



UTAH DEPARTMENT of
ENVIRONMENTAL QUALITY
**WATER
QUALITY**

UTAH NONPOINT SOURCE POLLUTION MANAGEMENT PROGRAM FISCAL YEAR 2019 ANNUAL REPORT



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Prepared by:
the Utah Department of Environmental Quality, Division of Water Quality
in cooperation with the Water Quality Task Force

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Cover Photo: San Pitch River Restoration Project. Implemented with Section 319 and State Nonpoint Source funds

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Introduction and Program Overview

This report fulfills the requirements of Section 319(m)(1) of the federal Clean Water Act of 1987. The Utah Department of Environmental Quality's (DEQ), Division of Water Quality (DWQ) annually prepares this report to inform the public, the U.S. Congress and the U.S. Environmental Protection Agency (EPA) on the State's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete account of all nonpoint source activities, it describes the most important features of Utah's program.

The mission of the Utah Nonpoint Source Pollution Management Program (NPSPP) is to support the environmental protection goals of the State as described in Utah Administrative Code (UAC) R317-2, in part to: 1) eliminate pollution which creates hazards to the public health; 2) to protect, maintain, and improve the quality of the Waters of the State for public water supplies, species protection and propagation and for other designated uses; and 3) to provide for the prevention, abatement and control of new or existing sources of polluted runoff. The NPSPP works to achieve these goals by working in concert with numerous local, state and federal agencies and private parties pursuant to the NPSPP Plan.

Nonpoint source pollution refers to diffuse pollutants that when added together from an entire watershed can significantly impact water quality in streams, lakes and reservoirs. Nonpoint source pollution is diffuse, coming from land runoff, percolation, precipitation or atmospheric deposition. Precipitation washes pollutants from the air and land into our streams, lakes, reservoirs and groundwater. Such pollutants can include sediment, nutrients, pathogens (bacteria and viruses), toxic chemicals, pesticides, oil, grease, salts and heavy metals. In Utah, our most common problems are nutrients, pathogens, metals, sediment, and salts. These pollutants alter the chemical, physical and biological integrity of the water and can impair their designated beneficial uses (e.g., drinking water, recreational, aquatic life and/or agricultural). Most waterbodies are listed on the State's 303(d) List of Impaired Waters for not meeting water quality standards because of nonpoint source pollution. Some of the common sources of nonpoint source pollution include agricultural activities, runoff from paved surfaces, mining and timber operations, recreational activities, onsite septic systems, construction, stream/riparian habitat degradation and natural sources.

Grant Management and Program Administration

In Fiscal Year 2019 (FY-19), DWQ received \$1,445,000 in Federal Section 319(h) funds. Of these funds, \$485,905 was used for program related staffing and support, while the remaining \$959,095 was dedicated to 4 project grants. DWQ received a less than 1% decrease in funding from the previous year (FY-18).

Section 319(h) funds are distributed to project sponsors at the local and state level to help address water quality issues contributing to nonpoint source pollution. Recipients of these funds can include local governments, watershed groups and individual cooperators. The projects selected for funding in FY-19 included the statewide volunteer monitoring program, local watershed coordinators and on-the-ground implementation projects focused on improving water quality on Pelican Lake and Matt Warner Reservoir (See figure 1).

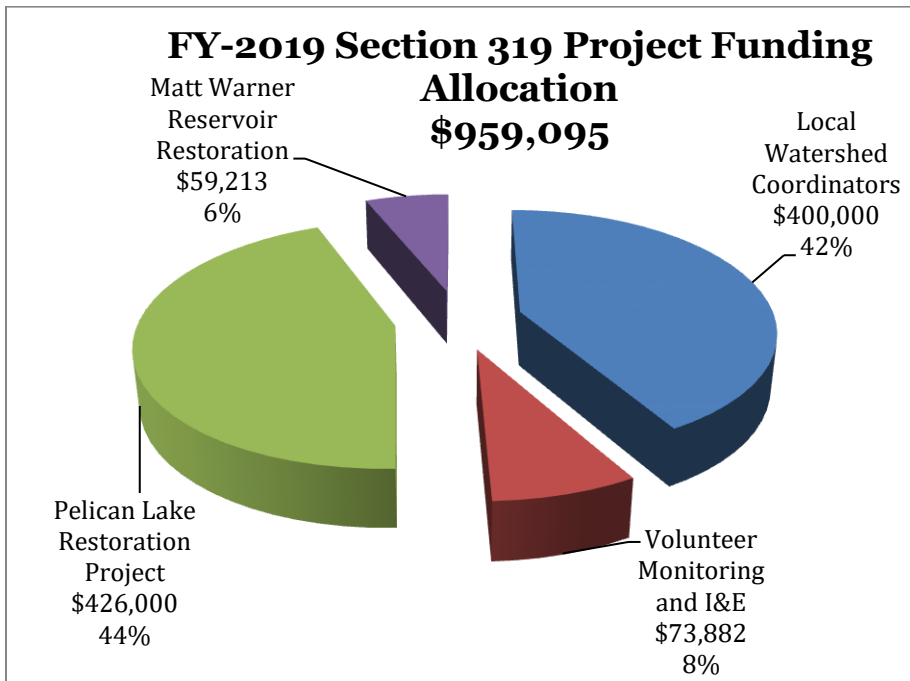


Figure 1. FY 2019 Section 319 Project Funding

In addition to the FY-19 Section 319 funds, DWQ continues to manage five other federal 319 grant awards which were partially or completely expended. Table 1 summarizes grant awards by year and the approximate percentage that was expended in each grant.

Table 1. Section 319(h) Nonpoint Source Funding Project Allocations FY14 to FY19

Federal Fiscal Year	Grant Award	Expenditures in FY-2019	Total Expenditures	Percent Expended
FY-14	\$893,621	\$47,011	\$893,621	100%
FY-15	\$879,703	\$122,322	\$858,981	98%
FY-16	\$987,458	\$159,712	\$709,384	72%
FY-17	\$1,004,260	\$466,606	\$780,372	78%
FY-18	\$970,494	\$154,085	\$154,085	16%
FY-19	\$959,059	\$0	\$0	0%
Total	\$5,694,595	\$949,736	\$3,396,443	60%

Staffing and Support

In FY-19, DWQ employed 5 Full Time Employee (FTE) positions that were funded by 60% with Section 319 funds and 40% with state revenue. Table 2 shows the positions and FTEs funded by DWQ using Section 319 funds.

Table 2. FTEs funded by 319 funds and state revenue in FY-2019

PERSONNEL (# FTE's)	SALARY	Benefits	FTE	TOTAL EXPENSES	STATE (40%)	EPA 319 (60%)
Program Coordinator	\$70,136	\$45,426	1	\$115,562	\$46,225	\$69,337
Environmental Scientist	\$72,161	\$46,167	0.50	\$59,164	\$23,666	\$35,498
Environmental Scientist	\$74,458	\$46,735	0.50	\$60,597	\$24,239	\$36,358
Environmental Scientist	\$64,070	\$43,130	0.50	\$53,600	\$21,440	\$32,160
Environmental Scientist	\$74,187	\$46,633	0.50	\$60,410	\$24,164	\$36,246
Environmental Scientist	\$66,043	\$23,302	0.50	\$44,673	\$17,869	\$26,804
Environmental Scientist	\$70,011	\$45,379	0.50	\$57,695	\$23,078	\$34,617
Watershed Section Manager	\$80,680	\$48,559	0.50	\$66,500	\$26,600	\$39,900
Administrative Services Manager	\$57,900	\$39,545	0.25	\$29,261	\$11,704	\$17,557
Assistant Division Director	\$85,608	\$50,680	0.15	\$23,189	\$9,276	\$13,914
Division Director	\$117,137	\$58,122	0.10	\$17,967	\$7,187	\$10,780
TOTAL 5.0 FTEs	\$864,277	\$507,871	5.00	\$588,618	\$235,447	\$353,171
SUPPORT						
Travel				\$17,000	\$6,800	\$10,200
Current Expenses				\$130,000	\$52,000	\$78,000
Indirect Costs				\$74,225	\$29,690	\$44,535
Total Support				\$221,225	\$88,490	\$132,735
Total Staffing and Support				\$809,842	\$323,937	\$485,905

FY-19 Accomplishments and Milestones

FY-19 Accomplishments

- Utah closed out the FY-14 Section 319 Grant, and all required information was entered into the Grants Reporting and Tracking System (GRTS)
- Water Quality Task Force meetings were held on September 11, 2018, December 6, 2018, and June 27, 2019.
- The annual agency coordination meeting was held on February 28, 2019. Partner agencies gave 15 minute presentations highlighting the nonpoint source pollution issues their agencies are addressing.
- The Utah Watershed Coordinating Council (UWCC) met two times during FY-19.
- A success story was submitted to EPA for a temperature delisting on Main Creek in Wasatch County. This was accepted and approved by EPA.
- DWQ and EPA participated in a project evaluation tour of the San Pitch, Spanish Valley, and Price River Watersheds on August 6th-August 8th 2019.
- The Utah Nonpoint Source (NPS) Management Plan and accompanying appendices were submitted and approved by EPA in May, 2018
- DWQ's Nonpoint Source Program Coordinator and Assessment and Monitoring Section staff updated the statewide nonpoint source monitoring plan that identifies the monitoring that will take place to document project effectiveness and facilitate the collection of data required for delisting waterbodies and generating success stories.
- The Agricultural Resource Development Loan interest buy-down program for Animal Feeding Operations/ Concentrated Animal Feeding Operations (AFOs/CAFOs) was approved by the Utah Conservation Commission and the Water Quality Board. Two projects were awarded under this new program.
- The Federal Consistency Review Tour was conducted October 17th 2019 in the Raft River Mountains area.

Annual Milestones

To help the State of Utah gauge the success of the NPS Program, the State has developed annual milestones based on the five objectives identified in the Statewide Management Plan. These objectives and milestones are as follows:

Objective 1: Environmental Protection

Annual Milestones

- Number of TMDLs completed.
- Number of TMDLs initiated during the state fiscal year.
- Number of nine element watershed based plans developed.
- Number of nine element watershed based plans initiated during the state fiscal year.
- Number of projects dedicated to the protection of threatened waterbodies identified in Utah's 303(d) list.
- Number of projects focused on groundwater protection throughout the state.

Objective 2: Improve Program Efficiency and Effectiveness through Reporting and Evaluation.

Annual Milestones

- Total number of stream miles restored (Annually)
- Total estimated load reductions (i.e., Total Phosphorous, Total Nitrogen, Total Suspended Solids) in project areas (Annually)

- Number of final project reports submitted (Annually)
- Number of 319 grants currently open during the fiscal year
- Amount of unexpended funds in each open 319 grant
- Number of success stories showing the environmental benefits of completed NPS projects submitted to EPA for approval.

Objective 3: Improve Public Participation and Understanding of NPS Issues.

Annual Milestones

- Number of participants involved in the Statewide Volunteer Monitoring Program
- Number of Information and Education projects implemented with Section 319 and State NPS Funding
- Updates made to the NPS Program Website

Objective 4: Improve Data Collection and Management

Annual Milestones

- Track updates made to enhance NPS monitoring in DWQ’s annual monitoring strategy
- Number of Sampling Analysis Plans developed
- Track status and updates of Utah’s AWQMS database
- Report on water quality data uploaded to the EPA’s WQX database

Objective 5: Improve Coordination of Governmental and Private Sectors

Annual Milestones

- Hold annual NPS coordination meetings
- Conduct annual consistency reviews with state and federal agencies
- Number of Water Quality Task Force meetings held during the fiscal year
- Amount of funding used to leverage 319 funding throughout the state. This funding can include program funding from Utah Department of Agriculture and Food (UDAF), DWQ, Utah Division of Wildlife Resources (UDWR), United States Department of Agriculture (USDA), and other state, federal, and local agencies

For a complete report of how these annual milestones were met in FY-19, refer to Table 15 in the Appendix.

Summary of Active Utah 319(h) Grants During FY-19

For an entire summary of active Utah 319(h) projects see Tables 9, 10, and 11 in the Appendix.

Watershed Based Plans/ TMDLs

Section 303(d) of the federal Clean Water Act requires states to develop and submit for approval a list of impaired waters (referred to as the 303(d) list) every two years. The most recent version of the 303(d) list approved by EPA for the State of Utah was issued in 2016. Waterbodies listed as impaired require additional study to determine the sources of impairment, and if appropriate, a Total Maximum Daily Load (TMDL) determination made for the pollutant of concern. Currently the State of Utah is implementing 64 TMDLs. In addition, a comprehensive tracking tool for TMDLs and waterbody

assessments has been provided by EPA that will assist in accurately reporting the status of completed TMDLs. DWQ has also prioritized the waterbodies listed on the 303(d) list of impaired waterbodies to determine where efforts should be focused to develop TMDLs and implement watershed plans. For a list of all TMDLs and watershed plans the State of Utah is currently implementing see Tables 12 and 13 in the Appendix.

Project Proposals Approved for Funding During FY- 19 Solicitation Process

Due to the high demand for 319(h) funds, the State of Utah has required that entities applying for funding submit pre-proposals to the State for review. Fifty six pre-proposals totaling over \$5.6 million were accepted from the first of February through mid-May for the 2019 fiscal year. These pre-proposals were reviewed by DWQ using a project selection ranking criterion developed by the Water Quality Task Force. Once the proposals were ranked, they were reviewed by a subcommittee of the Water Quality Task Force, and the final grant awards were determined. Of the proposals received, 4 projects were selected for funding with Section 319 funds. The Uinta Basin Watershed received the majority of project funds since the Uinta Basin was the targeted basin in FY-19. The local watershed coordinators and an information and education (I&E) grant to Utah State University Extension, which includes the volunteer monitoring program, were also funded (Table 3). The projects that were not selected for funding with Section 319 funds were then considered for funding with State NPS funds.

Table 3. 2019 Project Implementation Plans (PIPs) for CWA Section 319 Funding

Title	Allocation
Utah State University Volunteer Monitoring and I&E	\$ 73,882
Local Watershed Coordinators	\$ 400,000
Pelican Lake Restoration Project	\$ 426,000
Matt Warner Reservoir	\$ 59,213
Total	\$ 959,095

NPS Program Strategic Approach

To be eligible for funding, nonpoint source projects must be located on a waterbody, a tributary to a waterbody identified on the 303(d) list of impaired waterbodies, or in a waterbody that is at risk of becoming impaired. A current watershed plan should also be in place covering all nine elements required in an EPA approved watershed based plan. Using a targeted basin approach allows watershed planners time to develop watershed plans between funding cycles. To help facilitate the development of watershed plans and identify sources of pollutant loading, DWQ conducts annual intensive monitoring runs two years before funding is scheduled to be received by the targeted basin.

Targeted Basin Approach

The State of Utah uses a targeted basin approach to reduce nonpoint source pollution. FY-19 represents the 10th year of implementing the targeted basin approach (see Table 4). This approach allows the state to focus implementation efforts on a specific watershed and promote effective implementation of TMDLs and watershed plans.

The Uinta Basin obtained the majority of the 319(h) funds allocated for Best Management Practice (BMP) implementation in FY-2019. Projects located in the targeted basin also receive additional points in the ranking process, increasing their likelihood of being funded.

Table 4. Basin Priority Funding Schedule

Basin Priority Funding Schedule											
Watershed	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
(1) Jordan/ Utah lake											
(2) Colorado River											
(3) Sevier, Cedar-Beaver											
(4) Bear River											
(5) Weber River											
(6) Uinta Basin											

Utah Nonpoint Source Funding

DWQ uses funds generated from interest earnings on State Revolving Fund (SRF) loans awarded by the Utah Water Quality Board to address nonpoint source issues. Individuals, businesses, private entities, associations, and government agencies are eligible to receive these grants. Much like Section 319(h) funds, all project proposals received are ranked and prioritized. The highest priority projects are those that address a critical water quality need, human health concerns, and would not be economically feasible without the grant. In FY-18, 29 projects were funded using State NPS grants, totaling \$965,000. In addition to these projects, an additional \$35,000 was reserved for on-site septic system projects that may arise during the year. For a complete summary of FY-19 funded projects see Table 14 in the Appendix.

Program Match Status

Federal 319(h) funds received by the State require a 40% non-federal match for staffing, support and project funding. Most of the match for projects is provided at the local level by project sponsors and cooperating landowners. DWQ provides State NPS funds as match to selected 319(h) projects to provide an additional incentive to implement BMPs.

There are several state and local programs that are very helpful in generating match for the 319 projects. UDWR manages several grant programs including the Habitat Council, the Blue Ribbon Fishery and Watershed Restoration Initiative. These funds are dedicated to the improvement of wildlife habitat on public and private lands, while improving water quality. Table 5 shows the match associated with the projects where FY-2019 State NPS and Section 319 grants were used. Of the NPS grants funded, \$6,397,551 in match is generated from other programs, or landowner match. This equates to a 3:1 ratio of NPS grant to partner funding.

The Utah Conservation Commission manages the Agriculture Resource Development Loan Program (ARDL), which in recent years has been expanded to include water quality improvement projects on farms and ranches. UDAF's Grazing Improvement Program (GIP) also provides state revenue to improve management of upland and riparian areas throughout the state. All of the programs mentioned above have provided match for 319 funds in jointly funded projects. These state programs are tremendous assets to the improvement of water quality in Utah.

DEQ provides state revenue to match the staffing and support 319(h) funds that are part of the Performance Partnership Grant (PPG). The Utah Association of Conservation Districts also tracks match accruals through projects managed by the local Conservation Districts, where applicable, via an annual contract.

Table 5. FY-2019 match for federal 319(h) funds

Funding Source	Match Amount
National Resource Conservation Service	\$2,177,942
Cooperator Match	\$1,617,350
Utah Watershed Restoration Initiative	\$258,000
U.S. Forest Service	\$430,000
Universities	\$96,981
Utah Department of Agriculture and Food	\$30,000
Local Government	\$176,451
Trout Unlimited	\$65,000
In-kind	\$642,867
Utah Division of Wildlife Resources	\$799,000
Other	\$103,960
Total	\$6,397,551

Integrating Watersheds and NPS Funding (Basin wide summary)

Having watershed coordinators has proven to be very effective at helping to implement water quality projects. Local watershed coordinators develop relationships with landowners and educate them on the benefits of installing BMPs. They also oversee all project planning, design, project implementation, and reporting. They help organize and facilitate meetings for local watershed groups involved in watershed planning and in the project solicitation and selection process. They are also responsible for much of the project effectiveness monitoring of projects implemented in their watersheds.

Southeastern Colorado River Watershed- Arne Hultquist

The local watershed coordinator continues to work with the Moab Area Watershed Partnership (MAWP), the active watershed group in Grand County, Utah. The MAWP is revising the Moab Area Watershed Management Plan in anticipation of the next focused funding cycle in 2020. Efforts are continuing for the implementation of the Montezuma Creek Watershed Management Plan in San Juan County.

The Montezuma Creek watershed received a grant for a groundwater study project in FY-2019. The groundwater study is tied to Pinyon/Juniper removal projects on the benches of Montezuma Creek. Nine piezometers, eight temperature loggers and ten soil moisture probes were installed in the fall and winter of 2018-2019. In FY-2019, the MAWP area received funding for two projects. The U.S. Department of the Interior, Bureau of Land Management (BLM) Mill Creek phase IV restoration project is a continuation of the restoration work and is focused on Mill Creek from one mile above the North Fork Mill Creek to the private property on the Steel Bender 4X4 trail. The Southeastern Utah Health Department (SEUHD) received a small grant for digitizing on-site waste water treatment systems in their service area, which includes Emery and Carbon Counties.

In FY-2019, the local watershed coordinator completed four projects. Three projects were focused on riparian improvements, and treated roughly 1.2 miles of riparian corridor. One of the projects removed an animal feedlot from the riparian corridor on La Sal Creek and relocated it higher in the uplands.

Bear River Watershed- Gabe Murray

The Bear River Watershed Coordinator implemented several projects in the 2019 state fiscal year. Projects along the Logan River included the following projects: Mainstreet-100 East, Lower Rendezvous Park, Michael Jablonski, Jeff Kunzler, and Jodie Harris. Other projects in the watershed included Don Nebeker-Little Bear River, Bear River Land Conservancy-Mainstem Bear River, and Steve Jeppsen-Maple Creek. These projects consisted of 800 feet of stream bank stabilization, 2,600 feet of clearing and snagging, and 2.5 acres of riparian re-vegetation.

Several projects were funded in 2019. These projects include a soil health initiative in the Clarkston Watershed, a beaver dam analogue project in Petersboro, and three stream bank stabilization projects scattered throughout the watershed.

The coordinator continues to work with Utah State University (USU) and Logan City to develop partnerships on water quality monitoring and project development, as well as the Nature Conservancy, Bear River Land Conservancy, and other partners to prioritize and develop projects that benefit the Bear River Watershed.

Provo River/ Utah Lake- Dax Reid

The Provo River/Utah Lake watershed coordinator has begun the implementation of six projects in the Provo River, Main Creek and Lower Spanish Fork River watersheds. These projects are in various stages of planning and development. These projects were all initiated with NPS/319 funding along with Utah Conservation Commission (UCC) and local conservation districts.

In addition to the projects funded by DWQ, four other projects have been initiated in the Heber Valley in partnership with the National Resource Conservation Service (NRCS). These projects were primarily funded via the NRCS PL83-566 funding program with an emphasis on flood control, riparian restoration, water delivery and water quality improvements. Matching funds will be needed for the Daniel's Irrigation Restoration project as NRCS will only cover ~75% for the proposed practice(s) implementation.

In addition to the projects that are being implemented, the coordinator has begun to work with the local conservation district to develop a watershed plan for the Heber Valley to address

Weber River Watershed-Andy Pappas

While the Weber River Watershed Coordinator only completed one project in FY-2019, he continues to manage nine additional projects around the watershed that are in various stages of completion. The majority of these projects focus on the installation of practices that will better help disperse cattle throughout the South Creek and Chalk Creek watersheds instead of allowing cattle to spend large amounts of time in the riparian corridor.

In addition to the projects that are being implemented, the coordinator continues to work with partners throughout the watershed and facilitate meetings of various watershed groups. He has also been involved in collecting data to document the benefits of the projects that are currently installed.

San Pitch Watershed- John Saunders

The San Pitch Watershed Coordinator has been very productive implementing project work on the San Pitch River near the town of Mount Pleasant, Utah. In FY-2019, 12 projects were completed in the San Pitch watershed, restoring 16,907 linear feet of stream channel, installing 14,857 linear feet of riparian fencing and transitioning 76 acres of farmland from flood irrigation to sprinkler irrigation.

In addition to the great projects that were implemented in FY-2018, the local watershed coordinator continues to work with eight other landowners within the watershed. These projects consist of additional riparian restoration work, animal feeding operations, pasture management, and irrigation water management projects.

Beavers have become quite an area of discussion within the watershed. Beavers have begun to inhabit many of the treated riparian areas, and while landowners were initially not happy about this, they have begun to warm up to the notion of beavers present in their riparian areas. To help people understand the importance of beavers, and to better manage them, the local watershed coordinator is conducting flow monitoring in reaches where beavers are prevalent. A beaver management plan has been developed that identifies where beavers should be, and what to do when they move into areas where they are not welcome, such as irrigation diversions and canals.

Upper Sevier Watershed- Wally Dodds

Two of the NRCS's National Water Quality Initiative (NWQI) watersheds in the State are located in the Upper Sevier Watershed. As a result, the Upper Sevier Watershed Coordinator has spent a good majority of time planning and implementing NRCS Environmental Quality Improvement Program (EQIP) projects associated with this program. The Coordinator is currently working with 5 landowners to implement water quality improvement projects associated with the NWQI program. This requires collecting water quality data and obtaining the proper permits for these projects.

In addition to the work that is taking place in the Upper Sevier Watershed, the Coordinator is also working on Pinto Creek in Washington County, Utah. The Pinto Creek restoration project is part of a large scale Watershed Restoration Initiative (WRI) project. The watershed coordinator is using NPS funding to specifically address the riparian corridor in the watershed by stabilizing the streambank and establishing vegetation in the riparian area.

Nonpoint Source Water Quality Task Force

The mission of the Utah Water Quality Task Force is to facilitate coordinated and holistic management of Utah's watersheds for the protection and restoration of Utah's surface and ground waters.

The NPS Program Plan is administered by DWQ through the coordination and assistance of the Utah Water Quality Task Force and its established ad hoc committees. The responsibility of the Utah Water Quality Task Force is to advise DWQ in the holistic management of Utah's watersheds, with a focus on reduction of nonpoint source pollution. DWQ is responsible for the chairmanship of the Water Quality Task Force.

Functions of the Utah Water Quality Task Force

- Serve as a coordinating body for the review and direction of federal, state and local nonpoint source management programs to assure that these programs are implemented consistent with the Utah NPS Management Plan (approved by EPA in 2018 and as amended or revised)
- Promote and foster better alignment of relevant programs to assure efficient and effective watershed management efforts that improve water quality, in addition to other benefits
- Provide a forum for the exchange of information on activities which reduce nonpoint source pollution
- Provide a forum for discussing and implementing project monitoring (before and after)
- Provide a common storage area for all data collected
- Provide a forum for discussion and recommended resolutions to program conflicts
- Work with partner agencies to coordinate the prioritization of watersheds for nonpoint source activities. Prioritization criteria should include local involvement (e.g. locally led watershed committees), effective use of partnerships, and evidence of leveraged sources of funding
- Establish and implement a process for field inspections of nonpoint source mitigation activities on public and private lands to ensure that best management practices are installed and functioning as designed to protect water quality
- Serve as a coordinating body for outreach and education to increase public awareness regarding nonpoint source pollution management

Products of the Utah Water Quality Task Force

- The Annual Utah Nonpoint Source Program Report. This report is required by EPA, but is not restricted to 319 funded efforts. The report is prepared by DWQ in coordination with UDAF. The task force assists in providing content, advice and review. The report highlights the planning efforts, projects, and successes statewide that are possible with the broad coalition of partners encompassed in the Water Quality Task Force
- Presentation of the Annual Utah Nonpoint Source Program Report each year to the Utah Water Quality Board and the Utah Conservation Commission
- Organize a Nonpoint Source Conference periodically to share information, highlight successes, and improve networking throughout the state and region
- Maintain an institutional repository (e.g. a web site) that includes originals or links to documents, reports, and minutes

Membership

The Task Force includes representation of those entities with programs that could potentially cause or mitigate nonpoint source water pollution. As new nonpoint source program components are developed and implemented, additional entities will be invited to participate. Current invited members include:

- Local Governments
- U.S. Army Corps of Engineers, Planning Division
- U.S. Department of Interior, Bureau of Land Management
- U.S. Department of Interior, Bureau of Reclamation
- U.S. Department of Interior, National Park Service
- U.S. Department of Agriculture, Forest Service

- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey
- Utah Association of Conservation Districts
- Utah Department of Agriculture and Food
- Utah Department of Environmental Quality
- Utah Department of Natural Resources
- Utah Department of Transportation
- Utah Farm Bureau
- Utah State University Cooperative Extension
- Utah School and Institutional Trust Lands Administration
- Utah League of Cities and Towns

Grants Reporting and Tracking System

The Section 319(h) Grant Reporting and Tracking System (GRTS) is a national database developed by EPA to track projects and activities funded with CWA Section 319(h) funds. The primary purpose of the database is to track project progress, accomplishments, funding information and environmental results using several nationally mandated information items that are reported to Congress annually by EPA. Information extracted from this system forms part of the justification to Congress for funding the Section 319 Program. EPA Region VIII uses GRTS to enable the States to electronically fulfill reporting requirements using the Project Evaluation Form and other attachment features in GRTS such as final reports, GIS maps or other project publications.

Water Quality Information

Sampling and Assessment Activities

The State of Utah utilizes a targeted, rotational basin approach to implement NPS projects. There were several reasons DWQ decided to utilize this approach; to improve monitoring of NPS projects statewide and to concentrate the number of projects into a targeted area to make it easier to identify the benefits of the projects implemented.

As part of this strategy, DWQ conducts an intensive monitoring run within the selected watersheds where the majority of the funding would be spent two years prior to the implementation of the projects identified in the grant work plan. Additional monitoring occurs two years after the projects have been monitored. This data is used to determine project effectiveness and update the watershed plan in that basin.

Over the past several years DWQ has realized that while the intensive monitoring schedule has been useful, it is necessary to collect data more frequently. Instead of monitoring individual projects, Sampling Analysis Plans (SAPs) are developed for the targeted areas where projects are being implemented. This monitoring includes chemical, physical, and biological monitoring. The frequency of this monitoring is determined by the protocol of each assessment type being done. Chemical samples are usually collected monthly at various sites throughout the watershed, and samples are collected at a minimum of 5 years after the project is completed. This has been very helpful during implementation to help identify additional pollution sources in the watershed and additional projects that are funded with State NPS funding.

In addition to the more detailed monitoring plan, DWQ has developed a Statewide NPS monitoring SAP. This SAP highlights what sites and parameters will be collected throughout the State to document project effectiveness in areas where large amounts of NPS funding has been spent. This document also identifies the costs associated with collecting and processing the samples collected. This ensures that the costs associated with this monitoring are covered. When needed, additional funding will be requested from the PPG to supplement this monitoring.

The Statewide SAP was developed in a cooperative effort between DWQ's Monitoring, Assessment and Watershed Protection Sections. By working together, each section was able to verify that the samples collected meet all of their programmatic needs. For example, when trying to delist a waterbody from the 303(d) list of impaired waterbodies, certain locations and frequencies of data collection needed to take place. DWQ's Assessment Section was able to identify additional monitoring locations within those assessment units to realize this objective. This process occurs annually and a finalized SAP is completed by the end of June in coordination with the grant awards.

In most cases, the monitoring is conducted by the local watershed coordinators. DWQ has used State NPS funding to purchase the needed equipment to collect field data, and continues to offer training as necessary to both the local watershed coordinators and our partners to verify that they can proficiently collect the needed data. The local watershed coordinators also partner with volunteers from the Utah Water Watch for safety reasons when doing field work.

Assessment/ Integrated Report- DWQ

DWQ's water quality assessment program continues to work on a timely submission of the combined 2018/2020 Integrated Report (IR). To prepare for submitting the draft and final IRs in 2020, DWQ published the 303(d) assessment methods for a 45-day public comment period in November 2018. To help streamline the public comment process, DWQ implemented an online public comment form for the first time, which was used by eight different individuals and stakeholder groups for a combined total of approximately 215 comments. Some of the assessment method improvements and revisions that were reviewed by stakeholders during the public comment process included: identifying surface waters of the State that are reported in the draft and final IRs, further defining credible and readily available data, developing a high frequency assessment methods for dissolved oxygen data, and adding additional details to DWQ's secondary review processes. The final 2018/2020 IR assessment methods and response to comments are available on the IR's website.

In addition to improving upon and developing new assessment methods for the IR, DWQ also focused on streamlining and centralizing data and information submission processes for the IR's Call for Data. To assist with this process DWQ hired a consultant to help approximately 12 individuals and groups submit their data to EPA's Water Quality Portal and DWQ's data submission templates and forms. Training opportunities were available online, in-person at DWQ, and through one-on-one phone and video-conferencing calls during the 60-day Call for Data.

Plans for the upcoming year include migrating DWQ's previous automation tools from access databases to R and, for the first time, developing assessment review tools in R Shiny apps. This will allow reviewers to comment on and view spatially and temporally all data that was submitted to DWQ during the Call for Data. Once completed, DWQ will publish the draft results for a minimum of a 30-day public comment period and submit the final IR and response to public comments for EPA approval in 2020.

Utah Water Watch Citizen Monitoring

Utah Water Watch (UWW) remains a popular and active part of the statewide outreach program. In 2019 UWW recruited and trained 69 new volunteers, which offsets the natural loss of participating volunteers that occurs each year (Figure 2). In 2019, the program had 109 “unique participants” who monitored sites, an increase from 99 in 2018. These monitors visited 154 sites in 2019, a slight decrease from the 164 sites monitored in 2018 (Figure 3). The total number of monitoring events in 2019 (335) was considerably lower than the 845 events recorded in 2018. This is attributed mostly to small changes in communication with volunteers associated with changes in leadership, which resulted in fewer volunteers uploading their data throughout the monitoring season. In addition to encouraging real time uploading, UWW has begun a program audit which should identify other areas to increase efficiency. For example, UWW will communicate with volunteers more regularly and through multiple means of communication to assure that they reach everyone to address questions and concerns as soon as possible. It is expected to have many of these programmatic issues resolved by spring 2020.

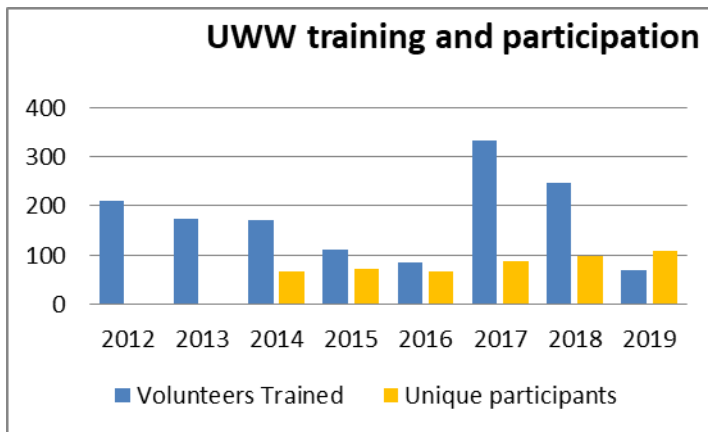


Figure 2. Utah Water Watch Participation

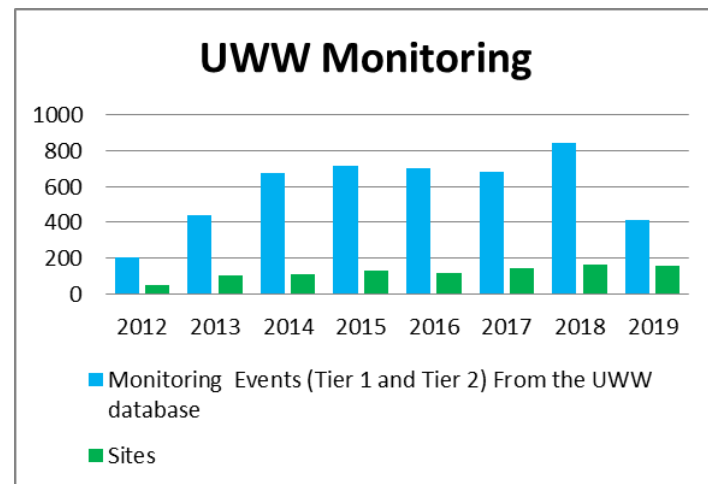


Figure 3. Utah Water Watch Monitoring

This past year USU Water Quality Extension completed and published a fully revised and updated Tier 1 monitoring manual. This manual provides substantially more guidance and interpretive information

than was available previously. The manual is available at: https://extension.usu.edu/waterquality/files-ou/Publications/Utah_Water_Watch_Volunteer_Manual_7.8.19.pdf. This updated manual has helped improve training activities and provides volunteers with clearer instructions at all stages of the monitoring process.

This year UWW continued to support a small core of “Tier 2” monitors who receive additional training and work with watershed coordinators or with partners with special projects around the State to help collect data as needed. Tier 2 volunteers trained in the State approved IDEXX method for E coli monitoring has been important in the support for DWQ’s E. coli monitoring efforts. UWW also continued to work closely with DWQ’s harmful algal bloom monitoring group and have improved monitoring techniques. Reporting has become more streamlined, in particular by utilizing the BloomWatch app.

In 2018 USU transferred all data (current and historic) to a shared web platform, www.citsci.org, hosted by Colorado State University (CSU). This platform is used by a number of citizen science projects and volunteers find it easy to navigate. This data can be accessed at: https://www.citsci.org/CWIS438/Browse/Project/Project_Info.php?ProjectID=2043&WebSiteID=7. In 2019, CSU began an upgrade of the database software, which will ultimately provide better services to all users, but has hampered USU’s ability to modify the tables and tailor the output to a more meaningful form for our users. CitSci developers at CSU have said that the revisions will take at least another 6 months but should result in a vastly improved database tool.

The Ambient Water Quality Monitoring System (AWQMS) Database- DWQ

DWQ has been exploring and testing alternative database management systems for the Ambient Water Quality Data Management System (AWQMS). Currently AWQMS is supported by a local Oracle database management system; however, DWQ is considering the possibility of migrating AWQMS to a SQL database management system that is hosted on a cloud environment. Migrating to a cloud based SQL database management system will ensure DWQ has access to all future AWQMS updates, including an upgrade to AWQMS 7.0. AWQMS 7.0 is a major upgrade that includes enhancements to data entry, review, and analysis.

DWQ data review, data validation, and verification process is currently in progress. Data collected for rivers and lakes during Quarters 1 and 2 of the 2019 water year have been imported into AWQMS and are currently available online. The data collected during Quarters 3 and 4 of the 2019 water year are undergoing quality control checks and are planned to be imported after validation has been completed.

Plans for the upcoming year include a greater utilization of open source software (e.g., R) for quality assurance reviews of collected/imported data. Use of open source software will allow for increased efficiency and accuracy of data quality control checks as well as increased automation of data processing.

Ground Water Protection

Ground water protection remains a priority in the State of Utah. DWQ and the Utah Division of Drinking Water are currently in the process of identifying areas with source water protection plans that may be good candidates for project implementation to help protect, or restore ground water quality. This is in cooperation with the NWQI program sponsored by the NRCS. While DEQ was unable to identify a watershed for source water protection activities in 2018, DEQ is still working with the NRCS to locate watersheds to focus on implementing source water protection projects.

Outreach Activities

Utah State University Extension- Nancy Mesner, USU WQE Specialist

The goal of USU's Water Quality Extension program (USU WQE) is to reduce the impacts of nonpoint source pollution by increasing the public's awareness of water quality issues, and motivating changes in behavior that will be more protective of water quality. USU WQE's efforts typically fall into the following 3 areas:

- Youth outreach through hands-on activities, curriculum development, and training and support for teachers who utilize our lessons;
- Support and expansion of Utah Water Watch (UWW), which trains citizens to monitor lakes, reservoirs and rivers across the state. The program increases citizens' understanding of water quality concepts and encourages stewardship efforts; and
- Support for watershed projects and TMDL efforts across Utah through development of new tools, training, online resources and more.

Each year USU WQE evaluates the effectiveness of our programs. We also reach out to our many partners to identify new needs, and to determine if ongoing programs remain relevant.

In 2018, USU's current water quality extension specialist began a phased retirement and will be fully retired in late 2021. In 2019, to prepare for this transition, USU Extension hired Hope Braithwaite, an environmental educator with considerable water quality experience. Hope is located at the Utah State University Botanical Center (UBC) in Davis County. She is tasked with coordinating UWW, as well as coordinating many of our youth and educator activities. Coordinating activities out of the UBC creates many exciting new possibilities, including creation of a water focused education center at the Wetland Discovery Point at UBC, increasing access to the large population centers along the Wasatch front, and incorporating existing water related programming at UBC.

Statewide Water Quality Outreach Campaign

In 2019, USU WQE began work on a statewide water quality outreach campaign working with the outreach committee of the Utah Water Quality Task Force. Several main areas of concern were identified that were not fully covered by other NPS efforts in recent years. It was decided to focus on management of small acreages and protecting public lands from impacts of human waste due to recreational activities.

Small acreages: We developed a survey for small farm owners and operators, distributed primarily through social media. We received a total of 436 responses, from all but one county (Daggett) in Utah. Most of those who answered the survey had farmed for at least 1 to 5 years, and were motivated by lifestyle considerations; teaching their children a good work ethic, a love of animals, or a desire for fresh and/or organic foods. They obtained their information from a wide array of sources, although trust in Extension sources remained high. Many used manure as their primary fertilizer source, and many believed that their irrigation runoff "stays on their property". Of those who responded to the survey, most were not aware of any water quality regulations or guidance for properties such as theirs.

Human waste management: We conducted structured interviews with 51 individuals, mostly with U.S. Forest Service and BLM as well as recreation specialists with state parks and state lands. All interviewees expressed real concern about problems with human waste due to distributed recreation. We are utilizing the national "Leave No Trace" materials and messages and will get messaging, posters at trailheads, and other materials finalized by the beginning of camping season in 2020. Another common concern that we had not anticipated was dumping of human waste from RVs. We will address this to some extent in our materials (e.g. provide interactive maps to sanctioned dumping stations) but we will also work with other agencies for a better funded and more coordinated effort on this problem.

Youth Outreach and Teacher Training

In 2019, we continued with many of our successful outreach efforts in the past (e.g., water fairs, experiential camps for students of all ages, etc.). We partnered with the USU Botanical Center and The Nature Conservancy in Utah to organize and deliver the Wings and Water Wetlands Education Program. In total, over 14,400 individuals participated in one of these programs. Of these, 515 were educators. A total of 67 educators attended our various teacher trainings, which always include a focus on hands on activities and increasing knowledge of watershed functions and water science. We conducted most of these activities in 7 counties, ranging from Cache in northern Utah to Washington County in the south. We continue to update our lesson plans and develop and evaluate new activities. We are seeking additional funding to develop interactive and educational displays at the Wetland Discovery Center, and launching into new areas such as robotics to reach out to different sectors.

This year of transition provided opportunities to review different methods and protocols. We feel that we're poised to move forward more effectively next year in many of our efforts. Among other activities, we will be conducting new assessments to measure changed behaviors resulting from our UWW program. We intend to develop online materials for some of our UWW trainings, which should allow us to provide more trainings and updates across the entire state. We are seeking funds for a part time UWW coordinator for the southern and eastern parts of the state so we can fully recruit and support our volunteers. We will also finalize the outreach campaign and report on that to our partners on the Utah Water Quality Task Force.



Engineering camp for High school students



Teacher training

State/Local Agency Contributions

Utah Department of Natural Resources- Tyler Thompson

The Watershed Program in the Department of Natural Resources focuses on protecting and enhancing core values for our present and future quality of life including watershed health and biological diversity (structure and function), water quality and yield, and opportunities for sustainable use.

This is accomplished through the Utah Watershed Restoration Initiative (WRI), a diverse partnership of state and federal agencies working together with non-governmental organizations, industry, private landowners, and local elected officials, coordinated by the Utah Department of Natural Resources. Locally led teams identify conservation issues and focus areas using existing plans to address needs at the landscape (watershed) level. Program partners then propose projects to address these needs and receive input from other partners. Projects are reviewed and ranked by the regional teams using a standardized scoring system and then are funded from a variety of sources and contributors.

In fiscal year 2019, the WRI partnership (80 partners participating) completed 141 projects restoring just under 200,000 acres of uplands and 155 miles of stream and riparian areas. Just over 77,060 acres of the total acres restored represent fire rehabilitation seeding following an active 2018 summer fire season. Many of these projects are designed with the goal of improving water quality and quantity. For a full list of WRI projects completed to date please visit us at: wri.utah.gov. Through the partnership effort, base WRI funding (\$2.4 million) from the Utah Legislature was successfully leveraged at over 13 to 1 in on-the-ground projects.

The long-term results from this effort will be reduced acres burned by wildfires and resulting fire suppression costs, reduced soil loss from erosion, reduced sedimentation and storage loss in reservoirs, improved water quality and yield, improved wildlife populations, reduced risk of additional federal listing of species under the Endangered Species Act, improved agricultural production, and resistance to invasive plant species.

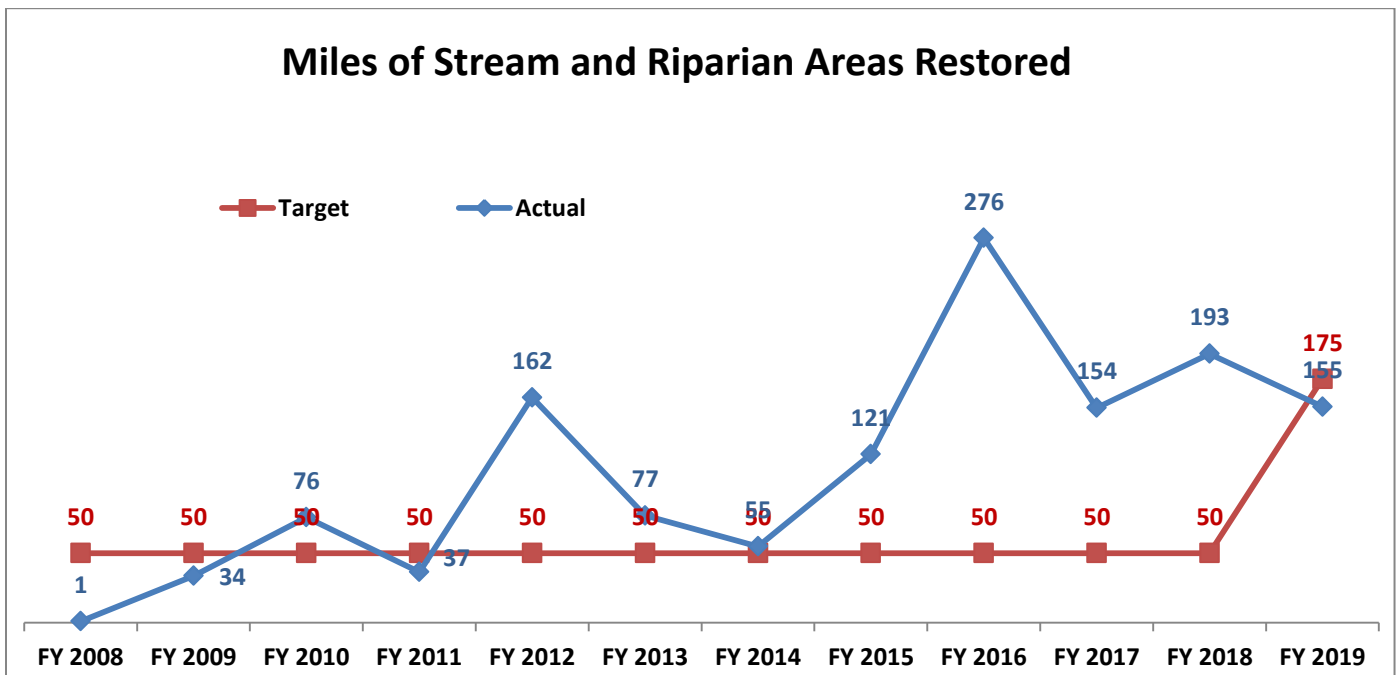


Figure 4. WRI Miles of Streams and Riparian Areas Restored

Utah Department of Agriculture and Food- RJ Spencer/Jay Olsen

The Utah Department of Agriculture and Food regularly collaborates with state and federal partners to assist agricultural producers to maintain viable and productive agricultural lands and to protect Utah's natural resources. A strong partnership provides technical and financial resource options to Utah's agriculture producers while promoting agricultural sustainability. A watershed approach is used to work cooperatively with private land owners to prepare conservation plans that will solve resource problems. Funding options are available from multiple state and federal programs.

Utah Conservation Commission (UCC)

The UCC is authorized under Title 4, Chapter 18 of the Utah Code. The act's Purpose Declaration states that "The Legislature finds and declares that the soil and water resources of this state constitute one of its basic assets and that the preservation of these resources requires planning and programs to ensure the development and utilization of these resources and to protect them from the adverse effects of wind and water erosion, sediment, and sediment related pollutants." With this in mind, the Legislature created in 1937 this unique state government entity and it has been active continually since, evolving to meet new environmental and social conditions. The UCC utilized UDAF resources in the ARDL program to provide CD's with funding for important conservation projects. During the FY19 budgeting meeting for the UCC, they approved \$1 million in projects, this funded 18 projects across the state where the majority included water quality projects; this effort is made to improving the water quality and quantity throughout the state.

The UCC also approved \$500,000 in equipment grants for the CDs to increase their efforts. One funded project of \$28,000 was for CDs to purchase water monitoring equipment.

UDAF Water Optimization Grant

During the FY19 Legislative Session, \$3 million in grant funding was provided for projects, spaced over multiple years, to implement and monitor water optimization and use, for established Utah producers seeking to improve water usage. This effort is in its initial stages and project numbers and results will be included in next year's report.

Utah Grazing Improvement Program (UGIP)

The Utah Grazing Improvement Program is a broad-based program focused on rangeland resource health. Its mission is to "improve the productivity, health and sustainability of our rangelands and watersheds." A keystone benefit is the reduction of NPS water pollution and the protection and improvement of water quality and habitat components.

A staff of grazing coordinators, located in six regions throughout the state, offers the livestock industry sound information and assistance regarding grazing issues. A main focus of the program is to invest in and help facilitate improved resource management. Grants are provided for projects that will enhance grazing management and rangeland resource health.

Agriculture Resource Development Loan Program

Projects eligible for ARDL loans include animal waste management, water usage management (irrigation systems), rangeland improvement, on farm energy projects, wind erosion control, disaster mitigation and cleanup, water conveyance projects for both private individuals and canal companies, and providing crop storage facilities and other farm structures outlined in the ARDL Policy. These projects all have a direct impact on protecting our natural resources, preventing or reducing pollution both to water and air and in sustaining the economic viability in rural communities.

The Loan section has a second program, Rural Rehabilitation Loans. Its purpose is to finance land acquisitions for beginning farmers and ranchers when conventional lending is not available. The program can also help farmers and ranchers with troubled debt that can be restructured through refinance of long term debt, with well secured, low cost financing.

The loan section also underwrites loans for the State Revolving Fund (SRF) managed by DWQ financing projects that eliminate or reduce nonpoint source water pollution on privately owned lands. That program was recently expanded to include grants as well as loans. We also underwrite loans for the replacement of Petroleum Storage Tanks for DEQ. This program is designed to assist owners and operators in rural Utah by upgrading, replacing, or closing existing underground tanks to comply with Federal regulations and to protect the environment.

Colorado River Basin Salinity Control Program

The State of Utah currently receives approximately \$1.5 million yearly from the Colorado River Basin States Salinity Control Forum to reduce salt that enters the Colorado River, which has increased significantly from the initial \$350,000 received in 1997.

The irrigation projects installed through the salinity program are an economic benefit to agriculture in eastern Utah. The new irrigation systems increase watering efficiency, decrease water loss through seepage, and improve crop production and uniformity

Agriculture Sustainability Task Force

To better understand and address the role that agriculture plays in promoting Utah's security, economy, society, culture, and well-being, a Utah Agriculture Sustainability Task Force gathered and analyzed data and information to make recommendations to promote the sustainability of all types of agriculture. Eight major issues emerged:

1. Food Security
2. Invasive Species
3. Grazing Management
4. Immigration
5. Urban Agriculture
6. Agriculture Promotion and Profitability
7. Next Generation Farms
8. Irrigation Infrastructure

In order to address these issues, the Task Force developed a list of proposed actions which can be implemented by state, local and federal governments, as well as the private sector. Agricultural sustainability and protection of natural resources go hand-in-hand.

Resource Assessments

Utah's local Conservation Districts are working in each County to prepare a county wide Resource Assessment to identify local resource concerns. In preparation for that effort, each county has prepared a list of priority resource concerns identified by the local work group, and has submitted those to UDAF. Subsequently, UDAF has prepared a Statewide Resource Assessment which identifies all County priorities. The Resource Assessments will be one tool used to fund priority projects.

Information and Education

UDAF is willing to provide assistance to Utah agricultural groups, and fairly represent agricultural interests at the many committee meetings staff are involved with. Some of those committees include:

- Utah Conservation Commission
- Utah Association of Conservation Districts

- Local Conservation Districts
- Utah Water Quality Task Force
- Utah Nutrient Core Team
- Utah Animal Feed Operation Committee
- Local Watershed Committees

UDAF works closely with Utah Legislators to make sure that agriculture is fairly considered in any legislation that is considered. We also maintain an up-to-date website (www.ag.utah.gov) that provides information to agriculture producers and the public.

Utah Division of Wildlife Resources- Don Wiley

Stream Restoration Training

The Utah Division of Wildlife Resources (UDWR) invested about \$30,000 in Blue Ribbon Fisheries Advisory Council and Habitat Council funds to send three biologists from the Aquatic Section to stream restoration training and one biologist from the Habitat and Aquatic sections to attend wetland delineation training during fiscal year 2019. Given the degradation of many in-stream and riparian habitats throughout Utah, the need for extensive stream restoration is apparent. Currently, the UDWR restoration biologists are working to address this need by implementing projects on streams and associated watersheds throughout Utah. With proper training, more balanced staffing, and an exchange of information among trained UDWR personnel, the number of stream restoration projects undertaken annually throughout Utah can be maintained.

Statewide Coordination

The UDWR Stream Team, made up of 15 stream restoration professionals in both the UDWR Aquatics and Habitat sections, met 2 times during FY 2019 to (1) track progress of ongoing stream restoration efforts, (2) plan and prioritize upcoming FY 2020 project implementation, (3) ensure that actions were scheduled to dovetail with existing partner efforts (e.g., DWQ's Targeted Watershed schedule), and (4) discuss partnership expansion with other entities responsible for stream restoration and water quality actions statewide (e.g., NRCS, UDAF, and DWQ).

Northern Region

Huff Creek Riparian Improvement Project

Huff Creek is a small stream which drains into the Chalk Creek drainage. The drainage has been a focus for many years for improving water quality, riparian health and cutthroat trout populations. This phase of the project included fencing and planting/transplanting about 500 willows and 100 cottonwoods. Shrubs will be planted in the spring 2020.

Fish Creek in South fork of Chalk Creek

Many tributary streams in northern Utah have experienced channelization and incision resulting in lack of floodplain connectivity, impacting both fish habitat and water quality. Beaver Dam Analog's have proven to be successful in the right conditions. Eighteen Beaver Dam Analogs were installed in Fish Creek.

Northeastern Region

Lake Canyon

In 2019, a small project to plant willows downstream of Lake Canyon Lake to improve the riparian corridor was completed. This is the beginning of likely a larger project that will occur in 2020.

Willow Creek WMA Project

The Meadow Creek and Willow Creek corridors have been severely impacted by flash flooding, trespass cattle, and wild horses over the past 20 years. Issues such as lack of stream habitat complexity, stream bank erosion and streambed downcutting, and ground table dewatering have occurred as a result. On Willow Creek, Beaver Dam Analogs were installed, wet mowing of nuisance sagebrush, rabbitbrush and greasewood was completed, livestock and wildlife exclosures were constructed and riparian tree planting occurred.

Trees and shrubs were planted along Meadow Creek. In addition, riffle construction was completed to provide better suitable habitat for native Colorado River Cutthroat Trout.

Central Region

Lower Diamond Fork Watershed

During the summer/fall of 2018 the Bald Mountain/Pole Canyon fire burned approximately 125,000 acres within the Central Region. Significant portions of both the Lower and Middle Diamond Fork drainage, and their associated upland and riparian vegetation, were impacted (nearly 13,000 acres) including mature Narrowleaf Cottonwood stands. Further hillslope vegetation loss will result in increased erosion into waterways. Through a collaborative effort, land management agencies within the Diamond Fork drainage revegetated approximately 13 acres of historic cottonwood galleries through the planting of approximately 2,600 rooted cuttings. The plantings will capture sediment and debris as it enters water courses maintaining aquatic organism habitat and reducing downstream "loading" of sediments.

Nebo Creek Watershed Post Fire Rehabilitation

During the summer/fall of 2018 the Bald Mountain/Pole Canyon fire burned approximately 125,000 acres within the Central Region. Approximately 77% of the Nebo Creek watershed burned resulting in a loss of all fish in Nebo Creek and tributaries. In addition, the loss of upland and riparian vegetation could result in significant sediment input to Nebo Creek and downstream waters. In FY 2019, large wood debris (directional tree felling) were added to stream reaches to create sediment deposition and deflect debris flow onto the floodplain. Heavy equipment and the use of Utah Conservation Corps facilitated efforts to install large woody debris and grade control structures to prevent headcuts and trap sediment.

Pole Creek/Bald Mountain Fire Rehabilitation

In September of 2018 two fires (Pole Creek and Bald Mountain Fires) began near Mount Nebo and expanded to about 100,000 acres. There is a risk of erosion and impairing downstream waters without establishing perennial grasses and forbes. In 2019 grass seed and forbes were scattered via aircraft on 31,481 acres of burned areas on the Pole Creek and Bald Mountain fires. In addition, 3,106 of these same acres with a secondary seeding of shrub seed.

Southern Region

Riparian Tree and Shrub Planting - Beaver River, East Fork of the Sevier River and Otter Creek River

Biologists in the Southern Region of UDWR have been actively involved with stream habitat improvement projects for more than 10 years. During FY19, Biologists spent several weeks maintaining and improving past stream restoration work that has been completed in the upper Sevier River.

The Upper Sevier River Watershed has been in a relatively degraded state for years, resulting from years of heavy agricultural land-use throughout the watershed. Ubiquitous and unfettered livestock grazing, especially along the riparian corridor, had led to near extirpation of woody riparian vegetation and the functional loss of riparian buffer zones along sections of the stream corridor. In turn, these changes led to elevated sediment loads (e.g., total suspended solids), negative changes in water

chemistry (e.g., total phosphorus), and a general lack of cover and suitable habitat. Additionally, the upper Sevier River is on Utah's 303(d) list of impaired waters for the cold water aquatic life use due to excess total phosphorus.

Historically stream improvement work helped to address major water quality and habitat issues and the waterbody is currently functioning as intended for the most part. However, there are several locations where past work was inadequate or is beginning to fail. Proposed projects would address these problem areas.

In addition to the past stream projects that have been implemented, there has also been a lot of upland work, such as pinion and juniper treatments, completed in the area. The upland work and the stream/riparian work dovetail as the two ecosystems are linked and wildlife interacts with both. For example, sage grouse benefit from the upland work for nesting and the stream/riparian work during brood rearing.

Maintenance of the stream work that has already been installed would help to ensure benefits from the upland work are maximized. Maintenance activities completed this year included:

- (1) Large woody debris and rock structure installation - The structures were intended to add cover for fish, help address problems associated with elevated rates of streambank erosion (e.g., recruitment of fine sediment or high total phosphorous loads), and protect cattle crossing structures to manage livestock grazing,
- (2) Streambank shaping and sloping - All bare, vertical, eroding banks were shaped and sloped back to at least a 2:1 slope in a manner intended to promote reconnection of the river with the floodplain and help address streambank erosion problems. The stream channel slope, pattern, and location were not changed,
- (3) Riparian seeding and planting - All disturbed ground and areas lacking adequate riparian vegetation were seeded with a native grass mixture and a conservation corps work crew was hired to plant willow cuttings and bare root riparian trees and shrubs (e.g., water birch, cottonwood, red-osier dogwood, chokecherry, elderberry and golden current) to add cover and address streambank erosion problems.
- (4) Livestock management - The stream corridor encompassing the original project areas was fenced as necessary to manage livestock grazing, which also helped to protect large woody debris structures, riparian vegetation, and streambanks over the long-term. Livestock grazing did not occur within these riparian areas for five years. Thereafter, livestock grazing within riparian areas has occurred at an intensity, duration, timing, and season such that woody riparian vegetation is not degraded or lost due to grazing by livestock (e.g., short duration, high intensity during spring). Areas requiring fence repairs were completed. .

Southeastern Region

Mill Creek Watershed Restoration

Beavers have been removed from many drainages and watersheds where they have historically occurred. Beavers contribute important benefits to watersheds such as recharging and raising ground water tables, improving riparian vegetation, expanding wetlands, slowing flood waters, reducing erosion, improving water quality, providing habitat for aquatic species and other wildlife, and providing more biodiversity to the landscape. During FY18, beavers were relocated to Deer Creek (Dutton), Baker Spring (Wayne County), Shingle Creek (Beaver), North Creek (Beaver), Chokcherry (Millard), and Bear Creek (Millard).

Forestry, Fire and State Lands- Bill Zanotti

Forest Water Quality Guidelines Program

Forestry, Fire and State Lands (FFSL) monitor timber harvesting on private and state lands within the State of Utah for the Department of Environmental Quality-Division of Water Quality. The overall goal of this monitoring evaluates the application of Utah's Forest Water Quality Guidelines (FWQG's) that is in Utah's State Non-Point Pollution Prevention Plan. Protocols for conducting FWQG's monitoring have been developed for use by FFSL's service foresters.

During the SFY-2019, the following monitoring activities were completed:

- No notifications to conduct timber harvesting activities was received
- 1 post-harvest inspection was conducted
 - The resulted of the inspection showed that the FWQG's are voluntarily being followed.

Forest Stewardship Program

Forestry, Fire and State Lands (FFSL) develop forest stewardship plans for private forested landowners and state agencies. The purpose for these plans is to encourage the long-term stewardship of important state and private forest landscapes, by assisting landowners to more actively manage their forest and related resources. Well managed forest landscapes create a flow of public benefits such as air and water quality protection; while reducing and preventing soil erosion.

Currently there are 94 active forest stewardship plans covering 271,012 acres. Plans typical covers a 10-year period before being updated.

During the SFY-2019:

- 6 plans were written covering 12,808 acres
- 4 plans covering 774 acres were randomly selected for monitoring to verify implementation
 - All 4 landowners were following their plan recommendations

Sovereign Lands Program:

Sovereign Lands are defined as the beds of navigable waters (lakes and rivers) at the time of statehood. As manager of river bans and lake shorelines, FFSL plays an important role as the final protection prior to runoff reaching our state's major waterways. FFSL implements the following to mitigate NonPoint Source (NPS) pollution by:

- Fund multiple grant programs for projects involving water quality improvements such as bank stabilization, bioengineering, riparian and wetland habitat enhancement
- Require best practices for all permitted work on State Lands including erosion protection measures during construction, bioengineered bank stabilization, and energy dissipation for water conveyance
- Enforce regulations by taking legal action against violations on State Lands, including those that could contribute to NPS pollution
- Carefully adhere to herbicide use best management practices for vegetation work
- Work with many partners on wetland improvement projects

FUEL REDUCTION PROGRAM

Table 6. Types fuel reduction projects that were completed to reduce the spread of wildland fires.

Number of projects	Treatment type	Number of Acres
11	Cut/Pile	835
10	Cut/Pile/Chip	140
1	Logging/Cut/Pile	70
1	Lop/Scatter	13
10	Mastication	864
	Total	1,922

Federal Agency Contributions

The original Memorandum Of Understanding (MOU) between the DEQ, the U.S. Forest Service, and the Bureau of Land Management was executed in 1992. This MOU was updated, reviewed, and signed by all parties in 2017. The following entities are a part of the newly revised MOU: U.S. Forest Service, Bureau of Land Management, National Park Service, Utah Department of Agriculture and Food, Division of Forestry, Fire and State Lands, Utah Division of Wildlife Resources, and DEQ's DWQ. The MOU is to be reviewed and updated as needed every 5 years.

Natural Resources Conservation Service- Clayton Schmitz

NRCS employees work in partnership with land users to conserve natural resource on private lands. These employees are distributed among 26 field offices and 2 area offices that cover the State of Utah. The individual field offices are managed by District Conservationists who may cover multiple offices. NRCS employees report progress on activities in the USDA-NRCS performance results system, which is the basis for the following information.

Financial and technical assistance was provided to land owners, sponsors & managers in Utah during FY2019 through the various USDA-NRCS programs. Four Comprehensive Nutrient Management Plans (CNMP) were written and two applied along with practices relating to nutrient and waste management during FY2019

Non-Point Source/Water Quality related practices: The results shown in the table below are for all conservation practices planned and applied during fiscal year 2019. The table also shows the number of new contracts obligated in FY2019 that will have an impact on water quality. Several practices have direct & indirect water quality benefits that can result in overall benefits for surface and ground water quality.

Table 7. NRCS Contracts that improved water quality

Conservation Stewardship Program		
Resource Concern	Contracts #	Acres
Soil Erosion	24	85,256.81
Water Quality Degradation	45	101,282

Environmental Quality Incentive Program		
Soil Erosion	46	83,640.30
Water Quality Degradation	206	18,952.90

Acres of Land with Applied Conservation to Improve Water Quality		150,476
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NRCS Water Quality Initiative (NWQI) in Fiscal Year 2019

The NRCS National Water Quality Initiative (NWQI) establishes priority watersheds nationwide to help farmers, ranchers and forest landowners improve water quality and aquatic habitats in impaired streams. NRCS offers producers an opportunity to implement conservation and management practices through a systems approach to control and trap potential pollutants. Qualified producers can receive assistance for installing conservation practices that are proven to treat the impairment within the watershed.

For FY2019, NRCS and DWQ recommended projects in the Hillsdale watershed located on the Upper Sevier River in Sevier County and in the Elkhorn and Fish Creek watersheds located in the South Fork Chalk Creek watershed located in Summit County.

Practices planned with NWQI assistance may include: Waste Storage Facility, Pond Sealing/Lining, Solid/Liquid Waste Separation Facility, Waste Transfer, Pumping Plant, Fence, Irrigation System, Sprinkler, Pumping Plant, Structure for Water Control, Irrigation Pipeline, Forage and Biomass Planting, Obstruction Removal, Nutrient Management, Irrigation Water Management, Riparian Herbaceous Cover, etc.

Updates to the program for FY2019-2023 include a focus on watershed assessment and planning and the use of multi-year budgets to demonstrate long-term commitment to assisting water quality efforts.

NRCS will continue to coordinate with local and state agencies, conservation districts, nongovernmental organizations and others to implement this initiative. This strategic approach will leverage funds and provide streamlined assistance to help individual agricultural producers take needed actions to reduce the flow of sediment, nutrients and other runoff into impaired waterways.

Bureau of Land Management- Kerry Scwartz, Ann Marie Aubry

Utah BLM is in its 14th year of cooperative implementation of the statewide Utah Watershed Restoration Initiative (WRI) through its participation in the Utah Partners for Conservation and Development. This is a multi-agency Federal, State, and private partnership treating lands for watershed improvement and long-term habitat restoration. Funds are contributed by partners, including non-governmental organizations (NGOs) and wildlife groups. Projects are submitted and prioritized by regional teams prior to submittal for final approval and funding by the statewide oversight team. BLM funds primarily come through the Wildlife, Fuels, Range, Aquatics and the Healthy Lands Initiative. Moab BLM continues to participate in the agreement with the Dolores River Restoration Partnership,

which has multiple NGOs, private, BLM, and other federal partners focusing efforts on the Dolores River.

Under the Healthy Lands Initiative (HLI)/WRI program, over 69,000 upland acres, 82 acres of aquatic-riparian areas, and 102 stream miles were treated on BLM Utah administered lands in fiscal year 2019. Treatments include riparian restoration, tamarisk and Russian olive removal, sagebrush restoration, removal of juniper, wildlife and rangeland vegetation enhancement, and other similar projects. The Utah Division of Wildlife Resources website has interactive maps and project descriptions at: <https://wri.utah.gov/wri/>.

The table below is a tally of the projects completed during FY2019. These are interagency funded projects and funding for most projects is based on the state fiscal year so some of these were actually started in the fall of 2018. More information can be found by searching the database utilizing the project number and various reporting features.

Projects

Grand Staircase Escalante National Monument (GSENM)

GSENM and KFO participated in the cooperative water quality monitoring program with DWQ, collecting field data and water chemistry samples throughout the area. Sample site and water quality parameter selection was coordinated with DWQ staff. Sampling focused on perennial streams in GSENM and KFO that were included on the DWQ's 303(d) List of Impaired Waters.

Salinity Structure Repair

In FY2018, GSENM and KFO received funding from BLMs Salinity Program to reduce salt loading to the Colorado River and tributaries originating on BLM lands. In support of this program, GSENM and KFO are in the process of rehabilitating sediment retention structures that were established in the 1950's and 1960's on the landscape below saline soils. Renovations typically include dam/spillway repair, head cut stabilization, sediment removal and upland stockpiling/stabilization, and removal of non-native & invasive vegetation. Between 2018 and 2019 Grand Staircase-Escalante National Monument cleaned out 9 salinity control structures across the Monument. Due to a prolonged and wet winter and short 2019 monsoon season, structures were filled with sediment throughout the 2018 monsoon season as well as the 2019 winter and spring seasons. These structures ranged in size from 0.03 to 0.40 acres. These structures had to be cleaned out, some needed repair work to the spillways, and one needed the dam repaired. Approximately 22,943 yd³ of sediment was removed from the structures equaling 1,538 tons of salt captured.



Wolverine Loop Road structure in the Circle Cliffs (2018).



Black Rock Flat structure south of Alton (2018).

Telegraph Flat Head Cut Repair

In November, 2018 GSENM repaired the first phase (phase 1) of a multi-phase project to stabilize active head cutting on Telegraph Flat on the southern border of the Monument. In 2017, two structures were installed to stop the head cut. The upper structure failed while the side structure lost some rock but held together. After reviewing how these structures worked, the decision was made to try riprap instead of the geotextile rock much rundown structure. The site was cleaned up, the remaining geotextile was removed and the banks were sloped back. Riprap was installed on top of geo-fabric. Below the structure we installed a spreader dike to start collecting sediment and rebuild the system.



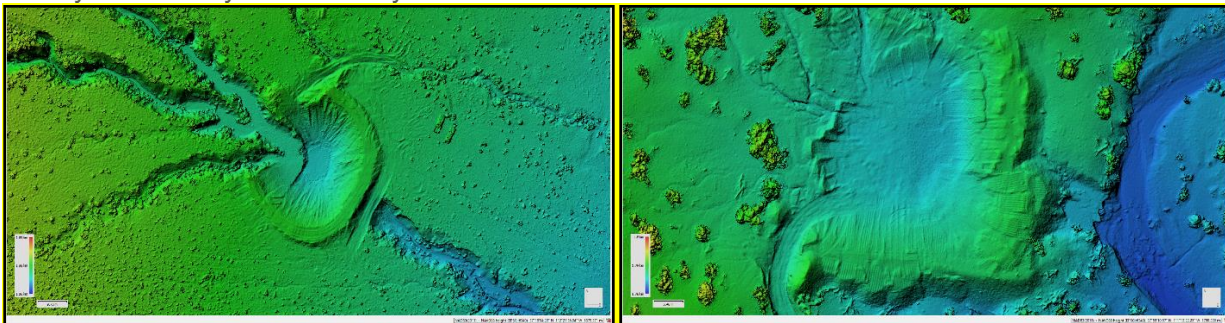
Geo-Fabric was installed (Shown) and covered overlain with riprap.



Spread dike was installed to collect sediment and rebuild the system

Assessment of erosion, sediment yield, and salinity loading on BLM administered lands

In FY2017, BLM funded a multi-year research study that will be conducted by USGS to quantify sediment and salinity loading rates in the GSENM and KFO. This study will determine sediment yields in watersheds above sediment retention basins using repeat topographic surveys and derived Digital Elevation Models (DEMs) of differences. Topographic data will be processed using Structure from Motion (SfM) photogrammetry. In FY2018, staff from the USGS Utah Water Science Center surveyed 17 salinity control structures on the GSENM and KFO using SfM technology. These structures will be surveyed annually for several years to determine sedimentation rates for GSENM and KFO areas.



DEMs produced from SfM assessments of two salinity control structures in May, 2018.

Canyon Country District/ Moab and Monticello Field Offices

The Canyon Country District Office conducted extensive monitoring efforts and implemented several projects in FY2019 to address and better understand non-point sources of pollution such as increased salinity and sediment loading. These projects rely heavily on the well-established and productive partnership with the Moab Area Watershed Partnership (MAWP).

Planning

The Monticello Field Office completed the Bears Ears National Monument Management Plan, working closely with local and state agencies, tribes and interest groups. Although water resources were not an issue of concern, the management plan does provide for limited surface disturbance near springs, streams, water wells and riparian areas.

Monitoring

BLM participated in the cooperative water quality monitoring program with DWQ, collecting field data and water chemistry samples throughout the District. Sample site selection was coordinated with DWQ

staff and a detailed Sampling Analysis Plan (SAP) was completed. Sample sites focused on the new Bears Ears National Monument in the Monticello Field Office and streams on the DWQ's 303(d) List of Impaired Waters within the Moab Field Office.

Other inventory and monitoring efforts within the Canyon Country District included a comprehensive spring monitoring project and data collection in aquatic systems following Spring Stewardship Institute (SSI) protocols. The spring inventory and monitoring project focused on areas currently under water rights adjudication.

The Monticello Field Office coordinated with the DWQ and Utah Geological Survey on installing monitoring equipment at 7 sites related to a large Pinyon Juniper removal project in the Montezuma Creek Watershed. This monitoring effort includes baseline data collection of spring flows, shallow groundwater levels and soil moisture conditions in both the project area and a control area. The monitoring will continue for several years before the Pinyon Juniper removal work is implemented.

Projects

Mill Creek Watershed Improvement Project

The Mill Creek Watershed Improvement Project is ongoing with additional funding from the DWQ (supported by the Moab Area Watershed Partnership) and WRI. This project involved ongoing efforts to eliminate Russian Olive and Ravenna Grass from Mill Creek Canyon and tributaries. Five gully control structures were constructed in small gullies directly adjacent to Mill Creek to reduce erosion and sediment loading. Simple structures following designs from Bill Zeedyk and using native materials were built by local youth corps led by Moab contractor TerraSophia LLC. These efforts along with other watershed improvement work such as closing, re-seeding and re-planting disturbed areas and duplicate hiking trails are helping reduce sediment loading and improve water quality in Mill Creek.



Before/after gully control structure construction

BLM has funded a USGS stream gauge on Mill Creek below a large irrigation diversion structure over the years to ensure minimal stream flows as required by the BLM right of way. This continues to be a successful effort to improve stream temperature conditions as identified in the 2002 Total Maximum Daily Load (TMDL).

Dolores River Restoration

An interesting restoration project along the Dolores River implemented this year involved the removal of a section of a man-made gravel berm, allowing flood flows to enter a large overflow channel system. The timing of this effort was terrific as spring flows were much higher than normal this year. Water

flowed through the overflow channel system from early April into early July. This project was funded with mitigation funds from the State of Colorado related to a hydrocarbon spill upstream.



Dolores River, on right, flowing through cut in gravel berm into overflow channel system to left



Overflow channel system with high spring runoff

Vernal Field Office

Projects

Arid Land Study

The purpose of this study is to provide BLM land managers a detailed reclamation guideline or recipe that will provide the most successful and sustainable strategy to reclaim disturbed lands in arid environments.

Objectives

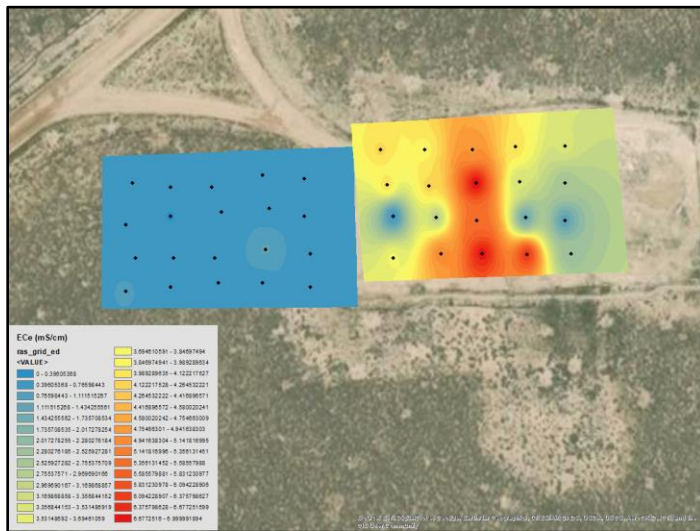
- To access soil health parameters on disturbed oil and gas well pads in order to establish strategies that will optimize soil health result in more successful soil reclamation.
- Restore lands impacted by soil sodicity
- Select appropriate revegetation species and determine the best planting methods to ensure the establishment of desirable species will inhibit the spread of invasive weeds.

Background

This study was established in August 2014 initially to evaluate different soil amendments for reclamation success. Over time it was determined that the greatest factors limiting the successful restoration and revegetation of P&A well pads by desirable native species were lack of soil water, soil salinity and sodicity. Subsequently, the use of a noninvasive electromagnetic induction (EMI) sensing technique was employed as an assessment tool for the reclamation of P&A well pads, and to help provide an understanding of the factors that modify processes associated with a healthy plant community which is the basis for ecologically based weed management. Comparison and correlation of EMI results with other soil health parameters were then compared. Studies and monitoring are ongoing.



Scanning of a field site with a hand-held EMI device.



EMI map comparing salinity levels in undisturbed (left) and disturbed (right) sites.

Note: Salinity levels increase going from blue to red. Disturbed sites consistently had higher salinity levels.

National Park Service- Rebecca Weissinger

The National Park Service is a significant land manager of 2.1 million acres in Utah, or about 3.9% of the State, and hosts over 13 million visitors per year. National Park System units have a dual Congressional mandate to preserve natural and cultural resources and to provide for their enjoyment by the public in such a manner that will leave them unimpaired for future generations. There are 13 National Park System units in Utah. On-going water quality monitoring, in cooperation with the State of Utah, occurs at seven of these National Park units. In addition to routine water quality monitoring, sampling for pesticides, wastewater indicators, pharmaceuticals, and personal care products also occurred at two national park units in Utah in cooperation with the Environmental Protection Agency and U.S. Geological Survey.

The National Park Service continued treating non-native tamarisk trees and herbaceous non-native invasive plants at priority sites in the riparian corridors of the Colorado and Green Rivers in Canyonlands National Park. The primary benefits of this project include restoration of native plant communities, protection of campsites and native tree stands through reduction of fuels from beetle-impacted tamarisk stands, and improved visitor experiences. Indirect benefits include overall reduced erosion of bank sediments into the river as fire frequency and fire size is reduced. Russian olive removal also occurred along the Green River in Dinosaur National Monument.

Capitol Reef National Park continues to cooperate with DWQ in their E. coli monitoring program. A TMDL process for E. coli impairment in the Fremont River was initiated in 2018. In September, the National Park Service's Lake Mead Invasive Plant Management Team treated non-native Russian olive trees in the Sulphur Creek drainage from Capitol Reef's west boundary to the confluence with the Fremont River. They also treated tamarisk in the Ackland Springs area of the recently retired Hartnet grazing allotment. These efforts will facilitate restoration of native willow and cottonwood communities, improve visitor experiences, and potentially increase flows at Ackland springs. Capitol Reef staff participated in the Lower Fremont River Watershed Technical Planning effort led by the NRCS.

In 2019, Glen Canyon National Recreation Area continued an extensive quagga mussel containment effort focused on educating boaters to clean, drain, and dry their equipment after exposure to Lake Powell, which is infested with quagga mussels. The program is a cooperative effort with Utah and Arizona. The NPS and State of Utah staff made over 150,000 direct boater contacts and used many other outreach and regulatory control approaches. The Glen Canyon Environmental Laboratory continued certification with the State of Utah to continue monitoring Lake Powell for E. coli at popular swimming beaches and, in 2019, conducted 13 routine sampling trips. Water quality sampling was conducted on 12 lake trips in selected sites around Lake Powell to document basic water quality. New protocols were developed based on draft Utah State protocols for contaminated waters and public closures. In 2019, Russian olive removal along the Escalante River was completed, after 18 years and ca. \$10,000,000 by the Escalante River Watershed Partnership.

Timpanogos Cave National Monument initiated revegetation efforts along the American Fork River in an area affected by the construction of a new visitor's center.

A cooperative effort with DWQ to resolve E. coli contamination in the North Fork Virgin River upstream from Zion National Park continued in 2019. Several agencies and landowners were involved in seeking a solution to high levels of E. coli carried into the stream by irrigation return flows. Possible solutions are being tested, including changes in livestock and irrigation management. In 2019 one irrigator chose not to run livestock on his lands. E. coli was monitored by the NPS on twelve dates throughout the Water Year. No samples in 2019 exceeded the 409 MPN/100ml not-to-exceed standard in the recreational area of concern.

U.S. Forest Service- Mark Muir

The Forest Service, an agency of the U.S. Department of Agriculture, manages National Forest System (NFS) lands across the country. All or a portion of six National Forests are in Utah. These public lands are managed by staff at Forest Supervisor Headquarters and Ranger District offices throughout the State, with support from the Intermountain Regional Forester's office in Ogden, UT.

High-quality water is one of the most important natural resources coming from these NFS lands. In addition to providing drinking water and other municipal needs, this water sustains populations of fish and wildlife, affords recreation opportunities, and provides supplies to meet downstream agricultural and industrial needs throughout the State.

Non-point source pollution control is a key component of managing NFS lands for high-quality water. Direct control is accomplished through two primary mechanisms:

- prescription, implementation, and monitoring of best management practices (BMPs) for a variety of land use and management activities¹, and
- implementation of watershed improvement projects.

Indirectly, the Forest Service provides for non-point source pollution control through sustaining or restoring watershed function and resilience so that NFS lands are resistant to catastrophic events such as fire, insects and disease, and a changing climate.

Additionally, direct non-point source pollution control may occur after wildfire if burned area emergency response (BAER) assessments prescribe the implementation of treatments designed to mitigate fire effects.

In 2019 the Forest Service continued implementation of a national Best Management Practices (BMP) program that provides a standard set of core BMPs² and a consistent means to track and document the use and effectiveness of BMPs on NFS lands across the country. The national core BMPs are general and non-prescriptive and are combined with other prescriptions from a variety of sources such as State of Utah BMPs, the Intermountain Region Soil and Water Conservation Practices (SWCP) handbook, Land and Resource Management Plan (LRMP) standard and guidelines specific to each of the six Forests, and professional site specific judgment.

The national forests in Utah, in addition to their long-standing use of State BMPs, the SWCP handbook, Forest Plan guidance, annual BMP monitoring, and professional judgment, are using these national core BMPs in project planning, design, and implementation. Implementation and effectiveness monitoring by individual personnel and interdisciplinary teams is a core part of Forest Service best management practices. In 2019, all the forests in Utah completed 4-6 BMP monitoring evaluations with interdisciplinary teams. Results of the reviews will be entered into a national database, which over time will help demonstrate and document the effects of implementing BMPs for different activities across the region and country.

In 2019 the Forest Service continued implementation of the Watershed Condition Framework (WCF)³, where watershed restoration action plans are written for priority watersheds. Essential projects are

¹ For example, motorized and non-motorized recreation, leasable and locatable minerals, range management, timber management, special uses permitting, wildlife and fisheries habitat management

² http://www.fs.fed.us/biology/resources/pubs/watershed/FS_National_Core_BMPs_April2012.pdf

³ <http://www.fs.fed.us/publications/watershed/>

identified that are specifically designed to improve or maintain watershed health, including the reduction or elimination of non-point source pollution. During 2019, one priority watershed was completed in Utah, with all essential projects being implemented in the Mill Creek watershed on the Uinta-Wasatch-Cache National Forest. In addition, forests completed watershed improvement projects that directly improved watershed conditions across the state. The type of direct watershed improvement work varied but included projects such as road and trail re-routing or decommissioning, recreation site restoration, gully control, spring and riparian area protection, and stream or wetland restoration. Additional projects were implemented that will have an indirect effect on sustaining and restoring watershed function and resilience, such as fuels reduction, aquatic habitat improvement, invasive plant treatment, and forest and rangeland vegetation improvement (See Table 8 for a summary of Watershed Improvement acres in Utah).

Table 8. Watershed Improvement Projects Completed on National Forest System lands in fiscal year 2019 (October 1, 2018 – September 30, 2019).

Forest	Soil and Water Acres Improved
Ashley	14,914
Dixie	4,380
Fishlake	0
M-L	4,011
U-W-C	7,479
Total	30,784

In addition to BMP implementation/monitoring, and watershed restoration activities, Forest Service (BAER) teams assessed fires that burned in Utah on NFS lands that had potential effects on life and property, long-term soil productivity, and water quality. Common recommendations for burned areas included Early Detection, Rapid Response (EDRR) treatment of noxious and invasive plants, seeding and mulching of hillslopes with moderate to severe soil burn severity to minimize runoff and erosion, as well as road or trail drainage improvement projects.

Per the Memorandum of Understanding (MOU) between the State of Utah and federal agencies, a federal consistency review of activities and conditions on NFS lands occurred on the Raft River portion of the Sawtooth National Forest in 2019. Personnel from the Utah Division of Water Quality joined Forest Service personnel for field reviews of various projects, including watershed improvement work done in the Raft River Range. Projects reviewed on site included riparian and wetland protection fences and pastures, aspen regeneration treatments and protection measures, fuels reduction treatments, stream crossing improvements, and aquatic habitat improvements. Federal consistency reviews are a useful opportunity for coordination and collaboration on nonpoint source protection issues between the state and federal agencies, and are planned to continue on a different forest each year in Utah.

Federal Consistency Review and NPS Project Tours for FY-19

The Federal Consistency Review Tour was conducted on October 17th 2019.

Location:

Raft River Mountains

Participants:

Jim Bowcutt, Mike Allred (Division of Water Quality), Bill Zanotti (Forestry Fire and State Lands), Mark Muir, Mark Dallon (U.S. Forest Service)

Clear Creek Campground

The Raft River Mountain Range consists of a combination of high peaks and low desert valleys. The Clear Creek Campground is located in a high mountain valley in close proximity to a flowing mountain stream. Above the campground is a tributary that feeds into Clear Creek. On the east side of the campground a large alluvial deposit has caused the water leaving this stream to create a braided system, which has rerouted the water leaving the spring many times over the years. This has caused the U.S. Forest Service much frustration over the years, and ultimately resulted in the closing of several campsites, and the decommissioning of the road leading to these sites. While water leaving the spring continues to cross the road, the way that it continually moves from one channel to the other makes it very difficult to install culverts to divert the water away from roads. The U.S. Forest Service has decided that the best approach is to simply take a hands-off approach and let the water move freely across the landscape. This appears to be a better option than channeling the water and potentially increasing the sediment load and velocity leaving the drainage.



Decommissioned Road near Clear Creek Campground



Spring channel above Clear Creek Campground

One Mile Canyon

A large amount of work has been done up One Mile Canyon on the North Side of the Raft River Range. As one of the few drainages in Utah that provides habitat for the Yellowstone Cutthroat Trout, this canyon has become more popular to fishermen, and outdoorsmen in general. Some of the Best Management Practices (BMPs) that have been implemented by the U.S. Forest Service in this drainage

include: road closures, grazing exclosures, and controlled burns, designated camping spots, and the installation of boulders to restrict camping on the south side of the creek.

There were two grazing exclosures that were visited on the tour. The first one appeared to be very successful. The amount of vegetation on the inside of the exclosure was much more healthy and plentiful than the vegetation on the outside of the exclosure. Many of the small woody plants were rebounding, and the creek was obviously narrowing.

The gate on the other exclosure had been opened, and it was obvious that cattle had spent a large amount of time in this area. While the riparian vegetation was still much improved from what it was when the fence was installed, it was obvious that the permittee had not been keeping an eye on his cattle, or maintained the fence.

Discussion was had as to what could be done to help the permittee better follow the requirements of their grazing permits. This has been an issue all around the Western United States, but due to the lack of employees available to the U.S. Forest Service it makes it very difficult to police every permit that has been issued. There is currently a situation up in Idaho, where a U.S. Forest Service Employee is taking action against a permittee that has violated the terms of his grazing agreement. It will be interesting to see how this situation plays out.



Successful Grazing Exclosure- One Mile Canyon



Grazed Exclosure- One Mile Canyon



Road Closure- One Mile Canyon



Controlled Burn- One Mile Canyon

Spring Protection Project

On the top of the Raft River Mountain Range the U.S. Forest Service worked with the grazing permittee to decommission an old water trough that was located in the middle of a wetland. A new pipeline was run from the wetland, down the hill approximately 100 feet to a new watering trough that was located outside of the wetland. The new trough has a buoy system that shuts the flow of water off to the trough when it is full. This will allow the excess water to stay in the wetland and not create a bog below the new trough that was installed. A fence will be constructed in 2020 around the wetland to help protect the wetland from excessive grazing pressure. This will help improve water quality and the health of the wetland, while providing the water for the cattle grazing in the area.



New watering troughs



Old trough site located in wetland

Johnson Creek Drainage

The Johnson Creek Drainage is very popular for outdoorsmen, and is probably the most popular place in the State of Utah to catch Yellowstone Cutthroat Trout. To remove nonnative fish and help sustain the population of cutthroat trout in the watershed the Division of Wildlife Resources electroshocked the upper reaches of the creek, and did a rotenone treatment in the lower reaches. They also installed a fish barrier to stop undesirable species such as Brook Trout or German Brown Trout from coming up the system.

The U.S. Forest Service installed designated camping areas to limit campsite expansion into riparian areas. Additionally, the U.S. Forest Service is looking at relocating the current road, which is located in the bottom of the basin, and crosses the creek in various locations, and installing a new road higher up on the hill.

The U.S. Forest Service continues to work with the ATV riders to identify which trails are currently open to the public, and which ones are closed. While on the tour the Forest Service representatives stopped and talked to individuals on the tour to make sure that if the trails are not marked as open, they are closed. ATV riders should not just assume that a trail is open because there is not a sign blocking the trail. All users must have access to a trails map to make sure they are in compliance.



Road located in the bottom of Johnson Creek

EPA Project Tour 2019

The EPA project tour was conducted from August 6th-8th, 2019

Location:

San Pitch Watershed / Moab Area Watershed/ Price River

Participants:

Gary Kleeman (Environmental Protection Agency), Jim Bowcutt, Jodi Gardberg, Mike Allred, Lucy Parham (Utah Division of Water Quality), Eric McCulley (River Restoration), Lenise Peterman, Dave Dornan (Helper City), Rj Spencer, Ryan Jones, Julie Weber, John Saunders (Utah Department of Agriculture and Food), Mark Jolissaint (Moab City), Orion Rogers, Arne Hultquist (South Eastern Utah Health Department), Rhonda Gateway Clyde (Grand County Conservation District), Kara Dohrenwend (Grand County Conservation District), Jorge Gonzales (Bureau of Land Management), Rye Hart (Redd Ranch), Tina Marion (U.S. Forest Service), Dave Erley (Town of Castle Valley)

San Pitch Watershed Restoration

The San Pitch Watershed restoration project is one of the NPS success stories in the state of Utah. Landowners have worked with the local watershed group and Conservation District to restore 13 linear miles of the San Pitch River, with another 1.3 miles planned to be implemented in the next couple years. During this tour, three sites were visited in the top, middle, and bottom of the watershed. The first site was near the bottom of the watershed near the City of Moroni. This was a project that was implemented four years ago using Section 319 funding. The project consisted of roughly 2,200 linear

feet of the river, which was restored and fenced. A grazing management plan was developed for the riparian area, allowing the landowner to utilize the forage within the riparian area but not over graze it. The willows had come in nicely, and the banks were heavily vegetated. There was a small section of this reach where Moroni Feed had dumped large amounts of concrete and asphalt. This section is currently being cleaned up.



Restoration San Pitch River Near Moroni



Illegal Fill Near Moroni

The second site visited on the San Pitch River was the Castleberry project. This project was located west of Mount Pleasant, in the middle reaches of the watershed. Roughly 2,400 foot reach of river restoration was completed in FY-19. The willows had taken hold, and the project looked very good. Another aspect of this project was the conversion of flood irrigated farmland to sprinkler irrigation. This will help reduce the return flows to the river and reduce the Total Dissolved Solid loading into the river. This project worked so well, the landowner upstream has agreed to install the same practices on their property. This work will be done in the next year.



Castleberry Restoration Project



Castleberry Irrigation Improvements

The final site that was visited on the San Pitch River was the Carter Project. This project focused on decommissioning an animal feeding operation located near the riparian area. This feedlot will be decommissioned and moved up higher on the hill, where runoff from the feedlot will be unable to reach the river. The project also restored over 1000 feet of river. This project was installed in spring, and due to the high runoff experienced in 2019, some of the sections of the river looked rough. However, in general the project was able to maintain its structural integrity, and should look good once the vegetation in this reach has a chance to establish.



Carter Stream Bank Stabilization Project

Moab Watershed

In 2015, the Moab Area Watershed Partnership (MAWP) received a large section 319 grant to begin implementing projects identified in a watershed plan they developed for the area. In addition to the Section 319 funding that was received, they have also received various State NPS grants over the past year. This tour covered the entire watershed and visited a wide variety of projects.

In 2010, the local Conservation District identified a small feedlot located in the middle of Moab that needed assistance. Over the next eight years the local watershed coordinators worked with the landowners to take corrective actions to stop manure from discharging into Pack Creek. While manure can no longer enter into the creek, the grazing practices leave something to be desired. The local watershed coordinator will continue to work with the landowner to address this resource concern.



Feedlot in Moab City

The City of Moab has worked with a private land owner on Mill Creek to help improve the riparian area through his property. Over the past 4 years the city has worked with the landowner to clean up trash resulting from illegal dumping into the riparian area near Walker Street in Moab. In addition to this clean up, the land owner would like to work with the local watershed coordinator to reduce erosion that is taking place on his property. It is anticipated that this project work will take place in the next few years.



Erosion near Walker Street in Moab

Part of the tour consisted of a visit with the Southeast Utah Health Department. During this visit the Health Department discussed their vision for Moab. This vision includes the installation of more Low Impact Development (LID) practices around the city to help reduce the amount of overland flow reaching the local creeks. They have installed several LID practices on their property including curbing that allows storm water to enter into their park strips, and infiltrate into the soils. They also discussed their desire to work with landowners to maintain septic tanks, or maybe even help sections of the city that are currently not tied in to the waste water treatment plant obtain funding to do so.



LID Practices in Moab City

Mill Creek is a jewel in Moab City that is enjoyed by the residents who live there. Currently there are walking trails that follow the creek for several miles. However, this has not always been possible due to the overabundance of invasive species such as Russian Olive and Tamarisk trees. To help restore the riparian area, the local conservation district worked with various partners to remove the invasive species from the riparian corridor. Native vegetation was then planted, and it is doing quite well. Section 319 funding was used to help with the planting of native species after the clearing. Work continues to take place on the lower reaches of Mill Creek.



Treated reach on Mill Creek in Moab

Utah State University Extension in Moab is looking at ways to help improve water quality. One of these is to help reduce runoff from impervious surfaces through rainwater harvesting. Utah State University has installed several large water tanks to collect the rain coming from a roof, and uses this water to irrigate the gardens that surround their building. This helps reduce the amount of runoff leaving their property, and reduces the mobilization of pollutants on the landscape. The university has also used this as an opportunity to plant flowers and other vegetation that is helpful to pollinators in the area. The gardens are coined Bee Friendly Gardens and are heavily supported by the Grand County Conservation District



Rain Harvesting System in Moab City

The BLM has received various grants to help reduce erosion on Mill Creek, while working to eliminate Russian Olive and Tamarisk trees. Funding from the 2015 Section 319 grant were used to help decommission trails and install practices in the uplands that help reduce erosion through sheet and rill erosion. DWQ has worked with the MAWP to install signage discussing the importance of water quality, as well as dog waste stations at the trail heads. An additional state NPS grant was awarded to the BLM in 2019 to help continue the work that is taking place on the upper reaches of Mill Creek.



Erosion Structure on BLM Near Mill Creek



Pet Waste Station

Redd Ranch is located on the South Side of the Manti Lasal mountain range. This is a large cattle operation that grazes their cattle on sections of adjacent of the U.S. Forest Service property, as well as large tracts of private land. Near the homestead, a large feedlot was located on La Sal Creek, contributing large amounts of nutrients to the creek. The landowner was contacted by the local watershed coordinator and worked to decommission the old feedlot, and construct a new feed lot several hundred yards away from the creek, effectively eliminating runoff into La Sal Creek. The landowner has been happy with the new corral system, and the location of the feedlot, and water quality has been improved.



Decommissioned Feedlot on La Sal Creek

Two NPS grants were awarded to help protect springs in the Manti Lasal Mountain Range. The U.S. Forest Service oversaw the implementation of these projects. The springs were fenced, eliminating cattle access to the springs. Piping was then run down the hill from the springs where it filled watering troughs for the livestock in the area. Overall, the springs have recovered, and the vegetation has reestablished in the protection areas.



Spring Protection Area Manti La-Sal National Forest

The Pinhook fire burned a significant amount of the Upper Castle Creek Watershed. This fire exposed the soil, and had high risk of a large erosion event occurring in the burn scar. To help treat this area, there was a large amount of the area that was treated by areal seeding; however, there were still areas that needed to have seed applied manually. Since the reseeding, the grasses that were planted have come in nicely, as well as the scrub oak in the area.



Pinhook Fire Restoration Area

The Town of Castle Valley received a grant in 2015 to do restoration work on Castle Creek, which flows through the town. Much of this restoration work was conducted on private property. The project focused on removing invasive species, specifically Russian Olive trees, as well as Tamarisk. It also stabilized sections of the river through vegetative plantings. The project has not responded well to the high flows that are characteristic of the monsoonal events received in the southern part of the State, but overall the landowners have been happy with the results of the project.



Castle Creek Restoration Site

Price River Restoration

Helper City has been partnering with several agencies to restore the Price River that flows through their town. Since Phase 1 of the project that was completed in 2014, there have been 4 other phases completed. The overall purpose of the project is to help bring attention to the river, but making it more user friendly, while making it more esthetically pleasing. The project has removed various in-stream structures that were impeding fish passage, and causing the degradation of the river through a two mile reach. Helper city will continue to work with partners to improve the overall health of the riparian area, and help draw tourism to the area.



Helper City- Price River Restoration

Utah's 2019 Nonpoint Source Section 319 Projects

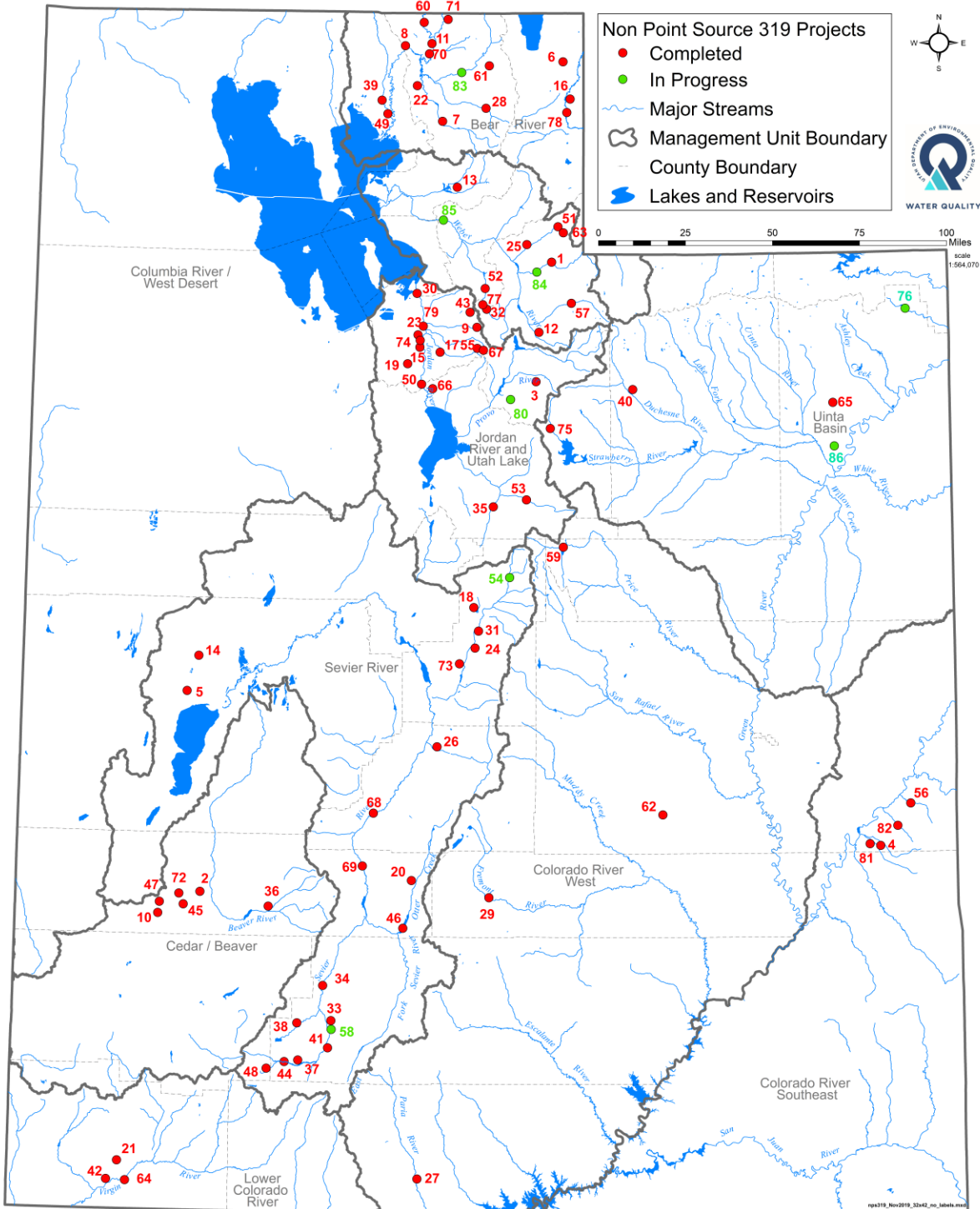


Figure 5. Utah's 2019 Nonpoint Source Section 319 Projects

Table 9. Completed and Active 319 Projects (refer to figure 5)

MAP_ID	STATUS	PROJECT_NAME	MAP_ID	STATUS	PROJECT_NAME
1	Completed	Chalk Creek	44	Completed	Groundwater (Mammoth Creek)
2	Completed	Milford Baseline GW and Aquifer Mapping	45	Completed	Mitigation of NPS Chemicals - Milford Groundwater
3	Completed	Wasatch County GW Study and Aquifer Mapping	46	Completed	Otter Creek Reservoir TMDL
4	Completed	Spanish Valley Baseline GW Mapping	47	Completed	Milford Microbial Contamination GW Study
5	Completed	South Sevier Desert GW Recharge Area Mapping	48	Completed	Cedar Mountain GW Assessment
6	Completed	Bear River Watershed Outreach Information/Education	49	Completed	Bear River Information and Education
7	Completed	Little Bear River Animal Waste System	50	Completed	Jordan River WQ/TMDL Assessment
8	Completed	Bear River TMDL Development	51	Completed	Rees Creek Demonstration
9	Completed	Millcreek Canyon Watershed Phase II	52	Completed	East Canyon Instream Flow
10	Completed	Milford Baseline GW Contaminant Inventory	53	Completed	Soldier Creek Spanish Fork
11	Completed	Bear River Groundwater Contaminant Inventory	54	In Progress	San Pitch Watershed Implementation
12	Completed	Kamas Valley Groundwater	55	Completed	Little Cottonwood ImplementationTMDL
13	Completed	Ogden Valley GW Recharge Area Mapping	56	Completed	Onion Creek Impementation TMDL
14	Completed	Millard County Groundwater	57	Completed	Upper Weber River Tech. Assist. Information & Education
15	Completed	Jordan River Wetland	58	In Progress	Upper Sevier River TMDL Implementation
16	Completed	Bear River (Rich County)	59	Completed	Scofield Reservoir TMDL Implementation
17	Completed	SL County Lawn Fertilizer and Pesticides Impacts on GW	60	Completed	Middle Bear River
18	Completed	Sanpete and Moroni Groundwater	61	Completed	Spawn Creek Bank Restoration
19	Completed	Salt Lake Valley Drinking Water Source Protection	62	Completed	Colorado River West
20	Completed	Otter Creek	63	Completed	Rees Creek Phase II
21	Completed	Washington County Septic Tank Effects on GW	64	Completed	Virgin River TMDL Implementation
22	Completed	Cache Valley GW/Aquifer Assessment & Classification	65	Completed	Oil and Gas Erosion Control
23	Completed	Jordan River Parkway Millcreek Riparian	66	Completed	Jordan Watershed Council
24	Completed	Sanpete Valley WQ Assessment and GW Mapping	67	Completed	Alta Fen Rehab
25	Completed	Echo Creek Demonstration	68	Completed	Middle Sevier River Watershed TMDL Implementation
26	Completed	Stuart Johnson Salina Canyon	69	Completed	Sevier River @Marysvalle Animal Waste Demonstr
27	Completed	Paria River Restoration Demonstration	70	Completed	Bear River Amalga
28	Completed	Hardware Ranch Demonstration	71	Completed	Cub River
29	Completed	Fremont River Demonstration	72	Completed	Milford (Private Wells)
30	Completed	Peace Trees Information and Education (Salt Lake City)	73	Completed	Sanpete Valley GW Recharge Area Mapping
31	Completed	San Pitch River Information and Education	74	Completed	Jordan River Ecosystem Restoration
32	Completed	East Canyon Creek	75	Completed	Upper Strawberry River Riparian Management
33	Completed	Upper Sevier Rangleland Improvement Demonstration	76	In Progress	Matt Warner Reservoir/ Pot Creek Riparian Management
34	Completed	USU Panguitch - Sevier River	77	Completed	East Canyon Stream Restoration
35	Completed	Thistle Creek	78	Completed	Upper Bear River Riparian Restoration, BLRC
36	Completed	Beaver River	79	Completed	Jordan River Restoration
37	Completed	Mammoth Creek	80	In Progress	Walsburg Watershed Restoration
38	Completed	Panguitch Creek	81	Completed	Spanish Valley Watershed Implementation
39	Completed	Lower Bear River Malad	82	Completed	Castle Creek Restoration
40	Completed	Duchesne River	83	In Progress	Logan River Restoration
41	Completed	Upper Sevier River Information and Education	84	In Progress	Chalk Creek Restoration
42	Completed	Virgin River Information and Education	85	In Progress	Weber River Restoration
43	Completed	Emmigration Creek Water Quality Study	86	In Progress	Pelican Lake Restoration

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Table 10. 319 Final Project Reports Submitted in FY-19

Project Title	Total 319 Award	Date Received
FY-14 San Pitch River Restoration	\$120,011	3/21/2019
FY-14 USU Volunteer Monitoring Program	\$84,525	7/25/2018
FY-14 Jordan River Restoration	\$199,085	11/19/18
FY-15 San Pitch River Restoration	\$40,000	3/21/2019
FY-15 Spanish Valley Watershed	\$118,868	9/4/2018

Table 11. Summary of Active Utah 319(h) Grants FY-19

Project Title	Total NPS Award	Grant Status
Local Watershed Coordinators FY-14	\$340,000	Project Complete Awaiting Final Report
USU Volunteer Monitoring Program FY-15	\$83,250	Project Complete Awaiting Final Report
Local Watershed Coordinators FY-15	\$340,000	Project Complete Awaiting Final Report
USU Volunteer Monitoring Program FY-16	\$72,595	Project Complete Awaiting Final Report
Local Watershed Coordinators FY-16	\$370,000	Project Complete Final Report Submitted
Upper Sevier Restoration Project FY-16	\$249,700	Project Complete Awaiting Final Report
San Pitch Watershed Restoration Project FY-16	\$295,163	Ongoing
USU Volunteer Monitoring Program FY-17	\$75,630	Ongoing
Local Watershed Coordinators FY-2017	\$370,000	Ongoing
Logan River Restoration Project FY-17	\$558,630	Ongoing
USU Volunteer Monitoring Program FY-18	\$64,158	Ongoing
Local Watershed Coordinators FY-18	\$370,000	Ongoing
Lower Weber River Restoration Project FY-18	\$149,466	Ongoing
Chalk Creek Watershed Restoration FY-18	\$386,870	Ongoing
USU Volunteer Monitoring Program FY-19	\$73,882	Ongoing
Local Watershed Coordinators FY-19	\$400,000	Ongoing
Pelican Lake Restoration FY-19	\$426,000	Ongoing
Matt Warner Reservoir Restoration FY-19	\$59,213	Ongoing

Table 12. Approved TMDLs

Water Body	Date Approved
Chalk Creek	12/23/1997
Otter Creek	12/23/1997
Little Bear River	5/23/2000
Mantua Reservoir	5/23/2000
East Canyon Reservoir	9/14/2010
East Canyon Creek	9/01/2000
Kent's Lake	9/01/2000
LaBaron Reservoir	9/01/2000
Minersville Reservoir	9/01/2000
Puffer Lake	9/01/2000
Schofield Reservoir	9/01/2000
Onion Creek	7/25/2002
Cottonwood Wash	9/09/2002
Deer Creek Reservoir	9/09/2002
Hyrum Reservoir	9/09/2002
Little Cottonwood Creek	9/09/2002
Lower Bear River	9/09/2002
Malad River	9/09/2002
Mill Creek	9/09/2002
Spring Creek	9/09/2002
Forsyth Reservoir	9/27/2002
Jonson Valley	9/27/2002
Lower Fremont River	9/27/2002
Mill Meadow Reservoir	9/27/2002
UM Creek	9/27/2002
Upper Fremont River	9/27/2002
Deep Creek	10/09/2002
Uinta River	10/09/2002
Pineview Reservoir	12/09/2002
Browne Lake	2/19/2003
San Pitch River	11/18/2003
Newton Creek	6/24/2004
Panguitch lake	6/24/2004
West Colorado	8/04/2004
Silver Creek	8/04/2004
Upper Sevier River	8/04/2004
Lower and Middle Sevier River	9/17/2004
Lower Colorado River	9/20/2004

Upper Bear River	8/04/2006
Echo Creek	8/04/2006
Soldier Creek	8/04/2006
East Fork Sevier River	8/04/2006
Koosharem Reservoir	8/04/2006
Lower Box Creek Reservoir	8/04/2006
Thistle Creek	7/09/2007
Strawberry Reservoir	7/09/2007
Matt Warner Reservoir	7/09/2007
Calder Reservoir	7/09/2007
Lower Duchesne River	7/09/2007
Lake Fork River	7/09/2007
Brough Reservoir	8/22/2008
Steinaker Reservoir	8/22/2008
Red Fleet Reservoir	8/22/2008
Newcastle Reservoir	8/22/2008
Cutler Reservoir	2/23/2010
Middle Bear River	2/23/2010
Pariette Draw	9/28/2010
Emigration Creek	7/18/2012
Jordan River Phase I	6/05/2013
Echo Reservoir	9/16/2014
Colorado River	6/17/2014
Rockport Reservoir	9/16/2014
Nine Mile Creek	3/02/2017
North Fork Virgin River	6/26/2018

Table 13. Watershed Plans

Watershed	Date Approved
Middle and Lower Sevier	October, 2010
San Pitch	January, 2006
Upper Sevier	June, 2004
Virgin River	February, 2006
Paria River	2006
Escalante River	2006
Salt Lake Countywide Water Quality Stewardship Plan	2009
Wallsburg CRMP	October 1, 2012
Duchesne River	July 31, 2014
Strawberry River Watershed	December 18, 2014
Spanish Valley Watershed Plan	January 5, 2014
Upper Bear River Watershed Plan	January, 2017
San Pitch Watershed Plan (revision)	June 2, 2017
Lower Weber River	Submitted to EPA for Approval
South Fork of Chalk Creek	Submitted to EPA for Approval
Spanish Fork River	Submitted to DWQ for approval
Upper Sevier River (revision)	Initiated
Montezuma Creek	Submitted to DWQ for Approval
Logan River	Submitted to EPA for Approval
Otter Creek	Initiated
Pelican Lake	Submitted to EPA for approval
Huff Creek	Submitted to EPA for Approval

Table 14. State Nonpoint Source Funds Allocated in 2019

Project Title	Watershed	Project Type	Proposed Funding
Logan River Main Street Restoration Work	Bear River	Stream Restoration	\$ 51,000
EV JW Hall Dairy	Bear River	AFO/CAFO	\$ 25,000
Don Nebeker Streambank and Bridge failure	Bear River	Stream Restoration	\$ 10,500
Logan River East of 400 East	Bear River	Design	\$ 9,000
Development of Onsite Waste Water Demo Site	Colorado River	I&E	\$ 62,000
Emigration Canyon Vault Toilet	Jordan River	General NPS	\$ 40,000
Cottonwood Heights Bio Retention Cell Engineering	Jordan River	Storm Water	\$ 38,590
2018 Water Week	Jordan River	I&E	\$ 5,000
John Hicken Wallsburg Stream Restoration	Provo River	Stream Restoration	\$ 1,650
Provo River Watershed Education Days	Provo River	I&E	\$ 10,000
Castleberry Phase 2 Stream Bank	San Pitch	Stream Restoration	\$ 19,000
Olsen Phase 2 Stream Bank	San Pitch	Stream Restoration	\$ 29,000
Mill And Pack Creek Restoration Rim to Rim	South East Colorado	Stream Restoration	\$ 39,055
Utah Watershed Coordinators	Statewide	Project Planning	\$ 30,000
Onsite	Statewide	Onsite	\$ 35,000
Envirothon	Statewide	I&E	\$ 5,000
Producer's Website and Small Hobby Farm Education	Statewide	I&E	\$ 23,850
South West Strawberry Roads	Uinta Basin	Road Improvements	\$ 100,000
Sowers Canyon Gully Plugs	Uinta Basin	Upland Treatments	\$ 60,000
Fitzgerald Dairy	Uintah Basin	AFO/CAFO	\$ 40,000
Mckee Dairy	Uintah Basin	AFO/CAFO	\$ 40,000
Matt Warner Shoreline Stabilization	Uintah Basin	Shoreline Protection	\$ 71,104
Delin Roundy Stream Bank	Upper Sevier	Stream Restoration	\$ 77,400
Byron Betts Lower Spanish Fork River Restoration	Utah Lake	Stream Restoration	\$ 15,000
South Fork Chalk Creek	Weber River	Grazing Management	\$ 60,075
Heiner Creek Riparian Fence	Weber River	Riparian Fencing	\$ 3,850
Huff Creek CRMP Phase 1	Weber River	Riparian Fencing	\$ 5,500
Lower East Canyon Creek BDAs	Weber River	Stream Restoration	\$ 23,426
F3 Land Company River Restoration	Weber River	Stream Restoration	\$ 70,000
		Total Requested	\$ 1,000,000

Table 15. Milestones of the Utah Statewide Nonpoint Source Program

Milestone	2018	2019
Objective 1: Environmental Protection:		
Number of TMDLs Completed	1	0
Number of TMDLs Initiated	-Spring Creek(Heber)-E.coli -Snake Creek- Arsenic -Jordan River- DO -Provo River- Aluminum & Arsenic	-Fremont River- E.coli -Jordan River Watershed wide – E.coli -Jordan River Phase 2 - DO
Number of 9 Element Watershed Based Plans Developed	-Huff Creek -Pelican Lake -Salt Lake Countywide waterquality stewardship plan	NA
Number of 9 Element Watershed Based Plans Initiated	NA	-Otter Creek -Heber Valley
Number of projects dedicated to the protection of threatened waterbodies identified in Utah’s 303(d) list	In FY-18 a State Nonpoint Source grant was given to the Bear Lake Watch to install long term monitoring stations on Bear Lake to monitor water quality. This will allow DWQ to take action if water quality begins to degrade.	None of the projects funded in 2019 were focused on the protection of water quality. All Proposals were located in a watershed that was previously listed on the 303(d) list of impaired waterbodies.
Number of projects focused on groundwater protection throughout the state	- \$15,438 was allocated to help property owners maintain septic tanks that are failing, or in need of maintenance around the state. -The Division of Water Quality has begun working with the Division of Drinking water to locate areas where source water protection plans are in place, and implementation work need to restore, or protect ground water quality.	-\$62,000 was dedicated to the development of an onsite waste water demo site in Southern Utah, similar to the one that currently exists at Utah State University in Cache Valley. -\$35,000 was awarded to DWQ to assist landowners with septic systems that are failing improve their systems. The purpose of this a hardship grant for those that otherwise could not afford it.
Objective 2: Improve Program Efficiency and Effectiveness Through Reporting and Evaluation		
Total Number of Stream Miles Restored	7.69 miles of stream restoration implemented in FY-2018. This includes projects implemented using 319, State NPS, and EQIP funding. 3,490 feet of riparian fencing installed in FY-2018. 28.6 acres of riparian planting.	4.49 Miles of stream restoration was implemented in FY-2019. This includes project implemented using 319, State NPS, and EQIP funding. 3.8 miles of fencing was installed to better control grazing in both the uplands and riparian areas in 2019. 78.44 Acres of riparian planting was completed in 2019
Total Estimated Load Reductions Reduced in Project Areas (includes reductions from annual and final reports)	Nitrogen-1353.6 lbs/year Sediment- 622.2 tons/year Phosphorus- 374.5 lbs/year	Nitrogen-3971.2 lbs/year Sediment- 1319.8 tons/year Phosphorous- 1156.5 lbs/year
Number of Final Project Reports Submitted	4 (see Table B)	5 (See Table 10)
Number of 319 Grants Open During the Fiscal Year	12 (See Table 9)	18 (See Table 11)
Amount of Unexpended Funds in Each Open 319 Grant	FY-14- \$47,011 FY-15- \$142,862 FY-16- \$437,786 FY-17- \$690,494 FY-18-\$970,494 (See Table1)	FY-15- \$20,722 FY-16- \$278,074 FY-17- \$223,888 FY-18-\$816,409 FY-19-\$959,059 (See Table1)

Number of Success Stories Showing the environmental Benefits of Completed NPS Projects Submitted to EPA for Approval	1-North Fork of the Virgin River	1-Main Creek- Temperature Delisting.
Objective 3: Improve Public Participation and Understanding of NPS Issues		
Number of Participants Involved in the Statedwide Volunteer Monitoring Program	In 2018 Utah Water Watch had 99 individuals participate in water quality monitoring.	In 2019 Utah Water Watch had 109 individuals participate in water quality monitoring.
Number of I&E Projects Implemented with Section 319 and State NPS Funding	8 Projects -Thanksgiving point Eco Challenge -Provo River Watershed Education Days - Envirothon -AWWA Water Week -American Fisheries Society 2018 Chapter meeting -Producer's Ag. Waste Management Website -Weber River Symposium -Utah Water Watch	6 Projects -Development of Onsite Waste Water Demo Site -2018 Water Week -Provo River Watershed Education Days -Envirothon -Producer's Website and Small Hobby Farm Education -Volunteer Monitoring Program
Updates Made to the State NPS Program Website	The NPS Program Website has now been completed, and Utah State University continues to maintain it as new information becomes available.	The NPS Program Website at https://www.utahcleanwater.org/ is updated by Utah State University Extension as new information becomes available.
Objective 4 Improve Data collection and Management		
Track Updates Made to Enhance NPS Monitoring in the Division of Water Quality's Annual Monitoring Strategy	The Statewide Nonpoint Source Project Monitoring SAP was updated, and continues to be implemented. To help watershed coordinators become more efficient at monitoring, \$32,000 in NPS funds were allocated to purchase monitoring equipment. This equipment has been distributed to the local watershed coordinators, and is currently in use.	There were no changes made to the FY-2018 Statewide SAPs. A SAP was developed for Matt Warner Reservoir that will be implemented in FY-2020. Matt Warner Reservoir and Pelican Lake received the majority of funding in FY-2019. As a result, DWQ deployed water quality buoys with sensors that collect pH, Temperature, Dissolved Oxygen, Turbidity, and Chlorophyll a data.
Number of SAPs Developed	SAPs were developed or updated for Pelican Lake, the Logan River, Chalk Creek, the Upper Sevier, the San Pitch, the Strawberry River, the Spanish Valley, Main Creek, and the North Fork of the Virgin River	No changes were made to the SAPs that were developed in 2019. One SAP was developed for Matt Warner Reservoir. All SAPs were effectively implemented in FY-2019.
Track Status and updates of AWQMS database	See Section 4.4 of this report	See section 4.4 of this report
Report on Water Quality Data Uploaded to the EPA's WQX Database	See Section 4.4 of this report	See the Ambient Water Quality Monitoring Section found on page 19 of this report.
Objective 5: Improve Coordination of Governmental and Private Sectors		
Hold Annual NPS Management Program Coordination Meetings	Held on March 8 th , 2018	Held February 28 th , 2019
Conduct Annual Consistency Reviews with State and Federal Agencies	Was not held due to the bad fire season experience in Utah. All Federal partners were unable to organize the tour.	The Federal Consistency Review Tour was held October 17 th , 2019. The tour was held in the Raft River Mountain Range area. A summary of the tour is found within this report.
Number of Water Quality Task Force Meetings Held During the Fiscal Year	Three Water Quality Task Force meetings were held on: October 5 th , 2017 January 9 th , 2018 June 14 th , 2018	Three Water Quality Task Force Meetings were held on: September 11 th , 2018 December 6 th , 2018 June 27 th , 2019
Amount of Funding Used to Leverage 319 Funding Throughout the State	\$7,977,399 (See Table 5)	\$6,397,551 (See Table 5)

Table 16. FY-19 BLM WRI Projects

2019 Utah WRI/HLI Accomplishments				
Project Id	Title	Terrestrial Acres	Aquatic/Riparian Acres	Stream Miles
4753	Horse Valley Fire ESR	1,130.81	0	4.3
3947	Tavaputs Plateau Sagegrouse Habitat Restoration	1,057.99	0	0.73
4513	Bone Hollow and Greenville Bench Project Maintenance	3,352.14	0	0
4514	Moab Mule Deer Winter Range Habitat Improvement-Phase 3	1,470.38	0	3.21
5040	Rich County Exclosure Maintenance	0	0	0
4300	Sage Hen Hollow Water Project	0	0	0
4163	Dark Canyon Plateau Phase 5	912.98	0	0.56
4759	Green River District Plateau Herbicide Raven and Miner's Draw Herbicide Treatment	1,897.47	0	9.44
4831	Project Maintenance - South Beaver Phase II	6,241.13	0	0
4461	Mortensen-Holyoak (Bull Hog and Lop and Scatter) Vegetation Treatment - Phase 3	3,310.61	0	16.77
4468	Clay Basin Herbicide 2018	2,515.86	0	6.78
4470	Parowan Stake/Parowan Gap/Paragonah Cattle/Willow Spring Vegetation Improvement Project	4,289.86	0	16.48
4488	South Canyon (Sunset Cliffs)	3,805.47	0	0
4558	Dolores River Restoration 2.0 - Utah	0	46.83	0.33
4744	Black Mountain Fire Emergency Stabilization and Rehabilitation	2,523.13	0	0
4858	Moab Mule Deer Winter Range Habitat Improvement-Phase 4	1,636.85	0	0
3968	Upper Horse Hollow Vegetation Enhancement Project (Lop & Scatter)	817.33	0	7.82
4141	Durkee Springs chaining maintenance	2,409.58	0	0
4107	Cherry Creek Bullhog Phase 1	3,056.80	0	8.16
4381	Monument Ridge Bullhog II	2,081.02	0	3.79
4357	Onaqui East Bench 2nd Entry	2,569.70	0	0
4543	Railroad Springs	2,633.99	0	4.11
4568	UKC - Spaniard Spring/Sink Valley Phase II	3,391.34	0	0.02
4529	UKC BuckKnoll Bullhog/ Cultural	3,215.43	0	4.55
4737	Richfield BLM Route inventories cultural	0	0	0
4374	Colorado River Watershed Restoration 2.0	460.29	0	0
2963	FFO Little Valley Seeding	656.51	0	0
4322	Range Creek Phase I Maintenance	240.67	35.33	5.9
4465	Bitter Creek Restoration Phase 3	1,869.72	0	6.5
4494	Cow Hollow	3,302.15	0	0
4495	Indian Creek (Upper Wildcat)	1,572.26	0	0
3782	Little Davenport Slashing/Lop & Scatter	1,793.39	0	2.73
4241	Rock Canyon Water Project	0	0	0
4323	Blanding East Phase III	479.18	0	0
4496	Yellowjacket (Chris Spring)	3,711.15	0	0

4467	Blue Mountain Chain Harrow and Seeding 2018	600.27	0	0
	TOTALS	69,005.46	82.16	102.18