



MEETING MINUTES

Water Quality Task Force

April 11, 2017
9:30-11:45 AM
195 North 1950 West,
Red Rocks Conference Room

PRESENT:

Jim Bowcutt	DEQ/DWQ
Sonja Wallace	SITLA
Carl Adams	DEQ/DWQ
Craig Miller	Division of Water Resources
Kari Lundeen	DWQ
Gary Kleeman	EPA
Ellen Bailey	USU
Bob Fotheringham	Cache County
Jay Olsen	UDAF
Don Hall	DWQ
Walt Baker	DEQ/DWQ
Kristy Davis	UACD
Norm Evenstad	NRCS
Erica Gaddis	DEQ/DWQ
Kate Johnson	DEQ/DDW
Wally Dodds	UDAF
Chris Haight	Salt Lake County
Andy Pappas	UDAF
Nancy Mesner	USU Extension
Margie Borecki	USU Extension
Arne Hultquist	Grand Conservation District
Bill Zannotti	UDFFSL
Dax Reid	UDAF
John Saunders	UDAF
Diane Menuz	UGS
Melissa Noble	UDDW
Deidre Beck	UDDW
Amy Dickey	UDWQ

I. DISCUSSION

Erica Gaddis (DEQ/DWQ)- Legislative Update

- **House Continuing Resolution 15 calls for the Division to apply best available science and work with regulated communities to resolve water quality concerns issues, specifically the POTWs**
- **House Continuing Resolution 26 focused on the restoration of Utah Lake. Natural resource issues such as Phragmites and other related concerns should be addressed.**
- **The Division of Water Quality asked for \$120,000 in General funds to help with DWQ's response to harmful algal blooms and the monitoring of harmful algae. This did not pass.**
- **Funding for a spills coordinator at DWQ was approved and the person that was hired is named Kevin Okleberry.**

Margi Boreki (USU Extension)-Bear River Watershed Implementation (See presentation)

- **The Bear River Watershed is the targeted watershed for FY-2017**
- **Currently four large projects are being planned on the Logan River.**
- **A Sampling Analysis Plan (SAP) has been developed, and is currently being reviewed by DEQ.**
- **A cover crop demonstration project is being conducted adjacent to the Bear River. They are also looking at a study on the effect of cover crops on tile drainage water in Box Elder County.**
- **The Coordinator is also working on a social media outreach campaign with video podcasts.**

Andy Pappas (UDAF)- Weber River Watershed Implementation Projects (See presentation)

- **The Weber Basin will be the targeted basin in FY-2018. Most of the implementation work that will be taking place will occur in the South Fork of Chalk Creek, and Huff Creek.**
- **The coordinator is currently working in several other locations in the basin on water quality related projects.**
- **In the Chalk Creek Watershed, landowners are paying for many of the needed practices themselves instead of applying for grants. There is a chance that between the landowners and**

the funding that is coming in from other grant sources, there will not be a large demand for NPS funds in Chalk Creek and Huff Creek in 2018.

- *Many of the practices that will be installed will focus on grazing management.*

John Saunders (UDAF)- San Pitch Watershed Implementation Projects (See attached presentation)

- *Many projects have been implemented over the years in the San Pitch Watershed. Partners that have provided funding include: DWQ, NRCS, and the DWR.*
- *A watershed plan has been completed and will be submitted to the Division of Water Quality in the next week or two. This watershed plan has identified one of the largest priority areas as the section of the San Pitch River from its headwaters to Moroni.*
- *Aside from water quality restoration projects, there has been interest generated to remove invasive species, specifically Russian olive trees along the river. Funding for these projects will be coming from sources besides DWQ.*
- *Over 4 miles of restoration has already occurred on the San Pitch, and around 4 more miles will be completed in the next 2 years. One animal feeding operation will also be taken care of during that time frame.*

Dax Reid (UDAF)- Provo River Restoration activities (See Presentation)

- *A coordinator position was recently created in the Provo River/Utah Lake watershed.*
- *Within the watershed ample work has already taken place in the Wallsburg Watershed.*
- *The Spanish Fork River CRMP has recently been completed, and the coordinator will be spending a large amount of time implementing projects in between the freeway and the confluence with Utah Lake.*

Wally Dodds (UDAF)- Upper Sevier River Restoration activities (See Presentation)

- *The Upper Sevier is currently selected as one of the three National Water Quality Initiative Watersheds in the state.*
- *Some of the best water quality projects that have occurred in the Upper Sevier are irrigation improvements, that help control or eliminate irrigation return flows into the Sevier River.*

- *There are currently 4 NWQI projects in the Upper Sevier that have applications into the NRCS office. These include one irrigation project, and three streambank stabilization projects.*

Arne Hultquist (Grand Conservation District)- South East Colorado Restoration activities (See Presentation)

- *Much of the NPS implementation work that is being conducted in the South East Colorado River Basin is taking place in the Spanish Valley near Moab.*
- *Various spring protection projects have been implemented in the Manti-La Sal National Forest.*
- *Additional information/education projects have been conducted including signage and dog waste stations.*
- *The Castle Creek project is about 65% completed and will be completed by this time next year. This project focused on restoring the riparian corridor through much of the town.*
- *The local watershed group would like to look into revisiting some of the assessment methods that are being used in that area, as well as revisiting some of the beneficial uses that are assigned to various waterbodies in that part of the state.*

Don Hall (UDWQ)- AFO Program and Discharges Observed in the Spring of 2017 (See Presentation)

- *Regulations that exist in the state of Utah regarding concentrated Animal Feeding Operations (CAFOs) are based on federal requirements that are then written into Utah's administrative code.*
- *Waters of the state are typically any water in the state that does not originate and terminate on the same private property.*
- *In the Spring of 2017 more than 30 AFOs and CAFOs were visited. Of those visited, 21 compliance letters and 4 enforcement letters will be sent.*

II. ADDITIONAL ITEMS

- *The Statewide NPS MOU has been officially signed by all parties, and a PDF scanned document has been sent out to all members of the Task Force. One hard copy will be housed here at the Division of Water Quality, and another will be sent to the legal counsel of the Federal agencies that have signed the document.*
- *Walt Baker will be retiring in May. He thanks the Task Force for all they do, and for the chance that he had to work with them.*
- *Next Meeting will be held on June 29th here at the Division of Water Quality*

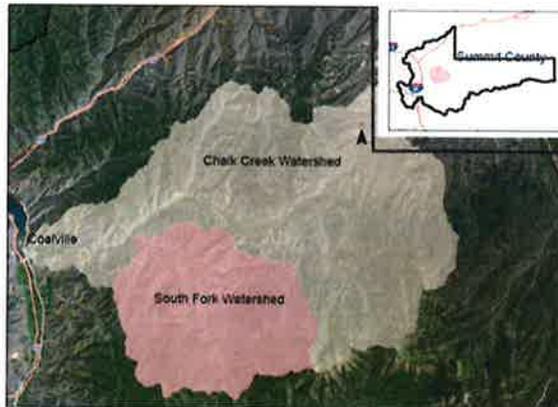
- Possible agenda topics for future meetings include:
 - Standards and assessment protocols
 - Possibilities for increased Public Relations and Outreach water quality campaigns
 - An update on the Federal Budget
 - Additional water quality issues as they occur.



South Fork of Chalk Creek
Coordinated Resource Management Plan (CRMP)

Location

- South Fork Watershed (54000 acres)
- 18 Landowners



Fish Creek August 7th, 2014



One inch rain fall event.

250 dump truck load of sediment entered stream.

August 7th, 2014



August 13th, 2014





Load Reductions

South Fork of Chalk Creek	Storm Water	Grazing Private	Irrigation/Fertilizer	Septic Systems	Channel Erosion	Natural Background
Total Phosphorus Load Allocations	11	33	2	0	158	89
Nonpoint Source Total Phosphorus Load	37	109	6	1	528	89
Total Phosphorus Load Reductions	0	76	4	0	370	0
South Fork of Chalk Creek	Storm Water	Grazing Private	Irrigation/Fertilizer	Septic Systems	Channel Erosion	Natural Background
Total Nitrogen Load Allocations	5	133	7	1	129	1,072
Nonpoint Source Total Nitrogen Loads	42	1,024	54	6	997	572
Total Nitrogen Load Reductions	0	891	47	0	868	0

Projects

- Cross fencing
- Riparian Fencing
- Grazing Management
- Water Developments
- Pinion Juniper lop and scatter
- Converting from Wild Flood to Sprinkler Irrigation

Monitoring

- Chalk Creek Sampling Analysis Plan
 - Temperature
 - pH
 - DO
 - Turbidity
 - TSS
 - Nutrients
 - Flow
- Other Monitoring
 - Photo monitoring
 - BLM MIM assessment
- Summit Conservation District

Partners

- Summit Conservation District
- Trout Unlimited
- Utah Department of Agriculture and Food
- NRCS
- Utah Division of Water Quality
- Utah Division of Wildlife
- Fish and Wildlife Service
- Weber Basin Conservancy District
- Plus many other partner
- \$580,000 spent on implementing the CRMP
- \$268,000 NWQI NRCS 2017



Huff Creek CRMP

Location

- Huff Creek Watershed 20000 acres
- 10 Landowners



Formation of a Plan

- Landowner driven
- Monthly meeting
- Guest speakers
- Resource inventories
- One on one meeting with landowners

Upper Sevier River Restoration Projects 2017

Wallace S. Dodds
Zone 5 Watershed Coordinator

Four NWQI Projects in planning phase two funded projects for 2017

- Funded projects include:
- 1 Vinnie Salvado pipe and riparian restoration project.
- 2 Richard briggs River Screen and riparian restoration project.

Planned NWQI Projects.

- 1. JYS Properties K-line and Riparian Restoration.
- 2. Craig Wolfley Riparian Restoration.
- 3. Frank Meyers Riparian Restoration Phase II.
- 4. Mike Wagner Riparian Restoration.

Vinnie Salvado project

- Installed over 2,000' of 15" Pipe/750' Riparian

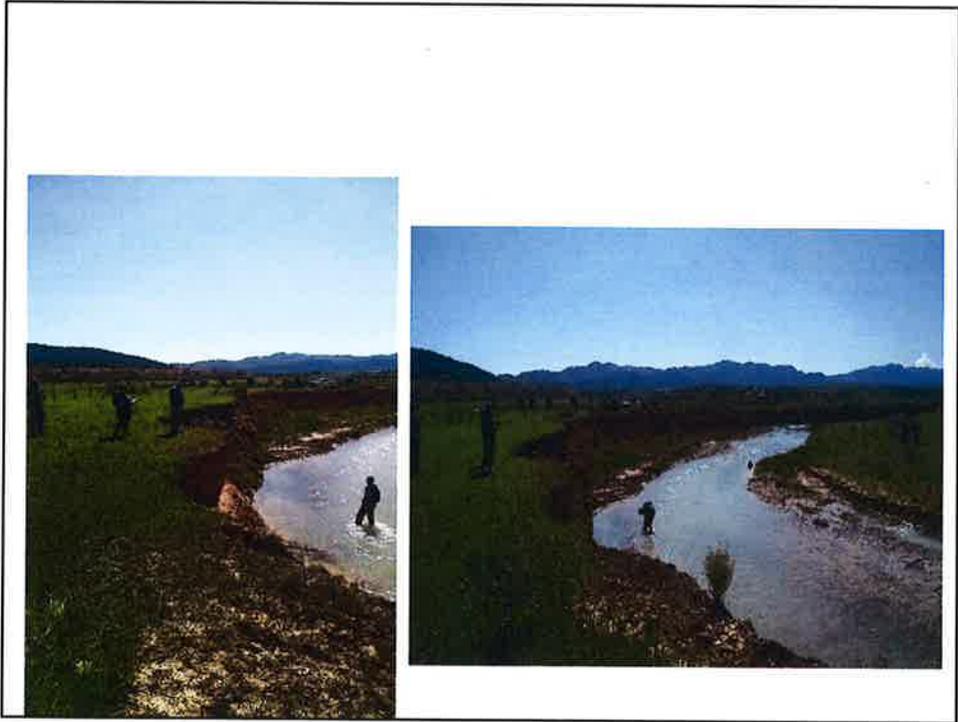


Richard Briggs



Frank Meyer





Frank Meyers Phase II



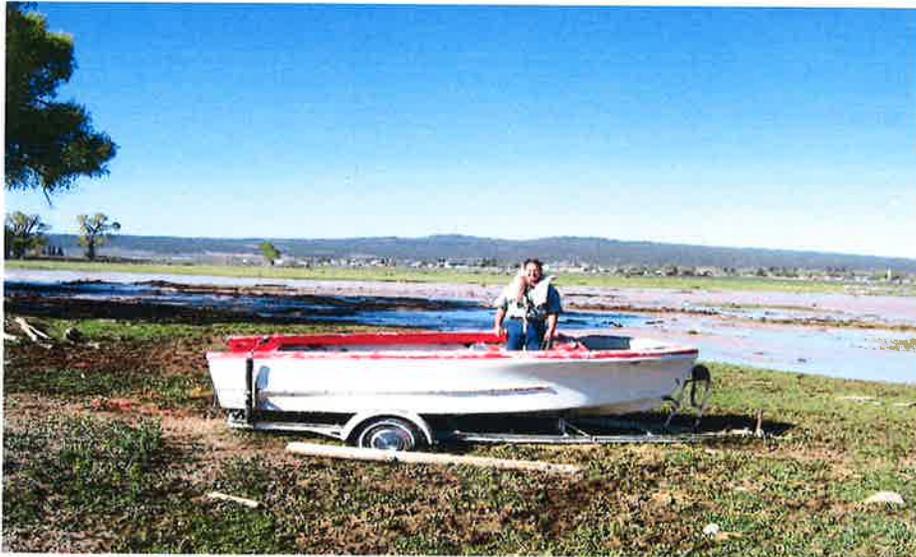
Wolfley



Monitoring June 01

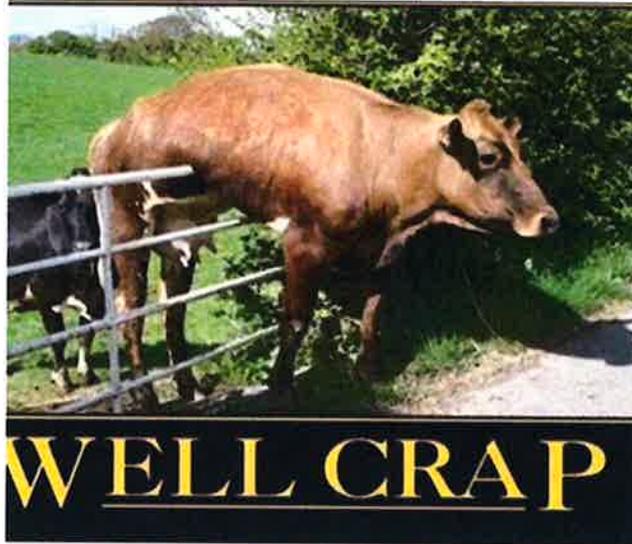


Old Monitoring Dinghy



Jim's new Monitoring Dinghy





Provo Area Watershed Report 2017

Drainage areas primarily in Wasatch
County and all tributaries into Utah
Lake – Coordinating, Planning,
Monitoring and Restoring

Goals

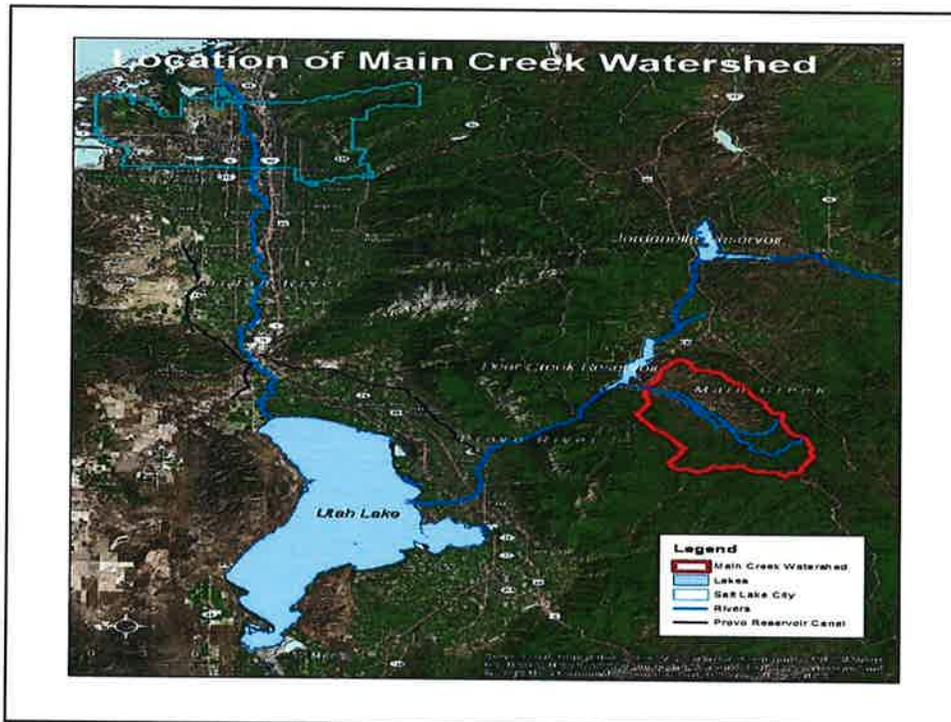
- Water quality determinations, benefits and value
- Cooperative water quality improvements
- Improved processes
- Increased landowner participation (CRMP's)
- Decreased contaminants
- Safer recreational opportunities
- NPS identification and solutions
- Stormwater and other large, sudden impacts
- Waterbody loading and chemistry
- Tile drains and other non-identified drainage points

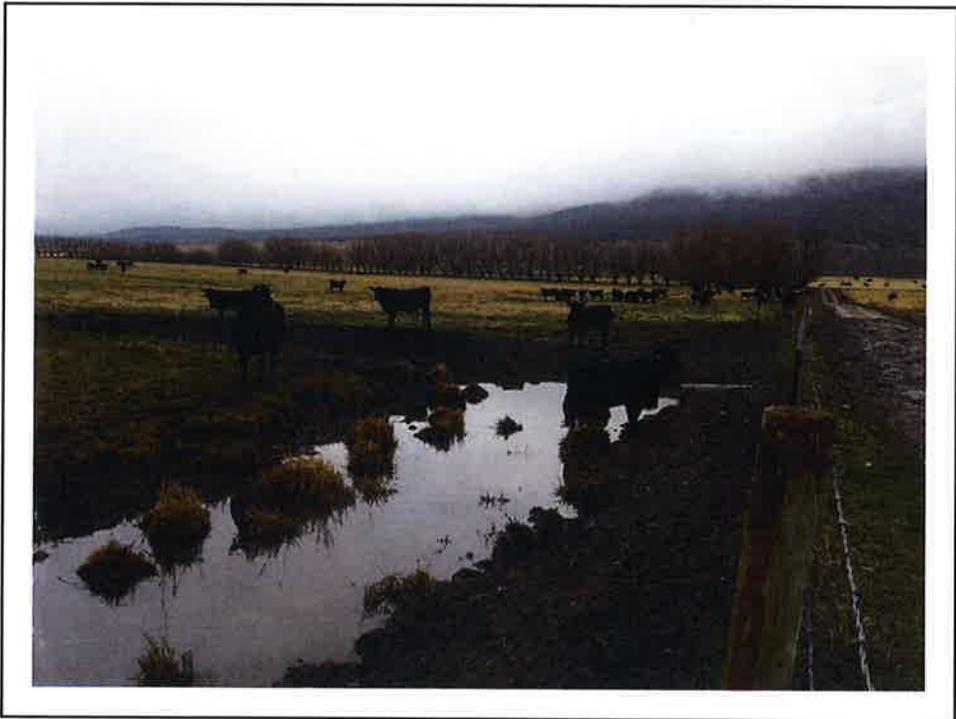
Watershed Major Streams



Main Creek / CRMP Priorities

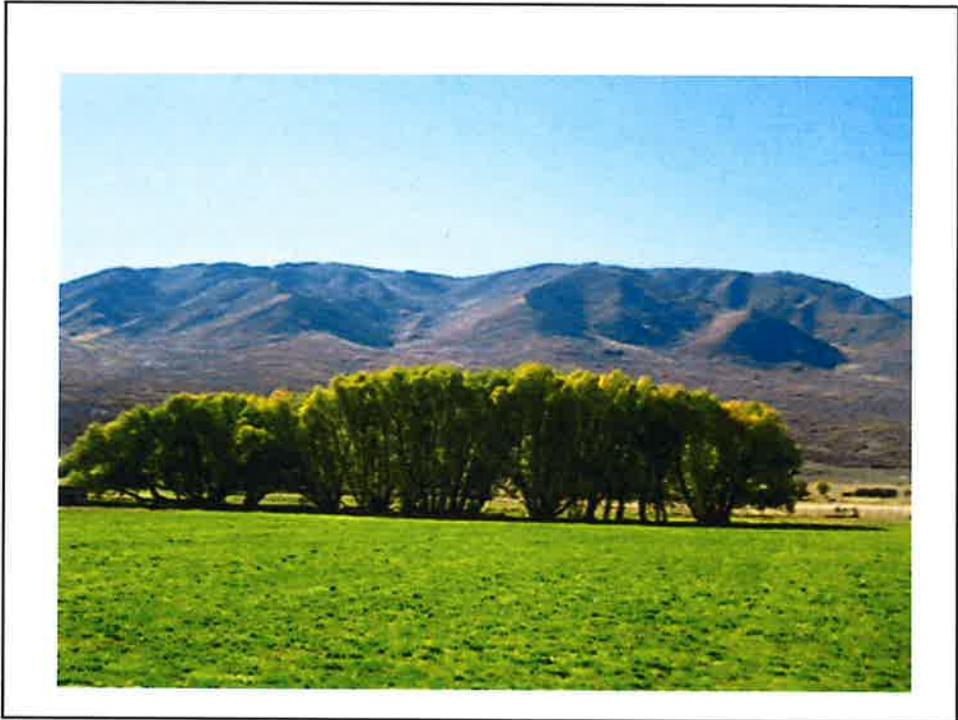
- Water conservation
- Riparian management
- Water quality
- Animal waste Noxious and invasive weeds
- Soil erosion
- Water rights
- Predator control
- Irrigation water management
- Threatened/endangered species
- Wildlife habitat
- Recreation impacts
- Forest health
- Pest management
- Septic tank management
- Well head protection
- Air quality
- Grazing management
- Wetland protection
- Agricultural land converted to other uses













Immediately After Initial Restoration



One Year After Restoration

- Before
- After



2 Years After Restoration



3 Years After Restoration



Main Creek Success Story

- Marked Decreases in:
 - Total Phosphorous
 - E. Coli
 - Sediment / Nutrient Deposition
 - Water Temperature

Continued

- Cold water fishery qualified now
- Reduced flows
- Improved riparian habitat
- Involvement from property owners
- Volunteer participation

Diamond Fork



Utah Lake



Algal Blooms Due To High Nutrients



Carp Removal



Swimming, Boating and Pets



Upcoming and Ongoing Big Stream Projects

- Wallsburg / Main Creek / Spring Creek on Ashton, Nelson, Smart and Hicken properties with next work beginning June 5th
- Spanish Fork River restoration below I-15 beginning this fall
- Establishing photo points and collecting sampling and monitoring data in streams and around Utah Lake with focus on peak concentration exposure
- Identifying possible projects centered around NPS sources looking toward 2019 initiatives

Projects Continued

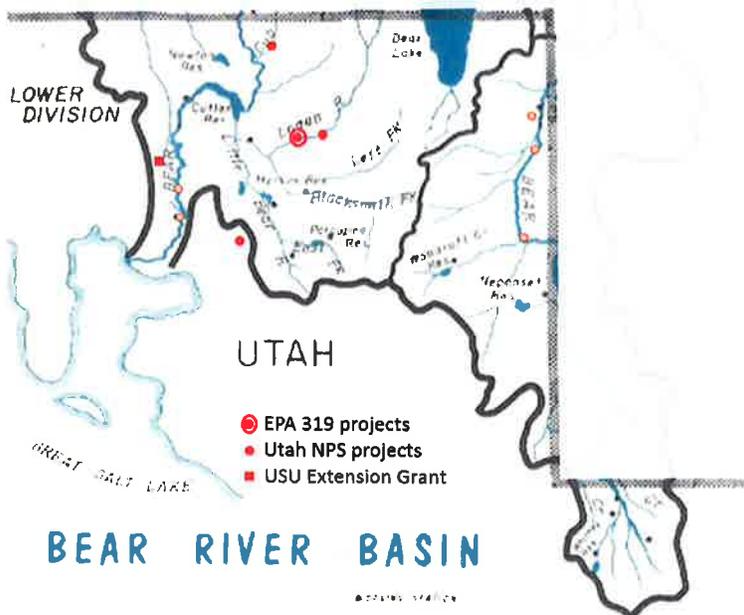
- Dredging of Utah Lake after Labor Day to allow for summer recreation and children's field trips
- Utah Lake Water Festival June 12th
- Proposed trail around lake moving forward
- Permanent / improved wind stations being installed for more real-time data delivery
- Final proposed year for carp removal project focused on protecting June Sucker and other endangered species

BEAR RIVER WATERSHED

Current Projects

4/11/2017

Bear River Watershed

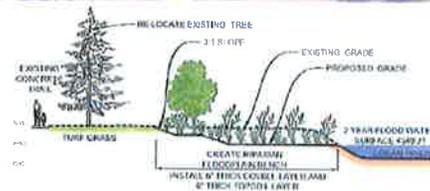


Logan River Projects



Stewart Nature Park

2017 NPS funds
DWQ Mini Grant (Dog Poop!)



100 East Residential

2017 EPA319 funds

Federal funds

Water Quality Improvements:

- Pruning of dead/overhanging trees
- Stabilize water access area (or off-site watering)
- Riparian revegetation
- Streambank stabilization



Rendezvous Park

2017 EPA319 Funds

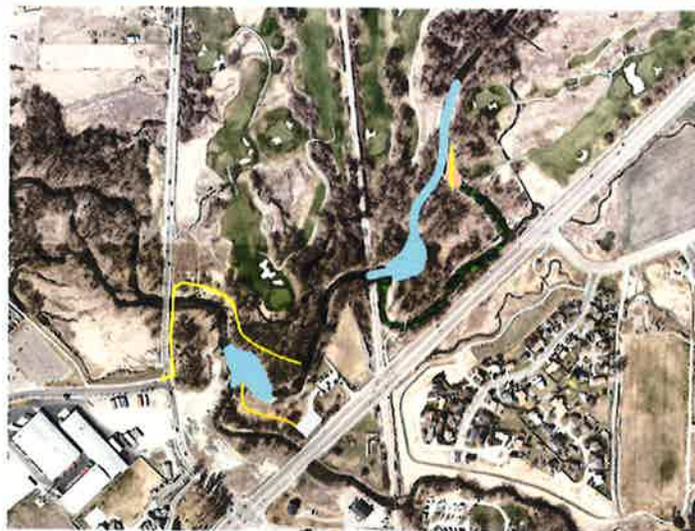
Willard Bay Mitigation Funds

Logan City

Water Quality Improvements:

- Clearing of fallen trees
- Dredging of sediment
- Realignment of river (dark blue)
- Flood zone berm location (pink)
- Sediment deposition pools (light blue)

*Limited areas of dyke removal and an enlarged floodplain will ensue upstream of this section.



1000 West Agricultural

2017 EPA319 Funds

Federal Funds

USU Water Initiative Funds (applied)

Water Quality Improvements:

- Clearing of fallen trees
- Dredging of sediment
- Realignment of river (dark blue)
- Flood zone berm location (pink)
- Sediment deposition pools (light blue)

*Limited areas of dyke removal and an enlarged floodplain will ensue upstream of this section.

Logan River Monitoring 2017 to 2022



Cove Cover Crops

2017 NPS Funds

Growth at 1 week (8-30-16)

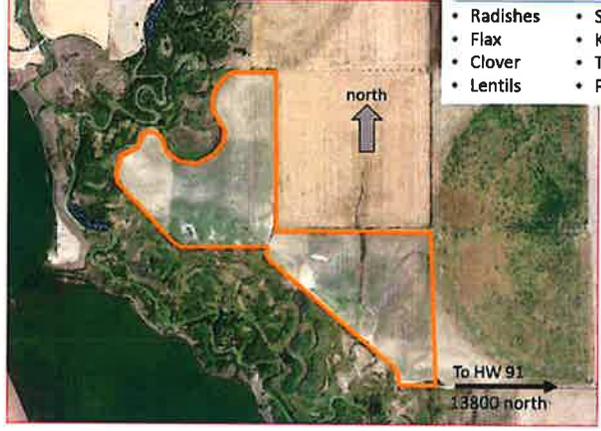


Growth at 3 weeks (9-12-16)



Seeded 8-23-16

- Radishes
- Safflower
- Flax
- Kale
- Clover
- Turnips
- Lentils
- Peas



Cover Crop Effects on Tile Drain Leachate

2017 USU Extension Grant (awarded)

USU Extension Grants Program 2017

Title: Cover Crop Effects on Leachate in Tiled Field Drains in Northern Utah

Discipline: Agriculture

Personnel:

Dr. Malgorzata Ryciewicz- Borecki	Co-PI	USU Extension
Dr. Rhonda Miller	Co-PI	USU Extension
Dr. Ramesh K. Goel	Co-PI	University of Utah
Carl Adams	Co-PI	Utah Division of Water Quality
Clark Israelsen	Co-PI	USU Extension – Cache County
Mike Pace	Co-PI	USU Extension – Box Elder County

Project Duration: Start April 1, 2017
Complete December 15, 2017

Total Requested Amount: \$30,000

Social Media & Video Podcasts

USU Professional Development Grant
(applied \$2,000)

Equipment Requested:

- Compact Camcorder
- Memory Card
- Desktop or Laptop Webcam)
- Flexible Mini-Tripod/Grip
- Lavalier Microphone

Example



USU Extension Forestry

Home Videos Playlists Channels Discussion About

Considering a Timber Harvest

Part 1. Considering a Timber Harvest on Your Family Forest USU Extension Forestry 240 views • 1 year ago	Part 2. Considering a Timber Harvest on Your Family Forest USU Extension Forestry 36 views • 6 years ago	Part 3. Considering a Timber Harvest on Your Family Forest USU Extension Forestry 62 views • 6 years ago	Part 4. Considering a Timber Harvest on Your Family Forest USU Extension Forestry 12 views • 1 year ago

Equipment Demonstrations

Skidder Demonstration USU Extension Forestry 11,162 views • 5 years ago	Grapple Outbar Demonstration USU Extension Forestry 162 views • 3 years ago	Log Wizard Demonstration USU Extension Forestry 5,636 views • 5 years ago	Mobile Pyrolysis Demonstration USU Extension Forestry 319 views • 8 months ago

Popular channels

- Dr. Sandra Lee (k...
Subscribers
- The Game Theoria...
Subscribers
- Chad/Courtne...
Subscribers
- BoShaw...
Subscribers
- Kingznight...
Subscribers
- AsapSCIENCE...
Subscribers

Utah Animal Feeding Operation Program and Discharges Observed February and March 2017

Don Hall
Utah Department of Environmental Quality (DEQ)
Division of Water Quality (DWQ)
(801) 536-4492
dghall@utah.gov

1

Federal and State Rule Changes

In 2013, DWQ revised Utah's administrative code to reflect 2011 changes to the federal Concentrated Animal Feeding Operation (CAFO) Rule. The state CAFO permit was issued in August, 2014 to include new federal requirements.

State Rule: *Utah Administrative Code (UAC) R317-8-10*

Permit: <https://deq.utah.gov/Permits/water/wqpermits/index.htm#cafo>

2

DWQ Responsibilities

- Federal Requirements
 - National Pollutant Discharge Elimination System (NPDES).
 - DWQ is delegated from EPA to oversee the CAFO Program in Utah. State rule and the CAFO permit must comply with federal requirements. In Utah, the NPDES Program is known as the Utah Pollutant Discharge Elimination System (UPDES) Program.
 - DWQ conducts CAFO inspections, permits CAFOs, and pursues enforcement for CAFO non-compliance to permits and Clean Water Act.
- State Requirements
 - Utah Code Annotated (UCA) (Utah Water Quality Act).
 - DWQ enacts state law which prohibits pollution of state waters from any animal production source such as animal feeding operations (AFOs), CAFOs, and grazing operations.
 - DWQ permits CAFOs and conducts enforcement against AFOs, CAFOs, and other sources.
 - Utah Administrative Code.
 - DWQ enacts state rule which prohibits pollution of state waters and violation of state water quality standards.
 - DWQ permits CAFOs, inspects AFOs and CAFOs, and conducts enforcement under the state rules.

3

Definitions

Water of the State (UAC R317-1-1) – “means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, irrigation systems, drainage systems, and all other bodies or accumulations of water, surface and underground, natural or artificial, public or private, which are contained within, flow through, or border upon this state or any portion of thereof, except that bodies of water confined to an retained within the limits of private property, and which do not develop into or constitute a nuisance, or a public health hazard, or a menace to fish and wildlife, shall not be considered to be “waters of the state” under this definition (UCA Section 19-5-102).”

Waters of the State are typically any water in the state that does not originate and terminate on the same private property. Waters of the State include washes, sloughs, rivers, lakes, etc. Also, ditches and canals are usually waters of the State that usually drain to other waters of the State.

4

Definitions

Discharge (UCA 19-5-102(7)) – “means the addition of any pollutant to any waters of the State.”

5

Definitions

Animal Feeding Operations (AFO) means

- (a) a lot or facility where animals have been, are, or will be stabled, housed, or confined and fed or maintained for a total of forty-five (45) days or more in any 12-month period; and
- (b) crops, vegetation, forage growth, or post harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

AFOs are typically animal production facilities, such as feedlots and dairies, where animals are confined and feed is brought in.

6

Definitions

Small AFO means a lot or facility that is an AFO that stables, houses, or confines the following type and number of animals:

<u>Beef, calves, and/or veal</u>	1-299
Cows (milking, dry)	1-199
Layers, broiler (wet system)	1-8,999
Chickens, not layers (dry system)	1-37,499
Layers (dry system)	1-24,999
Turkeys	1-16,499
Swine (55 lbs or more)	1-749
Swine (55 lbs or less)	1-2,999
Sheep and lambs	1-2,999
Horses	1-149

7

Definitions

Medium AFO means a lot or facility that is an AFO that stables, houses, or confines the following type and number of animals:

<u>Beef, calves, and/or veal</u>	300-999
Cows (milking, dry)	200-699
Layers, broiler (wet system)	9,000-29,999
Chickens, not layers (dry system)	37,500-124,999
Layers (dry system)	25,000-81,999
Turkeys	16,500-55,000
Swine (55 lbs or more)	750-2,499
Swine (55 lbs or less)	3,000-9,999
Sheep and lambs	3,000-9,999
Horses	150-499

8

Definitions

Concentrated Animal Feeding Operations (CAFO) means:

- (a) an AFO that is a Large CAFO; or
- (b) an AFO that is a Medium CAFO through discharge; or
- (c) an AFO that is a Small AFO or Medium AFO that is designated a CAFO through discharge.

There are no large "AFOs". Any AFO with the CAFO threshold number of animals is a Large CAFO.

Definitions

Large CAFO means an AFO that stables, houses, or confines the following type and threshold number of animals:

<u>Beef</u> , calves, and/or veal	1,000 or more
<u>Cows</u> (milking, dry)	700 or more
Layers, broiler (wet system)	30,000 or more
Chickens, not layers (dry system)	125,000 or more
Layers (dry system)	82,000 or more
Turkeys	55,000 or more
Swine (55 lbs or more)	2,500 or more
Swine (55 lbs or less)	10,000 or more
Sheep and lambs	10,000 or more
Horses	500 or more
Other: mink, deer, bison, elk, etc.	As determined by DWQ

AFO and CAFO Requirements: Prohibited Discharges

- Some discharges from Small and Medium AFOs do not require a permit, however all discharges of pollutants to waters of the state from all AFOs and CAFOs without a permit (permit includes permit by rule) are prohibited.
 - The discharges to waters themselves are illegal.
 - Some discharges may violate the state's water quality standards.
 - Some discharges may cause environmental harm or bring health risks.
 - Nutrient Pollution: Nitrogen, Phosphorus
 - Pathogen Pollution: E. coli, Cryptosporidium
 - Discharges from chronic storms and snowmelt are illegal.
 - Discharges from run-on or flood inundation are illegal.
 - Discharge of pollutants from grazing are prohibited but do not require a permit.
 - Some facilities with potential to discharge may be need to provide storage capacity greater than the 25-year storm event.

11

AFO and CAFO Requirements: Illegal Discharges are Subject to Enforcement

- Discharges to a water of the State, from any precipitation amount or for any reason, without a CAFO Permit or AFO Permit by Rule (PBR) are subject to enforcement consideration.
 - For un-permitted AFOs and CAFOs, containment capacity requirement is the amount of storage needed to prevent discharge.
 - Some illegal discharges will receive enforcement action and financial penalties from DWQ. To date, AFO/CAFO penalties have ranged from \$1,000 - \$105,000.

12

AFO and CAFO Requirements: CAFO Permit Requirement

- One of the changes brought by the new CAFO rule is that only discharging CAFOs and AFOs require a permit.
 - Any discharge from a Large CAFO requires a permit.
 - Medium AFOs must obtain the CAFO permit if they discharge through a man-made device (ditch, pipe, culvert, pump, trench, etc.) or animals have direct contact with waters of the state.
 - Small AFOs must be designated a CAFO to require a permit. They must discharge through a man-made device or direct animal contact with waters and must be designated a CAFO by DWQ.

If an AFO or Large CAFO has potential for a discharge (i.e. adjacent to a slough, etc.), the facility may want to voluntarily obtain the CAFO permit for enforcement protection

13

CAFO Requirements CAFO Permit

- The permit has requirements which if followed provide enforcement protection for discharging without a permit.
 - Permitted feedlots and dairies
 - Are allowed 25-year, 24-hour storm event and chronic discharges
 - Permitted swine, poultry, and veal
 - Older facilities are allowed discharges after a 25-year, 24-hour storm event or chronic event
 - New facilities (after 12/4/08) are allowed discharges after a 100-year storm event.
- Permitted facilities can still be subject to enforcement for causing environmental harm.

14

AFO and CAFO Options: Compliance Options for Non-discharging Facilities

- CAFOs (2 choices).
 - No CAFO permit.
 - Without coverage, a CAFO is prohibited from discharging.
 - Voluntarily obtain the CAFO permit.
 - Enforcement protections.
- AFOs (3 choices)
 - Voluntarily obtain the CAFO permit.
 - Obtain AFO Permit by Rule (PBR) or obtain an Agriculture Certificate of Environmental Stewardship (ACES) Certificate.
 - Provides penalty protection from discharges caused by Large Weather Event as defined, when Reasonable Measures in state rule are followed.
 - Not as stringent as the CAFO permit, but has limited enforcement protection and a permit may be required upon discharge.
 - No coverage under the permit, PBR , or ACES Certificate.
 - Any discharge is subject to enforcement and permitting without any protection.

15

References and Program Contacts

- State CAFO Rule:
 - Utah Administrative Code (R317-8-10)
 - <http://www.rules.utah.gov/publicat/code/r317/r317-008.htm#T10>
- CAFO Permit:
 - <http://www.deq.utah.gov/Permits/water/wqpermits/docs/2014/08Aug/GeneralPermitCAFO.pdf>
 - DWQ, Don Hall, (801) 536-4492
- State Ground Water Permit and Construction Permit
 - DWQ, Dan Hall, (801) 536-4356
- ACES Certificate Program and AFO Compliance Assistance
 - UDAF, Jay Olsen, (801) 538-7174

16

Summary of Discharges Observed February-March, 2017

More than 30 AFOs and CAFOS were visited
(3 CAFOS, 27+ AFOs).

21 compliance letters were sent and 4 enforcement
letters will be sent.

2 CAFOs will be required to obtain the permit.

17

Locations of AFOs and CAFOs Receiving Letters

- Box Elder County (1)
 - Penrose: 1, (1 CAFO)
- Cache County (16)
 - Hyrum: 2, (1 CAFO)
 - Benson: 7
 - Riverside: 2
 - Logan: 2
 - Newton: 2
 - Richmond: 1
- Morgan County (1)
 - Morgan: 1
- Wasatch County (3)
 - Charleston: 3
- Weber County (4)
 - West Ogden: 3
 - Plain City: 1

18

Compliance and Enforcement Letters

- Compliance Actions
 - Compliance Letters: (7)
 - Warning Letters: (3)
 - Letter of Violations: (11)
- Enforcement Actions
 - Stipulated Compliance Orders (4)
 - Notice of Violations (0)
 - Permit Requirement (2)

19

Were Discharges Caused by Non-compliance or Excessive Weather Events?

- Of the 25 facilities receiving letters, 21 are known or believed to have discharged in 2011 or after, not including this year.
 - Discharges were observed by DWQ (13)
 - Facility has no or minimal containment or direct animal contact (8)
- Non-compliance of direct animal contact, insufficient capacity, or poor pond management resulted in 21 of the 25 discharges.
- 4 facilities only had discharges this year.
 - 2 facilities had NRCS designs and construction.
 - One facility didn't dewater ponds prior to winter.
- Only 3 facilities had discharges resulting exclusively from high precipitation and snow melt.

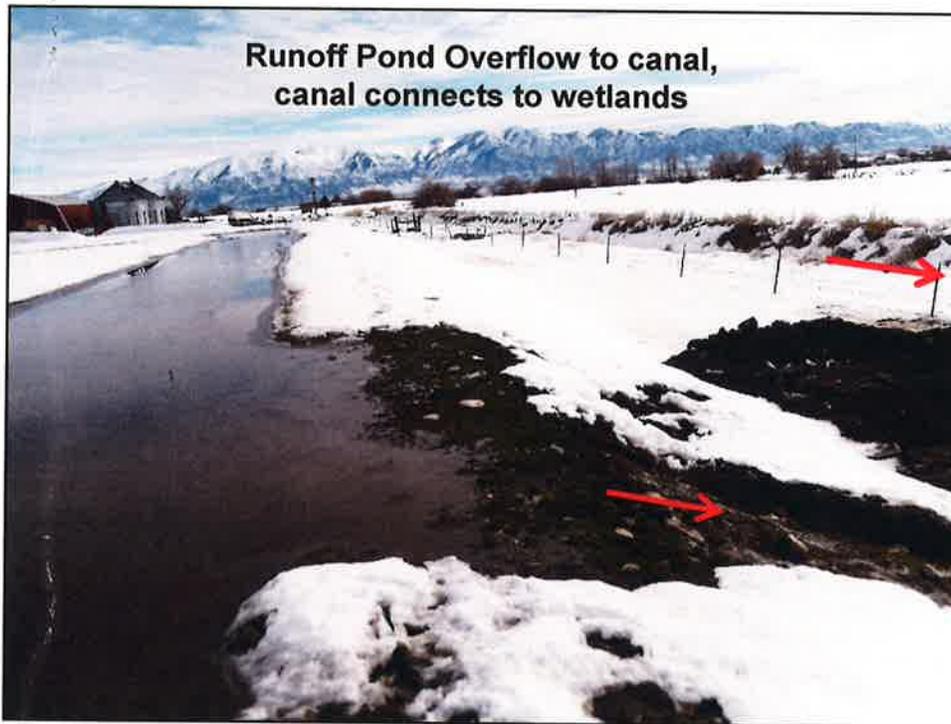
20

Examples of Problems Observed

21

**Direct Animal Contact with canal,
canal connects directly
to Deer Creek Reservoir**

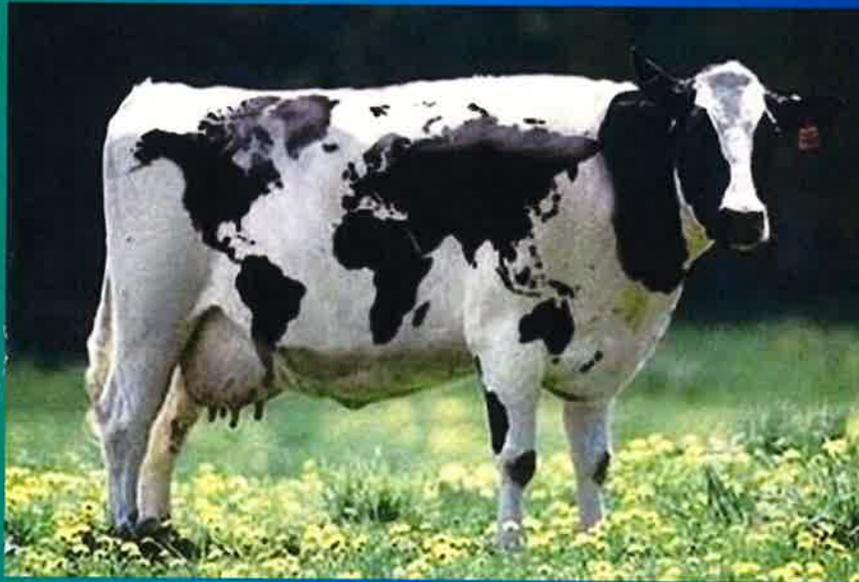








Questions

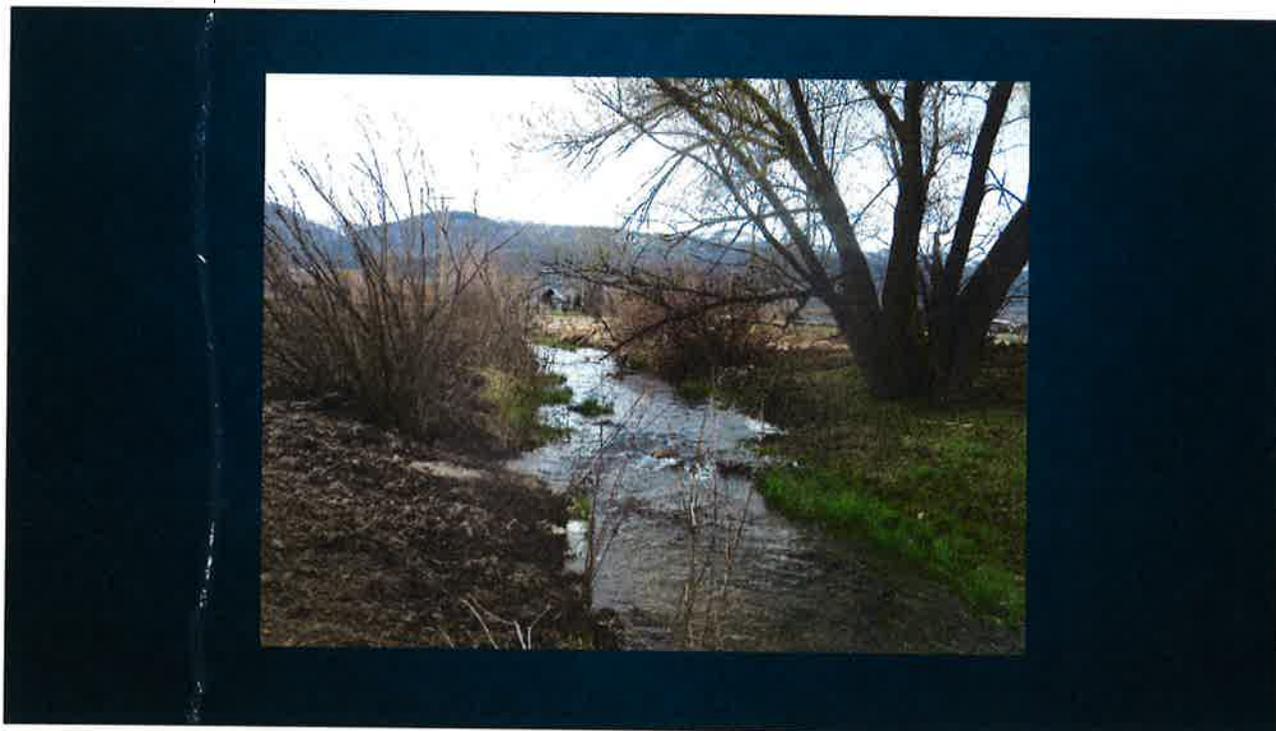


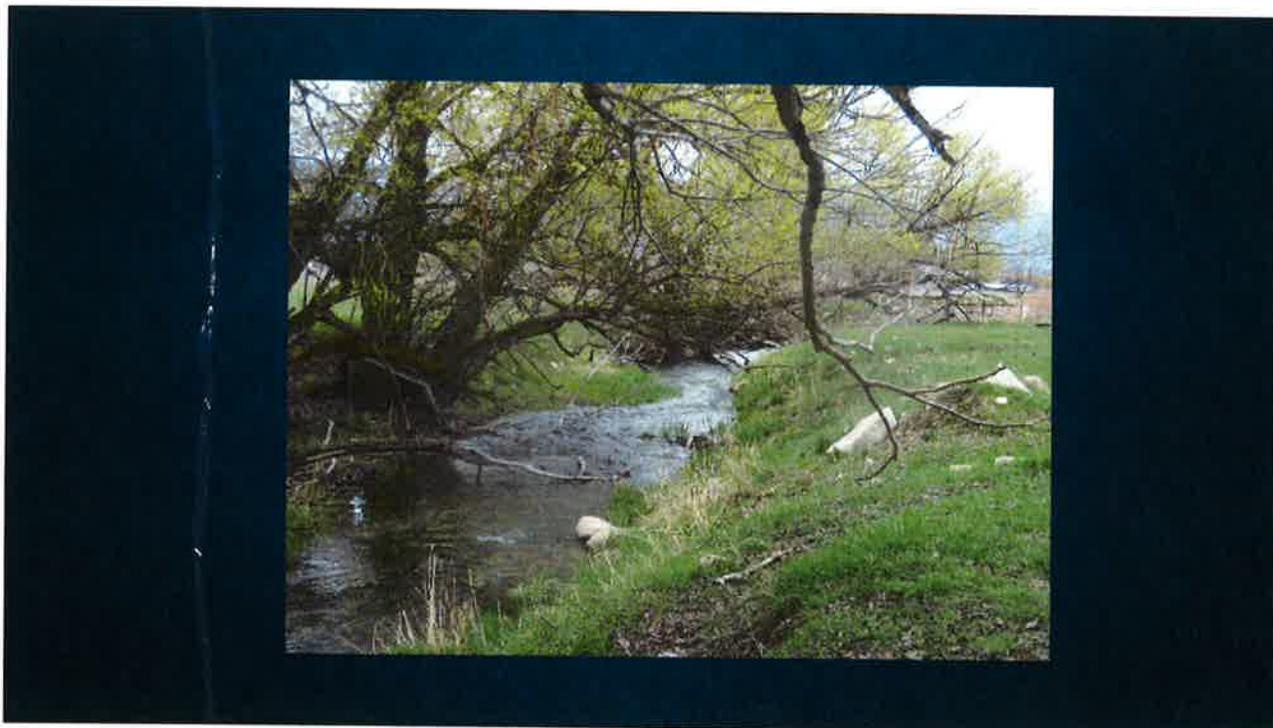
UPDATE ON THE SAN PITCH RIVER WATERSHED

By: John Saunders

April 2017



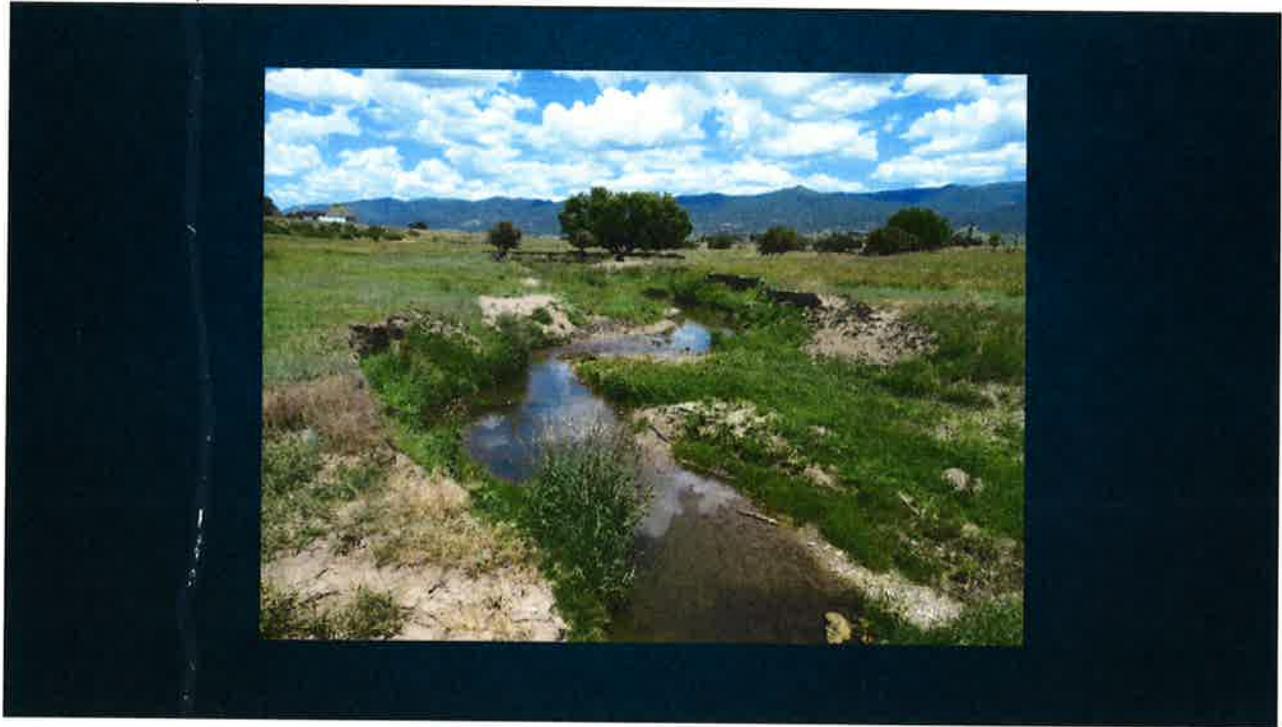








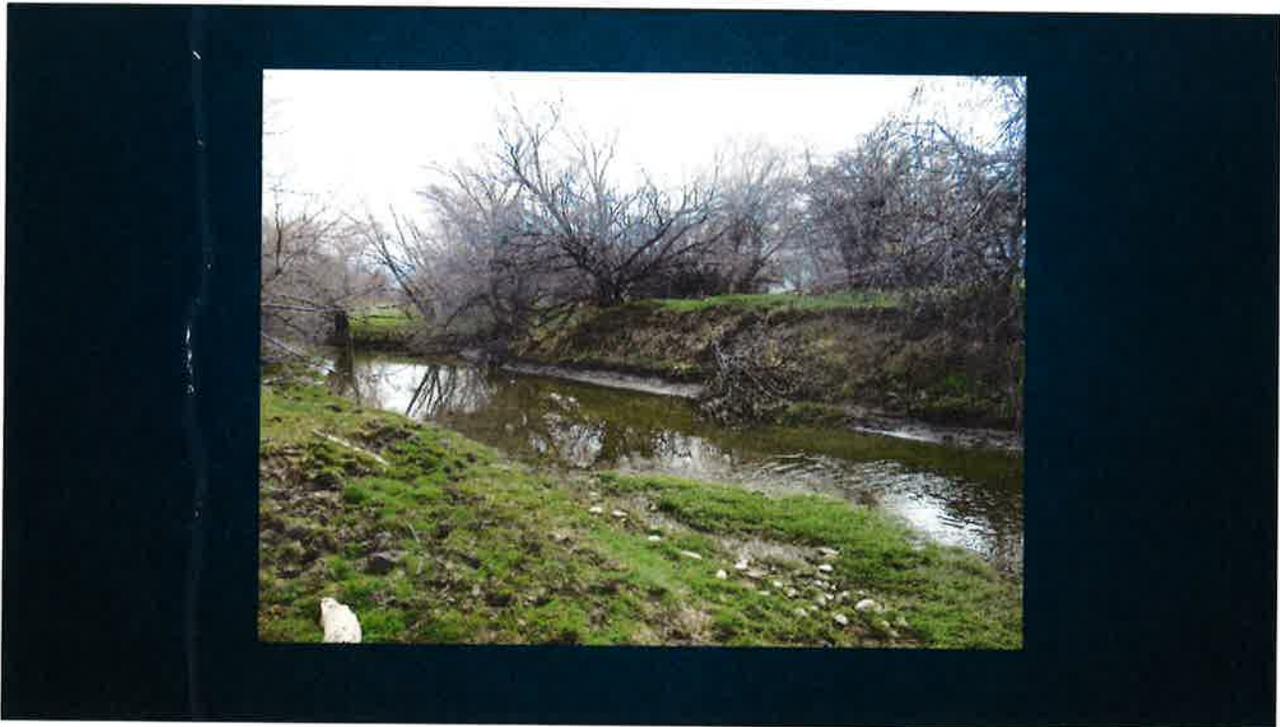
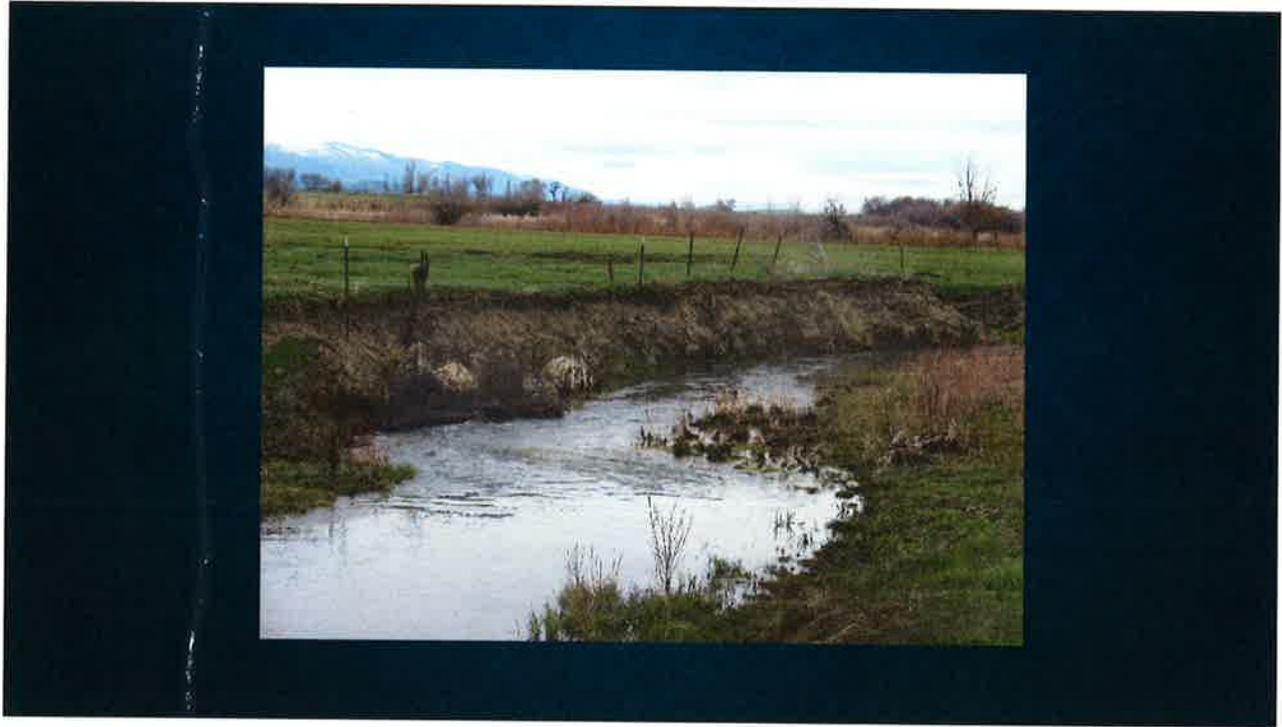


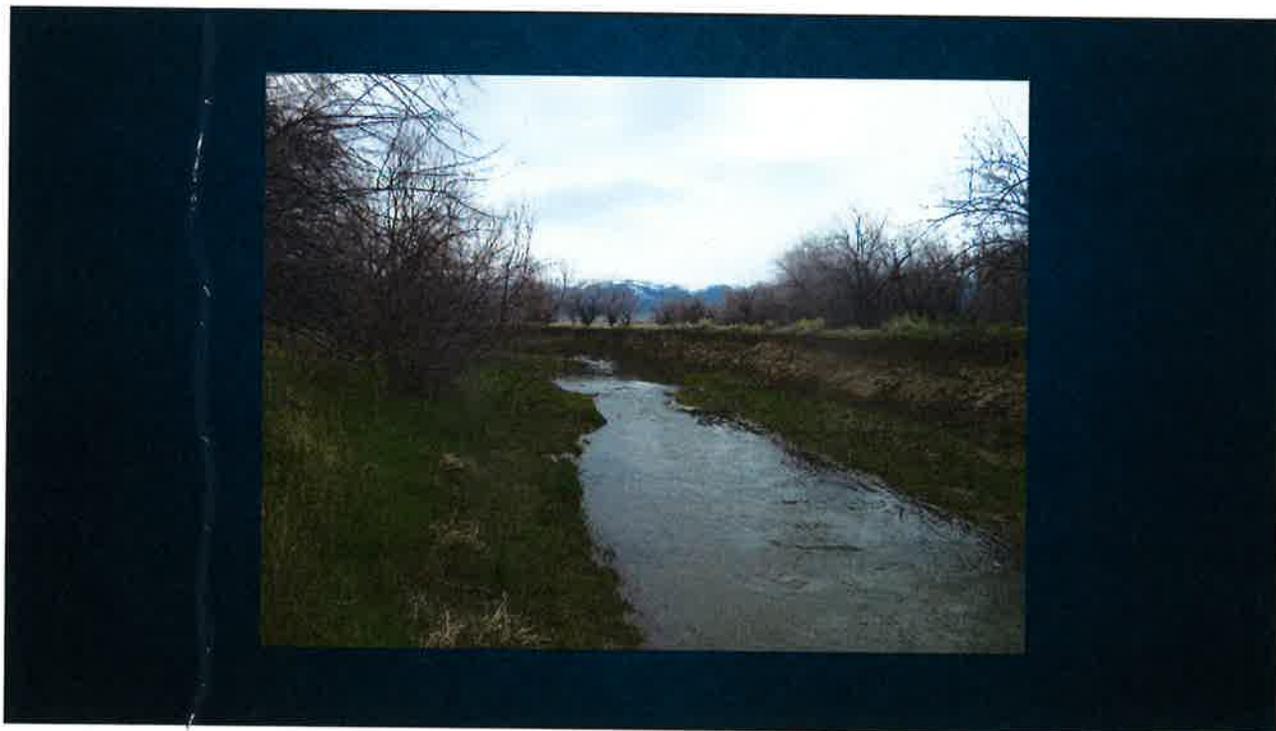


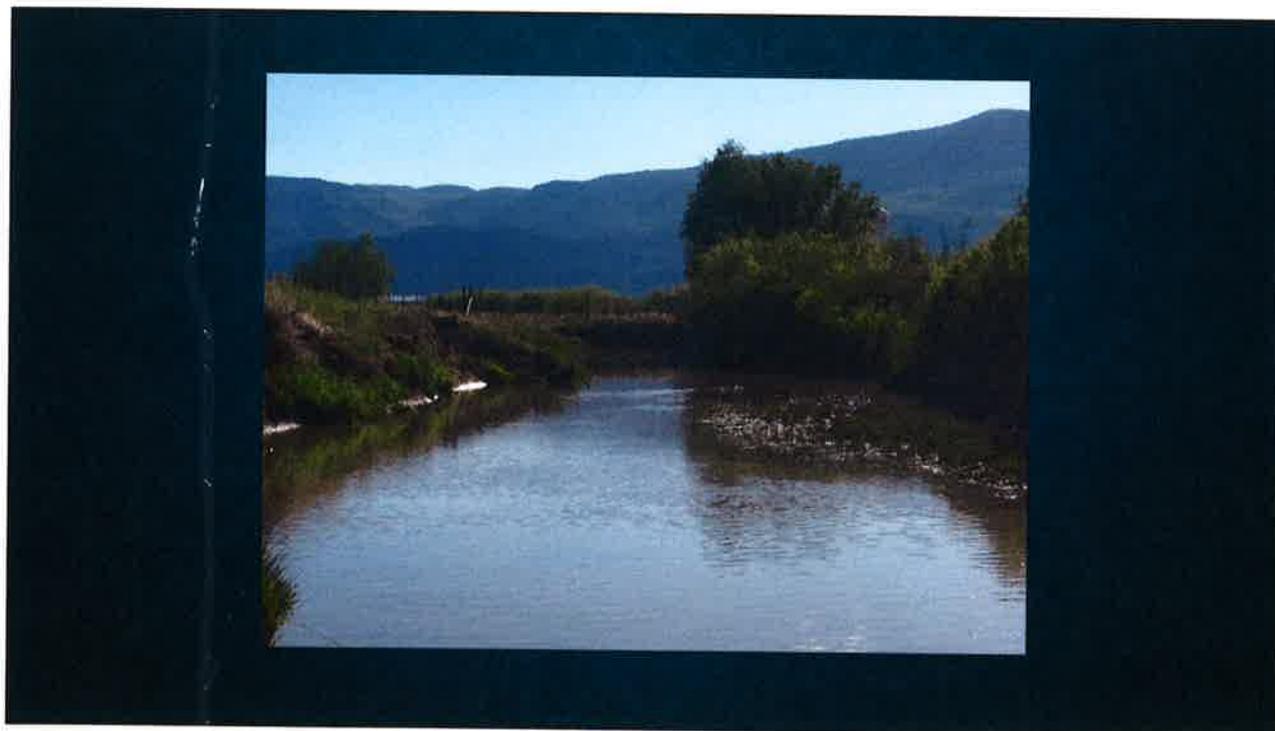




7
2
3
3









OTHER UPDATES

- Revised San Pitch River Watershed Plan completed April 2017
- About \$16,267,000 has been spent in Watershed

April 2017 Southeastern Utah Watershed Coordinators Report

- 1) Project update
- 2) Issues update
- 3) Strategy for delisting Mill, Pack, and Castle Creek

Spanish Valley Projects

Currently Funded Projects in Progress:

- Wagner Street Project
- Rim to Rim Vegetation Restoration Project
- Moab BLM Mill Creek Restoration Project
- Holyoak Feedlot Project
- USFS 2015 Spring Development Project

Recently Completed Projects:

- USU Rain Water Harvesting Project
- 2014 USFS Spring Development Project
- Water Monitoring Information and Education Project
- Dog Waste Station and Signage Project
- Information and Educational Kiosk Project

Wagner Street Project

- This project is a cooperative project between Moab City and the land owner to remove debris that was dumped in the flood plain of Pack Creek.
- The NPS project is about 10 % complete. The City has yet to invoice UDWQ.
- The project schedule has been hampered by turnover at Moab City.



Rim to Rim Revegetation Project

- This project is a cooperative project between Rim to Rim Restoration, Moab City and the land owners to revegetate areas of invasive removal along Mill and Pack Creek.
- The 319 project is about 50 % complete. The UACD has ben invoiced for \$16,600 of the \$42,000 grant.
- The project should be completed by January 2018.



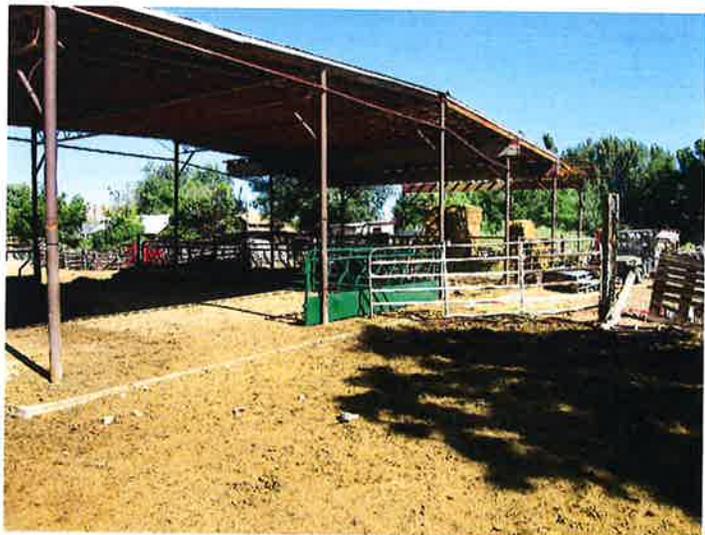
Moab BLM Mill Creek Phase 1 Restoration Project

- This project is a cooperative project between BLM and Moab Solutions to remove invasives and revegetate areas of invasive removal below the confluence of Mill Creek and N Fk Mill Creek to the BLM boundary.
- The 319 project is about 70 % complete. The UACD has ben invoiced for \$34,400 of the \$40,000 grant.
- The project should be completed by January 2018.



Holyoak Feedlot Project

- This project is on private land and will install a proper feedlot to control animal access to stream and appropriate waste removal for a property along Pack Creek at 400 East in Moab.
- The 319 project is about 85 % complete. The UACD has ben invoiced for \$35,800 of the \$36,600 grant.
- I cannot predict when this project will be completed.



Recently Completed Projects:



USU Rainwater Harvesting Project



Water Monitoring Information and Education Project

Recently Completed Projects:



Pre 2014 USFS Spring Development Project

Yes I left this one blank because 1 year later it looks really good I just don't have a picture of it yet

Recently Completed Projects:



Dog Waste and Signage Project



Recently Completed Projects:

Kiosk Information and Educational Project



Castle Valley Projects

Current Funded Projects in Progress:

- Castle Creek Revegetation Project

Recently Completed Projects:

- Placer Creek Reseeding Project

Castle Creek Revegetation Project

- This project is a cooperative project between the Town of Castle Valley and private land owners along Castle Creek revegetate areas of invasive removal along Castle Creek.
- The 319 project is about 65 % complete. The UACD has ben invoiced for \$10,000 of the \$22,500 grant.
- The project will be completed by January 2108.

Recently Completed Projects:



Placer Creek
Reseeding Project



San Juan County Projects

Current Funded Projects in Progress:

- Redd Animal Husbandry Corral

Recently Completed Projects:

- San Juan Watershed Management Plan (Almost)

Redd Animal Husbandry Corral

- This project is on private land and will replace feedlot next to La Sal Creek. The new corral is about ¼ mile upland of the current one.
- The NPS project is about 15% complete. The Redd's have yet to invoice UDWQ for any amount of the 127,500 grant.
- The project is scheduled to be completed by October 2018.



Issues Update

- Macroinvertebrate Monitoring below 6,000 ft in Southeastern Utah
- Closure of abandoned wells in Spanish Valley
- Coordination and cooperation with UDWQ

Biological Assessment of Streams below 6,000 Feet in Southeastern Utah

(I'm talking about macroinvertebrate monitoring and assessment)

- I've been told it is not O/E it is O/C, the C is calculated.
- NPS and BLM are not currently taking macroinvertebrate samples for beneficial use assessment because they have determined the O/E-C assessment model doesn't accurately determine biological integrity.
- The current best professional judgement believes our desert streams are too flashy for this modeling approach.

Biological Monitoring Below 6000 Feet

- Boyle TP and Others. 1993. Inventory of the Aquatic Resources in the East & North Forks of the Virgin River in & above Zion National Park, Utah. National Park Service, Water Resources Division, Applied Research Branch. Fort Collins, Colorado. <https://irma.nps.gov/DataStore/Reference/Profile/657924>
- p. 59 "Physical disturbance, usually in the form of floods, may be the primary determinant of biotic community structure in streams (Resh et al. 1988). The highly variable hydrological discharge, unstable shifting substrates, and large amounts of transported inorganic depositional material were responsible for reduced taxonomic and functional complexity of the benthic macroinvertebrate community of the East and North Fork of the Virgin River. Decreases in invertebrate densities were commonly associated with substrate disturbance. Invertebrate densities and taxa richness appeared to remain relatively constant with increasing flows until flows were sufficiently high to initiate substrate movement, after which densities declined in some cases to zero. Density recovery rates to pre-disturbance levels appeared dependent on the proportion of area disturbed (patchiness)."
- Brasher A and Others. 2010. Macroinvertebrate Communities and Habitat Characteristics in the Northern and Southern Colorado Plateau Networks, Pilot Protocol Implementation. Natural Resource Technical Report. NPS/NCPN/NRTR—2010/320. Natural Resource Program Center. Fort Collins, Colorado. <https://irma.nps.gov/DataStore/Reference/Profile/664690>
- Note that the authors promote the idea that aquatic macroinvertebrates will work well as a monitoring metric, but they go on to elaborate that different indices will need to be developed for each type of stream/elevation combination, and possibly each monitoring location. Upon further review, NCPN felt that the cost of metric development and indicators of water quality and watershed health. However, absent any regional context, the values for these example metrics incorrectly suggested that Coyote Gulch was of intermediate water quality and habitat degradation (as compared to Capulin Creek and the Mancos River)—when in fact, those values simply represented the habitat characteristics (and resultant invertebrate communities) typical of this region: relatively small substrate, low flows, and intermittent reaches (although the sampling reach itself is perennial).
- Can't find these online, but the recent ZION State of the Park report highlights information known on aquatic invertebrates (of all of our parks, Zion has looked into the possible of aquatic invert monitoring most prior to the existence of our monitoring program). Dave Sharrow, the hydrologist at Zion, was instrumental in deciding the fate and shape of NCPN's aquatic invert and water quality monitoring programs.
- National Park Service. 2016. State of the Park Report for Zion National Park. State of the Park Reports. No. 23. National Park Service. Washington, D.C. https://www.nps.gov/zion/learn/management/upload/ZION_StateOfThePark.pdf
- p. 11 "Studies of aquatic macroinvertebrates in the Zion Narrows found a species assemblage that would be considered depauperate in other settings, but are consistent with a habitat subject to frequent large floods and a mobile substrate. There was concern for the impacts of the many hikers in the narrows, and a significant level of impact was documented in the highest use areas, but these impacts were much smaller than the impact of natural flood events (Caries 2007, and Shakarjan and Stanford 1998)"
- And for springs, this is where I was personally involved (reprint attached). There were some modest differences for very high impact sites (grazing/ OHV), but since those disturbances aren't that relevant to the parks where we do springs monitoring, we didn't include them in our springs monitoring program.
- "A combination of habitat heterogeneity and the natural isolation of springs in arid systems has complicated the development of bioindicators of anthropogenic disturbances. Because traditional univariate bioindicators using macroinvertebrates largely did not respond to impact levels, but multivariate analysis did show differences in assemblage structure, future search should explore the possibility of developing multivariate predictive models of biodiversity. These models, commonly called O/E (observed/expected) models, use general predictor variables (e.g., geology, discharge, latitude, longitude, elevation) to predict the composition of invertebrate assemblages when a site is unimpacted."

Biological Monitoring Below 6000 Feet

Western North American Naturalist 72(3), © 2012, pp. 393–406

BIODIVERSITY, WATER CHEMISTRY, PHYSICAL CHARACTERISTICS,

AND ANTHROPOGENIC DISTURBANCE GRADIENTS OF

SANDSTONE SPRINGS ON THE COLORADO PLATEAU

Rebecca H. Weissinger¹, Dustin W. Perkins², and Eric C. Dinger^{3,4}

ABSTRACT.—Springs located on the Colorado Plateau are highly threatened and represent a small percentage of the landscape; yet they are disproportionately important to diverse native flora and fauna. The relationships between anthropogenic disturbance, aquatic macroinvertebrate species composition, and environmental variables at these springs have received little study. We selectively visited 40 sandstone springs in southeastern Utah and southwestern Colorado to span a range of impacts. We classified the springs into impact categories based on a spring impact score, and we measured biodiversity (aquatic macroinvertebrates), water chemistry (nutrients, dissolved O₂, pH, specific conductivity, temperature, turbidity, coliform bacteria [*Escherichia coli*]), physical characters (solar radiation, substrate, vegetation cover, bank stability, discharge), and presence of anthropogenic disturbance. *Escherichia coli* abundance was higher in high impact categories, and turbidity increased with increasing disturbance. No differences in total N, total P, specific conductivity, flow, dissolved O₂, pH, or substrate were found among the impact categories. Vegetation cover was higher in low impact categories than in moderate and high impact categories, while potential annual and growing-season solar radiation was lower in low impact categories than in high impact categories. Global and subsequent multiple response permutation procedure (MRPP) comparisons suggested strong differences in aquatic macroinvertebrates between low and high impact springs and no difference at moderate impact springs. Mean taxa richness (α -diversity), total taxa richness (γ -diversity), and percent of taxa richness composed of shredders peaked at moderate disturbance levels. The percentage of non-insect taxa richness was reduced in high impact categories, and Odonata (dragonflies and damselflies) were higher in low impact categories than in high impact categories. All high impact springs had both livestock use and vehicle use (roads or off-highway vehicles), and our data suggest that disturbances caused by one or both of these uses alter the aquatic macroinvertebrate assemblage. We suggest that disturbance may increase macroinvertebrate richness, where a mix of tolerant and intolerant species co-occur, until macroinvertebrate richness reaches a threshold; after surpassing this threshold, macroinvertebrate diversity decreases.

Closure of abandoned wells in Spanish Valley

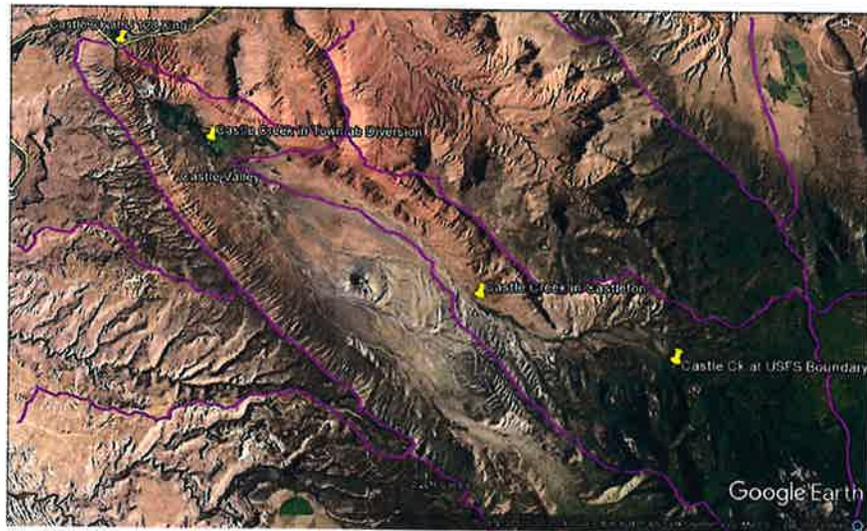
- This topic has come up in several meetings and the Moab Area Watershed Partnership is concerned over the large number of abandoned wells in Spanish Valley.
- The Utah Division of Water Rights has permitted the wells and requires closure of wells in their statute.
- The Utah Division of Water Rights (UDWRi) is refusing to take any long term action to support a policy that will insure well closure.
- The UDWRi is willing to assist any entity that will take over the well closure issue, but is unwilling to take the lead.
- Boyd Clayton, the Deputy State Engineer; “We are a regulatory agency and are not set up to administer grants. We are however willing to work with anyone that is able to administer a grant program to provide the information on who may need help abandoning their well.”

Coordination and cooperation with UDWQ

- In general I get a lot of support from UDWQ, especially the NPS program and the SE Watershed Environmental Scientist.
- I also receive and am grateful for the support and cooperation from the UDWQ's Monitoring Section.
- Where I could use some more coordination and cooperation is with standards and assessment. Which leads into my next topic.

Strategy for delisting Mill, Pack, and Castle Creek

- Castle Creek:
- The lower portion has a site specific standard
- Very few exceedances in the lower section
- No exceedances in the upper section.



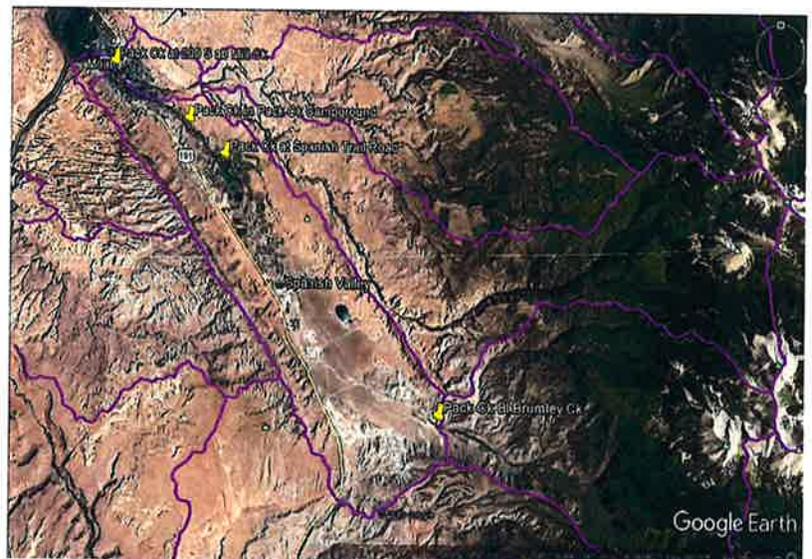
Strategy for Castle Creek

- Encourage reduced loading from Red Cliffs R/O facility
- Support Town of Castle Valley restoration efforts to reduce entrenchment
- Support Castle Valley Irrigators if they chose to request a change in Standard.



Strategy for Pack Creek TDS and Selenium

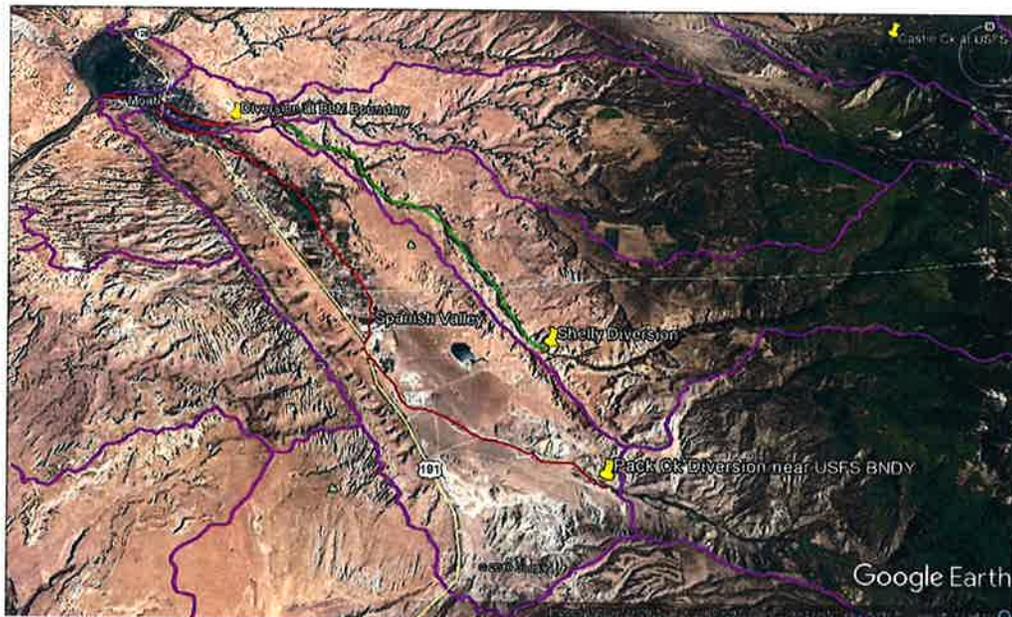
- There hasn't been a TDS exceedance in Pack Creek in 5 years.
- There have been <10% exceedances for Selenium in the last 5 years (TDS and Se correlate)
- We've removed a lot of Tamarisk and are supporting projects that reduce or stop entrenchment.
- Support projects and policies that sewer areas near Pack Creek and decrease storm water releases to Pack Creek



Strategy for Mill Creek and Pack Creek Temperature

- Change Standard from cold water fishery to warm water fishery for stream sections below diversions to confluence with Colorado. (The MAWP has sent a letter requesting this)
- For the Stream Reach “Main Fork of Mill Creek from diversion at BLM boundary to headwaters”; Work with affected partners to develop flow study that would support alternative diversion management strategy.
- Continue to support projects that decrease entrenchment and support riparian areas.

New Standards for Mill Creek



Strategy for Mill and Pack Creek E Coli

- Work with the Moab City, San Juan Special Services District and Grand Water and Sewer Service Agency to sewer large areas that have not been sewered.
- Work with Moab City and Grand Water and Sewer Service Agency to sewer individual homes that were not originally “hooked up”.
- Support projects and policies that protect the watershed from E Coli.
- I requested a standard change from 2B to 2A two years ago for Mill and Pack Creek.
- I’m getting very little “traction” on these efforts.

Possible Upcoming On The Ground Projects

- Mill Creek/Matheson Wetlands restoration project:
 - This project will make the wetlands wet again, support an endangered fish entrainment area and restore Mill Creek entrenchment issues in and near the Matheson Wetlands (this is a 1.7 million dollar project).
- Restoration projects that prevent entrenchment in Spanish and Castle Valley
- Curb cuts and sustainable storm water harvesting
- Abandoned well closure project
- Finish sewerage Moab/Spanish Valley
- Flow and Temperature Study on Main Fork of Mill Ck ab N Fk Mill Ck
- San Juan Watershed Management Plan Projects:
 - Entrenchment/stream bank protection projects
 - Upland projects that promote water infiltration