND FUNCTIONALITY

At their most simple, LEMs can be run with a single set of erosion and hydrology parameters across a site. However, they also have the capacity to run multiple parameter sets for a variety of surfaces. This capability is particularly useful for mine sites where there are disturbed areas surrounded by natural surfaces (Hancock et al., 2008a). A particular advantage of the CAESAR-Lisflood model is that to vary erodibility, the model particle size distribution can be varied. This is conceptually simple but requires knowledge of the particle size distribution across the landscape, something that is a non-trivial exercise to determine. The SIBERIA model can spatially distribute both hydrology and erosion parameters across a site if this distribution is known (again non-trivial to determine) (Hancock et al., 2008b).

While not important for small areas (i.e. plot scale), spatially variable rainfall can also be input for regional scale assessments where rainfall is known to vary (e.g. by orography). An important feature of the CAESAR-Lisflood model is that rainfall is input at hourly timescales. This allows a detailed assessment of rainfall events as well as an assessment of rainfall extremes (Hancock et al., 2017b) and is particularly useful for gully assessments (subject to differing climate).

Many models have a vegetation growth mode in some form. In the case of SIBERIA, vegetation is represented by a change in the erodibility and hydrology parameters, which can be calibrated from site data (Blanco & Lal, 2008; Evans & Willgoose, 2000; Evans et al., 1999, 2000; Lal, 1988; Wilkinson et al., 2018; Wischmeier & Smith, 1978). CAESAR-Lisflood has a vegetation growth model which responds to rainfall (Coulthard et al., 2013).

Several models have the capability to assess the effect of armouring (mARM and SSSPAM) but only two have been tested in any rigorous way. For example, the SIBERIA model has the capability to reduce erosion based on the armouring of the surface through time. This is of particular importance for mine sites where a new landscape is created with a mix of both fine and course material and the model is parameterized based on the newly constructed surface. There is a dearth of field data available describing how a surface armours, particularly for mine sites. A study at the ERA Ranger mine (Hancock et al., 2016b) found that when calibrated, the predicted sediment load from SIBERIA was a good match to field data. Other models, such as CAESAR-Lisflood, require the input of a material particle size and have armouring in-built within the model. CAESAR-Lisflood has the capability to generate a surface armour as well as predict the surface particle size distribution. This has been evaluated at the ERA Ranger mine (Coulthard et al., 2013).

Flow routing is also important (i.e. D8 and D-Infinity). Hancock and Coulthard (2012) demonstrated that a LEM could provide realistic channel avulsions because of different intense storm events using D-Infinity. Theoretically, D-Infinity should produce a more reliable landform, however, given the complexity of each LEM, the flow direction algorithm is one of many components that will influence gully initiation, growth and stabilization. At present, which algorithm is the most appropriate for both mine sites, as well as other landscapes, is an open question with further work required.

Another significant feature of LEMs is their ability to predict deposition. The models all produce deposition in the base of channels, realistic fans, as well as fill at the base of slopes (i.e. deposition at the foot of mine waste rock dumps) (Figures 3 and 4). In particular, the SIBERIA model in long-term studies of post-mining landscapes has produced considerable deposition in an ephemeral channel, which over time incises and is reworked, a pattern very similar to that expected in real-world conditions (Hancock et al., 2016a). However, the ability of LEMs to predict deposition and/or re-entrainment has received little attention (e.g. Hairsine & Rose, 1992a, 1992b), with the major focus being on erosion. Modelling deposition is a research area that needs to be addressed, given its importance both for landscape evolution and gully evolution (Barnhart et al., 2020a; Coulthard & Skinner, 2016; Welivitiya et al., 2016, 2019, 2020).

6 | TESTING LANDSCAPE EVOLUTION MODELS

Testing and validation involve taking a calibrated model and comparing it against data that were not used in the calibration, then assessing the fit of the model against these independent data. The independent data may take a variety of forms, including (1) the same type of data that was used in the calibration, but data not used in the calibration, (2) a different type of data that was collected at the same or different time and/or location as the calibration data, or (3) the same or different data for a different site.

LEMs are sensitive to initial conditions, so variations can lead to different landforms even if the physics is exactly the same (e.g. Lague et al., 2003). For example, it has been shown that drainage patterns in LEMs are sensitive to small variations in the initial conditions when that initial condition consists of a low-relief surface where drainage is not imposed (i.e. initially no valley-like forms exist). In contrast, if the initial topography already embeds a drainage structure, then sensitivity to initial condition is more limited (Hancock et al., 2016a,b; Lague et al., 2003). This can also be true for forcings (i.e. climate, vegetation change) so that there are many cases where the landform details (i.e. exact position of hills and valleys) vary considerably with only small changes in the inputs, yet the geomorphic statistics of the landform are the same (i.e. hypsometry). Therefore, a comparison between a model and a validation landform may be poor even though the model is good, simply because erosion features such as gullies are in different locations. Accordingly, a test of a LEM should be both a comparison between the landform generated by the LEM and the DEM in the field, as well as statistical properties of the landform/ landscape (i.e. a statistical property of elevation and area such as the hypsometric curve) (Flint, 1974; Strahler, 1952, 1964).

Early development of LEMs commonly saw testing of whether the model can generate the qualitative and quantitative characteristics of catchments (e.g. Hack, 1957; Lague et al., 2003; Langbein, 1947; Strahler, 1952, 1964; Willgoose et al., 1991a,b,c). This involved adjusting parameters to see if the field behaviour could be replicated by the models. What it does not say is that the physics and parameters used in the model are exactly the same as the physics and parameters applicable in the field.

Testing of LEMs using experimental model landforms involved either examining whether a model could be calibrated to simulator evolution (e.g. Hasbargen & Paola, 2000; Lague et al., 2003) or calibrating the LEM to 1D hillslope erosion experiments and then comparing the model to independent 2D landform evolution experiments using geomorphic descriptors (e.g. Hancock & Willgoose, 2002; Skinner et al., 2018; Temme et al., 2011). Different models with different sediment transport functions have been assessed at field scale in a number of environments (Attal et al., 2011; Barnhart et al., 2020c,d; Coulthard & Skinner, 2016; Schoorl et al., 2004; Tucker, 2009). In many of these tests, the LEMs produced gullies. Further testing using both degraded mine sites and undisturbed field sites assessed LEMs' gully prediction capabilities (Hancock et al., 2000, 2002; Skinner et al., 2018). The limitation of the above work was that it did not provide a measure of a statistically good or bad match.

A number of studies have evaluated LEMs for their ability to predict erosion at decadal timescales using qualitative (i.e. visual) and volumetric comparison, as well as comparing erosion rates with independently determined erosion data (i.e. ability to match gully form in a natural catchment) (Hancock et al., 2013). The SIBERIA model has also been shown to predict rill and gully erosion on a 10-year-old coal mine waste rock dump (Hancock et al., 2007).

Several other studies have directly compared gully predictions from a LEM with those of field data (Cohen et al., 2017; Flores-Cervantes et al., 2006; Hancock et al., 2000, 2007, 2013; Howard, 1997; Istanbulluoglu & Bras, 2005). While not explicitly examining gullies, Howard (1997) modelled gully-like features in the Mancos Shale badlands in Utah and compared them to field data. Istanbulluoglu & Bras (2005) modelled features that they explicitly called gullies using stability analysis of gully heads and walls and qualitatively tested the theory against field data in Colorado and elsewhere. Further work by Flores-Cervantes et al. (2006) developed a model of headcut retreat resulting from plunge pool erosion using the CHILD LEM. They examined the sensitivity of the model to parameters and geomorphic drivers and headcut retreat. Cohen et al. (2017), using the mARM5D model, examined the soil-landscape evolution of a field site in Israel and concluded that the field site was dominated by aeolian soil development, hillslope fluvial sediment transport, together with surface wash and gullying which produced a soil-depleted landscape.

The above work all demonstrated the potential of LEMs for gully prediction and assessment, however, these studies examined landscapes over centennial to millennial timescales or were theoretical in their approach. The reliability of LEMs has been examined at decadal timescales using environmental tracers such as ^{137}Cs. Hancock et al. (2008a) examined the ability of the SIBERIA model at decadal timescales in Arnhem Land, Northern Territory and the Hunter Valley, New South Wales (Martinez et al., 2009). Both studies provided confidence in the model. Schoorl et al. (2004) evaluated the LAPSUS model using erosion data determined using ^{137}Cs. However, both these studies examined hillslope erosion in catchments which had gullies present but did not explicitly examine gully erosion.

For long-term (millennial timescale) assessment of gully initiation, advance and stabilization, LEMs have been evaluated by their ability to predict plausible erosion rates as well as correct hillslope and geomorphic form using geomorphic measures such as the hypsometric curve (Langbein, 1947; Strahler, 1952, 1964) and area–slope relationship (Flint, 1974; Hack, 1957). Predictions from one model have also been compared with predictions from another model (i.e. SIBERIA with CAESAR-Lisflood) by comparing erosion rates and hillslope and catchment geomorphology (i.e. the hypsometric curve and area–slope relationship) (Hancock et al., 2002, 2016). Given the continuous advancement of LEMs and their application in different spatial and temporal domains, testing will be ongoing.

7 | CASE STUDIES

The first application of a LEM to assess a post-mining landform was at the ERA Ranger mine located in the Northern Territory, Australia. The rehabilitation goal at Ranger was for erosion characteristics (rate and type) which, as far as can reasonably be achieved, do not vary significantly from those of comparable landforms in surrounding undisturbed areas. A further goal was to demonstrate that tailings (i.e. the fine ground waste product from the processing of the uranium ore) were physically isolated from the environment for at least 10 000 years (Supervising Scientist, 2018). Using a model was the only practical method to assess design options.

The SIBERIA model was used to assess a proposed rehabilitation design using a 30 × 30 m cell dimension DEM (Willgoose & Riley, 1998), and its use demonstrated that large gullies were likely to form over a 1000-year period. These gullies were deep enough to release tailings stored within the rehabilitation structure. This work demonstrated the model's potential to understand both short and long-term geomorphic processes on mining landscapes. While the model produced what could be considered plausible outcomes at 1000 years, questions were asked about the accuracy and reliability of these findings.

Considerable work was then done to develop field and plot-based parameter sets (collected over a number of seasons) and to develop a methodology for calibration (Evans & Willgoose, 2000; Evans et al., 1999). This work included plots on both unvegetated and vegetated post-mining surfaces, as well as surfaces affected by fire. This work was focused on centennial (1000-year) landscape behaviour.

Since then, the SIBERIA model has been continually developed and improved. In recent years, the model has been employed to assess new proposed designs at annual through to millennial timescales (Hancock et al., 2016, 2017b; Lowry et al., 2018). The assessment focused on the Corridor Creek catchment (Figure 7) using

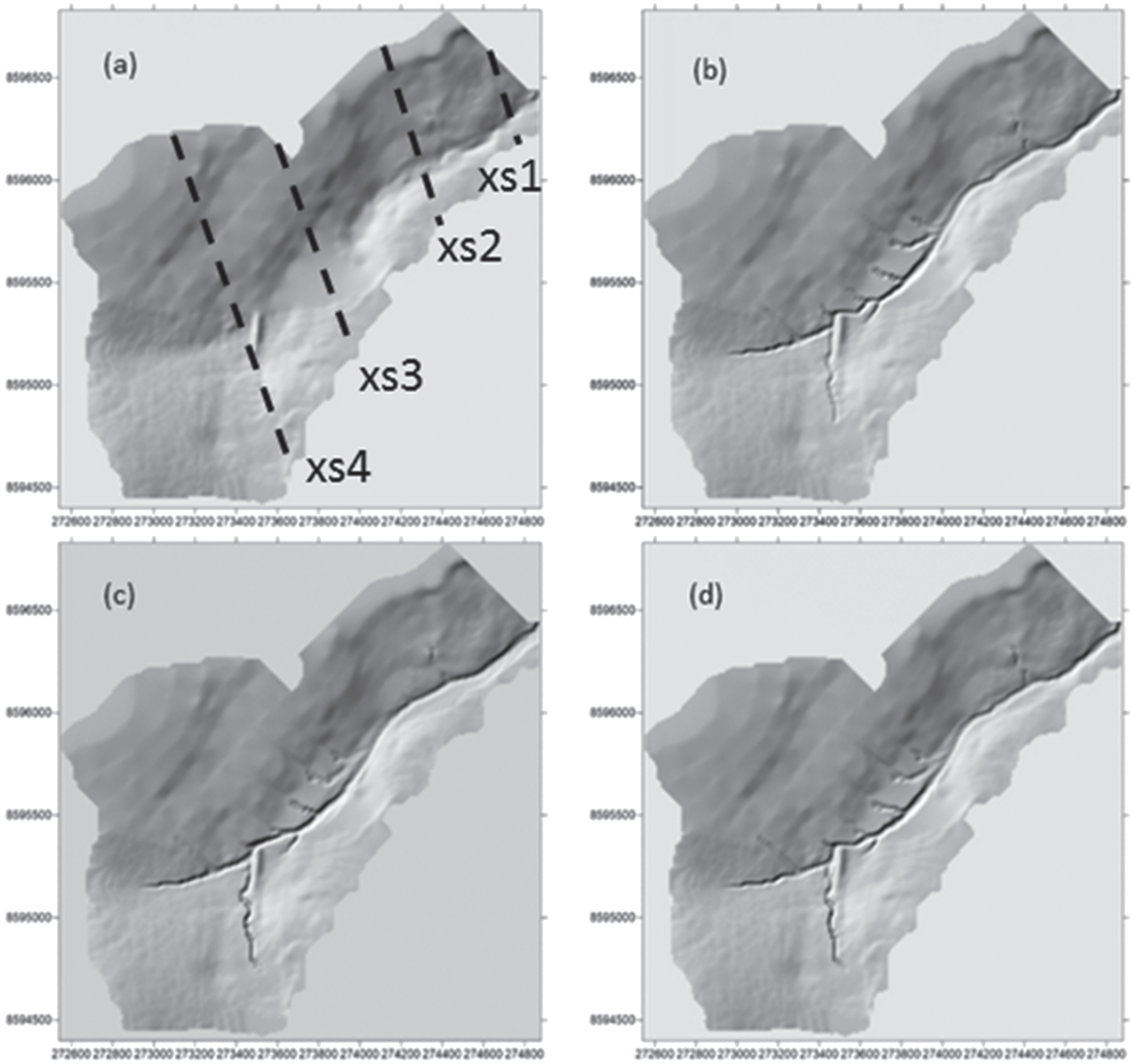

FIGURE 7 Corridor Creek catchment at year 0 (a) and the catchment at 100 years (b–d) using statistically identical rainfall replicates (Hancock et al., 2017). The dotted lines in (a) represent the cross-sections displayed in Figure 9 and are labelled xs1 to xs4. A three-dimensional image of the landscape through time is presented in Figure 9

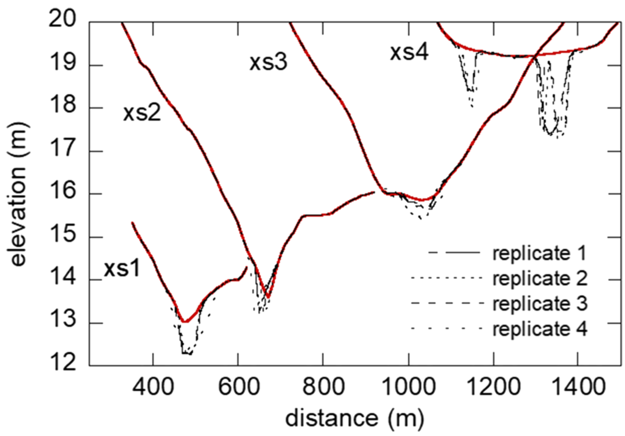

FIGURE 8 Cross-sections from the Corridor Creek catchment at equal 500 m spacings along the length of the catchment at year 0 (red) and 100 years (black) (see Figure 9) using four statistically identical rainfalls [Color figure can be viewed at wileyonlinelibrary.com]

parameters determined from the plots on the mine surface (Evans et al., 1998; Willgoose & Riley, 1998; Willgoose et al., 1991c). This demonstrated that gully position, width and depth varied with differing rainfall (Figure 8). Over the last 10 years, the CAESAR and CAESAR-Lisflood (Coulthard et al., 2013) models have also been employed at Ranger. This model has the advantage that hourly rainfall can be employed and therefore can be used to assess climate extremes (i.e. rainfall extremes) and influence on erosion and landscape evolution (Hancock et al., 2017). CAESAR-Lisflood has also been employed to examine the stability of tailings dams in Canada (Slingerland et al., 2018).

The use of both SIBERIA and CAESAR shows that the Ranger mine landscape develops gullies within the first 100 years (Figures 7 and 8) and these continue to evolve through time (Figure 9). The landscape evolves to have well-defined channels with considerable deposition in the valley bottom. At periods greater than 10 000 years, this deposited material begins to be eroded with new channels forming (Figure 9). An interesting point with this work was that SIBERIA and CAESAR-Lisflood produce similar erosion rates, gully form and location, as well as plausible deposition patterns.

Unpublished work by the authors has examined a range of mining landforms for their erosional stability. Figure 5 displays one section of a large WRD that internally contains tailings and acid-generating material from gold extraction. The landscape sits proud above the

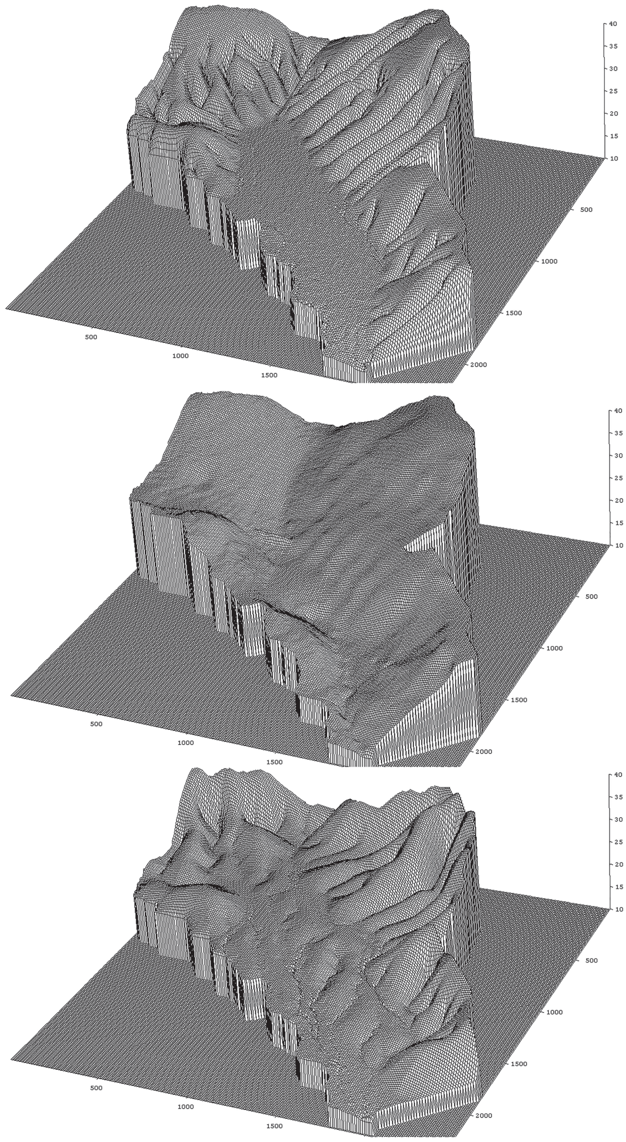

FIGURE 9 Corridor Creek at year 0 (top), 10 000 (middle) and 100 000 years (bottom)

surrounding natural surface. The SIBERIA model was used to assess a range of different scenarios for this landform, including different vegetation cover strategies. All scenarios found that gullies would evolve. The modelling work demonstrated that surface water management was key and that gullies formed by having large catchment areas on the cap and benches that collected and directed water down the steep face of each lift. A particular concern was the large gully system predicted on the top of the structure. This analysis led to a reconfiguration of the final landscape and a reduction in gully risk.

8 | DESIGNING AND MANAGING FOR GULLIES

8.1 | Designing for gullies

An option for landscape reconstruction is to construct the landscape in the most cost-effective method, observe and manage any issues that occur, and then repair the problem. There are several issues here. (1) In a poorly designed landform, any erosion—if left unchecked—may become a large and costly problem. (2) Any large-scale erosion may not occur immediately post-construction but years later when the mine has ceased operating and there are no funds for repair. (3) If the landscape is performing poorly in the early years post-construction, it is likely that any problem will grow and/or repeat itself in following years. This then leaves a long-term liability for both the mining company and the community. The alternative is to design and construct a landscape so that the failure risk is minimized.

Hancock et al. (2019) demonstrated a method of design where the post-mining landform is constructed in a series of subcatchments that have geomorphic characteristics commensurate with the construction materials (i.e. waste rock covered with topsoil), with the LEM run using material (site)-specific parameters. That is, once parameters are available for the material, a proposed landscape can be assessed for its erosion rate as well as erosion features such as gullies using a LEM. The goal of this approach is to produce a landscape with subcatchments which have a mature catchment form to which the landscape would likely evolve. In essence, the LEM is used to assess and design a landscape that is optimized for the materials as well as the landscape footprint. The landscape design, while being developed, can be tested using a LEM which will highlight areas of concern (i.e. gullies) and the landscape modified to reduce erosion. This approach was used for a coal mine and was an iterative process which developed a landscape that both reduced erosion and also had catchments which mimicked the morphology of natural catchments.

For this site, GeoFluv (www.geofluv.com) software was used for the landscape design. Hillslope lengths were shortened and concavity increased, while maintaining material volume with the landscape footprint constant. The modelling demonstrated that a convex–concave profile reduced both erosion rate and gully dimensions. While LEMs provide a simplified or idealized outcome, the effect of differential subsidence (settlement of the landscape) and the influence of different surface treatment (i.e. surface roughness) can also be examined.

A point to note is that for many disturbed environments, gullies may be inevitable. The best approach may be to accept this and allow for any repair in the short term. With this approach, there can be recognition and preparedness for any future issues.

8.2 | Risk assessment

LEMs allow an assessment of erosion risk based on both landscape design and climate (Barnhart et al., 2020a; Skinner et al., 2018; Verdon-Kidd et al., 2017). A design may be developed on a computer but its construction in the field may be different to that of the design. The pre- and post-construction landscape can be evaluated using a LEM and any areas of high erosion risk highlighted.

For example, many post-mining surfaces are ripped with a tyne pulled by a bulldozer along the contour to produce surface roughness upon final landscape construction. Ripping traps water and sediment as well as seeds for revegetation. The potential of ripping and surface roughness on erosion rate, gully form and position can be assessed by including this roughness in the elevation of the DEM (Hancock et al., 2016; McGuire, 2017; Vincent, 2018).

For high-risk sites, multiple landscapes can be constructed and multiple simulations run using a Monte Carlo approach (Skinner et al., 2018; Willgoose, 2018; Willgoose et al., 2003). The method allows both short (years to decades) and long-term (millennia) assessments. This is of high interest for sites where contaminants require complete separation from the environment for long time periods (e.g. uranium mines) and where depth and longevity of cover over the contaminants is required.

There are other causes of uncertainty in model outputs than just parameters, and these include model forcings and initial conditions, such as the initial topography, paleoclimate and paleotectonics (Barnhart et al., 2020c,d; Tucker, 2009). Willgoose and Gyasi-Agyei (1995) and Willgoose and Riley (1998) examined uncertain initial conditions on mine landform evolution and found differences in the deterministic planar geometry of the evolving hill/valley network with markedly different locations for hills and valleys/gullies. However, it was possible to define areas that had a high probability of excessive erosion for all the initial conditions. This allowed the mine owner to make an objective risk assessment as to the probability of failure of their encapsulation and how to modify the design to reduce the probability of failure.

Willgoose et al. (2003) at the Tin Camp Creek site introduced *t*-tests and Bayesian statistics to evaluate whether the LEM predictions fell outside model confidence limits (and thus whether the landform was statistically significantly different from the model). In this work Willgoose et al. (2003) only varied the initial conditions with model erosion and hydrology parameters independently determined and assumed perfectly known (i.e. the parameters were not varied as done in GLUE) (Beven, 2012). Further, the DEM for Tin Camp Creek had been derived by digital photogrammetry and included elevation errors. However, Willgoose et al. (2003) assumed that the topographic data error was zero. This meant that the confidence limits in Willgoose et al. (2003) were likely to be too small.

At other sites, Gyasi-Agyei et al. (1995) and Walker and Willgoose (1999) demonstrated that the effect of digital photogrammetry errors on geomorphology statistics (e.g. slope–area, cumulative area diagram, etc.) can be significant. This error would also widen the confidence limits. Thus, while Willgoose et al. (2003) concluded that the LEM and field data were significantly different, they only showed that the initial conditions could not be responsible for the differences between model and observed topography as they did not incorporate parameter or data errors. In summary, the assessment process described above provided a statistical method for assessment of model predictions and an objective method for rehabilitation design and design improvements.

9 | LEMS, THE NEXT GENERATION

The current generation of LEMs provide the ability to model the evolution of the Earth's surface across a range of spatial and temporal scales. They have a variety of rainfall and runoff models as well as the ability to examine the effects of vegetation. The models can also assess issues such as differential subsidence as well as different surface roughness (as a result of ripping the surface to create additional surface roughness and reduce hillslope connectivity in the short term). The next generation of models will refine these capabilities but also focus on the subsurface.

Surface armour development and weathering influences erosion, deposition and landscape evolution (Maurer & Gerke, 2016). It has only been in the last 10 years that models have been developed that can predict the evolution of both the surface (Coulthard et al., 2013) and subsurface (i.e. soil profile) (mARM and SSSPAM) (Cohen et al., 2013, 2015, 2017; Welivitiya et al., 2016, 2020). Modular models such as LAPSUS (Schoorl et al., 2000, 2002) and LANDLAB (Barnhart et al., 2020a; Hobley et al., 2017) provide the potential for incorporation of these processes. These issues are particularly important for post-mining landscapes, where the constructed surface is rapidly evolving and field data are only available for the first few years while the armour is still developing. That is, the fines are washed through the hillslope and catchment system, leaving a more erosion-resistant surface that is largely devoid of vegetation. This new (or transient) landscape then begins the process of pedogenesis, where the complex process of the newly placed material in combination with vegetation begins to form soil (Maurer & Gerke, 2016). While conceptually we understand the pedogenesis process, we have little field data on the processes and rates for disturbed landscapes such as mines. If we can both qualitatively and quantitatively understand the processes, then we can better construct both the surface and subsurface of a new landscape to geomorphically optimize and develop an ecologically sustainable system that integrates with its surroundings (Maurer & Gerke, 2016; Paola et al., 2005).

In the case of gullies, it has been observed that for mine sites an armour is likely to develop on the gully floor (Figure 6). This armour will increase the shear strength of the gully floor, increase roughness and reduce incision. Several authors have recognized the complexity of this gully armouring process. Some sites evolve to a coarser surface in a cyclic pattern due to different materials (Sawatsky & Beckstead, 1996; Zapico et al., 2018a). However, while observed, there is a paucity of field data on the amount (e.g. percentage cover), size (e.g. d_{50}) and rate of this armour development (Maurer & Gerke, 2016).

At metalliferous mines and sites where waste materials need to be contained indefinitely, there has been considerable effort to develop standards for engineered cover designs (http://www.gardguide.com/). These covers are designed and constructed to both store and release rainfall via evapotranspiration, as well as be erosion resistant. Cover materials are selectively placed to prevent exposure of undesirable by-products. A significant challenge for new landscapes is the lack of data and therefore understanding of the interdependencies and relationships between landscape surface and subsurface development and structure-forming processes (Maurer & Gerke, 2016).

At present, it is likely that for many situations, if the model is parameterized for this new landscape with new surface materials, then long-term erosion will be overestimated and gullying can commence; gullies then evolve at faster rates than in the field. This, while considered to be a conservative outcome, may result in over-engineered landscapes. There is a great need for field data to better quantify this armouring process, refine model capability and improve predictions, and laboratory flume studies may help with this understanding (i.e. Sheridan et al., 2000).

Mine-site hydrology is a further complexity for these evolving systems and operates at two different scales (Jarvis et al., 2016). At a coal mine, large ponds of approximately 1 ha in size and up to 1 m deep were observed by the authors to develop as a result of subsidence of the emplaced waste material. These rainwater-fed ponds existed for sufficient time for aquatic flora and fauna to colonize (tadpoles were observed), and then drained and disappeared (with no obvious reason or warning). This led to the conclusion that there were preferential pathways within the mine landscape which once activated, either by pressure of the water above or by weathering, could convey large volumes of water. This rapid loss of a relatively large volume of surface water causes significant issues with determining runoff for modelling purposes. Weathering, armouring and pedogenesis can proceed at a relatively rapid pace, particularly for coal mines where the siltstones and mudstones can rapidly weather. The authors have observed competent siltstone (at the same site as described above) with an initial d_{50} of 100 mm weather to a d_{50} of 10 mm when exposed to rainfall over a period of 2 months (unpublished data). From a landscape surface perspective, infiltration will change as the materials weather, resulting in the potential for increased runoff and erosion risk. This increased runoff may be countered by vegetation establishment, which will transpire more soil water and increase surface material shear strength. The current generation of LEMs have the capability to incorporate such data if available, however there are very few long-term data examining how mine-site hydrology changes through time.

10 | CONCLUSION

Gully initiation, growth and stabilization form a complex non-linear process. There are numerous models that have been developed to better understand gullies. All models have benefits and pitfalls. LEMs provide a further tool to better understand and manage this land degradation process. Our focus here has been mine sites that disturb large areas and are constructed of unconsolidated materials.

LEMs show considerable potential for whole landscape (not just mine sites) assessment across a range of spatial and temporal scales. The models can predict both gully location and form. At the landscape scale, long-term landscape evolution can be evaluated. This is of interest not just for scientific understanding but also for examining the restoration of sites such as mines, where whole new landscapes have been created. These mine landscapes are structures that are permanent and will be part of the landscape for geological time. LEMs can provide some insight into their long-term behaviour.

LEMs are like all models, they need to be operated at the appropriate spatial and temporal scales and calibration is important. The models have immense predictive potential but are now constrained by a lack of field data. There is a lack of detailed long-term studies that follow initiation, growth and stabilization of gullies for both mine sites as well as agricultural land use settings. We currently have the models but lack the field data to calibrate and validate LEMs, and this constrains their reliability. Focused field programmes are required to provide calibration and validation data for these new models, so they can be employed with increased confidence.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

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CAPABILITIES AND LIMITATIONS OF EROSION MODELS AND DATA

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Abstract
Variability in soil erosion data from replicated plots is large. One might think of the replicated plot as the best "real-world, physical model" of soil erosion, and that the physical model represented by the replicate plot represents a best-case scenario in terms of erosion prediction. In this study, replicated plot pairs for 2061 storms, 797 annual erosion measurements, and 53 multi-year erosion totals were used to estimate the natural variance of erosion data. Coefficients of variation ranged on the order of 14% for a measured soil loss of 20 kg/m^2 to greater than 150% for a measured soil loss of less than 0.01 kg/m^2. The r^2 for the fit for the replicate plot model was 0.76. This fit sets a benchmark for what one can expect for soil erosion models in general. This paper also discusses the critical nature of continuous simulation modeling in predicting erosion reliably. Results of simulation testing with the WEPP model indicate that 60 to 200 years of continuous simulation are required in order to quantify erosional response to plus or minus 10%. Single storm models do not have the capacity to accurately characterize erosional response of the complex and dynamic erosional system.

Additional Keywords: soil erosion, soil conservation planning, uncertainty, data variability

Introduction
The purpose of this paper is to present a realistic overview of soil erosion modeling capabilities and limitations. The data and model applications will focus on hillslope scale processes, but have obvious implications for sediment generation and sediment yield across larger scales as well. There are three major points upon which the paper will focus. The first has to do with variability of erosion in nature and its implications for erosion prediction. There have been many studies of soil erosion model application and validation using measured erosion data, but it is difficult to get a general or broad perspective and quantification of variability until you have relatively large data sets to work with, which is rare. It is also difficult to address variability unless one can replicate experiments, which is a challenge for watersheds. Here we will focus on plot scale erosion and variability associated with hillslope erosion. The basic message is that erosion in nature at the hillslope scale is quite variable, and that variability has major implications for models and prediction. On the other hand, patterns are evident, and we will discuss those patterns that are observable.

The second issue has to do with the importance of continuous simulation for erosion modeling. By continuous simulation, we refer to a model that calculates erosion through the year and over many years. Most importantly, it is a model that has the capability to update the parameters that define the state of the system as it influences erosion resistance or susceptibility, such as standing plant biomass that acts as soil cover, plant residues in contact with the surface, soil moisture, soil consolidation, etc. We will argue that one cannot effectively evaluate land use scenarios without a reliable form of continuous simulation. Lastly, we will argue that soil erosion models can be used as effective tools for many purposes, as long as they are used with the understanding of their capabilities and limitations.

Materials and Methods
In order to evaluate variability of measured soil erosion and expectations for model predictions we introduce the concept of the physical model of soil erosion. One can argue that the best possible model for erosion from a given plot will be the physical model, that is, a replicate of the plot on the same hillslope with the same slope, soil, land use, and weather input. By "the same", it is meant that we would characterize the plots the same for the purposes of modeling the erosion. Another way of looking at it is that the measured erosion values from the two plots would be samples from the same treatment distribution.

A large number of experimental natural rainfall-erosion plot data were used for the analyses presented. For each section of the information presented, data from some or all of the following locations in the United States were used: Holly Springs, MS; Madison, SD; Morris, MN; Presque Isle, ME; Watkinsville, GA; Bethany, MO; Guthrie, OK; Castana, IA; Tifton, GA; Pendleton, OR; Geneva, NY; and Kingdom City, MO. The experimental erosion plots used here represent a wide range of cropping systems, including fallow, cotton, grass-corn-oats, alfalfa, wheat-clover-cotton, bermuda grass, red clover, winter rye, fall-tilled corn, conservation-tilled corn, no-till corn, oats, no-till corn & soybeans, no-till soybeans, conventional-tilled soybeans, and potato.

Results and Discussion

Using the data from replicated erosion plots, we were able to first of all obtain an idea of the variance associated with the erosion data from the plots. The details of the methodology that was used to generate the graph (Fig. 1) of the coefficient of variation in the measured data, expressed as a fraction, versus the magnitude of soil loss measured on the plots is presented in Nearing et al. (1999). There are several key points to be made. One is that the level of variance in the measured data is high in general. At a measured soil loss level of 0.1 kg/m2, which translates to 1 ton per hectare, the coefficient of variation is approximately 1, or in other words, 100%.

The second obvious point here is that the level of variance between plots was dependent on the magnitude of soil erosion that was measured (Fig. 1). At low erosion levels, variance was quite large. As erosion level increases, we see the coefficient of variation reduced to tens of percent. Implicit in this, but not stated in the graph, is that other system parameters such as the geographic location, type of soil, and crop type, did not enter into the picture for explaining the differences in variance found in the data. Variance was, as far as was discernable from the data, a function only of the magnitude of soil loss measured.

What is not clear in this graph (Fig. 1) is that the x-axis of this graph represents measured soil loss for the plots over three different time scales: events, individual year values, and average annual erosion values. In other words, the variance level depended on the magnitude of soil erosion measured, but it did not matter over what time period the erosion was measured. An overlay of the same graph for event data exactly overlaps the same graph for annual average erosion, though event data values on average were less than the annual data values.

Figure 1. Coefficients of variation between replicated plots as a function of magnitude of measured soil loss (from Nearing et al., 1999).

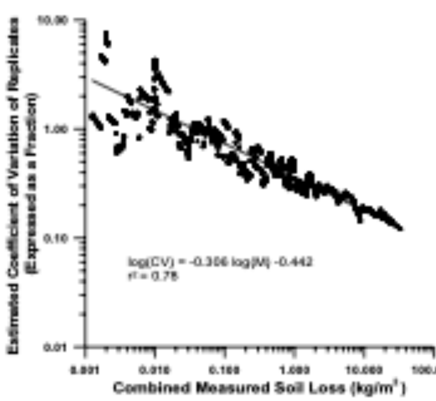
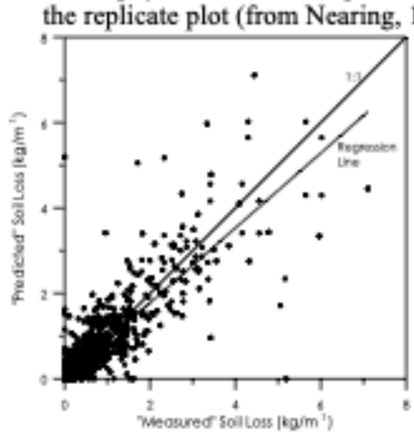


Figure 2. "Measured" vs. "predicted" soil loss for the physical model as represented by the the replicate plot (from Nearing, 1998).



These results have significant implications for modeling erosion. One immediate implication of data variability is that there is a limit in terms of accuracy for models. For example, using the data from replicated plots, Fig. 2 represents prediction accuracy for the best-case "physical model" (Nearing, 1998). All of the plot data was paired by replication, and event soil loss was plotted with one plot assigned as the treatment, and the other plot as the physical model. The level of fit obtained, in this case an r^2 of 0.77, can be considered as a benchmark, or "best-case" prediction scenario. One cannot reasonably expect a simulation model to fit better than this. Using the information from the previous graph, the coefficient of variation for measured data in the range of 1 to 5 kg/m^2 is of the order of 30 to 50%. If the measured data for the physical model in this graph were lesser in magnitude, the fit would reduce accordingly.

Another implication of variance in data is that it is much harder to predict low erosion rates than to predict high ones. So, for example, even though we know that the *relationship* between variance and soil erosion magnitude does not appear to depend on whether the erosion is from single storms or from long term averages, erosion values on average will tend to be lower for individual storms, and erosion predictions will tend to be poorer.

Figure 3 shows single storm predictions using the WEPP model (Zhang et al., 1996). WEPP is a process-based, continuous simulation model for soil erosion. It contains a model for predicting soil erosion for daily storm events, but also auxiliary models for plant growth and canopy cover; residue production, decay and burial; tillage; soil consolidation; soil moisture; infiltration; runoff; and many other system dynamics. Here Zhang et al. (1996) have used the model, un-calibrated, for 2119 storm events, and received a fit of approximately 0.4, which compares to a fit of 0.77 for the physical model results. One way of interpreting this is that the WEPP model is predicting the events approximately half as well as would our ideal physical model of the replicate plot. There obviously may be some room for improvement here in the WEPP predictions, but here at least we have a more realistic idea of where we stand and how much we could improve if our model was "perfect". It is important to stress that these predictions were using the model in the un-calibrated state. One finds very few published evaluations of un-calibrated erosion models, though this is how we most often need to apply them for solving problems.

Figure 3. Measured vs. predicted soil loss for daily results of the WEPP model for 2119 storm events (data from Zhang et al. ,1996).

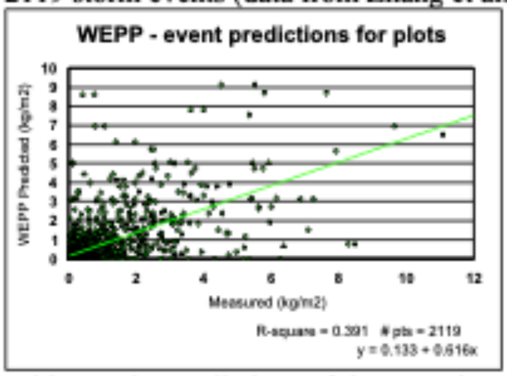
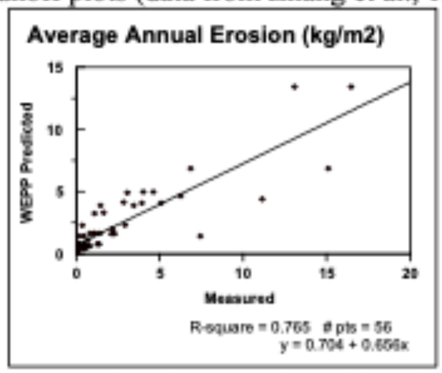


Figure 4. Measured vs. predicted soil loss for average annual results of WEPP for 56 natural runoff plots (data from Zhang et al., 1996).



When looking at the predictions of the annual average erosion rates using the same data, things look much better (Fig. 4) (data from Zhang et al., 1996). The fit in this case was much higher, at an r^2 of 0.77. This is a result of the fact that the random variation inherent in the plot data tends to smooth out when we look at higher erosion rates, which also often happens to be correlated to measuring over longer time scales. But the key point is that it is not, apparently, the time of record itself that governs the level of accuracy that can be and is achieved, but rather the magnitude of erosion measured. The effect is correspondent to Fig. 1, wherein the variance in the measured data decreased as a function of measured soil erosion magnitude.

Figure 5 shows similar data for average annual erosion using the Universal Soil Loss Equation. The accuracy of the results is approximately similar as that for WEPP. According to its developers, the USLE was never intended to be used as a event model, but only for predicting annual averages. However, if one looks at the structure of the model one sees that the average annual erosivity factor, R, is simply an average annual summation of individual storm erosivities, or EI_{30}s. Hence there is no fundamental reason why the USLE could not be used as an event model. The probable reason that the USLE was designated to be used only for annual averages was that the developers had access to enough data to know that predicting erosion for individual events, particularly with an uncalibrated model on a routine basis, was simply not possible with any reasonable level of accuracy. The individual event predictions using the USLE probably would not differ in accuracy much from the WEPP predictions for the same data.

Another approach that can be taken to the problem of validation, application, and calibration of models is the use of the event soil loss frequency distributions. Here (Fig. 6) we have a frequency distribution of measured and predicted soil erosion plotted in terms of recurrence interval (Baffaut et al., 1998). They found that even though the fit for measured vs. predicted events is usually relatively low, such as the r^2 of 0.39 shown in Fig 3, the frequency distribution of soil loss may compare well with the measured data. Baffaut et al. (1998) also showed that the frequency distribution of events can be used for calibration purposes. In general, the lower end of the frequency curve, or the small events, tend to be dominated by splash erosion. Thus the lower part of the curve can be used to calibrate the data for the splash or interrill parameters. The upper end of the curve is dominated by rill erosion, and correspondently the rill erodibility parameters can be calibrated on that portion of the curve.

Figure 5. Coefficients of variation between replicated plots as a function of magnitude of measured soil loss (data from Risse et al., 1993).

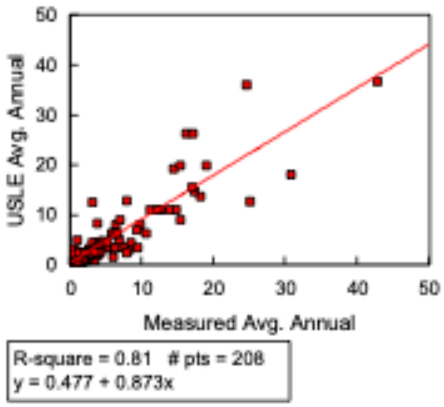
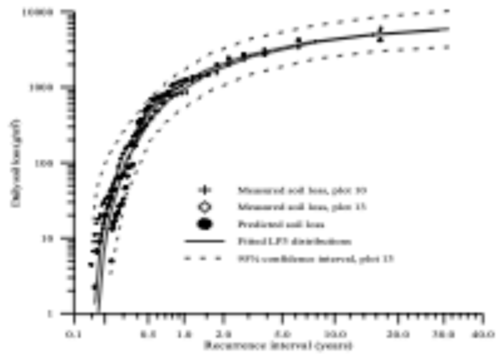


Figure 6. Comparison of distributions of measured and predicted daily soil losses on the fallow plots in Morris, MN from 1962-1971 (from Baffaut et al., 1998).

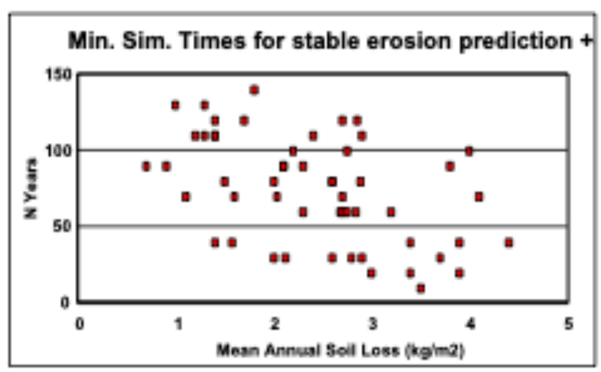


Much of the discussion above, including the idea of using long-term modeling averages such as average annual and frequency distributions of individual events, relies implicitly on the idea of utilizing continuous simulation models for predicting erosion. A large number of the models that are being used are not continuous simulation, but rather single event models. By a continuous simulation model, we refer to a model that calculates erosion through the year and over many years. Most importantly, it is a model that has the capability to update the parameters that define the state of the system as it influences erosion resistance or susceptibility, such as standing plant biomass that acts as soil cover, plant residues in contact with the surface, soil moisture, soil consolidation, etc.

Why is this so important? The issue revolves around the temporal variability in the system characteristics that influence so dramatically the erosion rates for a given storm event. One can think of the erosional response as being a function of the overlap of two distributions, the driving force of rainfall (in this case) and the state of the system in terms of its resistance to the driving forces (Fig. 7). Obviously, the reality is very complex, and Fig. 7 simplifies the reality to a conceptual level. For example, there is no guarantee that the resistance distribution itself is independent of the driving force distribution.

Figure 7. Schematic diagram representing the overlap of two distributions: one representing the driving force of erosion (e.g., rainfall) and the second representing the system resistance to erosion.

Figure 8. Minimum simulation times required to reach stable long-term average predictions of soil loss using the WEPP model applied to fallow conditions (Baffaut et al. FFFF).



For a given set of force and resistance distributions we can expect a specific erosion response distribution. If we look, for example, at a 50 year, return frequency storm occurring on a field that has recently been planted, the impact of that event will be a relatively large erosion response. For the same storm on the same crop rotation except offset by one year, thus occurring at a time during the rotation when the system resistance is very high, the erosion response may be very small. In this case the first field might be devastated by this storm, where in the second field there was no visible sign of erosion at all, even though both fields are under the same cropping system.

The most common attempt to deal with the questions that continuous simulation attempts to address, without actually doing long term simulation, is to run a single storm model on a distribution of individual events. The limitation is that this does not in itself address the fact that the erosional response is a complex overlap of the two dynamic distributions, rather than just the storm distribution alone. The evidence is clear that this is not sufficient for characterizing erosional response differences among land-used treatments or for producing accurate long term erosion estimates, and certainly it has never been verified that the process is effective at doing either.

With the WEPP model we also attempted to develop a technique to use three representative years of continuous simulation to obtain good estimates of long-term averages of erosion. The idea was to select representative wet, dry, and average precipitation years that, when used in the WEPP model, would result in erosion estimates that mimicked long term average trends. We found that one might be able to do this, as long as one was dealing with nearly identical systems, such as summer crops with similar planting and harvest dates. If one changed to winter crops, such as wheat for example, the process no longer worked. One had to choose a different representative three years. Relative erosion rates from the long term averages compared to the three year averages were not internally consistent between management systems, which were what we were trying to differentiate. The fact that the WEPP effort was unsuccessful does not mean that using rainfall distributions with an event model to determine long term erosion averages can't be done, but it has not been accomplished to date.

The reason for our lack of success in the abovementioned problem is evident in Fig. 8. Even with a continuous simulation model one has to deal with extreme variability in the erosion predictions. Baffaut et al (1996) conducted a simulation study using the WEPP model to determine how many years of simulation were necessary in order to obtain a stable long term erosion estimate. The predicted erosion rate was considered to be stable when it its value was within 10% of the 200 year average soil loss, and remained within that interval for all subsequent years. The results (Fig. 8) indicated a need for periods of simulation approaching 150 years in order to reach stability. In general, the simulation time tended to decrease as function of the magnitude of measured soil loss, but as one can see from the graph the relationship was a weak one. The simulations were primarily done using fallow conditions, and in that sense probably reflect conservative values since erosion magnitude for cropped conditions would tend to be less, and hence variability greater.

It is useful to mention again that WEPP model predictions of event distributions were shown to mimic distributions of measured erosion quite well (Baffaut et al. 1998). We do not believe that the long simulation times reported here are a function of the instability of the model. If anything, the model may not reflect the variability that actually could exist over decadal time periods. These types of results of model simulations leave one feeling discouraged about the possibility of constructing a method of using a single storm model in conjunction with rainfall frequency distributions to obtain accurate long-term erosion estimates or for quantifying erosion differences between land uses.

These results also leave one questioning the use of a "design storm" for erosion prediction. Land use sytems cannot be evaluated with the concept of the design storm. One could take the "worst case" scenario of the designated return storm frequency modeled at the least resistant time of the year for designing erosion control structures, for example. However, the only way to determine the probability of occurrence of that magnitude of an erosion event occurring within a given return period would be to run the continuous simulation model and determine the predicted frequency distribution curves for erosion. In other words, using the worst-case-design-storm method one will predict an erosion rate for the storm. But what is the probability that that level of erosion might occur in any given year? A slightly larger storm at a slightly different time of year, and hence theoretically more resistant condition of the system, would produce the same level of erosion. On the other hand, with a continuous simulation model one can design structures and conservation practices for a design erosion event. If one runs the simulation model for 200 years, then it is possible to pick from the event distribution data the 10 year or 20 year return frequency erosion event.

Another way of summarizing this is that with a single storm model one can plan for a certain return frequency *storm precipitation* for the system, but only in a single specific system state. With a continuous simulation model one can plan for a design, return frequency *erosion event*. Those are two very different things, and the former is not useful relative to erosion.

To this point we have discussed the limitations and the problems of natural variability in erosion and long simulations required for obtaining stable erosion values. Erosion models can, nonetheless, act as very valuable tools for a variety of purposes. A) They can help the land owner or manager choose suitable conservation practices, because they are able to assess relative effects of land use even in individual hillslope cases where the accuracy of any given prediction might be uncertain. B) They can be used to make broad scale erosion surveys in order to understand the scope of the problem over a region and to track changes in erosion over time, because if the model is predicting the mean erosion well for a given land use, then it will reflect the mean of the population of erosion values for land use treatments. C) Models can be used to regulate activities on the land for purposes of conservation compliance, because they can provide a consistent and fair evaluation system to compare agricultural fields. The model might not give the exact quantification of erosion on every field for every year, but in the long term the predictions are fair and reasonably accurate. D) They can be used to estimate long term loadings to streams and other water bodies, because as the time period increases, the accuracy increases. E) If used properly, they are useful as storm-response design tools. But in this case the storm design must be done within the context of a continuous simulation model run over a sufficiently long period of time to obtain a clear quantification of the size of the erosion event for a specified return frequency.

All of the above applications require explicitly the use of a continuous simulation model. One cannot accurately assess changes or differences in land use scenarios or conservation practices without continuous simulation. USLE and RUSLE are included in this class of models, since erosion is calculated based on time variations in the cropping and erosivity factors. However, one cannot use USLE or RUSLE for the last two applications (D and E). They cannot be used for estimating long term off-site loadings, because they do not include concentrated flow routing for off-site sediment yields, and they cannot be used for determining design storms, since they are not event models. All of the above applications also implicitly take into account the issue of variability that we talked about earlier. Simulations must be made for long time periods in order to make reliable quantitative assessment.

Where mistakes are most often made in the application of models is when we do not recognize the inability of models to accurately predict erosion at low levels, such as for events or even for a few years of erosion in cases where erosion rates are low and events infrequent. We really can't accurately *measure* erosion as a function of treatments when we try to do it over short time periods. Natural variation is huge, and our model variation is even greater. Secondly, we also are working in the realm of fantasy when we try to use single storm models to assess land use treatments or to define design erosion events. Single storm models do not have the capability to function in this capacity.

This presentation was limited to the discussion to hillslope scale erosion in a simple context of sheet and rill erosion. But even at hillslope scales the situation can be much more complex. There is enormous complexity in the many processes that take place in a real landscape, as well as complexity of surface morphology and the interactions of the morphology with processes, which our models do not attempt to take into account. Along the same line, we are also finding that the basic concepts of our process-based models appear not to function in natural areas and rangelands. The entire concept of rill and interrill erosion breaks down in these areas.

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supervising scientist report

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Future Directions for Application of Landform Modelling by the Supervising Scientist: Response to the Review of the application of the CAESAR-Lisflood model by the eriss Hydrologic, Geomorphic and Chemical Processes program

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Australian Government
Department of the Environment
Supervising Scientist

Typically, it is Supervising Scientist policy for reports in the SSR series to be reviewed as part of the publications process. This Supervising Scientist Report is a summary of an external review of landform modelling procedures at the Supervising Scientist and, although not externally peer-reviewed, it has been reviewed internally by senior staff.

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Executive summary

In January 2014, the Supervising Scientist commissioned an external review of the landform evolution modelling (LEM) methods in use by the Hydrologic, Geomorphic and Chemical Processes (HGCP) research program, focussing particularly on the use of the CAESAR-Lisflood software application. This report integrates the document produced by the external reviewer, Dr Geoff Pickup, with comments and feedback on review recommendations by the CAESAR-Lisflood application developer, Professor Tom Coulthard (University of Hull) and a leading practitioner of landform evolution modeling, Associate Professor Greg Hancock (University of Newcastle). Finally, it documents the Supervising Scientist response to the review recommendations and the subsequent feedback. It outlines the next steps and the priorities for future research in landform evolution modelling by the Supervising Scientist.

In his review, Dr Pickup assessed how the landform evolution modelling methods in use by the HGCP program compare with international best practice. He also reported on additional and emerging approaches in landform evolution modelling on mine sites that might be used by the HGCP program. While he notes that there are a number of alternatives to the CAESAR-Lisflood model, none offer the comprehensive approach to long-term landform evolution offered by specialised models such as CAESAR-Lisflood and SIBERIA (also used by ***eriss***). However Dr Pickup observed that SIBERIA, while offering shorter modelling time for long-term model simulations, does not model gully development and channel erosion (both critical processes for assessing or modellingthe stability of rehabilitated landforms at Ranger) as well as CAESAR-Lisflood.

Overall, Dr Pickup found that the landform evolution models in use at ***eriss*** represent world best practice and are largely suitable to the task in hand. The methods by which the models are employed are also consistent with world best practice. He found that there are some areas where modelling and erosion research procedures could be enhanced. These include more checking of DEMs for artefacts, sensitivity analysis of model parameters, and improved long term rainfall record generation procedures. Dr Pickup also suggested that future applications of the model could benefit from further development to incorporate greater spatial variability to reflect vegetation growth influences on runoff, erosion and deposition.

Professor Coulthard and Associate Professor Hancock endorsed Dr Pickups comments and recommendations. In addition, they provided supplementary information outlining the means by which Dr Pickups and their own recommendations could be prioritised and undertaken.

Crucially, Dr Pickup, Professor Coulthard and Associate Professor Hancock all stress the importance of landform modelling work continuing at the Supervising Scientist, particularly as the Ranger mine approaches the closure and rehabilitation phase.

The HGCP research program believes that the recommendations made by Dr Pickup will enhance landform modelling capabilities by enabling ***eriss*** to focus future LEM activities and research into specific areas. The priority areas for future landform modelling research at ***eriss*** are seen as:

- Calibrating the input parameters and variables to the CAESAR-Lisflood model to ensure it provides meaningful and useful results with confidence;

- Identifying and developing a rainfall dataset that could be used for long-term model simulations which would be representative of the range of global climatic extremes that may occur within a timeframe of 10,000 years;
- Continue to engage and consult with leading practitioners and developers of landform evolution models to ensure that the CAESAR-Lisflood model is updated to incorporate additional parameters as required, and to ensure procedures, processes and outputs from landform modelling represent best practice and are scientifically sound.
- Investigate the development and inclusion of additional parameters, such as chemical weathering and vegetation into the CAESAR-Lisflood model and the broader HGCP research program.

Acknowledgments

Dr Mike Saynor, Dr Rick van Dam and Ms Lucy Lytton from the Supervising Scientist and Dr Anita Chalmers from the University of Newcastle discussed various aspects of this work with the authors and helped improve the report.

Part 1: Background to the landform modelling review at the Supervising Scientist

J Lowry & W Erskine

1.1 Background

The 27th meeting of the Alligator Rivers Region Technical Committee (ARRTC) in November 2011 identified the assessment of the geomorphic stability of the proposed rehabilitated Ranger landform as a priority research activity of the Environmental Research Institute of the Supervising Scientist (***eriss***). This information is required for use by Energy Resources of Australia (ERA) in the finalisation of the landform design, and to assist with the development of closure criteria. To expedite this process ERA firstly identified from the company's perspective the key closure-related tasks, and their associated knowledge requirements and prioritised these against the current Key Knowledge Needs (KKNs). This was then followed by working meetings between ERA and the Supervising Scientist (SS) to map these needs against current KKNs, and to assign organisational responsibilities for the execution of the required work. Among the identified priority needs was an assessment of the geomorphic stability of the proposed landform (KKN 2.2.1 *Landform Design* and KKN 2.2.4 *Geomorphic Behaviour and Evolution of the Final Landform)*.

Within its membership, ARRTC includes a number of independent scientific experts in fields of relevance to mine environmental impacts, mine operations and mine rehabilitation. At the time of the 27th meeting, the independent member of ARRTC with expertise in geomorphology was Professor Colin Woodroffe of the University of Wollongong. While ARRTC plays a key role in setting research priorities and advising on appropriate methods and techniques, it does not have the resources and time to undertake detailed formal reviews of individual research programs. Similarly, representatives of the different scientific disciplines are not necessarily experts in all aspects or fields of that discipline. Therefore, with the increased importance of landform modelling as Ranger mine rehabilitation started, Professor Woodroffe encouraged SS to seek input and guidance on the research approach undertaken by the Hydrologic, Geomorphic and Chemical Processes (HGCP) research program from an external source who is an expert in the field of landform modelling.

In response to the recommendation of Professor Woodroffe, a review of the use of landform evolution modelling technologies to assess the geomorphic stability of a rehabilitated landform by the HGCP program was undertaken by Dr Geoff Pickup, an independent consulting geomorphologist.

1.2 Landform modelling at the Supervising Scientist

Historically, landform evolution modelling assessments of rehabilitated mine landforms have been done by SS, with SS having invested substantially in the development and application of the SIBERIA and CAESAR-Lisflood models.

Landform evolution modelling provides a means for assessing the potential performance of constructed mine landforms. Over the last 40 years a variety of models have been used to evaluate erosion and simulate post-mining landscape stability (Evans 2000, Loch et al. 2000). These models include the water erosion prediction programme or WEPP (Laflen et al. 1991), the universal soil loss equation (USLE) and its variants, the modified universal soil loss equation (MUSLE), the revised universal soil loss equation (RUSLE) (Onstad & Foster 1975, Wischmeier & Smith 1978, Renard et al. 1994) and SIBERIA (Willgoose et al. 1989). Importantly, much of the developmental work with the SIBERIA landform model was undertaken by projects associated with the Supervising Scientist and /or the Ranger mine site i.e.Willgoose & Riley 1998, Evans et al. 2000.

The CAESAR model (Coulthard et al. 2000, 2002) was originally developed to examine the effects of environmental change on river evolution and to study the movement of contaminated river sediments through drainage networks. Recently, SS has invested significant resources in assessing, developing and adapting the CAESAR (and succeeding CAESAR-Lisflood) landform evolution modelling software program to assess the geomorphic stability and evolution of proposed rehabilitated mine landforms in northern Australia (Hancock et al. 2010; Lowry et al. 2011; 2013; Saynor et al. 2012a).

1.3 Why CAESAR?

CAESAR-Lisflood is the latest version of the CAESAR model. It combines the Lisflood-FP 2d hydrodynamic flow model (Bates et al. 2010) with the CAESAR geomorphic model (Coulthard et al. 2000, 2002, 2005, Van De Wiel et al. 2007) to simulate erosion and deposition in river catchments and reaches over time scales from hours to thousands of years. The model does this by routing water over a regular grid of cells and altering elevations according to erosion and deposition from the operation of fluvial and slope processes. CAESAR-Lisflood can be run in two modes: a catchment mode (as used here), with no external influxes other than rainfall, and a reach mode, with one or more points where sediment and water enter the system. For both modes the model requires the specification of several parameters or initial conditions, including elevation, grain sizes and rainfall (catchment mode), or a flow input (reach mode). The initial topography of the landscape drives fluvial and hillslope processes that determine the spatial distribution of erosion (loss) and deposition (gain) that occurs during a given time step. This altered topography becomes the starting point for the next time step. Outputs of the model are elevation and sediment distributions through space and time and discharges and sediment fluxes at the outlet(s) through time. There are four main components to CAESAR-Lisflood: a hydrological model, a flow model, fluvial erosion and deposition and slope processes.

When running in catchment mode, runoff over the catchment is generated through the input of rainfall data. This is calculated using an adaptation of TOPMODEL (Bevan & Kirkby 1979) that contains a lumped soil moisture store which when it exceeds a threshold value generates surface runoff. The surface runoff generated by the hydrological model is then routed using a flow model.

Although flow is the main driver of the model, morphological changes result from entrainment, transport and deposition of sediments. CAESAR-Lisflood can accept up to nine size-based fractions of sediment that are transported either as bed load or as suspended load, depending on the grain sizes. CAESAR-Lisflood provides two different methods of calculating sediment transport, based on the Einstein (1950) and the Wilcock & Crowe (2003) equations.

A key attribute of the CAESAR-Lisflood model is the ability to utilise recorded rainfall data from the study area, enabling the modelling of the effects of specific rainfall events.

The model enables rainfall data to be input at a range of temporal intervals, ranging from 10-minutes to 1 hour. Event modelling is critical, especially for the early stages of landform evolution, since it is recognised that the majority of erosion typically occurs during a limited number of high-intensity events (Moliere et al. 2002). As the climatic region in which the Ranger mine occurs is dominated by seasonal, high-intensity rainfall events (McQuade et al. 1996), the ability to model specific rainfall events has meant that CAESAR-Lisflood model is the model of choice by SS for this region.

1.4 Report Structure

This report is divided into four parts:

- Part 1 provides the background and rationale for this report.
- Part 2 contains the review of landform modelling activities at Supervising Scientist by Dr Geoff Pickup.
- Part 3 contains a response to the recommendations contained in Part 2 by Professor Tom Coulthard and Associate Professor Greg Hancock, developer of the CAESER-Lisflood model and long-term landform modelling collaborators with the SS, respectively.
- Part 4 contains the response to the recommendations and comments of Dr Pickup and Professor Coulthard and Associate Professor Hancock by the Hydrologic, Geomorphic and Chemical Processes program, and outlines the priorities and future direction that landform modelling will take.

Part 2: Review of landform modelling at the Supervising Scientist

G Pickup

2.1 Project Brief

The project brief specifies a review of the landform evolution modelling activities of ***eriss***, in order to address the following questions:

1. How do the approaches and methods - specifically the use of the CAESAR-Lisflood software - currently employed by the Hydrologic, Geomorphic and Chemical Processes Research Program compare to current international leading practice for assessing landform evolution, especially in relation to erosion, of a rehabilitated mine site?
2. What additional or emerging approaches could be utilised by the Hydrologic, Geomorphic and Chemical Processes Program for its research and assessment activities for assessing landform evolution, especially in relation to erosion, of a rehabilitated mine site?

The environmental requirements for mine closure specify that the final landform should possess:

"erosion characteristics which, as far as can reasonably be achieved, do not vary significantly from those of comparable landforms in surrounding undisturbed areas" (Supervising Scientist Division 1999).

Rehabilitation planning and landform design should therefore aim to produce landform shapes and surface treatments that reduce erosion and minimise release of contaminants. Specifically, erosion should not result in gullying, which may expose contained waste material to the environment within a specified time period (Lowry et al. 2013).

The objective of modelling is to facilitate the design of the final landform by testing a range of alternative designs. However, given the requirements for mine closure, modellingshould not only evaluate erosion potential, it should also encompass downstream impacts. The review material below considers both of these issues.

The report consists of four sections. These are:

- A brief description of current practices in mine landform erosion modelling either used or with potential for use by ***eriss***.
- A review of how *CAESAR-Lisflood* is being applied, including data issues, parameter selection and model limitations
- Suggestions on how *CAESAR-Lisflood* results may be used with complementary models to overcome *CAESAR-Lisflood's* limitations.
- Comments on emerging approaches that may be used by the Hydrologic, Geomorphic and Chemical Processes program.

2.2 Comparison with International Practice

The Hydrologic, Geomorphic and Chemical Processes research program has a long history of landform evolution modelling and, in my opinion, currently represents world best practice. Over time, the program and associated scientists have carried out extensive research on rates of erosion and sediment transport on both natural landforms and mine-affected areas. Methods have included direct measurement of streamflow and sediment transport, use of rainfall simulators and plot trials, and almost two decades of two-dimensional landform evolution modeling. Indeed, the two landform evolution models, most commonly-used worldwide, *(SIBERIA and CAESAR/CAESAR-Lisflood)* owe at least some of their development to work in the Alligator Rivers Region.

In my experience, most attempts to model the final (and rehabilitated) landforms produced by mining rely on parameters derived from elsewhere or, at best, short runs of plot measurements at much smaller scales than the actual landforms. Scaling up is fraught with difficulty and prone to substantial error because the plot rarely represents the hillslope or small catchment. The Alligator Rivers Region datasets include erosion measurements at a variety of spatial scales and provide an unusual opportunity to both calibrate and validate landform process models. Furthermore, short-run datasets often do not include results from rare and extreme events yet these events may do much of the work in causing erosion and generating rapid landscape change. Some of the Alligator Rivers Region datasets include the effects of one or more severe tropical cyclones and, once again, provide an unusual opportunity to calibrate and validate models.

2.2.1 Models

While the review specifically calls for comments on the *CAESAR-Lisflood* model, it is worth adding a few comments on what else is available. These comments are restricted to models and procedures that are readily-available, either at no cost or commercially. I have only commented here on models that are sufficiently developed to be publicly available and regarded as operational. There are, of course, many models that are research tools developed by individuals but these are rarely supported and have had little or no testing making them inappropriate for operational use.

Landform evolution models that are potentially of use or have been applied in the eriss Hydrologic, Geomorphic and Chemical Processes Program fall into a number of categories:

Hillslope models such as the *USLE* and its variants. Essentially, these model plots or one dimensional planar hillslopes and do not allow for sediment storage due to factors such as slope curvature. They have a large database derived from many years of plot studies but do not readily scale up to two-dimensional landforms or larger areas. While they may be useful when calibrated for providing point or localized inputs into more complex and spatially distributed models, they are unsuitable for generating downstream impacts.

Variations of hillslope models that allow for sediment storage and non-planar, more complex, slopes such as WEPP. Essentially, these models are still one dimensional and not especially suited to more complex, two dimensional landforms although a 2-D effect can sometimes by represented by subdividing the landform into sub-areas. They are, however, a significant advance on the simple hillslope models.

Both pure hillslope models and their variations have been used by ***eriss*** *and its forerunners. Where this review is concerned, they are essentially a historical development and are already used in the* ***eriss*** *program where appropriate.*

Physically based 2-D and 3-D hydraulic models such as TUFLOW and SRH-2D. These models focus on in-channel and/or floodplain hydraulics with sediment transport as an add-on, usually based on a range of bedload equations. They require sediment inflow data as an upstream boundary condition and sometimes allow for lateral inflow of sediment. This means that a decoupled hillslope model is required. Such models can reproduce or forecast channel changes and may be used in modellingof downstream effects. However, they are not good at reproducing wash load which may be the main component of sediment load in cases of soil and gully erosion upstream. They are also only as good as the bedload equation in use and therefore potentially subject to large errors. The commercial models are also very expensive.

The hydraulic model approach described here is too restrictive to meet eriss's objectives as it lacks a hillslope component.

Lumped Parameter, Semi-Distributed Catchment and Sub-Catchment Models such as Source and MUSIC *(both products of the eWater CRC).*

MUSIC is a conceptual design tool to simulate runoff in catchments and predict the performance of water quality treatments. It has mainly been used in urban catchments in Australia in water-sensitive urban designs, although it is increasingly being adopted in non-urban settings including mining environments. It has a rainfall-runoff component based on soil properties and a sediment yield component that may be calibrated from observed data. The model uses a sediment accounting and delivery approach and allows for basin storage including the effect of sediment detention basins. It is a semi-distributed model and uses sub-catchments and/or sub-areas with different types of surface such as undisturbed zones, roads, quarries, rock dumps, etc. However each of these requires calibrated runoff and erosion parameters so the model is highly empirical and best used in a data-rich environment. While it may be used to generate water quality parameters such as suspended load, it does not reproduce the behaviour of specific landforms such as gullies. However, as long as calibration data are available, it may be used to evaluate a range of alternative treatments on runoff and water quality. The model is available commercially and is supported.

Source has some similarities to *MUSIC* but is a more complex and more sophisticated model. It also requires more input data and, like *MUSIC*, performs best when data are available for model calibration. The *eWater CRC* describes *Source* as follows:

'Source is highly flexible and is able to create an overall integrated model that is tailored to the problem. Constructing a model for a particular catchment management situation involves selecting appropriate component models and linking them in the software.

The model is based on the following building blocks:

- Sub-catchments: The sub-catchment is the basic spatial unit, which is then divided into hydrological response units (or functional units) based on a common response or behaviour such as land use. Within each functional unit, three models can be assigned: a rainfall-runoff model, a constituent generation model and a filter model.

- Nodes: Nodes represent sub-catchment outlets, stream confluences or other places of interest such as stream gauges or dam walls. Nodes are connected by links, forming a representation of the stream network.
- Links: Links represent the river reaches. Within each link, a selection of models can be applied to:
  - route or delay the movement of water along the link
  - modify the contaminant loads due to processes occurring within the links, such as decay of a particular constituent over time.

Source features a wide range of data pre-processing and analysis functions that allows users to create and compare multiple scenarios, assess the consequences, and report on the finding.

The contribution of a particular constituent on areas of the catchment can be viewed, and various visualisation methods used to show uncertainty including bar charts, line graphs, tables and maps such as rasters or polygons."

Source is particularly interesting because it allows for the use of a variety of dynamic *Sednet*[1] plugins covering hillslopes, gullies, streams and nutrients. It uses an ensemble of spatial and point models that produce outputs that are fed into *Source* for load generation. These can represent different soils, climates, land uses and land management scenarios. Once loads are generated, downstream effects of sediment storage and in-stream deposition and decay may be applied through the link models.

Source is available commercially and is supported with regular training sessions and conferences.

While Source and MUSIC are not landform evolution models per se they may offer potential for use together with distributed hillslope/channel models such as CAESAR-Lisflood since they make it possible to deal with spatially variable landscapes containing a wide range of soil and vegetation types and a different set of management treatments. I provide more comments on this in a later section.

Spatially Distributed Landform Evolution Models: while a number of models exist, only two are widely available and suitable for operational use. These are *SIBERIA* and *CAESAR* plus *CAESAR-Lisflood* which is the current version. Both have been applied by ***eriss***. A number of other spatially distributed models exist such as *EUROSEM, TREX, CASC2D* (now included in the *GRASS GIS)* and *LISEM*. However, these are more focused on estimating flood runoff and sediment yield from specific landforms and land use treatments rather than taking the longer term perspective of the landform evolution models.

SIBERIA has been used in the Alligator Rivers Region since the mid-1990s. It generates erosion and deposition using a simple sediment transport relationship based on slope and contributing runoff area. There are many other parameters including diffusion, rates of uplift or subsidence, etc. All these parameters require calibration and there is a small library of suitable parameters. However, usually only the slope and area parameters that control runoff and erosion are used while all other parameters are held constant. Indeed, in many cases, virtually nothing is known about what these other parameters do in

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[1] *Sednet* is a relatively simple sediment yield model originally developed by CSIRO for Australia's National Land and Water Audit in 2001 and subsequently developed as part of the eWater toolkit.

practice and changing them can sometimes produce quite unpredictable results. *SIBERIA* allows for a bedrock surface which limits downward erosion. It can also handle spatially variable ground and runoff conditions by having different parameter values for several sub-areas. However, boundaries between sub-areas may result in sharp differences in erosion rates and produce large steps in elevation as there is only basic sediment routing and very little smoothing. *SIBERIA* has also been used on landforms containing layers with different sediment and erosion conditions, notably at Los Alamos. However, this is not a simple process and is undocumented.

SIBERIA is perhaps the most widely used landform evolution model and a simplified version of it has been built into *CAESAR-Lisflood*. However, the model has not been developed further for some years and the support is minimal. It has also been widely misused and I have seen a number of cases where it has been used to evaluate a range of landform designs with no calibration or validation and parameters based on guesswork.

My personal experience of *SIBERIA* has been under steep slopes and very high rainfalls with high quality calibration datasets. While the hillslope profiles generated were reasonably convincing, the model did not handle concentrated flow in potential gullies. Once sediment loads were high enough, these became blocked and became pits from which no outflow occurred. Thus, most streams stopped dead. This meant that downstream erosion rates were severely underestimated and the distribution of erosion and deposition did not match what was observed. However, it was possible to calibrate the model to generate overall observed sediment loss rates.

While the SIBERIA model has a somewhat dated interface and is not an easy model to use, it still offers some potential for ***eriss****, particularly for hillslopes and situations where erosion rates are not too high to generate the pitting problem. It is much faster to run than CAESAR-Lisflood and is currently better suited to handling sub-catchments with different characteristics as part of the same model run. It may also be used to quickly generate results from a range of management treatments and landform shapes as long as defensible values for the slope and area runoff and sediment transport parameters are available.*

CAESAR-Lisflood is the current model in use by ***eriss***. It combines the *LISFLOOD-FP* flow model for unsteady flow routing across a landscape with the *CAESAR* landscape evolution model. There are four main parts to *CAESAR*, a hydrological model, a flow model, a fluvial erosion and deposition model, and slope process models. The hydrology model is a variant of the *TOPMODEL* procedure and is used to generate a combined surface and subsurface discharge using rainfall inputs, evaporation and a soil moisture store. *TOPMODEL* incorporates landform shapes through the use of a Topographic Index which is a measure of the extent of flow accumulation at the given point on the topographic surface. *LISFLOOD-FP* is a one-dimensional inertial model derived from the full shallow water equations that is applied in the x and y directions to simulate two dimensional flow over a raster grid. It combines both unsteady and spatially-varied flow. Erosion and deposition are modelled using either the Wilcocks and Crowe sediment transport model or the Einstein procedure. The model is capable of handling multiple grain sizes and uses multiple bed layers to provide a capacity for bed armouring. Slope processes consist of a slow soil creep model and a landslide threshold procedure based on angle of rest. In what is something of a first, *CAESAR-Lisflood* also contains a simple vegetation growth model allowing a grass surface to develop over time which inhibits erosion. However, it apparently occurs at a uniform rate over the whole catchment. Vegetation effects on runoff may also be represented through a parameter in the runoff model. A further advantage of *CAESAR-Lisflood* is that it has been shown to operate successfully on small plots and therefore has a capacity to scale up although careful attention to parameter values is needed to see if they are scale-invariant.

CAESAR-Lisflood represents current international best practice and eriss is a world leader in applying it to landforms rehabilitated after mining. *It provides estimates and locations of erosion and deposition, topographic change, and development and decay of gullies. It also calculates sediment loads at various locations and times within the catchment and at catchment boundaries. This meets many of the criteria specified for the rehabilitated landform after mine closure so it is fit for purpose. The model is also much more tolerant of the pits and flats that limit or halt downslope movement of sediment and water in SIBERIA.*

While *CAESAR-Listflood* is probably the best model currently available, there are a number of things it does not do, or capacities it does not have. These include:

- Inability to handle spatial variability in soil type and vegetation type and cover except through the use of sub-catchments which must be linked post-facto. This feature did exist in early versions of the CAESAR model but has been dropped in later versions.
- The model does not handle layers in landforms apart from an erosion-limiting bedrock surface.
- Limited capacity to generate the fine sediment that makes up wash load except, perhaps through the slope erosion parameter or by running the model in reach mode with fine sediment inputs from upstream.
- While many of the model parameters are based on measurable properties or have values that that can be reasonably estimated, some, such as the lateral erosion rate, ideally require calibration as they can make a significant difference to model results. Unfortunately this requires long term data on landscape change which may not exist.
- Reliance on sediment transport equations which are notoriously unreliable. Also, only two bedload equations are available. It is, however, relatively easy to modify calculated transport rates through a few lines of code that introduce a simple transport rate multiplier.
- The model is computationally intensive and, while running much faster than comparable 2-D hydraulic models, it still requires long computer times. These may be prohibitive on large areas or fine grids.

One problem with landform evolution models more generally is the lack of long term validation data on landform change. Models often run for long periods but there are few datasets available that show sufficient observed changes in elevation over time at the whole landform scale to validate model results against. Information on river channel changes over time (usually from sequences of aerial photographs) is more common and this has been used at times for model validation. However, there not enough change in mine area small catchments to make use of this approach.

Other datasets that have proved useful for model validation over long periods of time include concentrations of trace metals in sediment deposits from historical mining operations. Some of these have already been investigated in southern Alligator Rivers Region. Early versions of *CAESAR* included the *TRACER* model which allowed tracking of heavy metals down through river systems and identification of deposits. Unfortunately, this capacity is no longer present. It would be useful if this capacity was reintroduced by the model developer as it would allow more model validation in the local region.

2.3 *eriss* modelling procedures with *CAESAR-Lisflood*

The modelling procedures reported by eriss in recent publications are both thorough and sound and are consistent with best practice. *They are also still developing as final landform designs become available and as cooperation with the model developer continues. However, I do have some suggestions that might enhance the work.*

1. There are few examples in the general *CAESAR* literature (not just from the Alligator Rivers Region) where runoff rates from the *TOPMODEL* component are reported and compared with observed discharges. This should be done if possible even if the location of stream gauges does not quite match the current area of interest.

2. I would like to see more investigation of how changes in *CAESAR-Lisflood* parameters affect model results. In my own work with the model, I have found that changes in the soil creep parameter and the lateral erosion rate can make quite a difference to results. In fact, it may be desirable to conduct a formal sensitivity analysis to determine which parameters matter most under local conditions.

3. The long term simulation reported in the most recent exercise to determine the long term stability of the rehabilitated landform used a rainfall series built from repeating the observed 22 year rainfall but excluded the 2007 cyclone. Given the importance of extreme events in the Alligator Rivers Region reported elsewhere in the literature, this approach is open to debate. A more defensible approach might be to use the standard methods for generating rainfall series in Australia to produce a long term synthetic record. Several approaches may be necessary to accommodate extreme outliers. Indeed, stress testing of alternative landform designs might be carried out using a rainfall series with a fairly high frequency of extreme events.

4. Model results throughout the *CAESAR* literature (not just from the Alligator Rivers Region) tend to show the initial landform and the final landform but do not provide figures showing the amount of change between them. This can hide a variety of sins. I would prefer to see results of modelling runs expressed as change in elevation as well as elevation itself. This gives a much better indication of model performance. Just using elevation (as a grey scale) does not give a very clear impression of what is happening and tends to mask model flaws. I note that eriss has shown change values in modelling of pit stability but it would be useful to provide these values more widely.

5. All of the 2D models I have used (including *CAESAR-Lisflood*) are potentially affected by DEM artefacts. These are small irregularities in the topographic surface caused when gridding LiDAR point datasets or when gridding from contours (which may produce steps in the landscape). Gridding from contours via fitted TINs may also produce artefacts. Once a model is run, it may generate rills in some of the irregularities which subsequently become gullies under high rainfall conditions. DEMs should be checked to see whether these problems occur before running a model. A good way of carrying out this check is to calculate and view topographic curvature. The LiDAR-derived DEM of current landforms in the mine area seems reasonably free of major artefacts. However, if datasets of final landforms are delivered in the form of contours, this may cause problems.

6. *CAESAR-Lisflood* uses a single angle of rest to determine whether slope failure and subsequent landsliding can occur. On slopes containing fine sediment, waterlogging and possible even fluidisation may occur, producing landslips. Events of this nature have been reported from the Alligator Rivers Region on natural hillslopes. Presumably, the engineers designing the final landforms at Ranger will subject them to the normal range of geotechnical analyses. However, it may also be worth applying a shallow landsliding model such as *SHALSTAB* to investigate potential for areas of slope failure in steeper zones of flow convergence even if final landforms have fairly low slopes. Potential areas of interest may be valley sidewalls if local creeks affected by final landform construction re-establish themselves.
7. *CAESAR-Lisflood* assumes no change over time in particle size distribution from that of initially emplaced material except through sorting and bed armouring. However, there may well be some particle breakdown to fines with weathering. There may be a need to allow for the weathering characteristics of cap material during long term modelling runs. Some rock types, if fresh, can weather very quickly in tropical environments when exposed to oxidation. ***eriss*** is currently in the process of acquiring these data and a time series covering several years should soon be available.
8. Assuming that feral buffalo survive in the area, their tracks create a risk of gullying, especially if constructed landforms or the mine area provide a source of dry season drinking water (in pit lakes for example) or when rehabilitated landforms are sown with palatable grasses. Feral pigs may be an even greater problem as they can disturb soils with their foraging behaviour. These issues may be worth investigating as they could cause significant localised erosion.
9. When designing or testing landforms, it is common to use a safety factor, especially where model parameters or behaviour involves uncertainties. The *eriss* program has gone a considerable distance with this approach by modelling with and without vegetation cover and for surcharged and non-surcharged landforms. However, I would like to see wider use of safety factors, perhaps by varying the most important and least certain model parameters. Loss of vegetation through fire should be expected and modelling without vegetation cover will give a measure of safety.
10. Waste rock may contain sulphides. Potential for acid generation should be examined and mitigation strategies such as mixing with limestone may need investigation.

2.4 Potential for combining *CAESAR-Lisflood* with sediment accounting models

CAESAR-Lisflood does not handle spatial variability in soil types and vegetation growth cover easily. Sub-catchments need to be set up and model runs carried out and subsequently linked. Variations in rehabilitated landscape shape also need to be set up from new DEMs. *Given the relatively long computation times associated with CAESAR-Lisflood runs, it may be worth examining whether the model might be used to generate parameter sets suitable for use in sediment accounting models such as Source and thereby applied to larger areas and more heterogeneous landform assemblages.* I am not aware of any instances where this has been done with *CAESAR-Lisflood* but it is worth considering where a range of landforms or vegetation growth patterns needs to be investigated.

I note that eriss has already taken this approach by using CAESAR-Lisflood to help in selecting parameters for SIBERIA which allows for model runs over very long time periods.

2.5 Emerging approaches

While currently being state-of-the art, *CAESAR-Lisflood* is essentially a physical process model with a very simple grass growth model added on. However, recent trends in landform rehabilitation science show increasing concentration on biological processes. Some early work was done on soil turnover by termites in the Alligator Rivers Region but the biological component does not appear to have been incorporated within the sediment modelling program beyond the simple grass growth model in *CAESAR-Lisflood*. This reflects the lack of available models & reflects the lack of biology in the training of most geomorphologists more generally.

Most studies I have seen of rehabilitated mine landscapes in the semi-arid and seasonally wet tropics in Australia emphasise the importance of colonisation by plants and maintenance of vegetation cover in developing a stable landform. However, this is not a spatially uniform process as modelled in *CAESAR-Lisflood*. Instead, it is a highly variable process and is locally dominated by zones of water runoff and runon, and the level of loss, disturbance and accumulation of sediment and nutrients within a slope or landform. This is especially true of newly created or disturbed rehabilitated mine landforms where patterns of runoff and vegetation cover are developing from scratch. Here, recently constructed slopes or landform cover materials develop source zones which shed runoff, sediment, nutrients and plant material. Source zones feed into transfer zones which are areas which only show limited net loss or gain of material but are regularly disturbed as material is intermittently transported across them. Transfer zones feed into sinks where material accumulates and plant growth may be vigorous. Source zones often develop on the upper sections of hillslopes, transfer zones may occupy mid-slopes, and sinks occur on lower slopes. However this is a simplistic model and all three zones may occur anywhere on a slope. Indeed, they may exist simultaneously at a variety of spatial scales and small scale features may be nested within larger features making up erosion cell mosaics. The theory of these mosaics suggests that the finer scale features operate during smaller rainfalls whereas the larger source zones, transfer zones and sinks operate and develop connectivity during high rainfall events.

Over the last two decades, a great deal of work has been done in Australian rangeland research on this type of landscape patchiness and it has been shown that patch structures greatly influence landscape stability by modulating loss of water, sediment and nutrients (also termed leakiness). Leaky landscapes tend to have large patches (or erosion cells) and are regarded as degraded and low in resilience under variable climatic conditions such as those of the savannah landscapes of northern Australia. The more resilient landscapes and those which are trending towards stability tend to develop fine-scale patchiness.

One technique that has been developed for assessing landscape condition is *Landscape Function Analysis (LFA)*. This is essentially a ground survey technique based on one-dimensional transects. While initially developed for range assessment, it is increasingly being used on mine waste dumps and rehabilitated landforms, initially to understand how they are evolving through time, but also as a measure to assess whether the rehabilitation scheme was successful. Indeed, it is currently being considered by several States, both as a measure of successful rehabilitation, and, when a suitable level of landscape functioning is achieved, as a possible trigger for the return of post rehabilitation bonds.

A manual and full description of the LFA techniques is available here:

http://live.greeningaustralia.org.au/nativevegetation/pages/pdf/Authors%20T/7a_Tongway.pdf and other resources are available here: http://www.csiro.au/Organisation-Structure/Divisions/Ecosystem-Sciences/EcosystemFunctionAnalysis.aspx

A presentation on application to minesites is available here:

http://www.cse.csiro.au/research/ras/efa/resources/EFA_Overview_Minesite.pdf

The concepts behind *LFA* involve identifying those features in a landscape that regulate the availability of vital resources such as soil, water and nutrients in space and time. Many landscapes are naturally heterogeneous in terms of resource control and possess areas where resources tend to be lost or are only available intermittently (source and transfer zones) or patches where they accumulate (sinks). Between them are inter-patches which the resources flow more freely across. The patches may form "runon" zones where overland flow tends to accumulate, due to flats or depressions in the landscape, or plant patches that accumulate resources by acting as wind or water flow obstructions. Patches are richer in resources and have enhanced soil properties such as better infiltration, higher nutrient concentrations and greater physical stability. Inter-patches tend to be poorer in resources and have low soil property values compared with the patch. Source zones consistently shed water soil and nutrients and develop rills, sheetflow zones and gullies. Many rehabilitated landforms develop these features on their slopes or have them built in (often accidentally) during construction. Indeed, the development of patch structures is often how areas of disturbance restabilise.

Without going into the detail of the *LFA* procedure, stabilising slopes tend to develop fine scale patchiness or have low sediment loss and maintain uniformity of plant cover and retain resources. Degrading or dysfunctional slopes tend to develop large scale patchiness and largely consist of source or transfer zones with large sinks at their base.

Field application of *LFA* involves a range of measurements including soil surface parameters such as crusts and cryptogam covers, plant composition and recognition of patches. However, *CAESAR-Lisflood* also generates a range of source zones, transfer zones and sinks both initially in the *TOPMODEL* topographic index, and subsequently as erosion and deposition proceeds. These also develop at changing spatial scales as rainfall event magnitude increases. Indeed, it has been suggested that the topographic index controls flow accumulation, soil moisture, distribution of saturation zones, depth of water table, evapotranspiration, thickness of soil horizons, organic matter, pH, silt and sand content, and plant cover distribution.

It would seem that there is some capacity for improving the biological component of CAESAR-Lisflood by incorporating some of the LFA ideas on patchiness and resource leakage into both the plant growth model and into local erosion/deposition rates over time. Thus, water and sediment sinks or patches have more rapid or enhanced vegetation growth and stronger runoff and sediment trapping properties. Source or eroding zones, on the other hand, have reduced plant growth and runoff trapping properties and enhanced rates of sediment loss even during periods of general vegetation growth. No doubt, these changes would have to be made by the model developer or perhaps within a sediment accounting framework such as *Source*. However, it is a prospect and there is now probably enough multi-temporal high resolution remotely sensed data available to carry out some testing on existing landforms. I don't believe this has been done with an LEM as yet but I suspect that may become the way forward when trying to generate stable or resilient landforms.

2.6 Conclusions

The review brief called for assessments of:

1. How the Hydrologic, Geomorphic and Chemical Processes landform evolution research program compares with current international leading practice, especially in relation to erosion of a rehabilitated mine site?

In my opinion, the program is world-class and consistent with international best practice. The methods in use with the models are sound and also represent best practice.

2. What additional or emerging approaches could be utilised by the Hydrologic, Geomorphic and Chemical Processes Program for its research and assessment activities for assessing landform evolution.

The program may wish to examine whether the current generation of Lumped Parameter, Semi-Distributed Catchment and Sub-Catchment Models offer potential for developing more generalized approaches. However, this may not be necessary if available computer facilities are able to handle long term runs with CAESAR-Lisflood over larger areas.

There is potential for enhancing the program through incorporation of recent developments in knowledge of how slopes function by developing spatial patterns of distribution in runoff, erosion and deposition, and nutrient cycling, and the feedbacks between vegetation growth and these processes.

2.7 Credentials of reviewer

Dr. Geoff Pickup is geomorphologist of more than 30 years' experience with a background in fluvial geomorphology, remote sensing and engineering hydrology. Prior to becoming a private consultant in 2001, he was Chief of the CSIRO Division of Water Resources and Chief Research Scientist, CSIRO Land and Water. He currently specialises in sediment transport and erosion modellingin mining environments and has worked in Australia, Asia, Africa, North America and the Pacific. Over the last decade, he been responsible for most of Ok Tedi Mining Ltd's sediment transport modellingand recently, in association with EGI Ltd, pioneered the merging of sediment transport and ARD modeling. He has applied both the *CAESAR-Lisflood* and *SIBERIA* models at various locations, including the Ok Tedi and Hidden Valley Mines in Papua New Guinea. He has extensive experience in northern and central Australia in areas including palaeoflood analysis, erosion modeling and the use of high resolution imagery and airborne geophysical techniques for mapping of sedimentary environments. He also led the team that designed much of the Alligator Rivers Research Institute geomorphology program in the 1980s. He has had no connection with ***eriss*** since then.

Part 3: Comments by Tom Coulthard and Greg Hancock

T Coulthard & G Hancock

3.1 Introduction

The above comprehensive review describes how eriss is using state of the art models and world-best practice for simulating the future behaviour of the Ranger mine site. It also highlights a number of advantages of the methods used – and how this 'best practice' methodology is to be commended. The review also contained a series of comments and insights that are highly constructive to consider when moving the project forward.

In this chapter, Professor Coulthard (University of Hull) and Associate Professor Hancock (University of Newcastle) respond to all of the comments and suggestions made by Dr Pickup. The chapter has been broken into three broad sections:

- An integrated section which contains a joint response to general/technical comments;
- The response of Professor Coulthard, from the perspective of model developer, to three key areas picked up by Dr Pickup with respect to climate, soil development and vegetation; and
- The response of Associate Professor Hancock to Dr Pickup's comments from the perspective of a landform modelling practitioner.

3.1.1 Integrated general/technical comments

The review noted that CAESAR-Lisflood was unable to simulate spatially variable soil and vegetation. For soil/sediment type this is not correct. There is a utility called grainfilemaker (downloadable from the CAESAR website) where separate areas of soil/sediment composition can be created for the catchment / study area. This was used in 2012/13 by ***eriss*** to show how different surface treatments of the landform (in different locations – i.e. along streamlines) could impact upon erosion rates. Further Hancock and Coulthard (2012) have employed this function and shown that soil and particle size has a direct impact on erosion rate and erosion position. Vegetation growth can vary spatially across the modelled area – but the properties of the vegetation community do not change (i.e. it is the same type of vegetation) – although this is something that could be readily modified.

A further comment was that CAESAR-Lisflood does not handle layers of different type or competence of sediment. The model can handle this – but it is not implemented by ***eriss***. As CAESAR-Lisflood has ten 'strata' layers below the surface it is quite possible to define these differently – so capping layers can be underlain by different grade/formation sediments. This could readily be changed if such a scenario was required. If the field data was available this could be easily included in any simulation.

The review also noted that while some model parameters were based on measurable properties or values that could be calculated, other model parameters relied upon being calibrated (for example lateral erosion rates). Unfortunately, this is an issue with all forms of morphodynamic landform modelling and is not unique to CAESAR-Lisflood.

Similarly, the review correctly noted a reliance on sediment transport equations that have a high degree of uncertainty. When applying all morphodynamic models outside of a theoretical framework this criticism is true. A generic solution to this reliance in sediment transport equations is a long way from realisation.

Specific dot points raised by Dr Pickup are addressed below:

- *There are few examples in the general CAESAR literature (not just in the Alligator Rivers Region) where runoff rates from the TOPModel component are reported and compared with observed discharges. This should be done if possible even if the location of stream gauges does not quite match the current area of interest.*

Bevan (1997) compares predicted runoff rates from TOPModel with observed discharges. CAESAR-Lisflood utilises a largely unmodified version of TOPMODEL. Therefore, it is quite possible that TOPMODEL literature i.e. Beven & Kirkby (1979) may be used to parameterise the key 'm' value within TOPMODEL.

- *I would like to see more investigation of how changes in CAESAR_LISFLOOD parameters affect model results. In my own work with the model, I have found that changes in the soil creep parameter and the lateral erosion rate can make quite a difference to results. In fact, it may be desirable to conduct a formal sensitivity analysis to determine which parameters matter most under local conditions.*

This is a very valid criticism. A full evaluation of the sensitivity and uncertainty of CAESAR-Lisflood would be a very useful and instructive exercise. There are a range of previous studies which have considered and tested various aspects of CAESAR and CAESAR-Lisflood parameters (Coulthard & Van de Wiel 2013; Coulthard et al. 2012a; Hancock & Coulthard 2012; Hancock et al. 2011; Ziliani et al. 2013)

- *Model results throughout the CAESAR literature (not just from the Alligator Rivers Region) tend to show the initial landform and the final landform but do not provide figures showing the amount of change between them. This can hide a variety of sins. I would prefer to see results of modelling runs expressed as change in elevation as well as elevation itself. This gives a much better indication of model performance. Just using elevation (as a grey scale) does not give a very clear impression of what is happening and tends to mask model flaws. I note that eriss have shown change values in modelling of pit stability but it would be useful to provide these values more widely.*

Agreed. This is largely down to the data provided. Output data can be provided in a variety of forms from annual erosion rates through to 3-D plots of the evolving landscape at any time step required. At all times we have endeavoured to provide the most relevant and useful data.

- *All of the 2-D models I have used (including CAESAR-Lisflood) are potentially affected by DEM artefacts. These are small irregularities in the topographic surface caused when gridding LiDAR point datasets or when gridding from contours (which may produce steps in the landscape. Gridding from contours via fitted TINs may also produce artefacts. Once a model is run, it may generate rills in some of the irregularities which subsequently become gullies under high rainfall conditions. DEMs should be checked to see whether these problems occur before running a model. A good way of carrying out this check is to calculate and view topographic curvature.*

Agreed. This is a significant concern – albeit primarily the responsibility of the landform designer – in this context, the mining company ERA and/or its contractors. It is important that the reliability/robustness of the initial landform be assessed before any modelling occurs. From the perspective of the software developer / practitioner, while we may have little control over the initial landform as it is a product of the mass-balance issues of the landscape reshaping and that of the skill of the designer and their knowledge of geomorphology, we are currently developing a method for assessing landscape construction error and its long-term influence on landform behaviour.

- *CAESAR-Lisflood uses a single angle of rest to determine whether slope failure and subsequent landsliding can occur. On slopes containing fine sediment, waterlogging and possible even fluidisation may occur producing landslips. Events of this nature have been reported in the Jabiru area on natural hillslopes. Presumably, the engineers designing the final landforms at Ranger will subject them to the normal range of geotechnical analyses. However, it may also be worth applying a shallow landsliding model such as SHALSTAB to investigate potential for areas of slope failure in steeper zones of flow convergence.*

This could indeed be added – though given the low slopes on the landform for all scenarios proposed to date – this may not be necessary. However, it is an issue that should be considered with any proposed design.

Saynor et al. (2012b) found that landslides on Oenpelli Dolerite in the Magela Creek catchment during the extreme event of February/March 2007 were restricted to slopes equal to or steeper than 17° and the designed rehabilitated mine site would need to be checked for such threshold slopes.

- *Assuming that feral buffalo survive in the area, their tracks create a risk of gullying, especially if constructed landforms or the mine area provides a source of dry season drinking water (in pit lakes for example) or when rehabilitated landforms are sown with palatable grasses. This may be worth investigating.*

It is considered unlikely that the impacts and affects of feral buffalo will feature heavily in rehabilitation / remediation plans and activities for the Ranger mine. Hancock et al. (2011) demonstrated that tree throw after cyclones did not increase erosion for a nearby undisturbed catchment. Further work by Hancock et al. (in press) has found again that pigs do not increase erosion rates in a natural catchment despite exhuming considerable soil each year. How these findings translate to post-mining materials is not yet known.

- *CAESAR-Lisflood does not handle spatial variability in soil types and vegetation growth cover easily. Sub-catchments need to be set up and model runs carried out and subsequently linked. Variations in rehabilitated landscape shape also need to be set up from new DEMs. <u>Given the relatively long computation times associated with CAESAR-Lisflood runs, it is worth examining whether the model might be used to generate parameter sets suitable for use in sediment accounting models such as Source and thereby applied to larger areas and more heterogeneous landform assemblages.</u> I am not aware of any instances where this has been done with CAESAR-Lisflood but it is worth considering where a range of landforms or vegetation growth patterns needs to be investigated.*
- *I note that eriss have already taken this approach by using CAESAR-Lisflood to help in selecting parameters for SIBERIA which allows for model runs over very long time periods.*

This is a realistic and practical option. The current method employed is to use CAESAR for sub-annual and short term assessment with SIBERIA having the capacity to operate at longer (millennial) time scales.

3.2 Tom Coulthard's perspective

3.2.1 Climate

The reviewer rightly identifies limitations with how climate and climate change are represented in the modelling program. Changes in rainfall driving the model will be one of the main causes of change in output. We have conservatively used existing rainfall data (augmented by the 2007 cyclone event when required) as a baseline for our existing studies but when looking to simulate up to 10,000 years into the future a methodology should be developed for simulating rainfall for this period. Using synthetic rainfall data raises new issues – weather generators and other methods for creating rainfall time series largely sample statistical representations of existing rainfall tweaked to give different future distributions of events. These rainfall data are generated stochastically, by randomly sampling the distribution of past events and means a probabilistic approach is required for future simulations. This means that multiple repeats with different rainfall time series (from the same scenario) need to be used and average values (with variance) of resultant changes forming the output. This has been carried out over shorter time scales (30-100 years) on one UK based catchment (Coulthard et al. 2012b) and such a methodology could form a framework for future simulations here. Unfortunately, the need to run multiple simulations with a model that can have considerable run times generates a computational overhead. However, this need for improved rainfall data is coupled with understanding the armour/soil development and resultant feedbacks with vegetation growth and dynamics.

3.2.2 Soil development

The review rightly identifies that the present ***eriss*** modelling capability assumes no breakdown in the grainsize of sediment. Changes in surface grainsize are solely driven by selective erosion and deposition. Rates of mostly physical weathering on the trial landform test plots are currently being determined. Nevertheless, the physical and chemical breakdown of the surface material and soil is an important process that should be integrated within the ***eriss*** modelling approach.

Trial work has already begun on this approach by integrating the physical and chemical weathering components of the soil development model of Vanwalleghem et al. (2013). This is a dynamic 3d soil development model that takes into account how moisture and temperature vary with depth when determining the breakdown of sediment clasts. For example equation 1 describes how particle size reduction is contingent upon particle size, depth and rates of reduction for that grain size.

$$a_{jit} = -k_1 e^{(-c_1 D_j)} \frac{c_2}{\log(PD_i)} \Delta t \quad (1)$$

where a_{jit} is the amount each particle size class (i) breaks down by, k_1 the rate constant of physical weathering, D_j the depth below the soil surface for layer(j), c_1 the depth rate constant for physical weathering, PD_i the mean particle size, c_2 the size rate constant for physical weathering and Δt the model time step.

Vanwalleghem et al. (2013) also identify an equation which could be used to represent the chemical weathering of a landform surface.

The scheme of Vanwalleghem et al. (2013) uses multiple grainsizes and a series of layers to represent horizons within the soil, so can easily be integrated within CAESAR-Lisflood as this already contains an active layer system and works with multiple grainsizes.

Initial simulations are encouraging – and show the model reducing surface grainsizes over time. However, the parameters used to predict rates of weathering will require calibrating and the model testing with field data. Such work is already being carried out by ***eriss*** who have been monitoring surface grainsizes on the trial landform plots to show how the grain size distributions change over time. In the course of the coming few years this will give rise to a valuable data set from which the above schemes in CAESAR-Lisflood can be tested/calibrated.

3.2.3 Vegetation

The review rightly noted the limitations of the vegetation model used within CAESAR-Lisflood. The importance of vegetation on altering erosion rates in this environment is undeniable and needs to be accounted for. The existing vegetation model within CAESAR-Lisflood is simple and adequate for some purposes, but is probably too simplistic in its present form for this application.

The review suggested looking at the use of Landscape Function Analysis (LFA) for rehabilitated landforms and for integrating such approaches within numerical models of mine rehabilitated landforms. Reviewing the LFA manual and some example papers suggests that LFA is an excellent tool for *assessing* mine site rehabilitation and *measuring* vegetation recovery.

However, whether LFA approaches would translate into providing parameters and process rates that can be fed into a numerical model is not so clear. LFA gives good indicators of recovery, but how this could be used as a predictor within numerical code is not clear. Certainly it could provide data to parameterise numerical schemes, but it does not readily provide information on the processes or interactions operating. Therefore, we would suggest that methods like LFA would be an excellent procedure to use when assessing the performance of the landform and landform models post rehabilitation but less suitable for using to develop a numerical vegetation model component. However, if LFA is seen as a good way forward changes could easily be made within CAESAR-Lisflood with the aim of using LFA as a comparator metric/methodology and model outputs designed accordingly.

However, this still leaves a clear need for a dynamic vegetation model to be developed/integrated within CAESAR-Lisflood. Dynamic vegetation models have been developed within landscape evolution models (Cohen et al. 2013; Saco 2007; Saco & Moreno-de las Heras 2013) whereby soil moisture is linked to a biomass growth and seed dispersal model. Biomass levels can then be used to restrict surface erosion rates. In environments such as those found at Ranger with strongly seasonal vegetation responses this approach may be ideal and by lumping all vegetation within a biomass term it reduces the need to have different types of vegetation represented. Tests have already been carried out integrating this approach into CAESAR-Lisflood and shown that it works and can generate a dynamic vegetation pattern who’s biomass density follows overall moisture but also soil moisture. Therefore you get a concentration of vegetation within gulleys and depressions reducing the likelihood of erosion in these areas. Initial tests show that for the Ranger application seed dispersal is not a significant issue (we must assume that there is widespread planting) and that the model is sensitive to two terms accounting for biomass decay and biomass growth rates. Values for these can be taken from previous studies - but getting appropriate values could be measured/calculated for vegetation endemic to the NT.

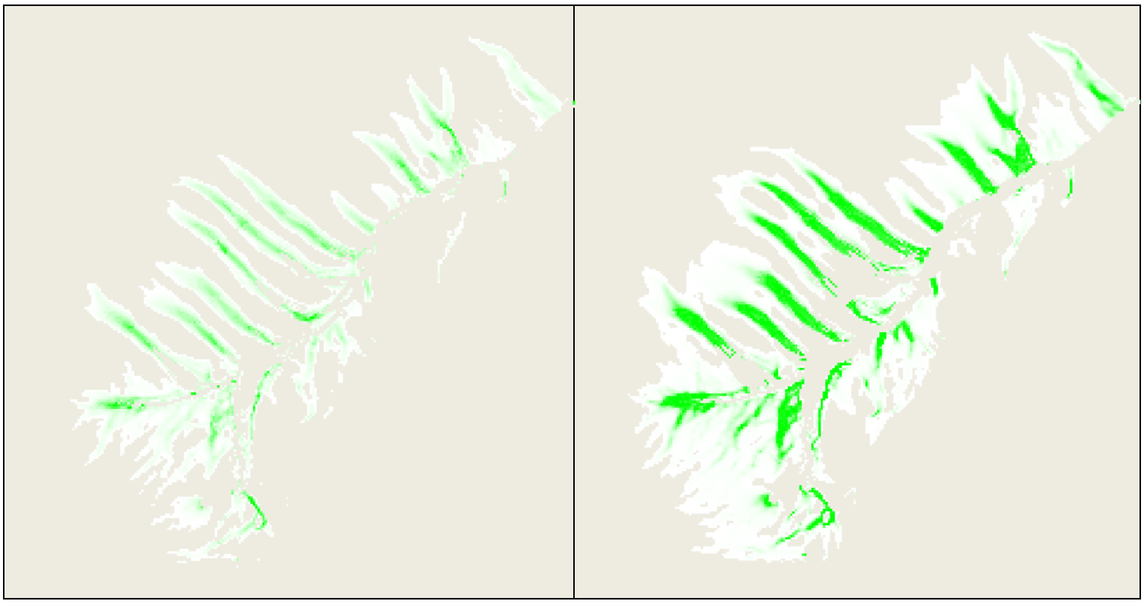

Figure 3.1 Images from preliminary runs showing the development of vegetation along drainage lines within the Corridor Creek catchment based on the Saco et al. (2007) model.

3.2.4 Future recommendations

I would suggest that the addition, testing and if necessary modification of the Vanwalleghem pedogenis model and Saco vegetation growth, in addition to an appropriate methodology for generating future rainfall for the region could be a suitable way of addressing the bulk of the issues outlined by the reviewer moving forward.

3.3 Greg Hancock's perspective

There is no question that the ERA Ranger site will be rehabilitated in some form and that the central tenet of any rehabilitation is a stable self-sustaining landscape. Given the length of time that the landscape is required to perform (10,000 years), innovative assessment approaches are required.

Over the past decade ***eriss*** has been visionary in using LEMs to assess a range of proposed landforms. These LEMs have been calibrated and developed to the point where they are now limited by input data and a consensus on design and climate scenarios. Both SIBERIA and CAESAR are very advanced models and it can be argued that they have more functionality than the field data with which to calibrate them. For example, if vegetation growth and its influence on hydrology was quantified along with pedogenesis then sub models within SIBERIA and CAESAR could be further developed and implemented.

Previous world-class work by Evans et al. (2000) developed LEM input parameters based on what was proposed to be the surface materials of the final landform. These parameters were for waste rock as well as for a vegetated surface. The effect of fire was also examined. However the extent, nature and composition of the final landform surface is still being evaluated. If the surface is very different to that of past materials then new LEM model parameters for the new material will be needed. This will require field plots to be constructed for a range of slopes and slope length and monitored for many years. If this is not done then any LEM predictions may have considerable error.

A significant issue is reliable prediction at time scales up to 10,000 years. Both SIBERIA and CAESAR are capable of running to this length of time, however this requirement has several implications such as model calibration at these time scales, validation at these time scales and the practicalities of model run times for 10,000 years. These and other issues are discussed below

3.3.1 Model calibration

At present any LEM parameters have been developed for surfaces that are several years old. We know very little about how these new surfaces evolve and how erodibility changes in this or any post-mining environment. It is well recognised that armouring and weathering of waste rock is extremely rapid at the ERA Ranger mine. However, we have a near complete lack of data on this process and therefore this is not included in LEM parameterisation. The outcome from this lack of data is that any model prediction may be grossly over or underestimating erosion at the 10,000 year time scales needed here. Significant issues are weathering and armouring and pedogenesis. A further issue is the trial landform.

3.3.2 Weathering and armouring

They should be at least examined on the surface of the trial landform and on any material that is likely to be used as part of the rehabilitation. Weathering trials for the proposed materials under controlled conditions (i.e. such as that performed by Wells et al. 2005) will provide important information on weathering process and rate.

3.3.3 Pedogenesis

Pedogenesis can be examined by use of soil pits at sites of different ages on rehabilitated areas of the mine or areas that have not been disturbed so that soil production rates and process can be determined.

3.3.4 Trial Landform

The Trial Landform, while a world class facility in its size and setup, is more suited for the determination of vegetation establishment and management than hydrology and sediment transport and has very limited potential for the reliable determination of long-term erosion parameters. This is due to the simple very low slopes on the plots that are not representative of the typical slopes and slope lengths on the rehabilitated site. Hydrology and sediment transport is recognised to be highly non-linear especially at higher slopes and a single low slope provides very limited calibration and validation potential.

It is recommended that further trial plots be established over a greater range of slopes so that more robust parameterisation and validation can be determined.

A further significant issue is that aside from the world-class work of Evans (2000) and Evans et al. (2000), there are few external data sets available for both post-mining and natural surfaces. Denudation rates exist but only provide a broad expected range of landscape lowering for the region. These denudation rates need to be re-examined and updated.

Further, data exists for the Gulungul Creek catchment adjacent to the mine as well as suspended sediment data from the trial landform, however, these data sets have not been fully processed, assessed and made available. While recognising that some data for the 2012-13 year is available in the *eriss* research summary (Erskine et al 2014a), the total dataset required is incomplete. Given the particular importance of the Gulungul Creek data, these data should be made available as soon as possible.

Other techniques using environmental tracers such as ^{137}Cs and ^{210}Pb should be employed to determine background hillslope erosion rates. ^{7}Be can provide data on storm scale erosion. These techniques are well-established and ^{137}Cs has been used successfully in the region. The employment of environmental tracers would provide indicative erosion rates over a 50-60 (^{137}Cs) and 200 (^{210}Pb) year periods. They need to be employed at suitable sites as close to the mine as possible.

3.3.5 The role of vegetation

Conceptually, vegetation is recognised to have a large influence on erosion and consequently landscape evolution. However, there is very little quantitative data on the role of vegetation and how this interacts with the new surface especially in this environment. While there is some data from the work of Evans et al. (1996, 1998) on this issue, there are no data for time periods greater than 5 years. This is especially important as how vegetation will influence hydrology and sediment transport at timescales greater than this will ultimately determine the performance of the landform. Therefore, field data is needed for proposed vegetation types and assemblages and how this temporally changes at both the initial and longer term periods. Long–term established analogue sites such as Tin Camp Creek provide a long-term end member for vegetation succession and should be examined.

The region also has a regular fire regime. In the initial stages of vegetation establishment fire will be excluded. However, over the longer term fire will be an inevitable part of the landscape evolution process.

At present, both the CAESAR-Lisflood and SIBERIA landform evolution models allow for incorporation of vegetation cover through the use of lumped parameter approaches. The vegetation parameter values used in both of these models need to be better defined to better account for the effects of developing vegetation cover over an area. Given its role in the north Australian landscape, the role of fire, which may disrupt or prevent the development of specific vegetation communities, will also need to be considered. The rate and effects of this process in the Kakadu region has been extensively studied in the Kapalga fire studies (Anderson et al., 2003). The impact of fire on the landscape and tree cover of Kakadu National Park has also been described in Lehmann et al. (2009).

Consequently, further studies into the role and impact of fire on vegetation development cannot be neglected and should be investigated in conjunction with studies into weathering and soils evolution. Consequently, field and plot studies are recommended to investigate how weathering and resultant soils interact.

3.3.6 Climate

At present all model parameterisation is carried out assuming a static climate. This is not a practical scenario given the time scales required here. Climate models predict an increase in frequency and intensity of rainfall in the area. Any future landscape design must take this into account and it is important that a consensus on future climate and thus rainfall scenarios is met, so that future designs can be assessed. This will allow model parameters to be developed that reflect expected events.

3.3.7 The significance of 10 000 year simulations

This is the first time that LEMs have been employed for 10 000 year simulations to assess rehabilitation strategies. The change in prediction time scales from 1 000 to 10 000 years presents a fresh set of challenges. Both models are capable running for these lengths of time however due to the additional processes modelled in CAESAR-Lisflood run times can be considerably longer than SIBERIA. The SIBERIA model, based on its framework of annual input data and annual output of sediment and landscape coordinates can provide a result for a Corridor Creek size catchment in approximately one hour for a simulated period of 10 000 years. In contrast CAESAR, with its high resolution hour time steps and similar output time steps allows much more detailed analysis of sediment transport and landscape form. However for a Corridor Creek size catchment it takes approximately 150 hours for 1000 years.

Therefore, a method could be established and protocol developed where, for example, CAESAR is run for the first 10–100 years and SIBERIA is employed for the landscape for the remaining time period. This would allow fine scale detail in the initial stages of landscape development and less detail but long-term trajectory to be examined at longer time periods by SIBERIA. Additionally, SIBERIA parameter values for future climates and vegetation levels could be developed from CAESAR-Lisflood simulations of 10–100 year periods under these future climate/vegetation scenarios.

3.3.8 Validation of predictions

If the models are to be employed at 10 000 year time scales then they require much more extensive validation than that currently undertaken. This validation is required for the short-term (annual to decadal) through to millennial time scales. This requires not just validation against erosion rates but also erosion process (i.e. sheetwash, rilling and gullying). Environmental tracers provide data on hillslope scale erosion rates while the Gulungul Creek data will help provide catchment scale data.

Older sites on the mine itself may provide areas where rilling and gullying exist and provide vital calibration and validation data for erosion process. The work at Scinto 6 provides a template for this type of analysis. Longer term data can be obtained from analogue sites such as Myra Camp where gullies have been quantified and hillslope plots established. Other approaches such as slack water deposits and the quantification of probable maximum floods would also be of benefit to quantify extremes.

3.3.9 Personnel

A critical issue with the effective use of LEMs is well trained and motivated personnel. The LEMs employed by ***eriss*** are state of the art. However, they are continually being developed and refined. To ensure that this development continues, it is vital that the skills base at ***eriss*** is continued and supported. It is also important that ***eriss*** continues to engage with the developers and practitioners of LEMs.

Part 4 : Response by Supervising Scientist – future directions and priorities for landform evolution modelling

J Lowry & W Erskine

This section provides a summary of current research projects and applications of the CAESAR-Lisflood model within the Supervising Scientist Branch, followed by a detailed response to the recommendations made by the reviewer and the external collaborators, including priorities for future work.

4.1 Research projects

Landform evolution modelling currently supports two research projects at the Supervising Scientist:

1. Assessing the geomorphic stability of the Ranger trial landform (RES-2010-007); and
2. Modelling the geomorphic stability of the Ranger landform for a period of 10,000 years (RES-2012-005).

It is envisaged that both of these projects will extend through to the end of 2015 at least.

As part of these projects, it is anticipated that the model will be used to assess the geomorphic stability of individual elements of the rehabilitated landform as they are designed.

In addition, it is anticipated that the CAESAR-Lisflood model will be used on an opportunistic as-needs basis, where new opportunities and requirements for landform and erosion modelling occur. Potential scenarios could include assessing the stability of containment structures in the South Alligator Valley; and the provision of advice to external stakeholders and consultants.

4.2 Response to review and external collaborators feedback

4.2.1 Reviewer recommendations

Dr Pickup reviewed the use and application of CAESAR-Lisflood favourably. All of his suggestions and recommendations were helpful. Responses to each of his suggestions and recommendations are provided below.

1. There are few examples in the general *CAESAR* literature (not just from the Alligator Rivers Region) where runoff rates from the *TOPMODEL* component are reported and compared with observed discharges. This should be done if possible even if the location of stream gauges does not quite match the current area of interest.

As noted by Dr Pickup, some information is available in the literature about the most appropriate runoff values to use to parameterise the 'm' value in TOPMODEL and consequently CAESAR-Lisflood. The suggestion by Dr Pickup is a valid and important one. ***eriss*** has been comparing field data collected on the trial landform with the model predictions of discharge from the trial landform since 2012, which goes some way to addressing this point. Observations to date indicate that an 'm' value of 0.02 is most appropriate to use for simulations on the landform, representing relatively low flood peaks and long duration hydrographs. The runoff / discharge data for Plot 2 are the most complete to date. Utilisation of an 'm' value of 0.02 in simulations shows a very high correspondence with measured discharge. Gaps in the field data for the other erosion plots means that it has not been possible to do a direct comparison with model data yet. It is anticipated that field collection of discharge data on the landform will continue for several more years, which will provide a valuable resource for assessing the accuracy of the predicted discharge data from the CAESAR-Lisflood model across all plots on the landform. Additional work is planned to utilise the data collected at gauging stations in Gulungul Creek to assess the accuracy of model predictions after the accuracy of the rating curves have been checked, as recommended by Erskine et al. (2014a). Continuing to compare model and measured discharge is seen as an important activity to ensure confidence that model simulations will provide meaningful and realistic predictions over longer time frames. Given the results to date, this is seen as a **low-medium** priority activity.

2. I would like to see more investigation of how changes in CAESAR-Lisflood parameters affect model results. In my own work with the model, I have found that changes in the soil creep parameter and the lateral erosion rate can make quite a difference to results. In fact, it may be desirable to conduct a formal sensitivity analysis to determine which parameters matter most under local conditions.

Sensitivity tests are currently being run to assess the impact and significance of the lateral erosion and soil creep parameters on simulations on both the trial landform and on the conceptual rehabilitated Ranger landform design prepared by ERA, over simulated time periods ranging from 4 years to 45 years. Longer term simulations up to 10,000 years are planned. This is recognised as an important part of calibrating model simulations and ensuring that model outputs are reliable and realistic. As such, this is considered an important **high priority** activity that should continue while the Ranger final rehabilitated landform is in development.

3. The long-term simulation reported in the most recent exercise to determine the long term stability of the rehabilitated landform used a rainfall series built from repeating the observed 22 year rainfall but excluded the 2007 cyclone. Given the importance of extreme events in the Alligator Rivers Region reported elsewhere in the literature, this approach is open to debate. A more defensible approach might be to use the standard methods for generating rainfall series in Australia to produce a long term synthetic record. Several approaches may be necessary to accommodate extreme outliers. Indeed, stress testing of alternative landform designs might be carried out using a rainfall series with a fairly high frequency of extreme events.

The point raised by Dr Pickup about the importance of a sound rainfall dataset on which simulations is based is very important. However, the material he reviewed may not have contained a comprehensive explanation of the lineage of the range of rainfall records used by ***eriss*** to date. Rainfall data recorded at Jabiru airport over the period from 1972-2006 has been used to generate a 22-year contiguous rainfall dataset. This contiguous dataset has been used to generate several rainfall files ranging in length from 44 up to 1000 years. Furthermore, data for the 2006-2007 rainfall year, which included a greater than 1-in-100 year extreme event in February-March 2007, has been recorded. In combination with the 22 year contiguous rainfall dataset, the 2007 rainfall dataset has been used to generate a number of rainfall files representing different rainfall scenarios. However, it is also recognised that generating a 10 000 year rainfall dataset using the 22 years worth of contiguous rainfall data currently available would limit the range of climate scenarios potentially modelled. It is recognised that simulating 10 000 years will require a dataset that would enable a wide range of scenarios to be modelled. Consequently, the creation and generation of a rainfall dataset to use in conjunction with 10,000 year modelling is recognised as an **important milestone and a high priority** for modelling a rehabilitated landform. Importantly, it is believed that such a dataset should form a common resource which could be utilised by other research programs, such as for groundwater and surface water modeling. The identification and sourcing of such a dataset is currently underway with ERA.

4. Model results throughout the *CAESAR* literature (not just from the Alligator Rivers Region) tend to show the initial landform and the final landform but do not provide figures showing the amount of change between them. This can hide a variety of sins. I would prefer to see results of modelling runs expressed as change in elevation as well as elevation itself. This gives a much better indication of model performance. Just using elevation (as a grey scale) does not give a very clear impression of what is happening and tends to mask model flaws. I note that ***eriss*** has shown change values in modelling of pit stability but it would be useful to provide these values more widely.

Simulations run by ***eriss*** have included the generation of output surfaces at a series of regular intervals between the commencement and the conclusion of the simulation. This has been demonstrated to have been particularly useful in modelling the changes in elevation and evolution of landscape and erosion features i.e. gullies over time, particularly in the period immediately after the rehabilitation of the mine site. This is recognised as an important output of the model simulations and ***eriss*** will continue to produce these as model outputs for simulations into the future.

5. All of the 2-D models I have used (including *CAESAR-Lisflood*) are potentially affected by DEM artefacts. These are small irregularities in the topographic surface caused when gridding LiDAR point datasets or when gridding from contours (which may produce steps in the landscape). Gridding from contours via fitted TINs may also produce artefacts. Once a model is run, it may generate rills in some of the irregularities which subsequently become gullies under high rainfall conditions. DEMs should be checked to see whether these problems occur before running a model. A good way of carrying out this check is to calculate and view topographic curvature. The LiDAR-derived DEM of current landforms in the mine area seems reasonably free of major artefacts. However, if datasets of final landforms are delivered in the form of contours, this may cause problems.

The comments about the need to check the DEM used to represent the rehabilitated surface for errors and artifacts are well founded and important. It is hoped that many of these issues can be eliminated when the DEM is generated by ERA or its contractors. However, the recommendation to assess and test any DEM before modelling has and will continue to be undertaken by ***eriss*** as a **high priority** before any simulations are run. Given that the most recent DEMs supplied by ERA have been generated from contour data, the suggestion to calculate and view topographic curvature will be incorporated into any pre-modelling preparations undertaken by ***eriss***.

6. *CAESAR-Lisflood* uses a single angle of rest to determine whether slope failure and subsequent landsliding can occur. On slopes containing fine sediment, waterlogging and possible even fluidisation may occur, producing landslips. Events of this nature have been reported from the Alligator Rivers Region on natural hillslopes. Presumably, the engineers designing the final landforms at Ranger will subject them to the normal range of geotechnical analyses. However, it may also be worth applying a shallow landsliding model such as *SHALSTAB* to investigate potential for areas of slope failure in steeper zones of flow convergence even if final landforms have fairly low slopes. Potential areas of interest may be valley sidewalls if local creeks affected by final landform construction re-establish themselves.

This inclusion of a dedicated landsliding model into long-term simulations using CAESAR-Lisflood is being considered. It should be noted that the landslide studies in the Alligator Rivers Region referenced by Dr Pickup occurred on Oenpelli Dolerite on slopes greater than 17° (Saynor et al. 2012b). Such a slope or material is not expected to be represented on a final rehabilitated landform at Ranger. The expansion of the CAESAR-Lisflood model to include a dedicated landslide component would require the involvement and participation of Professor Coulthard, as the developer of the model. Subject to the availability of Professor Coulthard, such a development is seen as a medium – long term goal and as such is considered a **medium priority** in the application of landform modelling technologies at ***eriss***.

7. *CAESAR-Lisflood* assumes no change over time in particle size distribution from that of initially emplaced material except through sorting and bed armouring. However, there may well be some particle breakdown to fines with weathering. There may be a need to allow for the weathering characteristics of cap material during long-term modelling runs. Some rock types, if fresh, can weather very quickly in tropical environments when exposed to oxidation. ***eriss*** is currently in the process of acquiring these data and a time series covering several years should soon be available.

As noted by Dr Pickup, ***eriss*** is currently in the process of collecting particle size data from the trial landform, as well as particle size data from other areas representing potential surface conditions (waste rock, Koolpinyah erosion surface) in the Alligator Rivers Region, such as the Nabarlek mine site. More significantly, ***eriss*** contracted Professor Coulthard to incorporate a weathering function into the CAESAR-Lisflood model to account for the weathering and breakdown of the surface materials over time. The weathering function incorporated into the model by Professor Coulthard is currently being tested. This forms a major part of the current landform modelling activity at ***eriss*** is seen as a **very high priority**. In addition, further ongoing engagement with Professor Coulthard and Associate Professor Hancock is required in this area.

8. Assuming that feral buffalo survive in the area, their tracks create a risk of gullying, especially if constructed landforms or the mine area provide a source of dry season drinking water (in pit lakes for example) or when rehabilitated landforms are sown with palatable grasses. Feral pigs may be an even greater problem as they can disturb soils with their foraging behaviour. These issues may be worth investigating as they could cause significant localised erosion.

Feral buffalo are not expected to be a major factor in a post-mining environment. Furthermore, Associate Professor Hancock notes studies conducted in western Arnhem Land which indicate that feral pigs may actually have little effect on soil erosion in a natural or undisturbed environment. However, modelling from the same study shows that simulated pig disturbance on a rehabilitated landform may lead to an increase in erosion. From this, it could be inferred that simulated pig disturbance should be included in the modelling assessment of a rehabilitated landform. However, it should be noted that the resolution of the data required to simulate pig disturbance (0.25m grid size) is much finer than the current and likely resolution of the DEM of the final landform (10m). Further work would be required to determine if pig disturbance could be modelled at a resolution of 10 metres. This aspect of landform modelling is seen as **low-medium** priority by ***eriss***.

9. When designing or testing landforms, it is common to use a safety factor, especially where model parameters or behaviour involves uncertainties. The ***eriss*** program has gone a considerable distance with this approach by modelling with and without vegetation cover and for surcharged and non-surcharged landforms. However, I would like to see wider use of safety factors, perhaps by varying the most important and least certain model parameters. Loss of vegetation through fire should be expected and modelling without vegetation cover will give a measure of safety.

The role of vegetation and fire on the landscape are recognised as important factors that will need to be incorporated into any final assessment of a rehabilitated landform for any extended period, particularly one potentially extending out to 10,000 years. ***eriss*** is currently looking at ways of better representing the role of vegetation communities and their development into the modelling process in collaboration with Professor Coulthard and regards this recommendation as a **high priority** for future activity**.** At the same time, ***eriss*** recognise the value of continuing to conduct some simulations without a vegetation component, as these provide a conservative estimate of landform response.

10. Waste rock may contain sulphides. Potential for acid generation should be examined and mitigation strategies such as mixing with limestone may need investigation.

The current waste rock material used on the trial landform has not yielded large quantities of sulphides. Similarly, data and observations from the trial landform have indicated that acid rock drainage is currently not an issue or concern. However, while it is assumed that the final rehabilitated landform will be primarily composed of similar material, the actual composition has not been defined. Consequently, it is recognised that there maybe the potential for acid generation and/or other chemical processes to occur. This is seen as an area for future research and development of the CAESAR-Lisflood model, which would need to be done in conjunction with Professor Coulthard and potentially other researchers with expertise in chemical weathering. At this stage, this is seen as a **low-medium** priority with respect to developing and enhancing the CAESAR-Lisflood model. However, it is recognised that there is a knowledge gap in chemical weathering expertise within the HGCP group. Consequently, the development and acquisition of this knowledge and capability is seen as important.

4.2.2 Additional Reviewer recommendations

11. *CAESAR-Lisflood* does not handle spatial variability in soil types and vegetation growth cover easily. Sub-catchments need to be set up and model runs carried out and subsequently linked. Variations in rehabilitated landscape shape also need to be

set up from new DEMs. *Given the relatively long computation times associated with CAESAR-Lisflood runs, it may be worth examining whether the model might be used to generate parameter sets suitable for use in sediment accounting models such as Source and thereby applied to larger areas and more heterogeneous landform assemblages.* I am not aware of any instances where this has been done with *CAESAR-Lisflood* but it is worth considering where a range of landforms or vegetation growth patterns needs to be investigated.

CAESAR-Lisflood is able to model spatial variability in soil or surface covers and ***eriss*** has been successfully running a series of simulations on conceptual landforms in which different surfaces covers (representing waste rock, natural or Koolpinyah erosion surface) have been modelled. ***eriss*** sees the collection of additional material which could be used to describe/classify new and existing surface classes as a **high priority** and an appropriate way of addressing this recommendation. This activity would integrate with those landform modelling tasks looking at understanding the effects of weathering on the particle size composition of landform surface.

12. It would seem that there is some capacity for improving the biological component of CAESAR-Lisflood by incorporating some of the LFA ideas on patchiness and resource leakage into both the plant growth model and into local erosion/deposition rates over time.

eriss has applied LFA techniques in earlier studies relating to landscape ecology and mine rehabilitation, but has not considered integrating or applying them in a landform evolution model. This is something which would have to be done in collaboration with Professor Coulthard, as the developer of CAESAR-Lisflood. Without the involvement or participation of Professor Coulthard, this would be considered a **low priority** for landform modelling activities at ***eriss***.

4.2.2 Collaborators feedback and recommendations

As discussed in Part 3, Professor Coulthard and Associate Professor Hancock both support the suggestions and recommendations of Dr Pickup for the use and direction of landform modelling research at ***eriss***, whilst noting some alternatives and additions to some of the recommendations.

Specifically, Professor Coulthard recommends that the addition, testing and if necessary modification of the Vanwalleghem pedogenis and Saco vegetation growth models be incorporated into future versions of the CAESAR-Lisflood model. He also recommends the adoption of an appropriate methodology for generating future rainfall for the region as an appropriate way of both adopting the reviewer recommendations and moving forward with landform modelling at ***eriss***.

From an ***eriss*** perspective, this appears an eminently practical and reasonable suggestion to move forward with long-term landform modelling.

Associate Professor Hancock notes that the extent, nature and composition of the final landform surface is still being evaluated. If the surface is very different to that of past materials then model parameters for the new material will be required. However, this is highly unlikely because the rehabilitated mine site will be constructed principally of waste rock and a range of slopes and slope lengths have been monitored by ***eriss*** over many years. While ***eriss*** recognises there may be benefit in the establishment of additional trial plots with a greater ranger of slopes, it also notes that much work has been done in the past which could provide useful information to address this issue. Examples of these studies include East et al. (1994), Riley (1995), Evans & Loch (1996), Evans et al. (1998), Saynor & Evans (2001) and Moliere et al. 2002).

Associate Professor Hancock also re-iterates that studies be undertaken on the weathering of the surface of the trial landform and on any material that is likely to be used as part of the rehabilitation. He further suggests that soil formation or pedogenesis should be included as part of the model parameterisation. This information could be determined by examining soil pits at sites representing different ages on rehabilitated areas of the mine or areas that have not been disturbed so that soil production rates and process be determined. ***eriss*** has already commenced this work.

> ***eriss*** recognises the value of additional data from a range of slopes and surface materials. However, ***eriss*** does not currently have the resources to lead the construction of new trial plots and therefore, any trial plot development would have to be done in collaboration with ERA. Professor Steven Riley, who undertook geomorphology research on the Ranger site and surrounds in the 1990s at ***eriss*** recently provided his notes on his research and Dr Saynor will collate and process this material.

Another issue noted by Associate Professor Hancock is that aside from the work of Evans et al. (2000), there are few external data sets available for parameterising post-mining and natural surfaces. Denudation rates exist but only provide a broad expected range of landscape lowering for the region. These denudation rates need to be re-examined and updated. Erskine et al. (2014b) partly addressed this issue in their review of the available data that they used to construct a revised total sediment load sediment budget for all of Magela Creek.

> ***eriss*** recognises the need to collect additional and updated information on background rates of landscape lowering or denudation in the ARR. For example, while Erskine & Saynor (2014) have recently calculated bedload yields for streams at Jabiluka using over 30 techniques, they conclude that additional work is required to understand background denudation rates of the landscape.

How regular fire events influence vegetation, water quality and landscape evolution have been researched extensively at Kapalga and Munmarlary within Kakadu National Park. This is an important issue that now needs to be integrated with the weathering and soils evolution. Earlier work, such as that of Evans et al (1999) will advise how the impacts of fire may affect vegetation community development, and any subsequent erosion and evolution of a post-mining landscape. The comment that long–term established analogue sites such as Tin Camp Creek provide a long-term end member for vegetation succession and should be examined has been noted and will be investigated further through studying the available literature at those sites.

> ***eriss*** hopes to be able to investigate the role of fire through monitoring the impact of fire on vegetation communities during a planned burn of the trial landform in several years time. In the interim, ***eriss*** will be opportunistically looking to gather this information as a high priority.

Associate Professor Hancock also notes that earlier / historic work conducted at mine sites in the Alligator Rivers Region may be useful for calibrating and validating work on erosion processes. Other approaches such as slackwater deposits and the quantification of probable maximum floods would also be of benefit to quantify extremes when developing input parameter values for modelling purposes.

eriss agrees that the use of historic data collected at mine sites in the ARR, along with data collected in related geomorphic studies, such as those analysing slackwater deposits should be used to support the calibration and validation of datasets used in simulations of landform stability.

Finally, Associate Professor Hancock notes that it is vital that the skills base at ***eriss*** for landform evolution modelling is continued and supported.

eriss plan to continue to engage external support and expertise to provide guidance and support in the development and application of landform modelling skills and techniques by ***eriss*** staff.

4.2.3 Summary of priority areas for further and future development

Dr Pickup has made a number of recommendations that will enhance landform modelling capabilities at ***eriss*** through focussing future landform research and activities into specific areas. These recommendations have been supported by comments from Professor Coulthard and Associate Professor Hancock. In addition, both provided additional suggestions and recommendations regarding the direction and applications of landform modelling research at ***eriss***. Based on the recommendations of Dr Pickup and Professor Coulthard and Associate Professor Hancock, the priority areas for future landform modelling research at ***eriss*** are seen as:

1. Calibrating the input parameters and variables to the CAESAR-Lisflood model to ensure it provides meaningful and useful results with confidence. A number of activities can be grouped into this area, including
    i. Collecting, developing and calibrating information on weathering rates of different surface types in the ARR to use with the weathering function that has been recently incorporated into the CAESAR-Lisflood model.
    ii. Undertaking sensitivity tests to determine the most appropriate input variables for parameters such as soil creep and lateral erosion, for the different surface types that may feature on a rehabilitated landform. Performing the sensitivity tests will identify the optimum parameter ranges to use for the ARR environment and enhance confidence in the outputs from the CAESAR-Lisflood model. This activity will include utilising relevant existing historic information collected in the ARR.
    iii. Study and collect information on the impact of vegetation communities and fire on the stability of a rehabilitated landform. This information will be used to as a guide for further developments to the CAESAR-Lisflood model itself, and as inputs to enhanced vegetation parameters.
    iv. Continuing to assess the reliability of CAESAR-Lisflood predictions by comparing model predictions of sediment transport and discharge with field-based observations of sediment transport from the Ranger trial landform. This is particulary important in helping understand the natural rates of weathering in the landscape.

2. In conjunction with ERA and external research collaborators identify and develop a rainfall dataset that could be used for long term model simulations which would be representative of the range of climatic extremes that may occur within a timeframe of 10 000 years.

3. Continue to engage and consult with Professor Coulthard to ensure that the CAESAR-Lisflood model is updated to incorporate additional parameters that are required to comprehensively model the long stability of a rehabilitated landform; and with Associate Professor Hancock to ensure procedures, processes and outputs from landform modelling are best practice and scientifically sound.
4. Investigate the development and inclusion of additional parameters, such as chemical weathering into the CAESAR-Lisflood model and the broader HGCP research program.

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