

2016 Performance and Progress Report

State of Idaho Nonpoint Source Management Program



**State of Idaho
Department of Environmental Quality**

April 2017

Cover photo: The Bear River basin in southeastern Idaho is home to a large number of livestock and agricultural operations. Over time, the Bear River adjusted to varying conditions that resulted in valuable farmland being lost to erosion. With funding provided by the Idaho Department of Environmental Quality's Nonpoint Source Program, efforts were taken to protect the bank from further damage by placing rock rip-rap and root wads in the channel and installing fencing to exclude livestock from accessing the river. For more information, see page 43.



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April 2017



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Acknowledgments

The Idaho Department of Environmental Quality would like to acknowledge all who helped develop this report, including federal and state agencies, project sponsors, and the many individuals whose efforts have helped reduce nonpoint source water pollution throughout the state.

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Acronyms and Abbreviations

BAG	basin advisory group
BMP	best management practice
BRO	Boise Regional Office
CRO	Coeur d'Alene Regional Office
DEQ	Idaho Department of Environmental Quality
DMA	designated management agency
EPA	US Environmental Protection Agency
FTR	Friends of the Teton River
GRTS	grants reporting and tracking system
IDFG	Idaho Department of Fish and Game
IFRO	Idaho Falls Regional Office
ISWCC	Idaho Soil and Water Conservation Commission
LRO	Lewiston Regional Office
MOU	memorandum of understanding
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
PRO	Pocatello Regional Office
Section 303(d) (§303(d))	Section 303(d) of the Clean Water Act
Section 319 (§319)	Section 319(h) of the Clean Water Act
SRF	State Revolving Fund
SWCD	soil and water conservation district
TFRO	Twin Falls Regional Office
TMDL	total maximum daily load
WAG	watershed advisory group

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Section 1 Overview

This document summarizes the State of Idaho Nonpoint Source Management Program's performance and progress for the period from December 1, 2015, through November 30, 2016. The Department of Environmental Quality (DEQ) administers the program for Idaho.

1.1 Introduction

Clean Water Act §319(h) requires the US Environmental Protection Agency (EPA) make an annual determination of satisfactory progress in meeting the milestones of each state's nonpoint source (NPS) management plan. To assist EPA in making this determination, DEQ provides an annual report that assesses the program's performance and progress toward meeting the goals and milestones in Idaho's plan.

Idaho's Nonpoint Source Program

Congress established the national NPS program in 1987 when it amended the Clean Water Act with §319, "Nonpoint Source Management Programs." States were given the federally funded mandate to address NPS water pollution by (1) conducting statewide assessments of their waters, (2) developing NPS management programs to address identified impaired or threatened waters, and (3) implementing EPA-approved, federally funded NPS management programs to remediate and prevent NPS pollution.

In accordance with the congressional mandate, DEQ places strong emphasis on ensuring that §319 funds are directed to on-the-ground projects that prevent, reduce, or eliminate NPS pollution in Idaho's surface water and ground water. Idaho's NPS Program has funded hundreds of on-the-ground projects since 1998. The majority of these projects were designed to remediate and prevent NPS pollution, thereby resulting in measurable pollution reduction.

The State Revolving Fund and the NPS Program

Starting in 2011, the NPS Program began working closely with the State Revolving Fund (SRF) Program to leverage SRF wastewater loans, providing funding to offset lower levels of §319 assistance.

In general, the SRF funding protocol allows the interest rate charged on a traditional SRF wastewater project loan to be adjusted to accommodate an NPS project's financial needs. Projects funded in this manner are then administered by DEQ's §319 grant staff and have essentially the same administrative conditions as a project funded with a traditional §319 grant. A sponsorship agreement is required for projects receiving funds from the SRF. The funds for the NPS project result from borrowing against a community's SRF loan; the interest rate on the loan is lowered so that the rate payers are held harmless (i.e., their rates are not affected by the cost of the NPS effort).

Throughout this report, projects funded from the SRF are identified alphanumerically, beginning with the letters "WW."

Scope of the Program

DEQ managed 44 active projects (Table 1) in 2016. Each project is described in a subgrant agreement established between DEQ and the project sponsor. Project sponsors may include state agencies, counties, municipalities, nonprofit organizations, or private individuals.

Table 1. Nonpoint source funding summary for projects active and closed during 2016.

Subgrant	Project Name	Project Sponsor	Start Date	End Date	\$319 Grant Amount	Total Spent (through 11/30/16)	Balance (as of 11/30/16)
K129	Wolf Lodge Creek Restoration	River Design Group	02/22/16	12/31/16	\$99,770.00	\$93,769.77	\$6,000.23
S381	Boulder Creek Restoration	Trout Unlimited	05/28/10	12/31/14	\$5,400.00	\$5,000.00	\$400.00
S433	Little Salmon River Watershed Improvement	Idaho Department of Fish and Game (IDFG)	08/18/11	12/31/15	\$51,691.08	\$51,691.08	\$0.00
S458	Cold Springs Creek Riparian Restoration	Elmore Soil and Water Conservation District (SWCD)	08/13/12	12/31/16	\$40,476.00	\$33,436.60	\$7,039.40
S459	Rock Creek Best Management Practices (BMPs)	Idaho SWCD	08/13/12	12/31/16	\$95,764.00	\$81,542.46	\$14,221.54
S460	Potlatch River, Phase IV	Latah SWCD	08/13/12	12/31/16	\$207,302.00	\$41,200.50	\$166,101.50
S461	Upper Bear River Streambank Stabilization	Bear Lake Regional Commission	08/13/12	12/31/16	\$54,350.00	\$52,863.42	\$1,486.58
S464	Coeur D'Alene River at Medimont Bank Stabilization	Kootenai-Shoshone SWCD	08/22/12	11/28/16	\$129,000.00	\$116,906.00	\$3,251.36
S465	Valley County Watershed	Valley SWCD	09/04/12	11/30/16	\$105,000.00	\$105,000.00	\$0.00
S469	Twin Falls Coulee Wetlands Project	Snake River SWCD	10/03/12	12/01/16	\$106,300.00	\$106,300.00	\$0.00
S471	Station Creek Watershed Improvement	Franklin SWCD	10/17/12	12/31/16	\$125,008.00	\$40,707.09	\$84,300.91
S472	Lindsay Creek Water Quality Improvement, Phase 1	Nez Perce SWCD	11/26/12	04/30/16	\$135,721.00	\$135,695.85	\$25.15
S490	Fish Creek Restoration	Twin Lakes Improvement Association	08/05/13	05/31/17	\$84,000.00	\$55,876.55	\$28,123.45
S491	Potlatch River Watershed Management Plan, Phase 5 Implementation	Latah SWCD	08/06/13	05/31/18	\$207,674.00	\$20,767.40	\$186,906.60
S493	Middle Snake-Payette Clean Water, Phase 2	Payette SWCD	08/07/13	12/31/17	\$202,729.00	\$125,428.57	\$77,300.43
S494	Owyhee Restoration Incentive Program	Owyhee Watershed Council	10/01/13	10/01/17	\$132,750.00	\$97,280.97	\$35,469.03
S495	PBJ Diversion	Bear Lake SWCD	09/06/13	12/31/16	\$123,857.37	\$43,127.07	\$80,730.30
S496	Wide Hollow Erosion Reduction	Oneida SWCD	09/10/13	12/31/17	\$249,750.00	\$195,069.12	\$54,680.88
S518	Lewis County Soil Health BMP Implementations	Lewis Soil Conservation District	08/06/14	12/31/18	\$60,000.00	\$59,957.62	\$42.38
S519	Snake Creek Bridge Installation	Clearwater SWCD	08/08/14	12/31/17	\$124,299.00	\$123,995.00	\$304.00
S520/542	Alder Creek Road BMP Implementation Project	Benewah County/Benewah SWCD	04/08/16	12/31/17	\$235,990.00	\$91,939.09	\$144,050.91
S521	Continued Canyon County BMP Program	Lower Boise Watershed Council	08/18/14	12/31/18	\$250,000.00	\$174,999.47	\$75,000.53
S522	Weiser Flat Wetlands Project, Phase III	Weiser River Soil Conservation District	08/26/14	12/31/18	\$94,106.00	\$83,682.87	\$10,423.13
S523	Upper Weiser River Bank Stabilization	Adams SWCD	08/28/14	12/31/18	\$190,796.00	\$61,514.20	\$144,377.80
S524	Bear River Streambank Stabilization	Bear Lake Regional Commission	09/04/14	12/31/18	\$17,094.00	\$17,094.08	-\$0.08
S525	Cocolalla Lake Wetlands Restoration	Ducks Unlimited	09/29/14	12/31/18	\$96,938.00	\$87,162.88	\$9,775.12
S527	PC Pipeline, Off-Site Watering, and Fish Screening	Caribou SWCD	10/20/14	12/31/18	\$229,861.53	\$229,861.53	\$0.00
S528	Stauffer Creek Project	Bear Lake SWCD	10/24/14	12/31/17	\$186,361.20	\$68,243.39	\$155,317.81

Subgrant	Project Name	Project Sponsor	Start Date	End Date	\$319 Grant Amount	Total Spent (through 11/30/16)	Balance (as of 11/30/16)
S529	39/39A Water Quality Project	Balanced Rock SWCD	02/06/15	12/31/17	\$54,526.00	\$48,976.00	\$5,550.00
S530	Wimpey and Pratt Creek Restoration	Trout Unlimited	02/25/15	12/31/17	\$250,000.00	\$115,073.41	\$134,926.59
S531	Teton Creek Restoration Project, Phase 4	Friends of the Teton River	12/15/15	12/15/18	\$103,100.00	\$49,310.00	\$53,790.00
S532	Lower Payette River Total Maximum Daily Load (TMDL) Implementation Project, Phase 4	Gem and Squaw Creek SWCD	01/04/16	12/31/18	\$165,809.00	\$85,459.16	\$80,350.25
S534	Owyhee Restoration Incentive Program	Owyhee Watershed Council	02/15/16	02/15/19	\$153,012.00	\$20,000.00	\$133,012.00
S535	Addressing Temperature Issues in Three Mile Creek	Palouse-Clearwater Environmental Institute	02/15/16	01/30/18	\$90,064.00	\$26,358.64	\$63,705.36
S536	Cove Streambank Restoration and Off-Stream Watering Project	Caribou SWCD	02/15/16	02/15/19	\$174,423.00	\$17,442.00	\$156,981.00
S537	Tom Beall Creek Restoration Project	Nez Perce SWCD	02/19/16	12/31/18	\$30,500.00	\$12,670.06	\$17,829.94
S538	Bloomsburg Road/Coeur d'Alene Lake Management Plan Sediment and Nutrient Reduction Project	Kootenai-Shoshone SWCD	03/10/16	02/12/19	\$31,131.00	\$31,131.00	\$0.00
S540	Upper Blackfoot Animal Feeding Operations	Caribou SWCD	04/01/16	04/01/19	\$130,916.00	\$13,091.00	\$113,146.94
S541	Fernan Lake Phosphorus Reduction	Kootenai Environmental Alliance	04/08/16	10/31/16	\$3,649.92	\$2,809.52	\$840.40
S545	Thomas Fork Animal Feeding Operations Waste Containment	Bear Lake SWCD	05/01/16	12/31/19	\$178,869.00	\$17,886.00	\$160,983.00
S547	South Fork Snake River Bank Stabilization	Trout Unlimited	11/21/16	11/30/17	\$250,000.00	\$0.00	\$250,000.00
S548	Mud Creek/Silo Creek Water Quality Project, Phase II	Balanced Rock SWCD	11/15/16	11/14/19	\$81,000.00	\$0.00	\$81,000.00
S549	Washington Creek Culvert Replacements	Clearwater SWCD	11/15/16	11/14/19	\$250,000.00	\$0.00	\$250,000.00
WW1010	Middle Bear River Watershed Mound Valley	Franklin SWCD	12/24/09	01/01/16	\$103,271.00	\$103,271.00	\$0.00

Assessing Program Performance

DEQ operates under the goals and objectives incorporated in the 2015 *Idaho Nonpoint Source Management Plan*, which provides guidance for developing an annual work plan required to effectively administer the program (DEQ 2015). Work plan tasks for the fiscal year reported are presented in section 1.2.

Framework of the Program

NPS Program functions include the following:

- Implementing watershed plans that target meeting TMDLs for pollutants and require adhering to drinking water, source water protection, and ground water management plans developed for the watershed
- Targeting compliance with water quality standards
- Evaluating the successful implementation of projects proceeding under their respective work plans and approved watershed plans, through water quality and various forms of effectiveness monitoring

Program Emphasis and Focus

Most program-managed projects focus on reducing NPS pollution associated with agriculture and grazing practices. Other nonpoint sources of pollution the program has invested resources to address include the following:

- Fisheries
- Forestry
- Mining
- Transportation
- Urban and rural stormwater

Determining Pollutant Load Reductions

DEQ requires project sponsors estimate reductions of sediment, phosphorous, and nitrogen loads resulting from their implementation of BMPs and at the completion of their project. Most projects take place in close proximity to a particular water body. A project's pollutant load reduction estimate can be added to load reductions resulting from other projects within the watershed to determine the cumulative load reduction achieved within the entire watershed.

Providing Technical Support

Idaho's NPS Program provides technical support through the following actions:

- Facilitating and coordinating implementation of the *Idaho Nonpoint Source Management Plan* (DEQ 2015)
- Developing and working to advance new technical approaches aimed at improving surface water and ground water quality
- Promoting partnerships, interagency collaboration, environmental education, and information transfer
- Ensuring consistency of base-level implementation activities addressed in TMDLs

- Providing training on how to complete a project application, an invoice, and a project final report
- Managing §319 funds in accordance with standard accounting and reporting practices

Public Participation

Public participation is an important component of the NPS Program that is mainly achieved by interacting with watershed advisory groups (WAGs) and basin advisory groups (BAGs) in accordance with Idaho Code §39-3601. Both WAGs and BAGs are required to evaluate and recommend actions necessary for improving water quality across the state.

In addition, the NPS Program works to coordinate activities with local, state, tribal, and federal agencies. Their support is essential to close the feedback loop described in the 2015 *Idaho Nonpoint Source Management Plan*, project-by-project, within the major river basins in the state.

1.2 2016 Nonpoint Source §319 Grant Work Plan

NPS Program tasks are defined in terms of “outputs.”

Task 1: DEQ State Office Administration

Output: Maintain a process for soliciting proposals for projects seeking to address water quality problems related to nonpoint sources; conduct public outreach; oversee program activities; and track grant expenditures to ensure compliance with program requirements and federal grant conditions.

Milestone: As needed: July 1, 2016–June 30, 2017

Estimated cost: \$124,257

Staffing level: 1.10 fulltime positions

Task 2: Develop Procedure and Guidance Documents

Output: Procedure and guidance documents are in place to support new and ongoing program implementation efforts.

Milestone: As needed

Estimated cost: \$56,999

Staffing level: 0.50 fulltime positions

Task 3: Revise Memoranda of Understanding (MOUs) with Designated Management Agencies (DMAs)

Output: Revised MOUs.
Milestone: On a schedule agreed to with EPA
Estimated cost: \$26,219
Staffing level: 0.24 fulltime positions

Task 4: Program Implementation

Output 4A: Collaboration with partners to implement NPS projects in priority watersheds.
Milestone: July 1, 2016–June 30, 2017
Output 4B: Implement the program in a manner consistent with the goals and objectives of the strategic plan and the performance partnership agreement. DEQ and the DMAs encourage water quality monitoring be performed to assess improvements to water quality. Routine program evaluations are performed to assess the effectiveness of implementation activities, and corrective action is taken.
Milestone: July 1, 2016–June 30, 2017
Output 4C: Support the Idaho Water Quality Monitoring and Management Conference.
Milestone: February 2017
Estimated cost: \$205,195
Staffing level: 1.81 fulltime positions

Task 5: Evaluate Nonpoint Source Projects

Output: On-site evaluations are performed at a minimum of 50% of all open, and a pre-determined number of closed projects; contractor performance and maintenance of existing BMPs is assessed.
Milestone: Annually, May–October
Estimated cost: \$98,037
Staffing level: 0.87 fulltime positions

Task 6: Coordinate and Implement Joint Activities of the NPS and Water Pollution Control Loan (SRF) Programs, per Established Protocols

Output: SRF-generated funding is leveraged to implement NPS projects that met the respective program criteria.

Milestone: Annually

Estimated cost: \$12,540

Staffing level: 0.11 fulltime positions

Task 7: Provide Technical Support and Information Transfer on Implementation (Watershed-based) Plans

Output: Support to watershed-based implementation and planning efforts is provided.

Milestone: Annually, as requested

Estimated cost: \$20,519

Staffing level: 0.18 fulltime positions

Task 8: Compile the Annual NPS Program Performance and Progress Report

Output: Final report submitted to EPA.

Milestone: March 2017

Estimated cost: \$21,659

Staffing level: 0.19 fulltime positions

Task 9: Meet Reporting Requirements of the Federal Grants Reporting and Tracking System (GRTS)

Output: Required data is timely entered into GRTS.

Milestone: Annually, by February 15.

Estimated cost: \$11,400

Staffing level: 0.10 fulltime positions

Task 10: Maintain the Idaho Nonpoint Source Management Plan

Output: All necessary updates to the NPS Management Plan are made and submitted to EPA.

Milestone: By December 30, 2016.

Estimated cost: \$14,820

Staffing level: 0.13 fulltime positions

Task 11: Surface Water Quality Management

Output:	319 Program goals and objectives are supported by the development of water quality standards, conducting assessments, and completing the biannual Integrated Report.
Milestone:	Ongoing
Estimated cost:	\$394,483
Staffing level:	3.66 fulltime positions

1.3 Time and Budget Utilization

Figure 1 compares the number of months work has been underway on each active project to the amount of time the project had at the outset to have its work completed. Figure 2 compares the amount of funding that has been expended (through November 30, 2016) on each active project to the amount of funding that was granted to the project at the outset.

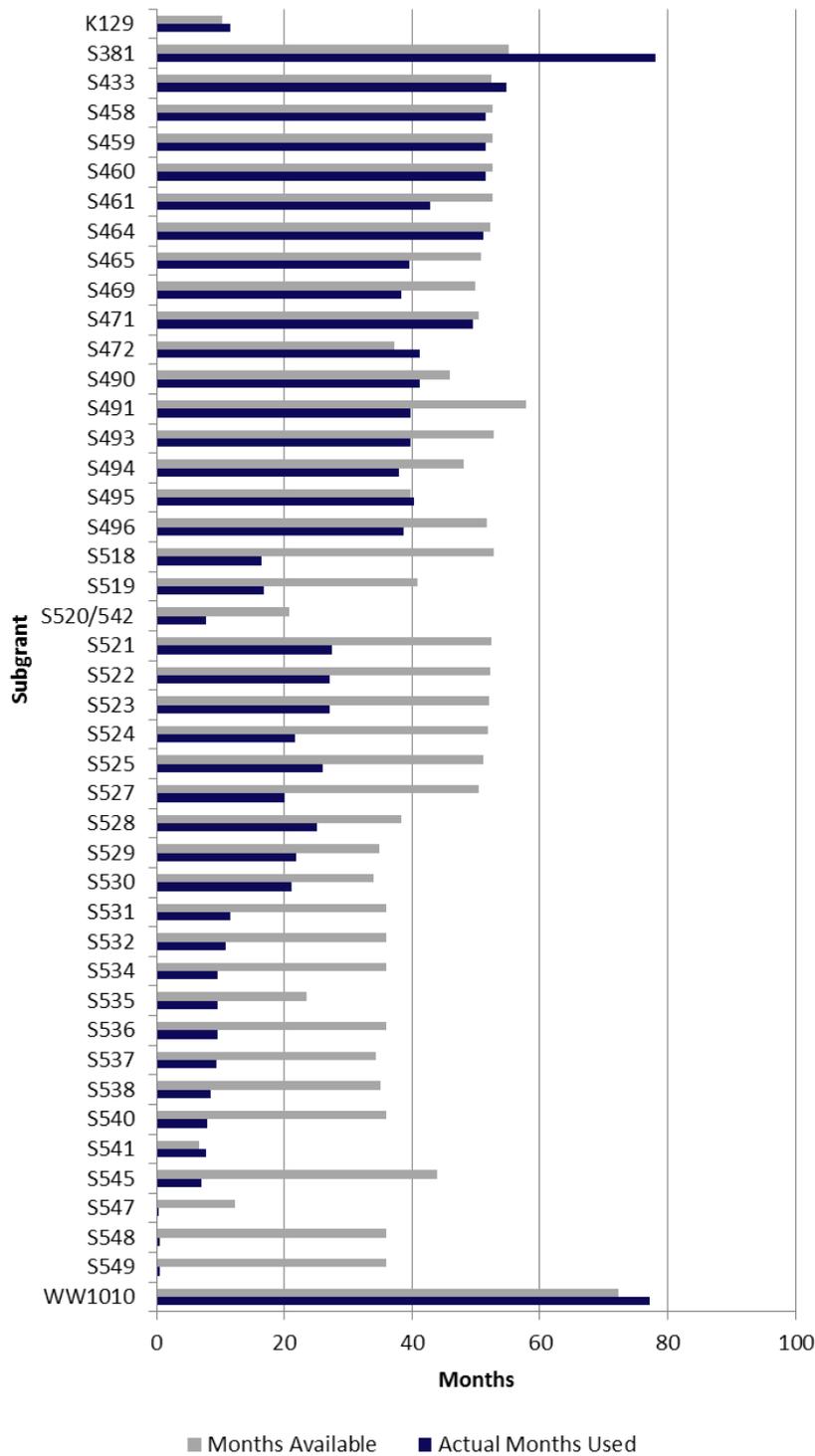


Figure 1. Active projects, time used, and total time available. The blue bars represent the total number of months the project has been underway. The gray bars represent total months available for project completion. (Note: Active projects are any projects funded in federal grant years 2009–2016, inclusive.)

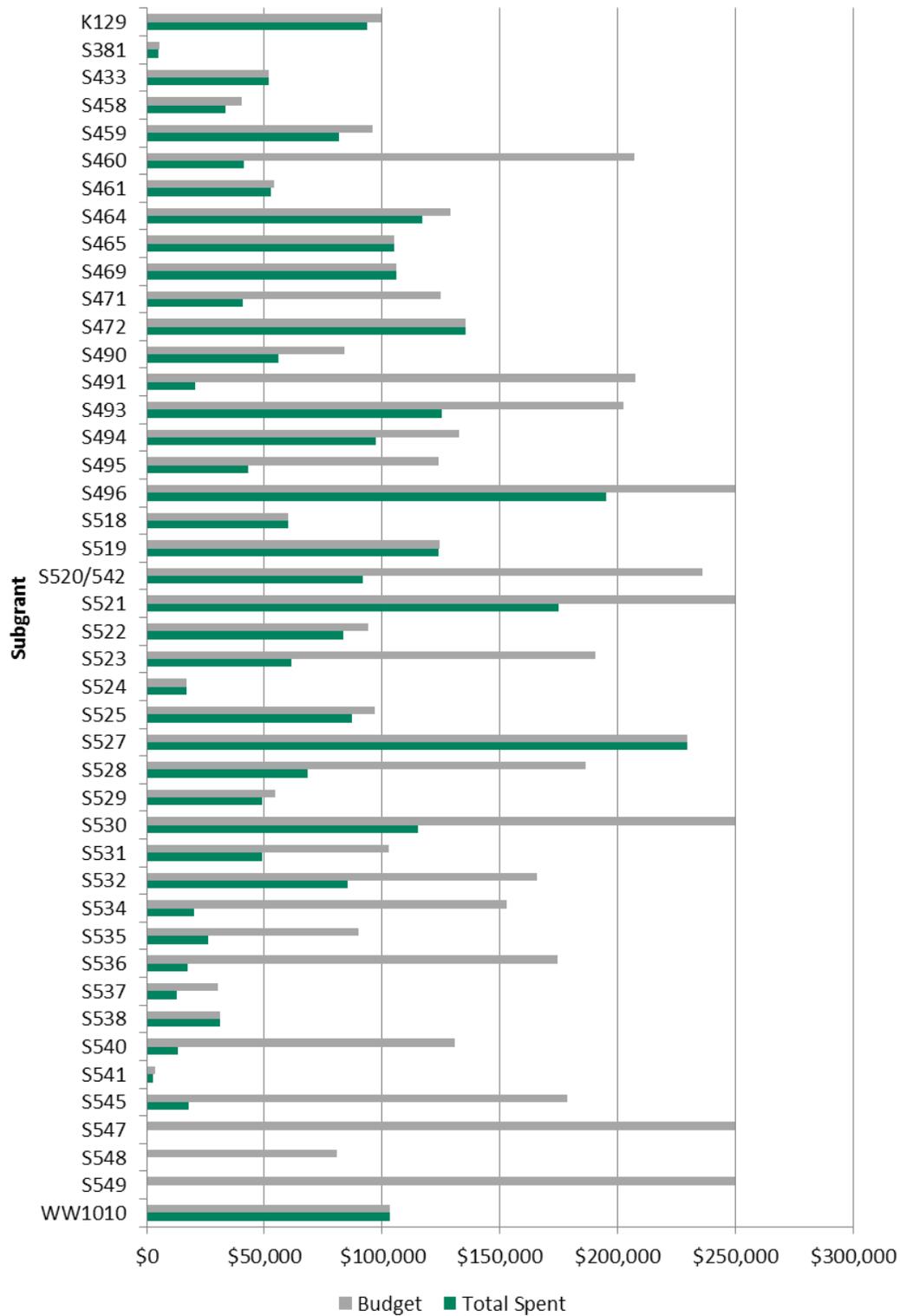


Figure 2. Budget usage by active projects. The gray bars represent the total federal funding granted to each project. The green bars show the amount spent by each, through November 30, 2016.

Section 2 Project Field Evaluations—2016

This section includes summaries of the project field evaluations DEQ performed in 2016. Section 3 follows with a summary of each completed evaluation. The full report on each field evaluation is available at the DEQ State Office.

2.1 Introduction

In 2016, DEQ managed 44 active projects across the state (Figure 3). Of these, 12 were determined to be complete and were closed out. Field evaluations were completed on 31 projects (Figure 4).

2.2 Field Evaluation Process

The field evaluation process begins with a review by DEQ staff of the project file record, including the subgrant agreement. Next, DEQ arranges a visit to the job site to review any work that is underway or completed, and to assess whether the project complies with the terms of the agreement. DEQ uses a standard form to report on its findings while on-site.

2.3 Results

Table 2 lists and briefly describes all projects that were field-evaluated during 2016.



Figure 3. Active or recently closed nonpoint source projects, as of November 30, 2016. For project information, see Table 1.

Table 2. Projects field-evaluated during 2016.

Sub-grant	Project Name	Evaluation Conclusions	Category	DEQ Region ^a
S190	Bear River Confined Animal Feeding Operation Improvements	The project relocated calving corrals and developed several off-site water sources and gaps that extended into the channel to create an area where livestock could find water. All BMPs were functioning as intended.	Agriculture	PRO
S214	Elk/Mores Creek Sediment Reduction and Floodplain Restoration	This project used a broad-scale linear approach to demonstrate mining and hydrologic modification BMPs that reduce nonpoint source pollutant loading, particularly sediment and water temperature. Treatments are being properly maintained.	Mining	BRO
S223	Marsh Creek Watershed Project, Phase 1	Landowners implemented BMPs most suited for their operations to reduce the amount of sediment, nutrient, and bacteria entering the creek. All BMPs were in proper functioning condition and being maintained.	Agriculture	PRO
S252	E Coulee Drain Elimination	This project reduced the sediment and nutrient loads in irrigation water that returned to the E Coulee drain following its use on approximately 1,000 acres of farmland. Two sediment basins and a finishing pond/wetland were built on a 4-acre tract of land. Monitoring shows water quality has improved.	Agriculture	TFRO
S291	Marsh Creek Wetlands Restoration Project	The purpose of this project was to implement BMPs to improve water quality, supplement late season streamflows, and restore off-channel wetland habitat along the creek within the 20,000-acre Six S Ranch. Implementation met all requirements.	Agriculture	TFRO
S381	Boulder Creek Restoration	This project stabilized the creek bank by constructing a log crib and planting it with native vegetation. An additional 750 feet of riparian area was also heavily planted. Implementation met all requirements.	Forestry	BRO
S389	Little Salmon River Riparian Restoration	The goal of the project was to protect and restore riparian habitat along the Little Salmon River and its tributaries by planting native species, building willow weavings, fencing riparian areas, and hardening one bank area. An off-site water source was also developed. All tasks in the workplan were adequately implemented.	Agriculture	BRO
S397	Mica Creek Sediment and Nutrient Reduction Project	The goal of this project was to construct fencing to exclude livestock from grazing in the riparian area. Debris was cleared from the channel, cattle crossings were hardened to reduce erosion, and 920 feet of creek bank were stabilized using rock and native vegetation.	Agriculture	CRO
S426	Palisades Creek Channel Improvements	Trout Unlimited implemented BMPs to stabilize degraded streambanks. Decreasing the sediment load in the creek will have the added benefit of less sediment entering the Snake River. BMPs continue to function as designed.	Agriculture	IFRO
S429	Kootenai River Bank Restoration and Riparian Enhancement	BMPs were implemented on steep, eroding riverbanks with little riparian vegetation. Native vegetation was planted in the riparian areas, and large wood was placed along the bank. A fence was constructed to exclude cattle and wildlife from riparian areas. BMPs have been successful.	Agriculture/ Forestry	CRO
S459	Rock Creek BMPs	BMPs include constructing fence, off-stream water systems, a roof runoff system, and manure collection pads; implementing manure management, seeding hay and pasture; and converting conventionally tilled cropland to a no-till procedure.	Agriculture	LEW
S460	Potlatch River, Phase IV	The goal of the project is to return perennial flow to the sinuous, well-vegetated historic Potlatch River channel. Restoration activities included installing channel plugs and constructing a series of wetland cells to store and enhance infiltration.	Agriculture	LRO
S462	Clear Creek Road Restoration	BMPs included improving the road surface; removing the slope, stabilizing, and revegetating disturbed areas; improving road drainage; removing and replacing culverts; realigning parts of the road away from the creek; and installing rock barbs in the channel. Implementation met requirements.	Agriculture	BRO

Sub-grant	Project Name	Evaluation Conclusions	Category	DEQ Region ^a
S463	Cove Creek Wetlands Project	The goal of the project was to implement BMPs to reduce the amount of phosphorus and sediment being discharged into Cove Creek from thousands of adjacent dry-land farmed, gravity-irrigated, and rangeland acres. Implementation met requirements.	Agriculture	BRO
S465	Valley County Watersheds	The goal of this project was to improve water quality in Lake Cascade and its tributaries and the North Fork Payette River below Cascade. BMPs included exclusion fencing, tree revetments, riparian plantings, and hardened crossings. Implementation met requirements.	Agriculture	BRO
S468	St. Maries River Road, Phase II	A stretch of St. Maries River Road was improved through drainage and surface improvements to reduce sediment discharge into the river. All BMPs required by the project workplan remain in good working order.	Agriculture	CRO
S471	Station Creek Watershed Improvement	The goal of the project is to improve water quality in the creek by reducing the sediment load from nearby cropland, grazing land, and an unstable streambank. BMPs include rock structures, tree revetments, riparian plantings, sediment basins, and water sources.	Agriculture	PRO
S492	Upper Lanes Creek Restoration	This project involved a large-scale realignment of approximately 3 miles of the Upper Lanes Creek stream channel. BMPs included grade control, bank shaping, riparian planting, fencing, off-site water sources, and stream crossing upgrades.	Agriculture	PRO
S493	Mid-Snake–Payette Clean Water, Phase 2	The goal of this project is to protect water quality by implementing BMPs on private agricultural lands. BMPs focus on reducing the amount of sediment that leaves the properties to eventually discharge into the Snake River. All completed projects met applicable standards.	Agriculture	BRO
S494	Owyhee Restoration Incentive Program	The goal of this project is to implement BMPs that will reduce the amount of sediment and nutrients coming off nearby agricultural lands to eventually enter water bodies found in the Mid-Snake/ Succor Creek subbasin. Implementation meets requirements.	Agriculture	BRO
S496	Wide Hollow Erosion Reduction	This project will focus primarily on three sites to reduce the sediment and nutrient input to local waters resulting from sheet and rill erosion and livestock impacts on streams. A host of BMPs will be implemented including water and sediment basins, terraces, stock water systems, and animal waste containment.	Agriculture	PRO
S520/542	Alder Creek Road BMP Implementation Project	The goal of this project is to improve the surface and drainage of a 2-mile stretch of Alder Creek Road to reduce sediment discharge to Alder and Carlin Creeks.	Agriculture	CRO
S521	Continued Canyon County BMP Program	This project is part of an ongoing effort by the Lower Boise Watershed Council to facilitate BMPs on tier 1 agricultural lands in the Lower Boise Watershed. The goal is to improve surface water quality in both Ada and Canyon Counties.	Agriculture	BRO
S523	Upper Weiser River Bank Stabilization	The overarching goal of this project is to restore the Weiser River to a stable condition by re-establishing riparian vegetation and protecting the river banks. Water quality will improve by implementing BMPs to reduce the sediment and phosphorus load.	Agriculture	BRO
S524	Bear River Streambank Stabilization	This project stabilized 330 feet of the Bear River bank, just upstream of the Dingle Bridge. Rock, willows, and tree root balls were placed to help stabilize the bank, and fencing was installed to keep livestock out of the riparian area. Implementation met requirements.	Agriculture	PRO
S525	Cocolalla Lake Wetlands Restoration	The goal of the project is to restore more than 90 acres on the southern end of Cocolalla Lake to its historic wetlands condition. Sediment and nutrient loading will be reduced by reconnecting the creek with its floodplain, redirecting flow from a nearby ditch into the creek, and constructing ponds to decrease the velocity and direction of flow across the property. Implementation activities are ongoing and on schedule.	Agriculture	CRO
S529	39/39A Water Quality Project	This project involved implementing BMPs on the irrigation return water found in the 39/39A drains. Four cleaning cells were constructed. The project is proceeding as planned.	Agriculture	TFRO

Sub-grant	Project Name	Evaluation Conclusions	Category	DEQ Region ^a
S530	Wimpey and Pratt Creek Restoration	The goal of the project is to improve water quality in both creeks by reducing the fecal coliform, sediment, and temperature loads. A broad range of BMPs will be implemented to improve streamflows, reduce stream temperatures, and reconnect Pratt Creek to Sandy Springs and the Salmon River.	Agriculture	IFRO
S531	Teton Creek Restoration Project, Phase 4	The goal of this project is to improve water quality in Teton Creek and the Teton River. Friends of the Teton River plans to stabilize approximately 800 feet of stream channel and 670 feet of eroding streambank, improve instream habitat conditions, and restore the aquatic and riparian ecosystem to a functional state.	Agriculture	IFRO
S532	Lower Payette River TMDL Implementation Project, Phase IV	The goal of this project is to protect and restore surface and ground water quality by providing financial incentives and technical expertise to landowners willing to install appropriate BMPs.	Agriculture	BRO
S536	Cove Streambank Restoration and Off-Stream Watering Project	The goal of the project is to improve the water quality of Bear River by reducing the amount of sediment, phosphorus, and nitrogen entering the river. BMPs include bank stabilization and off-site watering troughs. Implementation activities are scheduled to begin in summer 2017.	Agriculture	PRO

^a Idaho Falls Regional Office (IFRO), Boise Regional Office (BRO), Lewiston Regional Office (LRO), Pocatello Regional Office (PRO), Coeur d'Alene Regional Office (CRO), Twin Falls Regional Office (TFRO)

Section 3 Project Field Evaluation Reports

DEQ staff traveled to 31 project sites to evaluate and document progress. A number of these evaluations were of active projects. Others were on sites where work was completed several years earlier; the intent for those cases was to assess how well the previously implemented BMPs are being maintained and functioning. The following pages include summaries of the projects that were evaluated in 2016.

- 29 projects addressed NPS water quality issues related to agriculture or grazing, 1 of which also addressed forestry issues.
- 2 projects addressed issues related to forestry, 1 of which also addressed agriculture issues.
- 1 project addressed issues related to mining.

The following pages include summaries of the projects that were evaluated in 2016. More detailed evaluation reports for each project are available from DEQ upon request.

3.1 Bear River Confined Animal Feeding Operation Improvements (Dingle Property) (Re-evaluation)

Subgrant: S190 **Latitude and Longitude:** 42.23924, -111.35950

Description:

The project work plan called for relocating some calving corrals that had ponding water during spring runoff. A second task involved developing several off-site water sources and gaps that would extend into the channel to create an area where livestock could find water. A portion of the \$319 funds assigned to the project was used to purchase and install the solar panels needed to power the pumping system. Other equipment needed to operate the pumping system included a generator, batteries, and the pump. The generator provides a backup source of power for the pump should atmospheric conditions not generate the amount of power needed to operate the pump.

Project Status:

All BMPs called for in the workplan were implemented on time and within budget. BMPs were being maintained and operating as designed. To reduce the amount of time the generator needed to run in the winter to supply water, the landowner installed four additional solar panels and a small wind turbine. These additions increased the amount of energy available to the system while lessening the chances of the system failing due to a power shortage.

Outcome To-Date:

The Bear Lake SWCD entered into contracts with two landowners: one on Paris Creek and the second on the old Bear River channel. Designs were secured and closely followed, and all were built to meet Natural Resources Conservation Service (NRCS) standards. The success of the project resulted in an off-stream water supply sufficient to water approximately 1,100 head of livestock. A containment system was built to prevent animal waste from running off the corrals and entering the river. The two landowners fenced 2,575 feet of stream to exclude livestock from the riparian areas. All BMPs were functioning as intended. The project was completed in February 2009.



A view of Paris Creek with the riparian fencing in place to exclude livestock from the area. This is the location of an old calving barn and corral that was removed as part of the project.



Working corrals and the waste containment site were relocated away from Paris Creek.



An area on Paris Creek previously included a livestock water gap that was removed, and Paris Creek was fenced to keep livestock from entering the stream.



The four solar panels on top of the shed and the small windmill were added to provide additional solar and wind power to the system on cloudy days. The generator runs about 4 hours a day during December and January. A shallow sump for the pump is located just behind the panels.

3.2 Elk/Mores Creek Sediment Reduction and Floodplain Restoration (Re-evaluation)

Subgrant: S214 **Latitude and Longitude:** 43.81000, -115.86500

Description:

This project used a broad-scale linear approach to demonstrate mining and hydrologic modification BMPs that reduce nonpoint source pollutant loading of §303(d)-listed water bodies and reduce and eliminate pollutants listed in the Idaho City source water assessment (DEQ 2016). This project focused on improving the beneficial use of drinking water. The primary objectives were to reduce sediment loads and water temperature in both Elk and Mores Creeks.

Project Status:

Several sediment ponds were built to capture runoff discharging from Gold Hill, a hydraulically mined area that has been very erosive. Catchment basins were developed just upstream of the Elk Creek drinking water intake for Idaho City. The ponds are still functional and being maintained by Idaho City employees. Slope stabilization treatments in this area included rock dams, logging slash, and wattles to help dissipate overland flow and prevent mobilized sediments from redepositing. These structures are still largely in place. The banks of Elk Creek were laid back to prevent erosion, barbs were placed in the creek, and willows were planted at the toe of the slope. All treatments remain intact and the banks appear stable. Plant growth on eroding slopes in the area appears to be improving. A drinking water infiltration gallery was installed to replace an old intake. The infiltration beds are adequately covered and the pump house has been upgraded. Road grading and lot leveling in the area was completed to minimize stormwater erosion and runoff to Elk Creek. These treatments are being properly maintained.

Outcome To-Date:

This project closed in December 2008. Project manager West Central Highlands Resource Conservation District has since been dissolved.



This 300-foot long sediment basin is the first capture of sediment runoff out of the Gold Hill area. Outflow from this sediment basin passes through the stand pipe under the roadway to the natural basin areas adjacent to Elk Creek.



A series of check dams were installed in this gully to effectively control surface runoff and trap soil and sediments on the terraces. These check dams also control channel erosion along the gully bed.



Streambank was protected using rock, stream barb, and tree revetment. Beaver have anchored a dam to one of the barbs. The tree revetment is still in place and continues to slow near-bank currents and allow sediment to deposit within and behind the tree branches. Willows are growing within the treatment.



Idaho City operates another intake and pump house on Elk Creek. This infiltration gallery was covered with heavy angular rock to keep the pipes from being exposed during high flows.

3.3 Marsh Creek Watershed Project, Phase 1 (Re-evaluation)

Subgrant: S223 **Latitude and Longitude:** 42.42700, -112.20800

Description:

A Portneuf SWCD survey showed that of the 112 active livestock feeding operations in the watershed, 35 were operating very close to Marsh Creek. The goal of the project was to recruit up to eight landowners with active cattle feeding operations in the Marsh Creek watershed and work with them to improve the quality of the water in Marsh Creek. The landowners would agree to implement the BMPs most suited for their operations to achieve the desired results. Successful implementation would result in a reduction of the amount of sediment, nutrient, and bacteria that was entering the creek.

Project Status:

The BMPs that were implemented involved constructing waste containment berms, planting permanent vegetative cover, fencing livestock from entering important habitats for threatened Bonneville Cutthroat Trout, and installing or developing various stock watering systems (e.g., well/spring, pipeline, storage tank, troughs).

Outcome To-Date:

The designs prepared for all of the participating livestock feeding operations were approved by the landowners and implemented. All BMPs were in proper functioning condition and being maintained. The project closed in December 2012.



A containment pond can be seen on the back side of the relocated corrals, just below the tree line.



A frost-free trough in the corral provides water to livestock. The stream is seen in the background, at a distance from the corrals. The corrals are bermed and include a containment pond to capture and store any runoff.



The area in and around the old corrals has been revegetated, and a berm was built to prevent runoff from entering the stream.



The corrals were relocated upslope and away from the stream. Cement was placed around the trough as heavy use protection, and to keep cows from digging in that area.

3.4 E Coulee Drain Elimination (Re-evaluation)

Subgrant: S252 **Latitude and Longitude:** 42.59131, -114.88443

Description:

The E Coulee Drain discharges directly into Salmon Falls Creek, a tributary of the Snake River, approximately 11.5 stream miles north of the project site. The purpose of the project was to reduce the sediment and nutrient loads found in the irrigation water that returned to the E Coulee drain (5/5A lateral) following its use on approximately 1,000 acres of farmland. Two sediment basins and a finishing pond/wetland were built on a 4-acre tract of land. The return water was diverted from the drain to the pond and wetland complex, which passively treats the water as it flows through the system prior to discharging into the Snake River.

Project Status:

The primary BMPs implemented included two sediment basins, grade stabilization structures, a structure for water control, and a sprinkler irrigation system. The ponds are stable, with vegetation growing on and around the sites. The pivot sprinkler was not operating on the day of the evaluation but the crop on the land is clearly being watered. The grade around the ponds was stabilized by using rip-rap and planting trees. There were sloped crop fields located southeast of the pond and wetland complex. These fields had been losing a large amount of soil during irrigation, which resulted in lost productivity. The producer has reduced the amount of soil lost and increased productivity by practicing cross slope furrowing, reducing the number of passes on the fields, and adding organic material to the fields to help stabilize the soil.

Outcome To-Date:

All tasks have been completed and the project is now closed. An inflow and discharge sampling event took place on June 23, 2016. The results suggested a 62% decrease in total suspended solids, an 18% decrease in total phosphorus, visibly clearer water, turbidity reduced from 15 nephelometric turbidity units to 9, and a 29% decrease in *E. coli*. Additional information on sampling is available at <http://data.kimberly.uidaho.edu/HITS/siteinfo>.



This photo shows an overview of the project.



The upper finishing pond has vegetation growing in and around it.



This connection runs from the upper to lower finishing pond. The row crop seen in the background is watered by the pivot installed as part of the project.



The stream seen on the right carries water from the Phase I ponds. The stream entering on the left carries water off an adjoining field and is untreated.

3.5 Marsh Creek Wetland Restoration Project (Re-evaluation)

Subgrant: S291 **Latitude and Longitude:** 42.46854, -113.51438

Description:

Marsh Creek originates in the Albion Mountain range. The creek is highly degraded over much of its length, with eroded banks and a limited riparian area. The purpose of this project was to implement BMPs to improve water quality, supplement late season streamflows, and restore off-channel wetland habitat along the creek within the 20,000-acre Six S Ranch. With the help of partners including the IDFG and US Fish and Wildlife Service, 60 acres of high quality seasonal and semipermanent wetlands were restored in four areas along Marsh Creek. The restored wetlands will filter suspended sediment, nutrients, and bacteria from Marsh Creek and are expected to contribute to ground water recharge. The wetlands will also provide excellent habitat for wetland-dependent birds and other wildlife.

Project Status:

The BMPs implemented included the construction of four wetland areas with head gates and other related control infrastructure. All four of the wetlands are currently functioning as intended. A healthy population of macrophytes and various broods of migratory waterfowl were observed in the wetlands during the evaluation. Many acres upslope of the project site burned in 2014. The burn areas are now in a period of regrowth, which is being dominated by wild mustard and a limited number of other preferred forage species.

Outcome To-Date:

Implementation met all requirements. The project is now closed.



Two cleaning cells were constructed near the upper end of the project site.



This view is from the upper reservoir/retention pond looking downstream on the wetlands and a diversion structure.



The riparian area around the lower reservoir/retention pond was well established and the uplands well vegetated.



Waterfowl and other wildlife are regular visitors to the lower reservoir/retention pond.

3.6 Boulder Creek Restoration (Re-evaluation)

Subgrant: S381 **Latitude and Longitude:** 44.73079, -116.07399

Description:

The goal of this project was to stop a 100-foot section of Boulder Creek, a tributary to the Cascade Reservoir, from severely eroding. The bank was stabilized by constructing a log crib along the stretch and planting it with native vegetation. An additional 750 feet of riparian area was also heavily planted.

Project Status:

An evaluation of the site revealed that the log cribbing remained sound and in place. Even under the low rainfall conditions of recent years, the riparian plantings are thriving and the cribbing continues to be overgrown with vegetation. This project was made further successful by the participation of local school children, many of whom assisted with planting and some of the construction-related work.

Outcome To-Date:

Implementation met all requirements. The project is closed.



A log grid structure was used to cover the soft, steep embankment. Individual cells in the structure help to stabilize eroding soil and allow a mix of vegetation to take root. This BMP was applied in 2011. Plants are now well established and help decrease erosion.



The toe of the slope is stable, and streambank vegetation is vigorous.



The hillslope was severely eroded in May 2010, prior to restoration.



The log grid structure can be seen in this photo from October 2010, post-restoration.

3.7 Little Salmon River Riparian Restoration (Re-evaluation)

Subgrant: S389 **Latitude and Longitude:** 45.07568, -116.30470

Description:

The goal of the project was to protect and restore riparian habitat along the Little Salmon River and its tributaries—Goose, Fourmile, and Round Valley Creeks—by planting native species, building willow weavings, fencing riparian areas, and hardening one bank area. An off-site water source was developed for cattle. This project was designed to meet the Little Salmon River TMDL implementation goals for tier 1 critical areas. Water quality will be improved by reducing sediment, nutrients, bacteria, and solar loads and improving riparian areas and instream habitat.

Project Status:

At one time, the banks of Goose Creek and the Little Salmon River were severely cut. Coyote willows were planted at the mouth and along several reaches of both water bodies. The willows, maintained by IDFG, had low mortality and are now well established. The high banks will eventually slough to create stability between the tiered plantings. The property on Fourmile Creek that was planted is under new ownership and DEQ is not authorized to access the site. From the perimeter, DEQ observed a large stretch of fencing that appeared to be intact and willows that remain alive. Annual high flows on the Little Salmon River were threatening nearby structures and causing riverbank erosion. Rock rip-rap had been placed and interspersed with willow clumps and cuttings, resulting in vigorous growth and improved bank stability. At another site, reed canarygrass had grown so well that willow growth was hard to evaluate. Hawthorns were doing well, but young willows were showing signs of heavy grazing.

Outcome To-Date:

All tasks in the workplan were adequately implemented. The subgrant was closed in January 2015.



The upper bank and the toe of the sloped bank of Goose Creek was planted with coyote willow. The bank is expected to slough into a more stable angle between the tiered plantings.



The land along Fourmile Creek has changed hands over the last couple years. The exclusion fence seen here is being maintained but there is ongoing grazing in the riparian area.



Rocks at the Tipping project site help prevent erosion. As interspersed willow plantings become established, their roots spread in the underlying soil, binding the rocks and soil together. The willows create an aesthetically pleasing and functional shoreline that absorbs energy and improves habitat.



Coyote willow competes well in grass-dominated areas, seen here, where 200 willows were planted along approximately 200 yards of eroding riverbank.

3.8 Mica Creek Sediment and Nutrient Reduction Project (Re-evaluation)

Subgrant: S397 **Latitude and Longitude:** 47.60033, -116.87403

Description:

This project was the second of two efforts to improve water quality over 1.25 miles of Mica Creek. The project was undertaken with funding administered by the Basin Environmental Improvement Project Commission and additional funding that was obligated in a settlement agreement with the Idaho Transportation Department. The goal of this project was to construct fencing to exclude livestock from grazing in the riparian area. Debris was cleared from the channel, cattle crossings were hardened to reduce the amount of sediment being generated during periods of use, and measures were taken to stabilize 920 feet of creek bank by using rock and native vegetation.

Project Status:

The sponsor stabilized the bank by using a combination of rock rip-rap and willow plantings. Large woody debris that was causing the channel to migrate laterally at a high rate was removed. A fence had been constructed on the outside boundary of the riparian area to exclude livestock from accessing these areas. During the evaluation, DEQ noted that the streambanks were very stable due in part to the willows that had been planted. The willows were thriving, and alders that had recruited to the site were providing an excellent amount of shade and cover on the stream. Kokanee Salmon are regularly seen spawning in the reaches where the BMPs were implemented. Some alders showed signs of winter damage.

Outcome To-Date:

The subgrant expired in December 2014. The landowner is on site almost daily and can quickly assess damage and take corrective measures to prevent the damage from escalating.



Vegetation planted in the riparian area has helped to stabilize the bank.



Riparian areas that were once severely degraded are now recovering nicely.



Kokanee Salmon are spawning in Mica Creek, providing further evidence that the cold water aquatic life beneficial use is being supported.

3.9 Palisades Creek Channel Improvements (Re-evaluation)

Subgrant: S426 **Latitude and Longitude:** 43.38449, -111.23147

Description:

The goal of this project was to improve water quality in Palisades Creek by reducing the sediment load. Trout Unlimited focused its efforts on implementing BMPs to stabilize degraded streambanks. Decreasing the sediment load in the creek will have the added benefit of less sediment entering the Snake River. In addition to the obvious water quality benefits are less obvious secondary benefits. For example, sediment builds up over time on the IDFG fish weir on Palisades Creek and requires maintenance to clean the weir. Less sediment in the water should translate to fewer maintenance visits by IDFG, reducing their operating costs.

Project Status:

On-site field work to stabilize banks, install instream structures, and replant riparian areas was completed using rock cross veins (2), bio-engineered soil lifts (4), large woody debris jams (4), boulder energy dissipaters (3), boulder grade control structures (5), and log veins (2). Property owners have permanently removed livestock from the site.

Outcome To-Date:

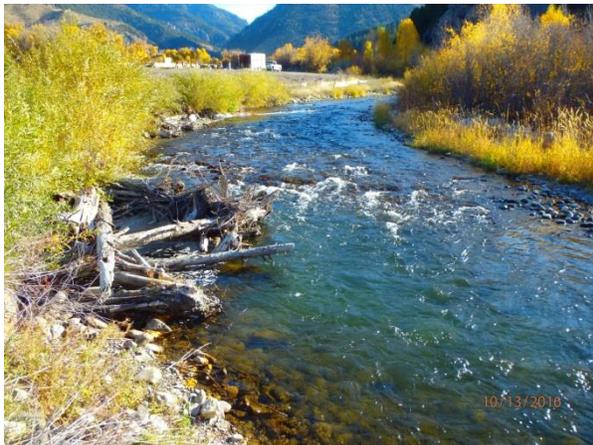
The project was completed in 2011. An October 2016 evaluation confirmed that BMPs continue to function as designed. No deficiencies were noted.



Coir bio logs help stabilize the bank and provide a matrix for vegetation to establish. Herbaceous cover was planted in the riparian area, and a number of root wads were placed along the bank to reduce flow velocity and provide refugia for fish.



Willows planted along the bank are becoming well established.



Root wads were placed in the channel, which was also graded.



Large rock was placed close to the bridge abutments on both banks to further reinforce the bridge and stabilize the bank.

3.10 Kootenai River Bank Restoration and Riparian Enhancement (Re-evaluation)

Subgrant: S429 **Latitude and Longitude:** 48.69813, -116.20388

Description:

The project site is located on the Kootenai River upstream of Bonners Ferry. BMPs were implemented at two locations: on the bank of the main river itself and on a side channel. The sites had steep eroding riverbanks with little riparian vegetation. The project workplan included regrading the bank and applying various bioengineering techniques to expand the existing floodplain. The plan also called for native vegetation to be planted in the riparian areas. Large wood was used at specific locations along the bank to create microtopography, with the goal of creating complex niches for plants to become established and to improve fish habitat. A fence was constructed to exclude cattle and wildlife from grazing and browsing in riparian areas and making the bank unstable.

Project Status:

Large woody debris was strategically placed in the river channel to redirect flow away from the bank and provide habitat for fish and other wildlife. The banks of the side channel remained stable and showed little signs of ongoing erosion. Large rocks and soil lifts provided the added stability to the banks that the project manager was hoping to achieve. Some of the riparian plantings made early in the project were lost due to animals browsing in areas where access was not restricted. This problem had been addressed by reinforcing the original fence with a permanent 10-foot fence along side. The perimeter of the floodplain was also fenced. Young riparian plants were protected from damage by beavers and other wildlife.

Outcome To-Date:

All workplan tasks were completed by November 2012. The subgrant has been closed out. The project involved many partners and was ultimately deemed to be a tremendous success.



Restoration work was completed on this side channel of the Kootenai River.



This length of fencing was constructed outside of the riparian area to exclude livestock and wildlife from grazing.



Large woody debris was added to help stabilize the bank and provide habitat for fish.



Soil lifts help provide bank stability while plants grow.

3.11 Rock Creek BMPs

Subgrant: S459 **Latitude and Longitude:** 45.90518, -116.39697

Description:

The Idaho SWCD is working with producers who have volunteered to implement BMPs on their lands. BMPs include constructing 1 mile of fence, 8 off-stream water systems, 1 roof runoff system, and 2 manure collection pads; implementing 500 acres of manure management; seeding 600 acres of hay and pasture; and converting 600 acres of conventionally tilled cropland to a no-till procedure. These BMPs are expected to have a significant effect on the quality of the water flowing in Rock Creek and the Lower Salmon River.

Project Status:

The BMPs implemented on seven subprojects included 1 cistern, 4 replacement culverts, 2,032 feet of fence, 9,399 square feet of heavy use protection, 50 acres of hay and pasture seeding, 6,564 feet of pipeline, 1 irrigation pump, 37 acres of residue management, 3 springs, 1 well, and 9 watering facilities. The work was completed by producers and, in one case, the Grangeville Highway District. No deficiencies were observed during the evaluation.

Outcome To-Date:

The subgrant expired on December 31, 2016. The final report will show that the work completed under this subgrant took place on over 2,200 acres and affected 15,000 feet of stream and 684 head of cattle.



Culverts were installed to help prevent gully erosion and manage onsite and downstream runoff.



This newly constructed watering facility includes heavy use area protection.



Water collected from a spring and stored provides time for sediment to drop out.



A site that had been mulch tilled was later seeded into oats.

3.12 Potlatch River, Phase IV

Subgrant: S460 **Latitude and Longitude:** 46.85000, -116.40000

Description:

The goal of the project is to return perennial flow to the sinuous, well-vegetated historic Potlatch River channel. Doing so will reduce erosion, improve river composition and shading, restore meadow hydrology to attenuate flash peak flows, increase recharge, improve summer base flows, and reduce water temperature as a result of ground water seepage. Restoration activities included installing channel plugs in the incised straightened channel. Flow was diverted from the ditch into the nearby channel. A series of wetland cells were constructed to store water longer, thereby enhancing infiltration to aid in restoring the meadow hydrology.

Project Status:

The BMPs implemented include enhancing vegetation on the river bank, stabilizing the channel, planting critical areas, improving and intensely managing river habitat, establishing trees and shrubs in the project area, and restoring the wetland/meadow complex. No deficiencies were noted during the evaluation.

Outcome To-Date:

The subgrant expired on December 31, 2016. By all indications, work was expected to be complete by the end of the year at the time of the evaluation.



Beaver ponds provide important wildlife habitat. They also function to trap sediments, remove nutrients, increase low flows, and decrease high flows in the river.



Field crews planted native riparian plants, trees, and shrubs and installed sedge mats.

Large woody debris was placed in the main channel near a smaller excavated persuasion channel.

3.13 Clear Creek Road Restoration (Re-evaluation)

Subgrant: S462 **Latitude and Longitude:** 44.40190, -115.96237

Description:

The North Fork Payette River TMDL (DEQ 2005) and implementation plan (DEQ 2007) allocated load reductions and identified sediment coming off of the road and entering Clear Creek as a priority goal for the Clear Creek subwatershed. Clear Creek is not supporting the cold water aquatic life beneficial use due to sediment/siltation. The primary land type within the watershed is forestland, and the primary land uses include grazing and surface-irrigated pasture.

Project Status:

BMPs included improving certain stretches of the road surface; removing the slope, stabilizing, and revegetating disturbed areas; improving road drainage; removing and replacing culverts; realigning parts of the road away from the creek; and installing rock barsbs in the channel to deflect flow away from the road. Implementation met requirements.

Outcome To-Date:

The project is closed. Approximately 9 miles of Clear Creek Road was raised and reshaped to improve drainage; 44 culverts were installed; 1,900 feet of roadside drainage ditch was excavated; parts of the creek’s bank were treated with rip-rap and filter fabric; 0.4 acres of willows and 80 pounds of grass seed were planted along the bank; and 4.4 acres were mulched and covered with straw.



This rip-rap treated length of bank and log revetment has stopped scouring on this outside bend of Clear Creek.



Rock barsbs were constructed to redirect currents, moving hydraulic forces away from the streambank. Vegetation can be seen establishing itself downstream in areas between the barsbs.



Rip-rap was used to stabilize the bank and protect the adjacent roadway.



Six miles of road was resurfaced with rock. Barrow ditches were constructed, and culverts were replaced.

3.14 Cove Creek Wetlands Project (Re-evaluation)

Subgrant: S463 **Latitude and Longitude:** 44.13583, -166.48115

Description:

The goal of the project was to implement BMPs to reduce the amount of phosphorus and sediment being discharged into Cove Creek from thousands of adjacent dry-land farmed, gravity-irrigated, and rangeland acres.

Project Status:

A wetland area was constructed near Cove Creek to remove sediment and ortho-phosphorus from returning irrigation water. The water leaves the creek in a pipe, which leads to a sediment retention structure. The structure includes concrete checks that allow the water to either be temporarily stored or released into three parallel sediment basins and two grow plots. The water remains in the basins long enough for sediment and bound nutrients to settle. Water leaves the basins and enters two plots seeded with native plants before it eventually discharges at a hardened outlet into the creek. The wetlands and creek are enclosed by 6,850 feet of fence to exclude cattle. Livestock are allowed to enter the grow plots at certain times to graze the vegetation, reducing the possibility of the plants eventually dying and contributing an additional nutrient load to the creek.

Outcome To-Date:

Implementation met requirements. The project is closed.



Approximately 620 feet of pipe delivers water from Cove Creek to the inlet of the sediment basin.



The basins are 3 feet deep and designed to collect sediment and nutrients from returned irrigation water. These basins can be easily maintained for proper operation.



This hardened crossing on Cove Creek provides access to the constructed wetland area. A pipe buried under this road serves to deliver water from the sediment basins to the two downstream grow plots.



These shallow grow plots were hydro-seeded and sprinkler irrigated for the first year due to severe drought conditions. Soil from the excavation of the basins and grow plots was feathered onto the hillside. The hillside soil was seeded and plants were observed beginning to take root.

3.15 Valley County Watersheds (Re-evaluation)

Subgrant: S465 **Latitude and Longitude:** 45.20000, -115.80000

Description:

The goal of this project was to improve water quality in Lake Cascade and its tributaries and the North Fork Payette River below Cascade. Partnerships, including landowners and local government, continue to be used to implement water quality improvement projects. Three subprojects were funded under this subgrant.

Project Status:

The first subproject evaluated included sites on the North Fork Payette River and Big Creek; 6,200 and 1,900 feet of fencing was installed along the river and creek, respectively. The fencing is preventing livestock from accessing the river and causing banks to erode. The second subproject involved three sites on Big Creek where bioengineered tree revetments were placed along 450 feet of bank and the bank was reseeded. The next subproject included parcels on Willow Creek where fencing and riparian plantings were applied on both banks to prevent erosion; 69 trees and shrubs were planted and hand-watered on 300 feet of streambank, 925 feet of fencing was installed, and 226 large shrubs were planted. Hardened crossings were also built in the channel.

Outcome To-Date:

Implementation met requirements. The project is closed.



By fencing cattle from the river's edge, the banks will begin to stabilize and foliage will begin to grow.



Three sections of bank along Big Creek were treated with tree revetments to slow water velocity, create areas for sediment to deposit, and provide a matrix where willows and other quick-sprouting species could establish and grow to provide permanent cover.



These revetments of nonsprouting trees will hold the bank in place. Willows can already be seen growing through the revetments to help stabilize the bank.



This stretch of land along Willow Creek was planted by IDFG 5-6 years ago. Funds provided for this project allowed revegetation work to continue. New riparian plantings took root to further stabilize eroding banks and provide additional shade to the creek.

3.16 St. Maries River Road, Phase II (Re-evaluation)

Subgrant: S468 **Latitude and Longitude:** 47.14220, -116.37460

Description:

The goal of Phase II of this project was to improve a second stretch of St. Maries River Road. The plan called for improving drainage and the surface of a 2-mile section, from Kittle Loop to Lotus. A steep 0.2-mile stretch had no relief culverts or other drainage structures. The road surface was severely eroding and causing sediment to be discharged into the river.

Project Status:

Large woody debris was placed in the river channel at points where flow would be redirected away from the bank and to provide habitat for fish and other wildlife. Large rocks and soil lifts were added to provide additional stability. The banks had remained stable since first being treated and showed no sign of ongoing erosion. Some of the riparian plantings made early in the project had been lost. There was evidence that wildlife had entered the unenclosed area where the trees were planted and intensively browsed the young trees, causing their demise. The area has since been replanted and enclosed with a 10-foot high fence. A fence was also constructed along the perimeter of the floodplain. The new road surface and relief culverts that were part of the project were intact and functioning as intended.

Outcome To-Date:

All implementation had been completed 2 years prior to the evaluation. All BMPs required by the project workplan remain in good working order. The project closed in July 2015.



Benewah County continues to maintain the road surface and ditches.



The slope adjacent to the road is well vegetated



Some inlets to relief culverts were filled with debris.



A new culvert was installed.

3.17 Station Creek Watershed Improvement

Subgrant: S471 **Latitude and Longitude:** 42.16658, -111.75602

Description:

Station Creek is a tributary to the Bear River located within the Bear River/Malad River subbasin. The goal of the project is to improve water quality in the creek by reducing the sediment load from nearby cropland, grazing land, and an unstable streambank. The estimated necessary sediment load reduction is 1,106 tons per year. Rock structures will be installed to reduce downcutting of the streambank. Tree revetments will be placed and locked into the bank at strategic locations to reduce the stream energy hitting the bank. Willows, dogwoods, and cottonwoods will be planted on the banks for added stabilization. Water troughs will be placed at upland sites to draw cattle off the stream. A spring source will be developed to provide water and a pump installed to feed the troughs. Water and sediment basins will be excavated and will serve to capture sediment running off nearby cultivated fields.

Project Status:

All BMPs—including heavy use protection, water and sediment basins, structures for water control, grade stabilization structures, a livestock water system (pipeline, troughs, spring development, and exclusion fencing)—were operating as designed. Some grade stabilization structures had loosened since they were installed due to high water levels and were unstable. The high water also moved downstream some of the rock placed in the channel to create fish and wildlife habitat. Maintenance will be required to correct the recent damage the water caused.

Outcome To-Date:

Contracts have been let with all participating landowners. Each contract includes a schedule and plan for implementing the BMPs. Work under each contract has commenced. Some landowners who had an early interest in participating in the project have since withdrawn due mostly to the length of time the Franklin SWCD needed to get final design plans completed. In their place, other eligible landowners are moving forward with plans to implement similar BMPs on the lands they manage. At the time of evaluation, the district expected to fall short of completing the project by the end of December 2016, the date the subgrant expires.



Sediment basins are designed to capture sediment-laden runoff from nearby cropland.



This structure is designed to allow spring-time high water flows to pass. At other times, the boards can be adjusted to measure the flow at this point in the channel.



This fence was built to exclude livestock from entering the riparian area along Station Creek. Other fences installed under the project include small gates that allow wildlife to pass through when livestock are not in the area.



Water troughs were installed upslope from the creek to keep livestock from needing to access the stream for water.

3.18 Upper Lanes Creek Restoration (Re-evaluation)

Subgrant: S492 **Latitude and Longitude:** 42.94226, -111.26489

Description:

Lanes Creek is a major tributary to the Blackfoot River in eastern Idaho. Trout Unlimited pursued a large-scale realignment of approximately 3 miles of the Upper Lanes Creek stream channel on land owned by the Caribou Cattle Company. The BMPs implemented under the project workplan included grade control, bank shaping, and riparian planting activities. Trout Unlimited also developed off-site water sources including 8 troughs, several instream/side stream water intakes, and a solar pumping plant. Each side of the creek was fenced to exclude cattle from the riparian area, and several stream channel crossing sites were upgraded. The finished project highlights the complementarity between sustainable agricultural production and natural resource protection, providing a model for watershed restoration and stewardship in other basins.

Project Status:

Instream stabilization and grade control was accomplished with 716 cubic yards of large rock; 300 pine trees and a large number of willows all complete with root balls attached were planted to further stabilize the bank. Sedge along the banks was removed before the in-channel and bank work began and was successfully transplanted back on the newly shaped banks. New water troughs were placed on site, powered by a solar pump system. All the fencing was four-wire barb attached to treated posts. Two metal pipes that the creek passed through were removed and replaced with a concrete fish-friendly box culvert.

Outcome To-Date:

All tasks have been completed and the project is now closed.



Grade stabilization structures were installed and working well to keep flow in the center of the channel upstream of a crossing. A new beaver dam was built and is functioning as a grade control structure. A number of active beaver dams are located in the project area and have raised the water table and helped willows and other riparian vegetation establish.



Solar panels were installed on the site to provide power for the stock water system.



The fences seen on each side of Lanes Creek were built to exclude livestock from the riparian area. They lay flat under heavy snow to protect the fence from damage.



Eight troughs were installed on the project site. The inlet and drain pipes can be seen in the middle of the trough. Metal mesh extends into the trough to provide an exit for birds.

3.19 Mid-Snake–Payette Clean Water, Phase 2

Subgrant: S493 **Latitude and Longitude:** 44.06362, -116.54236

Description:

The goal of this project is to protect water quality by implementing BMPs on private agricultural lands. BMPs focus on reducing the amount of sediment that leaves the properties to eventually discharge into the Snake River. Installing BMPs will provide landowners a sense of ownership and personal management and maintenance responsibilities, which can lead to improved water quality and increased production and profitability in their operations.

Project Status:

Three completed subprojects and a planned fourth were evaluated. The first project converted 16 acres of agricultural land from flood to sprinkler irrigation. A second converted the irrigation practice on a 26-acre site from siphon tubes to wheel lines. The third installed a full circle pivot on a 38.5-acre parcel. BMPs will be implemented on the fourth project if the property can be purchased from its current owner. The planned BMPs include exclusion fencing and developing an off-site water source.

Outcome To-Date:

All completed projects were built to NRCS standards. The Payette SWCD and Lower Payette Ditch Company provide oversight and outreach activities. Implementation meets the goals of the project.



A wheel line, hand line, pump, and a mainline for risers are all part of the project. A self-cleaning screen was placed over the existing headgate. An upgrade from single- to three-phase power is needed to support all of the equipment.



The wheel lines installed on 26 acres will save an estimated 168 tons of sediment per year.



Irrigation tailwater used to flow into this ditch, only to eventually discharge into the Payette Ditch/Weiser River. In past years, check dams were installed in the ditch to reduce scour and erosion and minimize additional sediment loss. The ditch is no longer used since runoff from the 26-acre parcel has largely been eliminated.



The pump seen here was installed on two separate subprojects funded from this grant. NRCS engineered both a wheel line and full circle pivot system for irrigation purposes. The pumps are hand primed; valves are geared for precision; flow meters have been installed to measure water use; and all screens used on the project are selfcleaning.

3.20 Owyhee Restoration Incentive Program

Subgrant: S494 **Latitude and Longitude:** 42.50130, -117.01260

Description:

The goal of this project is to implement BMPs that will reduce the amount of sediment and nutrients coming off nearby agricultural lands to eventually enter water bodies found in the Mid-Snake/Succor Creek subbasin. The project area includes Castle Creek, Catherine Creek, Jump Creek, and the Snake River.

Project Status:

Six subprojects are expected to be fully implemented by the end of this subgrant. To date, three have been implemented. One subproject included installing three pivots and eliminating a 2,500-foot open irrigation ditch that was no longer needed since the pivots were installed. When this project is done, the landowner will be able to better manage his irrigation water and improve the condition of the wetland and wet meadow riparian buffer areas located adjacent to Castle Creek. A second subproject involved installing 13,400 feet of pipeline and a screened inlet structure that allows landowners to connect to a pressurized pipeline system to make it feasible to convert from their current method of irrigation to sprinkler. The third subproject used \$319 funding to purchase and develop a screened inlet structure for a pipeline to the South Canal.

Outcome To-Date:

Implementation meets requirements.



The landowner implemented three pivots to help reduce erosion, increase irrigation efficiency, and improve grazing management. As a result, the landowner no longer uses 2,500 feet of open ditch and thus does not discharge directly to Catherine Creek.



Converting to 5,000 feet of 12-inch pipe replaced the need for the open ditch system that was being used to irrigate grazing land and a wetland/wet meadow area.



Treatments to be implemented across the entire 75-acre parcel were designed to eliminate flood irrigation return flows from entering Castle Creek with high pollutant loads. As a result of this project, 7,435 feet of delivery ditch will be abandoned and the landowner will switch to sprinkler irrigation. Improving grazing management and livestock watering practices will lead to improved riparian habitat and overall rangeland health.



This screened inlet structure on the South Canal is the source of pressurized irrigation used on 700 acres of tier 1 cropland that is currently being furrow irrigated. This new system will improve irrigation efficiency and eliminate soil erosion and sediment discharge into Jump Creek.

3.21 Wide Hollow Erosion Reduction

Subgrant: S496 **Latitude and Longitude:** 42.37401, -112.45468

Description:

This project will focus primarily on three sites located in the Arbon Valley, the Cherry Creek watershed, and the Daniels Reservoir area. All of the sites are located within the jurisdictional boundaries of the Oneida SWCD. The TMDL agriculture implementation plan for the Malad subbasin (Smith 2010) and the Daniels Reservoir (Evans at al. 2007) area recommended BMPs to reduce the sediment and nutrient input to local waters resulting from sheet and rill erosion and livestock impacts on streams. To reach that goal, a host of BMPs will be implemented including installing water and sediment basins, terraces, stock water systems, and animal waste containment.

Project Status:

The SWCD has struggled over the last 2 years with unusually high staff turnover, which has hampered their ability to meet the outreach goals set for this project. Otherwise, implementation has been going well with landowners having installed a stock water system, a water and sediment basin, and a terrace, trough, and pipeline.

Outcome To-Date:

Other landowners are on schedule to be finished this fall with installing livestock watering systems and animal waste containment BMPs. The subgrant is due to expire on December 31, 2017.



A water and sediment basin was installed above Daniels Reservoir to capture sediment and nutrients before they enter the stream.



A pipeline for a stock watering system is currently being installed in the trench.



Tees fit in the water line branch off to provide water to troughs.

3.22 Alder Creek Road BMP Implementation Project

Subgrant: S520/542 **Latitude and Longitude:** 47.22452, -116.66699

Description:

The goal of this project is to improve the surface and drainage of a 2-mile stretch of Alder Creek Road. The surface is severely breaking down due to erosion and drainage-related problems. As a result, sediment is discharging to both Alder and Carlin Creeks. The goal of the project is to reduce the amount of sediment entering the creeks by implementing a number of BMPs designed to correct the problems. The Benewah SWCD will take on information and outreach efforts to keep the public informed of progress.

Project Status:

The Idaho Soil and Water Conservation Commission (ISWCC) provided engineering assistance. All work required under the engineering design plan and the stormwater pollution prevention plan is progressing well overall, with only minor concerns noted. The integrity of some of the relief culverts was questioned in terms of how they were installed and the potential erosion risk they created. A culvert failure could result in a major discharge of sediment entering the creeks. The ISWCC engineer agreed to re-evaluate the culvert installations and recommend mitigation, if necessary.

Outcome To-Date:

BMP implementation continues. The subgrant will expire at the end of December 2017.



Alder Creek Road was resurfaced and drainage ditches installed.



The soil above the drainage ditch was subsequently seeded with grass.



Some newly installed relief culverts had inlets that were not well stabilized, creating conditions that could lead to sediment discharge into the creek.



Much of the road received a new surface and improved drainage.

3.23 Continued Canyon County BMP Program

Subgrant: S521 **Latitude and Longitude:** 43.72149, -116.84234

Description:

This project is the third in what is expected to be an ongoing effort by the Lower Boise Watershed Council to facilitate BMPs on tier 1 agricultural lands in the Lower Boise Watershed. The goal is to improve surface water quality in both Ada and Canyon Counties. To accomplish this goal, the council will (1) continue to provide financial assistance to qualified landowners, (2) demonstrate feasible and effective solutions to nonpoint source pollution, and (3) promote coordination between local landowners and state agencies.

Project Status:

Irrigation practices on 70 acres of corn, sugar beets, winter wheat, and onion fields were converted from flood irrigation to center pivot. A drip irrigation system was installed on a hop field that was being furrow irrigated. Two additional fields will be converted next season, for a total of 106 acres converted. Three hop fields totaling 81 acres at a second location were converted from furrow to drip. The conversion has mostly eliminated erosion and runoff from these fields. The irrigation pumps are nicely housed with pipes traveling underground to the valve system adjacent to fields. The conversions to drip tape will reduce surface runoff and the consequent delivery of sediment and nutrients to the Boise River. All of the conversions were made on tier 1 agricultural lands.

Outcome To-Date:

All project funds have been allocated and work is complete. The council has until December 2018 to receive final payment and submit a final report to close the project out.



Drip irrigation is now permanently installed on 107 acres of hops that were previously furrow irrigated, causing runoff that discharged directly into the Boise River.



This pump station in an onion field will be used next season when the landowner converts from furrow to drip irrigation and plants the field in hops.



The pump and related infrastructure for the drip system is nicely housed.



Pipes exit the pump house underground and lead to this valve system. From here, drip tape is placed into the field.

3.24 Upper Weiser River Bank Stabilization

Subgrant: S523 **Latitude and Longitude:** 44.80805, -116.55916

Description:

The overarching goal of this project is to restore the Weiser River to a stable condition by re-establishing riparian vegetation and protecting the river banks. Water quality will improve by implementing BMPs to reduce the sediment and phosphorus load. Fish habitat will benefit from an improved riparian area and cooler water temperatures. The project area encompasses a 16-mile stretch of the Weiser River from its west fork confluence to the confluence with Goodrich Creek.

Project Status:

A total of five sites were evaluated: two where BMPs had been implemented and three where the project manager was awaiting NRCS's completion of the design phase before implementation could begin. At one site on the upper river, 3,000 feet of four-strand barbed wire fence was installed according to NRCS specifications. The fence will exclude livestock and other animals from accessing a stretch of once-treated river bank that is now eroding because of livestock damaging the treatments. At a second location, 10 rock barbs had been installed to protect 960 feet of bank. Willows were planted between the barbs and willow trench packs were installed. The Adams SWCD noted the difficulty in recruiting landowners willing to participate in the shortened term (3 years) of the subgrant.

Outcome To-Date:

Implementation is ongoing. The district has until December 2018 to complete the project. Despite difficulties with the shortened time frame, the project manager remains hopeful that the project can be completed by its deadline.



Riparian areas are expected to be vegetated with lush growths of trees, forbs, and shrubs to function as intended. The treatment and protection given to this stretch of bank will allow shrubs and willows to regenerate over time and will help keep sediment, nutrients, and bacteria from entering the water.



Willows installed along and between the rock barbs on this stretch of eroding streambank will increase the effectiveness of the rock by forming a living root mat at the base of the rock. The barbs and willow plantings will also help deflect flow and dissipate energy that could otherwise cause sediment to deposit along the bank.



An upland willow trench pack was used to accelerate the development of a riparian buffer. Once established, the willows will help hold the soil in place and dissipate energy during periods of high flow. The current lack of vegetation in the area makes the streambank highly susceptible to erosion.



The engineering design for this project is currently being evaluated by NRCS. Before the streambank work gets started, the landowner has arranged to have Council school kids help install a fence that will exclude cattle from the area and further protect the streambank.

3.25 Bear River Streambank Stabilization (Re-evaluation)

Subgrant: S524 **Latitude and Longitude:** 42.22889, -111.24635

Description:

The objective of this project was to stabilize 330 feet of the Bear River bank, just upstream of the Dingle Bridge. For the past few years, the channel has been moving to where it was threatening to wash out the bridge and a nearby building. The landowner was concerned about losing valuable agricultural land due to the river eroding the bank at a high rate. To address this continuing threat, rock, willows, and tree root balls were placed to help stabilize the bank. A wooden pole fence was installed to keep livestock out of the riparian area and away from the bank. Excluding livestock in this manner will allow newly planted willows to become established and further stabilize the bank.

Project Status:

Construction activities—including installing rock rip-rap and root wads and planting willows along 330 feet of streambank to help stabilize the bank and prevent further erosion—have been completed. The bank has been fenced, using wooden posts and rails to exclude horses from grazing in the riparian area.

Outcome To-Date:

Implementation met requirements. The project is closed.



This photo shows an overview of the restoration efforts, taken from the Dingle Bridge. Note the tree root balls placed in the river along the bank. The root balls were keyed into the bank to decrease their chance of moving during periods of high water.



Root balls were placed to help stabilize the bank and fencing excludes livestock.

3.26 Cocolalla Lake Wetlands Restoration

Subgrant: S525 **Latitude and Longitude:** 48.10651, -116.62468

Description:

The goal of the project is to restore more than 90 acres on the southern end of Cocolalla Lake to its historic wetlands condition. A major tributary, Fish Creek, is responsible for 10% of the nutrient load and 24% of the sediment found in the lake. The loading rate will be reduced by (1) reconnecting the creek with its floodplain, (2) redirecting flow from a nearby ditch into the creek, and (3) constructing ponds to decrease the velocity and direction of flow across the property. Successfully implementing the project BMPs will help recharge the shallow aquifer and convert land that is currently dominated by reed canarygrass to land that is more diverse and wildlife-friendly. Partners in the project include the Bonneville Power Administration, DEQ, NRCS, Ducks Unlimited, the Cocolalla Lake Association, and the IDFG.

Project Status:

Six shallow water wildlife ponds were constructed. Rock was installed to prevent erosion from occurring along some of the channel and at the inlet to and the outlet of some of the ponds. Rock weirs were built at locations where grade control was needed. The creek was reconnected with its floodplain. A drop log/check dam was constructed. Efforts are being taken to control reed canarygrass by using herbicides. A fair amount of natural recruitment of upland and wetland plants was observed on the site. IDFG will seed the site at selected locations over the next 2 years.

Outcome To-Date:

Implementation activities are ongoing and on schedule. The project subgrant is set to expire in December 2018.



Ponds were constructed to decrease the velocity and direction of flow across the property.



A second pond was observed following one season of native vegetation recruitment.



This site is pictured following an attempt to control reed canarygrass.



Rock was placed at the outlet of this wildlife pond to control erosion.

3.27 39/39A Water Quality Project

Subgrant: S529 **Latitude and Longitude:** 42.64263, -114.63544

Description:

This project, located about 3 miles north of Filer, Idaho, involved implementing BMPs on the irrigation return water found in the 39/39A drains. About 1,200 acres, much of which is sloped, drain into the project area. Four cleaning cells were constructed; two will receive the irrigation return water flowing in the 39 drain entering from the west, and two others will receive the irrigation return water flowing in the 39A drain entering from the east. The water leaves the cells by discharging into a large finishing pond that subsequently discharges into a holding pond. The project is designed to operate in line with a Federal Energy Regulatory Commission licensed hydropower facility, with the outflow from the holding pond entering the intake of the hydropower’s penstock. The water from the penstock and any bypass water discharges flow directly into the Snake River approximately 400 meters north of the facility. The system also includes a discharge weir and an emergency overflow capability.

Project Status:

The Twin Falls Canal Company, a partner on this project, has contracted with the University of Idaho to monitor the sediment level in the irrigation water at various points in the system. The sediment ponds to treat irrigation return water have been constructed. Disturbed areas were seeded with only partial success. Seeding will continue until grass has been successfully established. A professional survey was completed and used to provide the information needed to complete a 20-year conservation easement to the property, which is in force at this time.

Outcome To-Date:

The project is proceeding as planned. All work must be completed by the end of 2017.



This lower cleaning cell is located on the 39 drain.



The 39A drain discharges directly into the finishing pond.



Water from this finishing pond discharges to a holding pond.



Water discharged from the hydroelectric project flows to the Snake River.

3.28 Wimpey and Pratt Creek Restoration

Subgrant: S530 **Latitude and Longitude:** 45.08630, -113.68214

Description:

The overall goal of the project is to improve water quality in both creeks by reducing the fecal coliform, sediment, and temperature loads. A broad range of BMPs will be implemented to improve streamflows, reduce stream temperatures, and reconnect Pratt Creek to Sandy Springs and the Salmon River. Successfully completing this phase of the project will help restore the natural function of lower Pratt Creek by improving sinuosity, floodplain connectivity, and riparian conditions. Trout Unlimited is working with one of the landowners to secure a perpetual conservation easement on the property. The project site is approximately 10 miles southeast of Salmon, Idaho.

Project Status:

This project will be completed over several phases. The initial phase involved negotiating the terms of the easement and taking on a host of other planning efforts, namely completing the engineering and design specifications for the irrigation infrastructure and fish-passable diversions and securing the water rights from senior owners. On-the-ground activities were limited to relocating a feedlot and calving operation located along Wimpey Creek to a site upslope and further away from the creek. Willows were also planted along a stretch of Wimpey Creek.

Outcome To-Date:

This subgrant was initially issued to the Nature Conservancy before being transferred to Trout Unlimited just over one year later. A survey of the land on which the new irrigation system is to be placed has been completed. Power has been hooked up and related irrigation supplies purchased. A consultant was hired to research and report on the physical conditions of the site and to prepare a conceptual design for the project. The conservation easement, critical to the project, has not been entered into. The subgrant will expire at the end of December 2017, with a significant amount of work remaining to be done to satisfy the terms of the project workplan.



A confined animal feed lot and calving operation is located on Wimpey Creek. The manure pile that was located on this site has been removed.



This confined animal feed lot and calving operation is located along Wimpey Creek.

3.29 Teton Creek Restoration Project, Phase 4

Subgrant: S531 **Latitude and Longitude:** 43.72630, -111.08333

Description:

The goal of this project is to improve water quality in Teton Creek and the Teton River. Friends of the Teton River (FTR) plans to stabilize approximately 800 feet of stream channel and 670 feet of eroding streambank, improve instream habitat conditions, and restore the aquatic and riparian ecosystem to a functional state.

Project Status:

As of October 2016, FTR had not started implementing the BMPs planned for the project. Rock to be used on the project had been purchased and was staged on site. FTR has also established a water quality monitoring site below the project area. A suite of parameters will be monitored, including turbidity, streambed composition, and total suspended solids. Data will be used to determine the sediment and temperature load reduction resulting from the BMPs implemented.

Outcome To-Date:

The subgrant for Phase 4 of the Teton Creek project does not expire until December 2018. All work completed in the earlier phases was finished on time and within budget. The outlook for Phase 4 implementation remains favorable.

Teton Creek: Rock Stockpile Location for Phase IV



This figure provides an overview of where rock has been stockpiled for use on the project.



The rock stockpile was staged for use on this project.

3.30 Lower Payette River TMDL Implementation Project, Phase IV

Subgrant: S532 **Latitude and Longitude:** 43.89967, -116.58534

Description:

The goal of this project is to protect and restore surface and ground water quality by providing financial incentives and technical expertise to landowners willing to install BMPs to meet the goal. The Gem and Squaw Creek SWCD will convert a 40-acre crop field and a surface-irrigated pasture/hay field to sprinkler irrigation. Converting to a pivot irrigation system will eliminate runoff from the fields, keeping sediment, bacteria, and nutrients out of the irrigation drain to the river. Nitrates would also stay in the soil rather than leaching to ground water.

Project Status:

Two project sites were visited. At the first, 951 feet of center pivot had been installed to irrigate 37.5 acres. This system included a bubbler, 15-horsepower pump, and 1,100 feet of irrigation pipeline. The project has been fully implemented. Additional improvements were made at the landowners cost, including an open drainage ditch and structure to protect cattle from the elements. A second project site on Squaw Creek had long been used for grazing cattle. Infrastructure was installed to allow two short pivots with pods to operate on either side of the road. Irrigation water is drawn from a screened intake located on Squaw Creek, and pressure builds to work the pivots and pods. Improved management on this site is helping to keep bacteria and sediment from entering Squaw Creek.

Outcome To-Date:

This project is ongoing with implementation likely to extend through 2018.



This new irrigation system powers the corner pods and pivot that can be seen in the background of this photo.



Corner pods and a pivot irrigate the lower end of this property located on the Second Fork of Squaw Creek. The creek flows in the tree line seen in the distance. The irrigation conversion helps to prevent overland flow of sediment- and bacteria-laden water from entering nearby surface waters.



Under current conditions, cattle have open access to the creek's adjacent riparian area. The next phase of this project includes plans to fence cattle from the riparian area across the length of the property.

3.31 Cove Streambank Restoration and Off-Stream Watering Project

Subgrant: S536 **Latitude and Longitude:** 42.30127, -111.47295

Description:

The project site is located approximately 5 miles south of Grace, Idaho. The goal of the project is to improve the water quality of Bear River by reducing the amount of sediment, phosphorus, and nitrogen entering the river. The Caribou SWCD will stabilize the banks along this stretch of the main stem of the Bear River and along a small tributary stream. Implementation plans also call for installing watering troughs off-site and away from the river. An off-site water source will reduce the impact cattle are having on the banks and elsewhere in the river’s riparian area.

Project Status:

No BMPs have been implemented at this time. An ISWCC engineer is drawing up a plan for the project. It is expected that some of the work will focus on reshaping the banks, installing willows and sedge mats, and constructing a fence to exclude cattle from the riparian area. A solar power source will be built to power the pump that will send water to the troughs. DEQ personnel took pictures to document the condition of the site prior to implementation.

Outcome To-Date:

Implementation activities are scheduled to begin in summer 2017.



The small tributary stream is down cut in places and lacks riparian vegetation. Structures will later be installed instream and woody vegetation will be planted.



Cars that had been disposed of in the river, in some cases unintentionally, provided some level of bank protection.



In other cases, flow was not redirected by the cars and instead the river flowed behind them to cause further erosion of the banks.

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