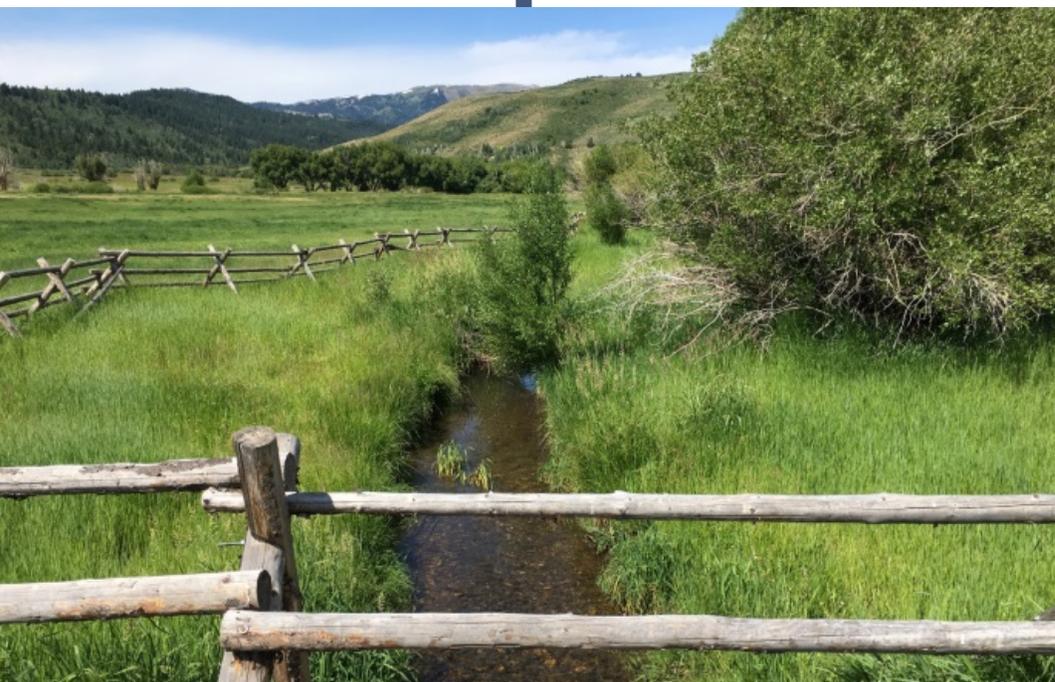


# 2019 Performance and Progress Report

## State of Idaho Nonpoint Source Management Program



State of Idaho  
Department of Environmental Quality  
March 2020



## 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 improved water quality throughout the state.

Cover photo—The Pebble Creek meadows were revitalized by restoring the meandering stream channels and installing stream crossings and riparian fencing. New woody growth appears throughout the project.

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## Acronyms and Abbreviations

AG	agriculture
BAG	basin advisory group
BMP	best management practice
BRO	Boise Regional Office
CRO	Coeur d'Alene Regional Office
DEQ	Idaho Department of Environmental Quality
EPA	United States Environmental Protection Agency
FY	fiscal year
FTE	full-time equivalent
IFRO	Idaho Falls Regional Office
LRO	Lewiston Regional Office
NPS	nonpoint source
NRCS	Natural Resources Conservation Service
PRO	Pocatello Regional Office
SFY	state fiscal year
SRF	State Revolving Fund
SWCD	soil and water conservation district
TFRO	Twin Falls Regional Office
TMDL	total maximum daily load
WAG	watershed advisory group

# 1 Overview

This document summarizes the State of Idaho Nonpoint Source Management Program's performance and progress from December 1, 2018, through November 30, 2019. The Idaho Department of Environmental Quality (DEQ) administers the program for Idaho.

The 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.

## 1.1 Idaho's Nonpoint Source Program

The US Congress established the national NPS program in 1987 when it amended the Clean Water Act with §319, "Nonpoint Source Management Programs." States were given a federal 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 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, resulting in measurable pollution reduction.

## 1.2 State Revolving Fund and NPS Program

In 2011 the NPS Program began working closely with the State Revolving Fund (SRF) Program to leverage SRF wastewater loans, providing funding to offset decreasing 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 a NPS project's financial needs. Projects funded in this manner are then administered by DEQ's §319 Program staff and have the same administrative conditions as a project funded with a traditional §319 grant. A sponsorship agreement is required for any project 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 ratepayers are held harmless (i.e., their rates are not affected by the cost of the NPS effort).

### **1.3 State General Fund NPS Agriculture Best Management Practices Program**

In the 2017, the Idaho Legislature began appropriating general funds to DEQ to implement agricultural best management practices (BMPs) in high-priority watersheds throughout Idaho. By 2019, the Idaho Legislature has allocated \$1,790,000 to implement a total of 16 projects. Each grant includes a match of at least 40%. DEQ received a total of 27 applications from across the state to implement projects that met the funding criteria.

### **1.4 Scope of the Program**

DEQ managed 57 active projects (Table 1) in 2019. A description of each project is included in a subgrant agreement entered into between DEQ and the project sponsor. Project sponsors may include state agencies, counties, municipalities, nonprofit organizations, or private individuals.

### **1.5 Assessing Program Performance**

DEQ operates under the goals and objectives incorporated in the *Idaho Nonpoint Source Management Plan* (DEQ 2015), which provides guidance for developing an annual work plan required to effectively administer the program. Work plan tasks for the latest fiscal year are located in section 1.11.

### **1.6 Framework of the Program**

NPS Program functions include the following:

- Implementing watershed plans that emphasize meeting total maximum daily loads (TMDL) for pollutants and require adhering to drinking water, source water protection, and ground water management plans developed for the watershed
- Emphasizing compliance with water quality standards
- Evaluating projects that are implemented based on a specific work plan and approved watershed plan

### **1.7 Program Emphasis and Focus**

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

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

**Table 1. Nonpoint source funding summary for projects active and closed from December 1, 2018, through November 30, 2019.**

Subgrant	Project Name	Sponsor	Subgrant Issued Date	Subgrant Expiration Date	Funding Level (Federal) (\$)	Total Spent to Date (Federal) (\$)	Balance (Federal) (\$)
S638	Owyhee Restoration Incentive Program	Owyhee Watershed Council	09/26/19	09/25/22	114,500.00	20,000.00	94,500.00
S636	Tincup Creek Stream Restoration Final Phase 3	Trout Unlimited	09/13/19	09/12/22	60,000.00	0.00	60,000.00
S635	Bear River Nutrient Reduction Project	Bear Lake SWCD	09/13/19	09/12/22	232,200.00	0.00	232,200.00
S634	Blackfoot River Off-Stream Water and Diversions Project	Caribou SWCD	09/13/19	09/12/22	164,239.00	16,423.00	147,816.00
S633	Red Rock Creek Livestock BMP Implementations— Phase 2	Idaho SWCD	09/11/19	09/10/22	177,684.00	0.00	177,684.00
S632	Rhodes Creek Road Rehabilitation	Clearwater SWCD	09/05/19	09/04/22	211,031.00	0.00	211,031.00
S631	Mica Creek Watershed Agricultural Sediment Reduction and Improvement Project	Kootenai-Shoshone SWCD	09/03/19	09/02/20	44,340.00	0.00	44,340.00
S617	Windmill Road Riparian Restoration	Nez Perce SWCD	07/01/19	06/30/20	19,730.00	0.00	19,730.00
S616	Restoring tributaries of the Clearwater River (The Schaub Ranch Project)— State General Fund SFY2020	Palouse-Clearwater Environmental Institute	07/01/19	06/30/19	60,928.50	0.00	60,928.50
S612	Teton County Soil Health Initiative—State General Fund SFY2020	Friends of the Teton River	07/01/19	06/30/20	54,425.00	0.00	54,425.00
S611	Clearwater River Face Drainages Agricultural Implementations	Lewis Soil Conservation District	07/01/19	06/30/20	200,000.00	0.00	200,000.00
S610	State General Fund SFY2020 Continued Treasure Valley BMP Program	Lower Boise Watershed Council	07/01/19	06/30/20	250,000.00	0.00	250,000.00
S609	Castle Creek Irrigation Efficiency Improvement Project—General Fund	Bruneau River SWCD	07/01/19	06/30/20	26,458.00	0.00	26,458.00
S608	Teton Creek Stream Restoration Project Phase IV—Part 2	Friends of the Teton River	07/01/19	06/30/22	77,975.00	0.00	77,975.00
S603	East Spring Creek Road/Lightening Creek TMDL Implementation Project	Bonner SWCD	04/15/19	04/15/22	158,205.00	132,796.00	25,409.00
S602	Valley County Watershed Improvement Project	Valley SWCD	04/15/19	04/15/22	118,500.00	10,000.00	108,500.00

Subgrant	Project Name	Sponsor	Subgrant Issued Date	Subgrant Expiration Date	Funding Level (Federal) (\$)	Total Spent to Date (Federal) (\$)	Balance (Federal) (\$)
S600	Lower Payette River TMDL Implementation Project—Phase 6	Gem SWCD	03/08/19	05/31/19	55,000.00	55,000.00	0.00
S599	Cottonwood Creek Off-Stream Watering Project	Oneida SWCD	01/01/19	12/31/21	230,438.00	23,043.00	207,395.00
S598	Bingo Creek Cooperative Culvert Replacement	Clearwater SWCD	01/01/19	12/31/21	132,901.00	0.00	132,901.00
S597	Bear Lakes SWCD Diversions and Bank Stabilization Project	Bear Lake SWCD	01/01/19	12/31/21	206,507.00	24,483.64	182,023.36
S593	Continued Treasure Valley BMP Program	Lower Boise Watershed Council	11/01/18	10/31/21	250,000.00	109,608.90	140,391.10
S592	Potlach River Watershed Restoration FY18—Meadow Restoration Emphasis	Latah SWCD	11/01/18	10/31/21	178,914.00	565.57	178,348.43
S591	Fleming Creek Road Sediment and Nutrient Reduction Project	Boundary SWCD	09/20/18	12/31/18	45,000.00	38,330.15	6,669.85
S590	Payette Ditch Wetland Spillway Repair	Weiser River SWCD	09/15/18	12/31/18	4,615.00	4,615.00	0.00
S589	Upper Bear River Streambank Stabilization Project RSFY18	Bear Lake Regional Commission	09/01/18	08/30/20	79,850.00	52,177.00	27,673.00
S588	Big Wood River Sediment Reduction and Water Delivery Project for State General Fund SFY2019	Trout Unlimited	07/01/18	06/30/19	64,864.09	64,726.18	137.91
S587	State General Fund SFY19 Curlew Watershed Project	Oneida SWCD	07/01/18	06/30/19	146,499.00	129,196.08	17,302.92
S586	State General Fund SFY2019 Continued Treasure Valley BMP Program	Lower Boise Watershed Council	07/01/18	06/30/19	250,000.00	249,999.54	0.46
S585	State General Fund SFY19 Teton County Soil Health Initiative Phase II	Friends of the Teton River	07/01/18	06/30/19	84,000.00	84,000.00	0.00
S584	State General Fund SFY19 Middle Snake-Payette Clean Water Project Phase 3	Payette SWCD	07/01/18	06/30/19	197,626.00	197,571.05	54.95
S583	State General Fund SFY2019 Gully Erosion Reduction on Agricultural Fields/Potlach River Watershed	Latah SWCD	07/01/18	06/30/20	47,011.00	0.00	47,011.00
S575	State General Fund SFY2018 Stargazer	Snake River SWCD	10/06/17	06/30/18	77,423.00	69,300.00	8,123.00

Subgrant	Project Name	Sponsor	Subgrant Issued Date	Subgrant Expiration Date	Funding Level (Federal) (\$)	Total Spent to Date (Federal) (\$)	Balance (Federal) (\$)
S573	Upper Bear River Streambank Stabilization DU2016	Bear Lake Regional Commission	12/15/17	12/15/20	84,125.00	0.00	84,125.00
S572	Middle Bear River Project	Caribou SWCD	11/01/17	10/30/20	220,905.00	22,090.00	198,815.00
S571	Fernan Lake Phosphorus Reduction FY17	Kootenai Environmental Alliance	10/20/17	10/20/20	18,705.00	18,705.00	0.00
S570	Confluence Streambank Restoration Project Phase I	Weiser River SCD	10/13/17	10/13/20	59,240.00	15,662.68	43,577.32
S568	Little Sawmill Creek Restoration	Lemhi SCD	10/12/17	10/12/20	250,000.00	184,477.47	65,522.53
S565	Teton County Soil Health Initiative—Full Season Cover Crop Demonstration	Friends of the Teton River	10/13/17	10/12/20	74,366.00	14,357.00	60,009.00
S564	Lower Payette River TMDL Implementation Project—Phase 5	Gem SWCD	10/13/17	10/12/20	163,589.00	62,132.15	101,456.85
S563	Treasure Valley BMP Program	Lower Boise Watershed Council	10/01/17	09/30/20	250,000.00	250,000.00	0.00
S562	St. Joe River Streambank Stabilization and Vegetation Project	Benewah SWCD	10/01/17	09/30/20	49,140.00	35,740.00	13,400.00
S561	Potlach River Watershed Management Plan—FY17 Implementation	Latah SWCD	10/01/17	09/30/20	209,998.00	175,374.18	34,623.82
S556	Boulder Creek an North Fork Payette Streambank Stabilization Project	Idaho Department of Fish and Game	05/01/17	12/31/18	27,330.00	27,330.00	0.00
S555	Middle Eighteenmile Creek Habitat Improvement Project	Lemhi SCD	03/01/17	10/31/20	250,000.00	218,571.15	31,428.85
S554	North Fork Payette River Watershed Improvement Project	Valley SWCD	02/01/17	02/01/20	114,050.00	57,677.99	56,372.01
S553	Wimpey and Pratt Creek Restoration Project—Phase II	Trout Unlimited	01/01/17	12/30/20	250,000.00	206,556.74	43,443.26

Subgrant	Project Name	Sponsor	Subgrant Issued Date	Subgrant Expiration Date	Funding Level (Federal) (\$)	Total Spent to Date (Federal) (\$)	Balance (Federal) (\$)
S552	South Fork Palouse River TMDL Implementation	Palouse-Clearwater Environmental Institute	12/07/16	12/20/19	103,687.00	56,369.23	47,317.77
S551	Western Camas Prairie Culvert Replacement	Idaho SWCD	12/05/16	12/20/19	184,925.00	172,830.08	12,094.92
S549	Washington Creek Culvert Replacements	Clearwater SWCD	11/15/16	11/14/19	250,000.00	246,590.94	3,409.06
S548	Mud Creek/Silo Creek Water Quality Project Phase II	Balanced Rock SWCD	11/15/16	11/14/19	81,000.00	65,200.00	15,800.00
S537	Tom Beall Creek Restoration Project	Nez Perce SWCD	02/19/16	12/31/18	30,500.00	30,500.00	0.00
S536	Cove Streambank Restoration and Off-Stream Watering Project	Caribou SWCD	02/15/16	12/01/19	174,423.00	115,046.95	59,376.05
S534	Owyhee Restoration Incentive Program	Owyhee Watershed Council	02/15/16	02/15/19	153,012.00	142,979.86	10,032.14
S532	Lower Payette River TMDL Implementation Project—Phase 4	Gem and Squaw Creek SWCD	01/04/16	12/31/18	165,809.41	165,809.41	0.00
S529	39/39A Water Quality Project	Balanced Rock SWCD	02/06/15	12/31/17	54,526.00	54,526.00	0.00
S523	Upper Weiser River Bank Stabilization	Adams SWCD	08/28/14	12/31/18	190,796.00	135,113.20	55,682.80

Notes: soil and water conservation district (SWCD), best management practice (BMP), State Fiscal Year (SFY), total maximum daily load (TMDL), fiscal year (FY)

## 1.8 Determining Pollutant Load Reductions

DEQ requires project managers to estimate reductions of sediment, phosphorous, and nitrogen loads at the start and at the completion of their project that result from implementing BMPs. Most projects take place in proximity to a water body. Load reduction estimates for all projects in a watershed can be combined to calculate the cumulative load reduction.

## 1.9 Providing Technical Support

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

- Facilitating and coordinating implementation of the nonpoint source management plan (DEQ 2015)
- Developing and working to advance new technical approaches aimed at improving surface water and ground water quality and quantity
- Promoting partnerships, interagency collaboration, environmental education, and information transfer
- Ensuring consistency of base-level implementation activities addressed in TMDLs
- Providing various types of training, as necessary
- Managing §319 funds according to standard accounting and reporting practices

## 1.10 Public Participation

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

The NPS Program coordinates activities with local, state, federal, and tribal agencies. Their support is essential to close the feedback loop project-by-project within the state's major river basins, as described in the nonpoint source management plan (DEQ 2015).

## 1.11 2019 Nonpoint Source §319 Grant Work Plan Progress

### Task 1: State Office Administration

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

Progress:

- Initiated open application processes for both state and federal §319 NPS grants in March and April, respectively.
- Provided technical assistance and review of project proposals throughout the year.
- Processed contract amendments, invoice payments and closeout procedures routinely throughout the year.
- Performed quarterly financial review of active projects with fiscal and contract partners to ensure timely progress and completion of work plans.
- Conducted annual site visits on 50% of all active projects to prepare the annual report.
- Prepared annual NPS performance and progress report. Draft to EPA by March 1, 2020.

Estimated cost: \$86,076

Staffing level: 0.7 full-time equivalent (FTE)

### Task 2: Develop Procedure and Guidance Documents

Output: Procedure and guidance documents in place to support new and ongoing program implementation efforts. Comply with federal grant condition.

Progress:

- Updated 2020 Federal Grant Year §319 Project Application Guide, March 2019.
- Developed invoice checklist and mail to all active subgrantees to improve processing efficiencies, December 2019.
- Post invoice guidance resource to DEQ's website, March 2020.

Estimated cost: \$18,445

Staffing level: 0.15 FTE

**Task 3: Revise Memoranda of Understanding with Designated Management Agencies**

Output:	Revised memoranda of understandings
Progress:	Revised the Nonpoint Source Water Quality Program MOU among Idaho Department of Environmental Quality, Idaho Department of Lands, US Department of Interior, Bureau of Land Management, and USDA, Forest Service Northern and Intermountain Regions. Currently routed for signatures, March 3, 2020.
Estimated cost:	\$18,445
Staffing level:	0.15 FTE

**Task 4: Program Implementation**

Output 4A:	Collaborate with partners to implement NPS projects in priority watersheds.
Progress:	DEQ actively works with partners from watershed advisory groups, basin advisory groups, local soil and water conservation districts, and willing landowners to implement water quality improvement projects statewide.
Output 4B:	Implement the program in a manner consistent with the goals and objectives of the nonpoint source management plan (DEQ 2015), strategic plan (DEQ 2019), and the performance partnership agreement (DEQ 2019).
Progress:	<ul style="list-style-type: none"> <li>• DEQ 2020–2023 Strategic Plan updated, July 1, 2019</li> <li>• DEQ Performance Measurement Report updated, September 1, 2019</li> <li>• Meeting commitments of Performance Partnership Agreement; in regular communication with EPA throughout the year</li> </ul>
Output 4C:	Support the Idaho Water Quality Monitoring and Management Conference.
Progress:	<ul style="list-style-type: none"> <li>• Planned and conducted steering committee meetings</li> <li>• Established key theme and arranged keynote and featured speakers</li> <li>• Arranged sponsorship, schedules, and vendors conference services</li> <li>• Developed program and web presence with IT staff</li> <li>• Idaho Water Quality Workshop scheduled, February 11–13, 2020</li> </ul>
Estimated cost:	\$122,966
Staffing level:	1.0 FTE

**Task 5: Evaluate Nonpoint Source Projects**

Output: Perform on-site project evaluations on a predetermined schedule to assess the effectiveness of BMP implementation and to recommend corrective action, when needed. Evaluations are performed on a minimum of 50% of all active projects, and a predetermined number of closed projects; contractor performance and maintenance of existing BMPs are assessed.

Progress:

- Prepared field evaluation forms
- Scheduled on-site visits with landowners and sponsors
- Photo documented and evaluated progress on work plans and timelines
- All field evaluations are performed annually, May–October

Estimated cost: \$147,558

Staffing level: 1.20 FTE

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

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

Progress: DEQ is evaluating the value of the current program.

Estimated cost: \$12,297

Staffing level: 0.1 FTE

**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: As requested

Estimated cost: \$12,297

Staffing level: 0.1 FTE

**Task 8: Prepare the NPS Program Performance and Progress Report**

Output: Submit final report to EPA.

Progress:

- DEQ staff evaluate NPS projects, May–October
- Draft NPS report developed, November–March
- Draft NPS report submitted to EPA, March 2020

Estimated cost: \$24,593

Staffing level: 0.2 FTE

**Task 9: Meet the Requirements for Entering Data into the EPA-Grants Reporting and Tracking System**

Output: Data are entered on time.  
Milestone: Annually by February 15  
Estimated cost: \$110,669  
Staffing level: 0.9 FTE

**Task 10: Maintain the Idaho NPS Plan**

Output: Reach agreement with EPA on a schedule to update the NPS management plan; update the plan.  
Milestone: Agreement by January 1, 2020; update by June 30, 2020.  
Estimated cost: \$18,445  
Staffing level: 0.15 FTE

**Task 11: Surface Water Quality Management**

Output: Support §319 Program goals and objectives by developing water quality standards, conducting assessments, and completing the biannual Integrated Report.

Progress:

- Maintained a Water Quality Standards program, including rulemaking to update Water Quality Standards and Criteria.
- Bioassessment protocol was performed on 240 sites in 2019.
- The 2018–2020 biannual Integrated Report is being prepared. It includes approximately 400 assessments of data from 2014–2018 and highlights a success story from the Coeur d'Alene region. The final report is expected to be submitted to EPA by September 15, 2020.

Estimated cost: \$459,348  
Staffing level: 4.24 FTE

**Task 12: Application Software Development**

Output: Assist in hiring a contractor to develop NPS project application software; interact on a regular basis in an advisory capacity; plan and develop related training modules.

Progress:

- Staff is mapping the NPS application and developing contract and invoicing processes to address programmatic needs in software development, July 1, 2019–June 30, 2020.

Estimated cost: \$117,215  
Staffing level: 0.14 FTE

## 2 Project Field Evaluations—2019

DEQ managed 57 active projects in 2019 (Table 1 and Figure 1). Of these, nine were completed and closed. Field evaluations were conducted on 33 projects (Figure 2 and Table 2). The field evaluation process begins with a review of the project file. DEQ then visits the site to evaluate the work that is either ongoing or completed. In the evaluation, staff records whether the project complied with the terms of the agreement.

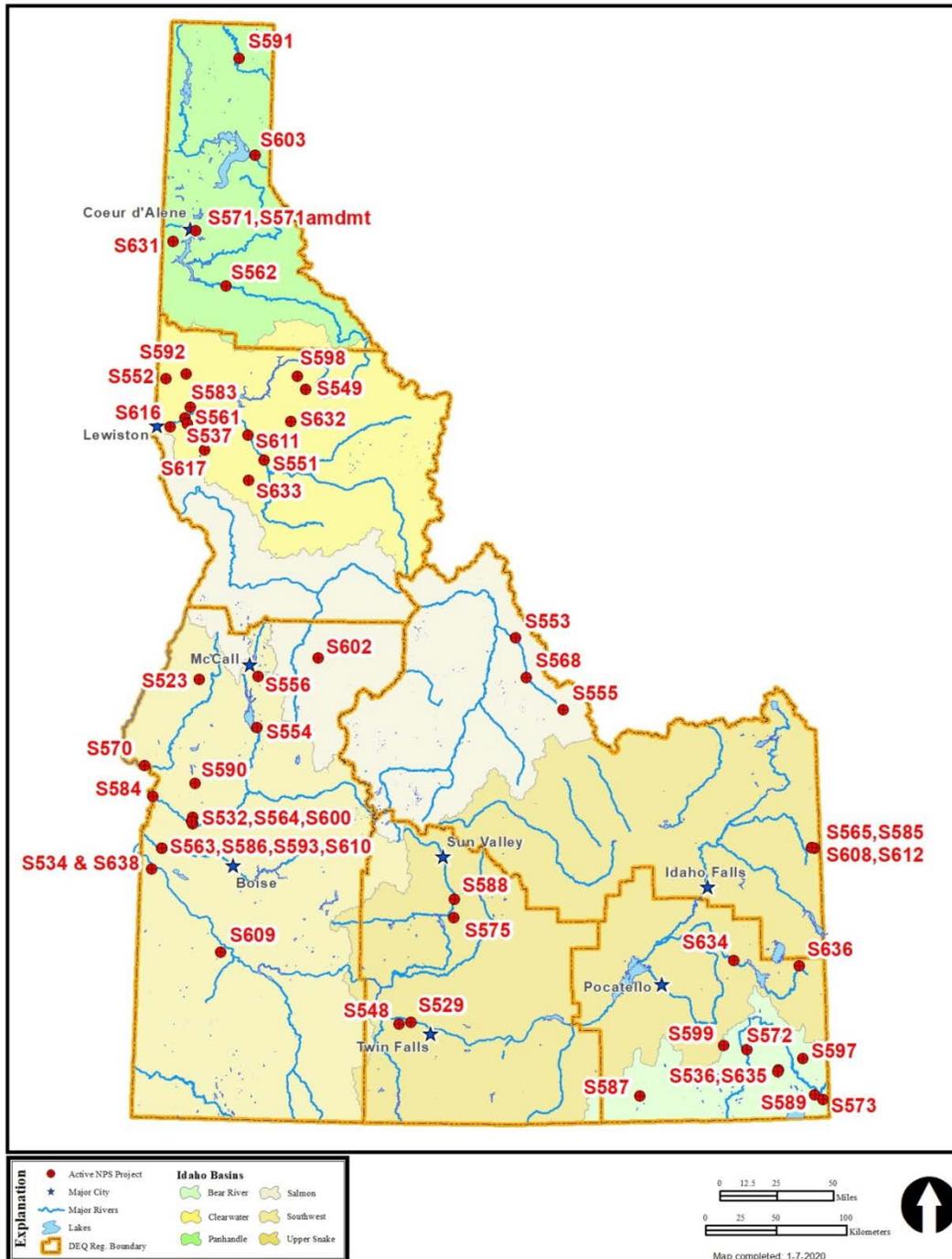


Figure 1. Nonpoint source projects active or closed as of November 30, 2019.

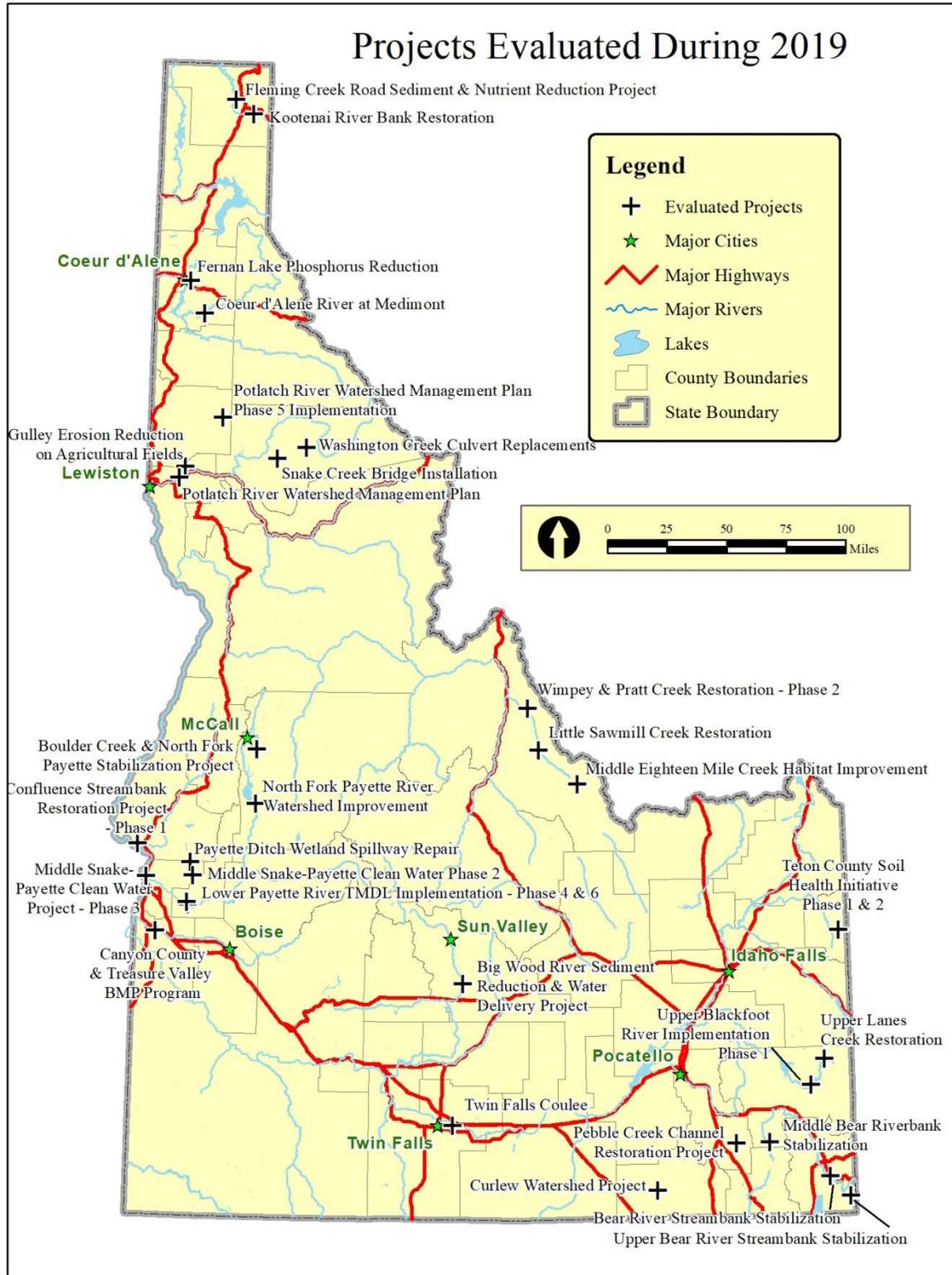


Figure 2. Nonpoint source projects evaluated in 2019.

**Table 2. Projects evaluated in 2019.**

Subgrant	Project Name	Project Type	Region	Hydrologic Unit Code
S600	Lower Payette River TMDL Implementation Project—Phase 6	AG	BRO	17050114
S591	Fleming Creek Road Sediment and Nutrient Reduction Project	AG	CRO	17010104
S590	Payette Ditch Wetland Spillway Repair	AG	BRO	17050124
S588	Big Wood River Sediment Reduction and Water Delivery Project for State General Fund SFY2019	AG	TFRO	17040219
S587	State General Fund SFY19 Curlew Watershed Project	AG	PRO	16020309
S586	State General Fund SFY2019 Continued Treasure Valley BMP Program	AG	BRO	17050114
S585	State General Fund SFY19 Teton County Soil Health Initiative Phase II	AG	IFRO	17040204
S584	State General Fund SFY19 Middle Snake-Payette Clean Water Project Phase 3	AG	BRO	17050122, 17050124
S583	State General Fund SFY2019 Gully Erosion Reduction on Agricultural Fields/Potlach River Watershed	AG	LRO	17060306
S572	Middle Bear River Project	AG	PRO	16010204
S571	Fernan Lake Phosphorus Reduction FY17	AG	CRO	17010303
S570	Weiser River Confluence Streambank Restoration Project Phase I	AG	BRO	17050124
S568	Little Sawmill Creek Restoration	AG	IFRO	17060204
S565	Teton County Soil Health Initiative—Full Season Cover Crop Demonstration	AG	IFRO	17040204
S561	Potlach River Watershed Management Plan—FY17 Implementation	AG	LRO	17060306
S556	Boulder Creek and North Fork Payette Streambank Stabilization Project	AG	BRO	17050123
S555	Middle Eighteenmile Creek Habitat Improvement Project	AG	IFRO	17060204
S554	North Fork Payette River Watershed Improvement Project	AG	BRO	17050123
S553	Wimpey and Pratt Creek Restoration Project—Phase II	AG	IFRO	17060204
S550/589	Upper Bear River Streambank Stabilization	AG	PRO	106010201
S549	Washington Creek Culvert Replacements	AG	LRO	17060307
S532	Lower Payette River TMDL Implementation Project—Phase 4	AG	BRO	17050122
S524	Bear River Streambank Stabilization VALC.2013	AG	PRO	16010201
S521	Continued Canyon County BMP Program	AG	BRO	17050114
S519	Snake Creek Bridge Installation	AG	LRO	17060308

<b>Subgrant</b>	<b>Project Name</b>	<b>Project Type</b>	<b>Region</b>	<b>Hydrologic Unit Code</b>
S493	Middle Snake-Payette Clean Water Phase 2	AG	BRO	17050122
S492	Upper Lanes Creek Restoration	AG	PRO	17040207
S491	Potlatch River Watershed Management Plan—Phase 5 Implementation	AG	LRO	17060306
S469	Twin Falls Coulee Wetlands Project	AG	TFRO	17040212
S467	Pebble Creek	AG	PRO	17040208
S464	Coeur d'Alene River at Medimont Bank Stabilization	AG	CRO	17010303
S430	Upper Blackfoot River Improvement Phase 1	AG	PRO	17040207
S429	Kootenai River Bank Restoration	AG	CRO	17010104

*Notes:* agriculture (AG); Boise Regional Office (BRO), Coeur d'Alene Regional Office (CRO), Twin Falls Regional Office (TFRO), Pocatello Regional Office (PRO), Idaho Falls Regional Office (IFRO), Lewiston Regional Office (LRO),

### 3 Project Field Evaluation Reports

This section summarizes the results of the 2019 on-site evaluations. DEQ staff evaluated work at 33 project sites and documented progress. Active projects and projects previously completed were evaluated. All evaluations addressed NPS-related water quality issues associated with agriculture and grazing practices. Copies of complete evaluation reports are available from DEQ on request.

#### 3.1 Lower Payette River Phase 6

<b>Subgrant:</b>	S600	<b>DEQ Region:</b>	BRO
<b>Description:</b>			
<p>This field on the Emmett Bench sits on the edge of a bluff. Over several years, the landowner has experienced flood irrigation water loss down the field due to sand and gravel pocket geology. The flood irrigation method was moving high volumes of shallow ground water towards the river, compromising the soil integrity at the bluff in several areas.</p> <p>BMPs at this site include a water control structure, pumping plant, 820 feet of irrigation water conveyance, and a pivot irrigation system for 32 acres. All BMPs were installed to Natural Resources Conservation Service (NRCS) standards and specifications.</p>			
<b>Status:</b>	The project is complete.		
			
<p>This project converted a surface-irrigated field to center pivot system. Shifting to sprinkler irrigation will use less water and eliminate waterlogging of the bluff area. The estimated reduction in sediment to the Lower Payette River is 69.4 tons from the 32-acre field.</p>		<p>Years of flood irrigation destabilized the bluff in several areas. Excess irrigation water flooded lands directly below the field. Overflow from the pumping station is now piped down the bluff to the irrigation drain below.</p>	

### 3.2 Fleming Creek Road Sediment and Nutrient Reduction Project

<b>Subgrant:</b> S591	<b>DEQ Region:</b> CRO
<b>Description:</b>	
<p>This project replaced three existing but poorly functioning culverts with properly sized culverts and improved the road surface to reduce sediment runoff and associated nutrients to the Kootenai River. The old culverts were fish passage barriers to native fish. The new culverts are sized to allow fish passage to the upper reaches of Fleming Creek.</p> <p>Three culverts were installed: two squash culverts and one relief culvert. The road prism was redone, inlets and outlets were stabilized, and willows were planted.</p>	
<b>Status:</b>	The project is complete.
	
This culvert outlet is elevated, creating a barrier to fish passage.	The replacement culvert outlet is at grade with the creek.
	
Replacement culvert inlet.	This new relief culvert allows fines to be deposited in a vegetated buffer.

### 3.3 Payette Ditch Wetland Spillway Repair

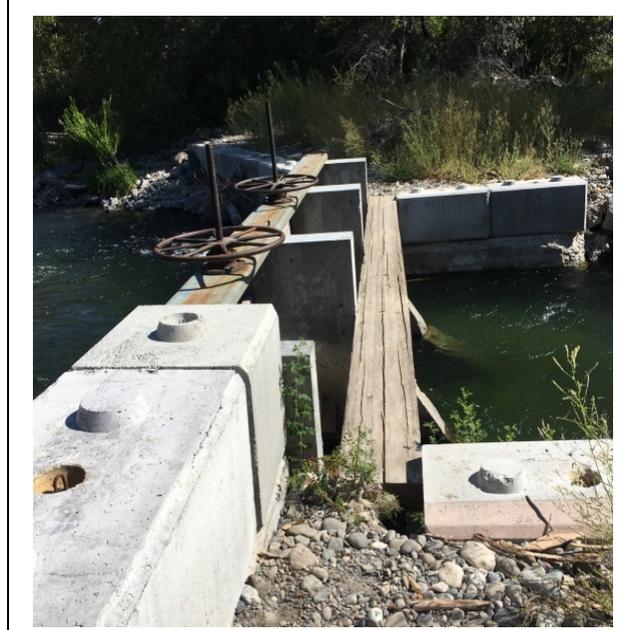
<b>Subgrant:</b> S590	<b>DEQ Region:</b> BRO
<b>Description:</b>	
<p>This project repaired a levee and spillways at the Payette Ditch wetland. The wetland was damaged in 2017 after ice jams and flooding broke through the levee.</p> <p>The Weiser SWCD completed original work on the Payette Ditch wetland (S405) in 2012. Over 12 levee sites along the Weiser River were severely damaged after severe ice jam and flooding in 2017. Weiser, Idaho, was declared a disaster area. The levee along the Payette Ditch wetland was one of the most severely damaged.</p> <p>This project included the levee repair between the Weiser River and Payette Ditch wetland and two spillway repairs including the upper pond and the wetland outlet spillways. All repairs restored the original design standard and specification.</p>	
<b>Status:</b>	The project is complete.
	
<p>The Weiser River, with a massive ice flow, overtopped its bank, broke through the levee and flowed across the wetland and nearby fields. Vegetation was sheared off, and soils were eroded at the bank, levee, and across the wetland area.</p>	
	
<p>The levee was repaired in coordination with the Federal Emergency Management Agency, flood control district, and Army Corps of Engineers.</p>	<p>Both the upper and lower spillways were repaired to elevations matching the original engineering design.</p>

### 3.4 Big Wood Sediment Reduction Project (State Funded)

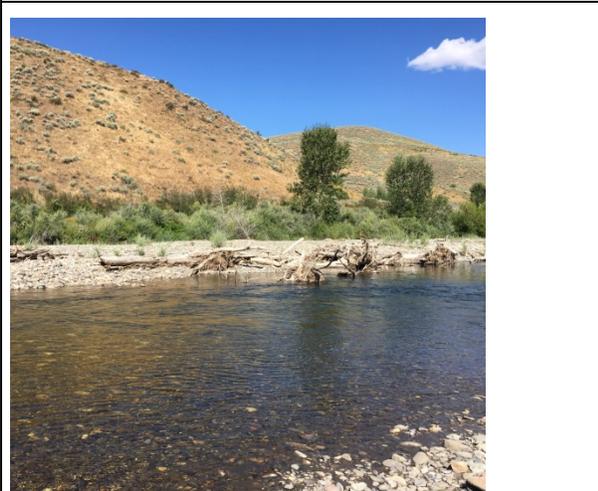
<b>Subgrant:</b>	S588	<b>DEQ Region:</b>	TFRO
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**Description:**  
 This project implemented recommended conservation BMPs for riparian land in the Big Wood River. Water delivery at three control structures was improved by restoring historic river channel morphology and flow direction. A primary eastern river channel was activated to direct flow towards the bypass canal, which delivers most of the irrigation water. Appropriate rock grade control structures were applied to the eastern channel. A secondary western channel will remain to deliver water to the Glendale Diversion and Bannon Ditch and for high flows. Portions of the Bannon Ditch eroded in 2017 were reconstructed in conjunction with streambank grading and vegetation planting.

**Status:** The project is complete.



The new and old diversions receive improved flow during irrigation season. Improved water delivery reduces the amount of annual instream work needed to meet delivery needs.



Woody debris and willow plantings provide bank and channel stability.

Sediment catchment area settles out fines and improves salmonid habitat downstream.

### 3.5 Curlew Watershed Project (State Funded)

<b>Subgrant:</b> S587	<b>DEQ Region:</b> PRO
<b>Description:</b>	
<p>The Curlew Watershed Project worked with eight different landowners to install BMPs to improve soil health, reduce soil erosion, and improve water quality.</p> <p>Six landowners signed up to install BMPs ranging from cover crops, water and sediment basins, terraces, and spring developments for livestock, which will improve water quality and grazing management.</p>	
<b>Status:</b>	This project is complete.
	
<p>One of two water troughs installed. The source has limited flow so large diameter troughs were installed to provide additional water storage for the system.</p>	<p>Sagebrush stocks are thinned to encourage better grass growth and provide edge habitat for sage grouse.</p>
	
<p>A pivot will provide better water management and use of the irrigation water.</p>	<p>Cover crop residue following a summer multispecies planting. Residue protects the soil surface from erosion and allows better rain infiltration.</p>

### 3.6 Continued Treasure Valley BMP Program (State Funded)

<b>Subgrant:</b>	S586	<b>DEQ Region:</b> BRO
<b>Description:</b>		
<p>This project improved surface water quality in Ada and Canyon Counties by installing BMPs on Tier I agricultural lands. This goal was achieved by continued implementation of the agricultural BMP financial assistance program in the Lower Boise River watershed.</p>		
<p>Three surface to pivot irrigation conversion projects were implemented on a 34-acre parcel, 120-acre parcel, and 190-acre parcel. Additional costs include filtration, pipe, hand line, and electrical installations.</p>		
<b>Status:</b>	The project is complete.	
		
<p>With local pressure to develop this parcel, the landowner committed to a new irrigation system to keep the land in production for some time. The center pivot spans the drain because no chemigation will be done using the irrigation system.</p>	<p>This electrical and pump station drives one 32-acre circle pivot and two 2-acre corner pivots. An estimated 9.46 pounds/acre/year of phosphorus runoff is eliminated by implementing this project.</p>	
		
<p>This dairy property was furrow irrigated. New pump stations, three new corner pivots, and a center pivot will reduce soil erosion and runoff. This land is located in a ground water Nitrate Priority Area. Sprinkler irrigation keeps nutrients in the root zone rather than pushing nutrients deeper into the soil. This new management practice will protect local ground water by preventing nutrient leaching.</p>	<p>One of three corner pivots irrigating this 140-acre parcel. Currently this field is in alfalfa, which is a legume. Legumes improve soil health by adding nitrogen and organic matter and reducing potential erosion and leaching loss.</p>	

### 3.7 Teton County Soil Health Initiative—Phase II (State Funded)

<b>Subgrant:</b>	S585	<b>DEQ Region:</b> IFRO
<b>Description:</b>		
<p>This project continued to demonstrate, evaluate, and verify that the agricultural BMPs of cover crop application, conservation tillage, and grazing management can be effectively used in Teton County, Idaho, to improve water quality in §303(d)-listed streams, while also protecting community drinking water resources and improving farm productivity and soil moisture.</p> <p>The total estimated load reduction produced by this project was at least a 379-lb reduction in sediment; 486-lb reduction in phosphorous; and 2,428-lb reduction in nitrogen.</p>		
<b>Status:</b>	This project is complete.	
		
Conservation tillage BMP—emerging grain in a minimal till high-residue field.	Conservation tillage BMP—no till drill planting multispecies forage.	
		
Grazing management BMP—management intensive grazing on multispecies cover crop.	Monitoring—installation of lysimeters.	

### 3.8 Middle Snake-Payette Clean Water Project Phase 3 (State Funded)

<b>Subgrant:</b>	S584	<b>DEQ Region:</b>	BRO
<b>Description:</b>			
<p>This project assisted landowners in improving management practices targeting NPS pollution on agricultural lands in the Lower Payette River and Middle Snake River subbasins.</p>			
<p>The first of two projects converted surface to wheel-line sprinkler irrigation on approximately 40 acres. Crop rotation consists of forage sorghum, pearl millet, and grass hay. Previously, irrigation water was delivered by an unnamed ditch, flooded onto the acreage, and returned to the Snake River (Middle Snake-Payette HUC 17050115) 4 miles to the west by an unnamed drain. Field consists of fine sandy loam soils, which are extremely susceptible to erosion.</p>			
<p>The second project converted 100 acres from surface to pivot sprinkler irrigation. This project included installing a circle pivot system and the associated pumping plant and electrical system. Additional work included feeder pipeline for pivot, lateral, and gated pipe and bubble screen to irrigate corners.</p>			
<b>Status:</b>	This project is complete.		
			
<p>Converting this 40-acre parcel to wheel-line irrigation will save an estimated 3.88 tons/acre/year of sediment from entering the Snake River.</p>	<p>The pumping plant in the back corner was designed and installed to NRCS standards and specifications for this irrigation system.</p>		
			
<p>An open lateral earthen ditch used to run down the center of this field as seen on the left. Active erosion and surface runoff traveled down the lateral into a drain ditch and on to the Payette River. The lateral was filled in and the new pivot travels in a 3/4 circle across the field (photo on right).</p>			

### 3.9 Gully Erosion Reduction on Agricultural Fields/Potlatch River Watershed (State Funded)

**Subgrant:** S583    **DEQ Region:** LRO

**Description:**  
 The Latah SWCD Board of Supervisors identified soil erosion from county road culverts draining into agricultural fields as a priority soil and water quality concern. Erosion from county or private road culverts draining into agricultural fields presents a relatively high annual sediment loss as new gullies form each year leading to significant contributions of sediment and nutrients to streams in the Potlatch River and Clearwater River watersheds. This project provides cost-share assistance to install permanent water control structures to convey discharge from county road culverts.  
 Four water control structures have been installed, and eight landowners/producers have agreed to 14 contracts. The project will be complete by 6/30/2020.

**Status:** This subgrant is open and active.



County road culvert and 36-inch riser structure and excavated trench that accepts underground 6-inch nonperforated pipe, which extends out to a less erosive field edge location.

### 3.10 Middle Bear River Bank Stabilization

<b>Subgrant:</b> S572	<b>DEQ Region:</b> PRO
<b>Description:</b>	
<p>This project includes bank stabilization on a 3/4-mile section of the Bear River in Gentile Valley; off-stream watering for livestock; removing fish barriers and restoring 400 feet of Whiskey Creek; and installing a bottomless culvert. These BMPs will improve Bonneville Cutthroat Trout habitat on Whiskey Creek and improve riparian vegetation and grazing impacts on the Bear River. The streambank improvement will reduce fine sediment inputs to the river as well. All of these BMPs will improve the water quality in Whiskey Creek and the Bear River.</p> <p>The project will be completed by 10/30/2020.</p>	
<b>Status:</b>	This subgrant is open and active.
	
Location of a new well for livestock.	This old diversion will be replaced with one that is fish friendly. The stream will be narrowed to reduce solar radiation input to the stream. Livestock will be fenced out of the stream. Troughs will be installed to water livestock.

### 3.11 Fernan Lake Phosphorus Reduction II Project

<b>Subgrant:</b>	S571	<b>DEQ Region:</b> CRO
<b>Description:</b>		
<p>This project focused on controlling polluted runoff from entering Fernan Lake by installing erosion control BMPs on 2,749 feet of bare and eroding shoreline. At Fernan Lake, the local highway district resloped 300 feet of shoreline between the bank and road, eliminating rills and channels for runoff and providing a better environment for plants and seed to grow. Volunteers helped replace topsoil, add compost, and plant native plants and native grass seed. Volunteers also applied ponderosa pine needles over the site for water retention and weed control. The remaining 2,749 feet of shoreline were planted with native grass seed.</p>		
<b>Status:</b>	This project is complete.	
		
<p>Installation of soil amendment and native plants following bank resloping.</p>	<p>Postproject installation.</p>	
		
<p>Stairs were installed to encourage fisherman's access to water.</p>	<p>Project site with dead plants. Annual grass did well.</p>	

### 3.12 Weiser River Confluence Bank Restoration

<b>Subgrant:</b>	S570	<b>DEQ Region:</b>	BRO
<b>Description:</b>			
<p>This project focuses on restoring the streambank of the Weiser River at its confluence with the Snake River. The approved engineering design determined a two-phase installation. In the first phase, the gravel bar is removed, the bank is shaped and armored, and plantings are installed. In the second phase, if needed, rock barbs are installed to deflect flow and move the thalweg.</p> <p>The project will be completed by 10/31/2020.</p>			
<b>Status:</b>	This subgrant is open and active.		
			
<p>A large gravel bar downstream of the train trestle has been growing over the years putting pressure on the adjacent bank and affecting the drinking water intake for the city of Weiser. This project excavated depositional sediments down to the allowable limit during low flow.</p>		<p>The piers on this railroad trestle direct flow to the south side of the Weiser River causing bank instability, erosion, and sediment deposition onto the point bar. Gravel extraction from the bar will dissipate flow and relieve hydraulic pressure on the south and north river banks.</p>	
			
<p>The city of Weiser's water treatment facility is regularly subject to flooding during high flow events in the Weiser River. Material excavated from the point bar in the river was placed in this field as a berm. This berm will still allow floodwaters to inundate this area but will deflect flow back toward the river.</p>		<p>This heavily used stretch of bank near the city's water treatment plant is being restored in partnership with the city of Weiser. The toe of this slope was completely lacking in vegetation before planting.</p>	

### 3.13 Little Sawmill Creek Bank Restoration Project

<b>Subgrant:</b>	S568	<b>DEQ Region:</b>	IFRO
<b>Description:</b>			
<p>This project gained fish access to nearly 0.8 mile of juvenile rearing habitat in Indian Springs and improved conditions on lower Little Sawmill Creek to encourage fish to enter Indian Springs. The project resulted in reduced fecal coliform bacteria entering Little Sawmill Creek and Lemhi River; an increase in juvenile salmon and steelhead rearing habitat; removal of a fish barrier; consolidation of two unscreened diversions into one existing screened diversion; reductions in sediment and temperature; and irrigation efficiencies.</p>			
<b>Status:</b>	The project is complete.		
			
Calving operation moved off stream.		Gravity fed pivot installed.	
			
New stream channel vegetated.		Exclusionary fencing installed.	

### 3.14 Teton County Soil Health Initiative, Phase I

<b>Subgrant:</b>	S565	<b>DEQ Region:</b>	IFRO
<b>Description:</b>			
<p>The project will demonstrate, evaluate, and verify that the agricultural BMPs cover crop application, combined with conservation tillage, can be effectively used in Teton County, Idaho, to improve water quality in §303(d)-listed streams, while also protecting community drinking water resources and improving farm productivity and soil moisture. This project applies cover crop and conservation tillage to at least 100 acres of demonstration farms, and will compare results to paired, conventionally farmed plots for a period of 3 years.</p> <p>Currently in year 2 of 3. Acreage exceeds 100 acres.</p> <p>The project will be completed by 10/30/2020.</p>			
<b>Status:</b>	This subgrant is open and active.		
			
A no-till drill is integral to planting cover crop unique to each producer's field.	Control field for nutrient transport for evaluating no-till success.		
			
Two fields enrolled in the program; the field on the left is in year 1 of no-till cover crop; the field on the right is in year 2 of cover crop then alfalfa.			

### 3.15 Potlatch River Watershed Management FY17 Implementation

<b>Subgrant:</b>	S561	<b>DEQ Region:</b> LRO
<b>Description:</b>		
<p>This project continued the 5-year/5-phase proposal to implement Latah SWCD's Potlatch River Watershed Management Plan (2007). This project's goal was to restore Endangered Species Act-listed steelhead habitat in prioritized subwatersheds throughout the Potlatch River system. Water quality improvements focused on sediment and temperature TMDL load allocations. The project implemented the following BMPs: access road, conservation cover, fence, grade stabilization, nutrient management, sediment basin, riparian forest buffer, fish passage, pipeline, stream channel bank vegetation, channel stabilization, critical area planting, stream habitat improvement and management, tree/shrub establishment, wetland/meadow restoration, spring development, stream crossing, underground outlet, wetland creation, watering facility, use exclusion, and underground outlet.</p>		
<b>Status:</b>	The project is complete.	
		
<p>Meadow restoration side channel construction, sedge mat establishment under cloth cover.</p>	<p>Reconnected stream and floodplain with engineered 2:1 slope construction and native vegetation reestablishment.</p>	
		
<p>Aerial view of Two Mile Meadow restoration of East Fork Potlatch River. Restored channel, expanded floodplains, stabilized banks, improved channel stability, tree jams, beaver dam analogs, vegetation planting, and fish habitat structures helped to restore wetland function.</p>	<p>Beaver dam analog installation to retain water into meadow system.</p>	

### 3.16 Boulder Creek and North Fork Payette River Streambank Stabilization Project

<b>Subgrant:</b>	S556	<b>DEQ Region:</b>	BRO
<b>Description:</b>			
This project focused on reducing sediment and nutrient load through riparian restoration on high priority tributaries of Cascade Reservoir. This goal was met by planting native trees and shrubs and installing a wetland sod mat on Boulder Creek and North Fork Payette River.			
<b>Status:</b>	The project is complete.		
		<p>The city of Cascade provided fencing to keep visitors from affecting the river's bank. The fencing, instream structures, and heavy plantings will help heal this heavily impacted area.</p>	<p>Plantings on the 1.5 miles of Boulder Creek were completed in 4 days with 51 volunteers donating 447 hours of labor. The Idaho Department of Fish and Game spent an additional 4 days preparing the site by digging holes with a mechanized auger.</p>
		<p>Two of these willow weaving revetments were installed for a combined length of 275 feet on two vertical eroding cut banks that averaged 8 feet in height. Thirteen volunteers donated 126 hours of labor and travel time.</p>	<p>This bank was denuded before new plantings were installed. In fall 2018 and spring 2019, this bank was planted, and survival rates are high.</p>

### 3.17 Middle Eighteen Mile Creek Habitat Improvement Project

<b>Subgrant:</b>	S555	<b>DEQ Region:</b>	IFRO
<b>Description:</b>			
<p>This project will improve stream conditions on Eighteenmile Creek in the Lemhi River subbasin near the town of Leadore in Lemhi County. The project is located on private property on Eighteenmile Creek, a headwater tributary to the Lemhi River, between Hawley Creek and Clear Creek. BMPs include water diversion structure; piping; pump and pivot system; fencing; off-site watering facility; and tree, shrub, and grass plantings.</p>			
<b>Status:</b>	This subgrant is open and active.		
			
<p>Willows plantings and brome and sedge grass were moved from the old channel. Burlap-wrapped wattle that sprouts herbaceous cover, pod-watering system, and more seeding will be installed.</p>		<p>DEQ-funded irrigation pivot pieces.</p>	
			
<p>Irrigation pipe to pivot.</p>		<p>Concrete pad for pivot install, end of irrigation pipe to pivot.</p>	

### 3.18 North Fork Payette River Watershed Improvement Project

<b>Subgrant:</b> S554		<b>DEQ Region:</b> BRO	
<b>Description:</b>			
<p>This project continues the successful implementation of water quality improvement projects in the North Fork Payette River watershed, including North Fork Payette River, Boulder-Willow Creek, West Mountain Road, and Big Creek. Five projects administered under this subgrant are installed and near completion.</p> <ol style="list-style-type: none"> <li>1. Stormwater at American Legion: Stormwater from the area was ponding in the American Legion parking area. The water would run down Mill Street picking up additional pollutants before discharging into a ditch then into the North Fork Payette River. BMPs include a catch basin, storm drain piping, and 1,000 gallon sand and grease trap.</li> <li>2. Strand Project: Downstream of Kelly's Whitewater Park, a side channel of the Lower Payette River was severely eroding, putting tons of sediment into the river. BMPs include a 75 feet of rock and bank stabilizing willow wall in the channel to diffuse flow and catch sediment, deepening the channel to keep the thalweg centered and 1,000 feet of riparian plantings.</li> <li>3. Donnelly Boat Dock Shoreline Stabilization: Severe shoreline erosion was occurring at the boat dock. NPS §319 funds were used to purchase rock riprap. The city paid for plantings and installation. The project eliminated 332 tons of sediment, 532 pounds of phosphorous, and 35 pounds of nitrogen from entering the reservoir.</li> <li>4. Riverfront Park: 7 bank barbs and rock riprap were installed to stop mass wasting of the bank. The bank was sloped to a more stable angle of repose and plantings installed for slope and bank stabilization.</li> <li>5. West Mountain Road Rehabilitation: Improved roads drainage and resurfacing on 1 mile of West Mountain Road in the Silver Creek Area. Road drainage is directly adjacent to Cascade Reservoir. Unimproved roads are listed as a phosphorus and sediment sources in the Cascade Reservoir TMDL.</li> </ol>			
<b>Status:</b>		This subgrant is open and active.	
			
<p>This separator box is part of the stormwater treatment system to intercept sediment and oil in stormwater runoff before it discharges into the North Fork Payette River.</p>		<p>More than 1,500 willow poles were planted in reed canary grass over 650 feet of bank. Partners included the Cascade High School, Valley SWCD, Trout Unlimited, Idaho Department of Fish and Game, and city of Cascade.</p>	
			
<p>At the Donnelly boat dock, willow clumps were harvested from the surrounding area and replanted to stabilize the slope around the rock retaining wall.</p>		<p>Riverfront Park—seven rock barbs and willows will stop mass wasting of the hill slope into the North Fork Payette River. The slope was laid back to a more stable angle. More willow clumps will be harvested near the airport and transplanted on site. The slope will be revegetated with native seed mix.</p>	

### 3.19 Wimpey and Pratt Creeks Restoration Project–Phase II

<b>Subgrant:</b>	S553	<b>DEQ Region:</b> IFRO
<b>Description:</b>		
<p>This project improved water quantity and quality on approximately 3.6 miles of lower Pratt Creek, 2.13 miles of lower Sandy Creek, 1.11 miles of Wimpey Creek, and 0.75 miles of Warm Springs Creek (a tributary of Wimpey Creek). Work included irrigation infrastructure and management improvement, resulting in improved natural stream flows. Additional reductions in sediment and bacteria loads on both tributaries will be achieved through changes in grazing and confined animal feeding practices.</p>		
<b>Status:</b>	The project is complete.	
		
<p>Riparian herbaceous cover, tree/shrub establishment, channel stabilization and habitat development, and cattle exclusion (nutrient management).</p>	<p>Infrastructure and irrigation water management.</p>	
		
<p>Fencing for cattle exclusion. The county sprayed for weeds.</p>	<p>Water control structure.</p>	

### 3.20 Upper Bear River Stabilization

<b>Subgrant:</b>	S550/S589	<b>DEQ Region:</b>	PRO
<b>Description:</b>			
<p>This project will restore 740 feet of streambank with rock, willows, root wads, and bank shaping. The BMPs implemented will reduce sediment and nutrient load to the Bear River and protect a county-owned bridge. During the 2017 runoff, the stream moved the bank back 25 feet.</p> <p>Project BMPs include engineering design and approval; harvest, haul, and installation of root wads and willow clumps; new channel excavation; and rock procurement and placement.</p> <p>The project will be completed by 8/30/2020.</p>			
<b>Status:</b>	This subgrant is open and active.		
			
<p>Looking up stream, barbs are installed along with the dead trees to provide roughness to the newly created flood plain. Willows will be planted across this area. In 2017, the landowner lost about 45 feet of streambank through the fence, which put the new streambank within 50 feet of the county road.</p>		<p>In the middle section of the project, the new channel location helps direct stream flow under the bridge just downstream.</p>	

### 3.21 Washington Creek Culvert Replacements

<b>Subgrant:</b>	S549	<b>DEQ Region:</b> LRO
<b>Description:</b>		
<p>This project replaced two separate crossings consisting of three 60-inch road crossing culverts with two 35-foot bridges on a multiuse shared forest road in the Clearwater National Forest and on private and state forest holdings. The new bridge installations now provide proper high spring stream flows and large woody debris passage as well as fish and other aquatic organism passage. BMPs observed include channel bank vegetation, channel stabilization, constructed wetland, fish passage, obstruction removal, stream crossing, stream habitat improvement and management, and streambank protection. All listed BMPs were implemented; the main objective was installing two bridges over Washington Creek where additional BMPs were installed to allow the creek to function naturally and allow public access.</p>		
<b>Status:</b>	This project is complete.	
		
<p>New bridges were constructed to allow high flows and fish and aquatic organism passage.</p>		

### 3.22 Lower Payette River TMDL Implementation–Phase 4

<b>Subgrant:</b> S532	<b>DEQ Region:</b> BRO	
<b>Description:</b>		
<p>This project protects and restores surface water and ground water quality by providing financial incentive and technical expertise to landowners willing to implement BMPs in the project area.</p> <p>Phase 4 BMPs included fence, water control structures, pumping plants, irrigation pipe, pods, pivot system, and critical area plantings. All BMPs were installed to NRCS specification and design standards.</p> <p>Five projects were implemented with this subgrant. Two projects were visited during the field survey in 2016 with another two projects visited today.</p> <p>The first project converted steep-sloped pasture from furrow to center pivot sprinkler irrigation on 22 acres. The second project converted a 45-acre furrow-irrigated field to center pivot.</p> <p>A small amount of §319 funds were allocated to reseed 100 acres of range and pasture burned in July 2018. Both Gem and Squaw Creek SWCDs respond rapidly to help improve vegetative cover during the critical growing period to prevent or decrease erosion.</p> <p>Phase 4 included a comprehensive water quality monitoring plan for several drains on the Emmett bench. Five drains were monitored on lands north of the lower Payette River, where most of the tilled farmland in the project area is located. Results show that 4 of 5 drains monitored show improvements in the total suspended sediment load; however, bacteria counts have increased in all but one drain.</p>		
<b>Status:</b>	This project is complete.	
		
<p>The 440 feet of irrigation water conveyance to pivot system will keep sediment and nutrients in place on this steep slope.</p>	<p>Pivot and pasture after installation was completed.</p>	
		
<p>Sediment loss for this 45-acre field was 66.6 tons/year. The new system will keep sediment, nutrients, and pesticides in the field where applied.</p>	<p>The 45-acre irrigation system included a structure for water control, pumping plant, irrigation water conveyance, and pivot system.</p>	

### 3.23 Bear River Streambank Stabilization ValC. 2013

<b>Subgrant:</b>	S524	<b>DEQ Region:</b>	PRO
<b>Description:</b>			
<p>This project stabilized 330 feet of streambank upstream of Dingle Bridge. Over several years, the Bear River has moved to the point where it was threatening to take out the bridge and was within 130 feet of a building. Rock, willows, and tree root balls were used to stabilize the bank. A wood pole fence was installed to keep livestock away from the bank. Fencing will help willows establish and provide soil stabilization along the bank.</p>			
<b>Status:</b>	The project is complete.		
			
<p>Streambank protection and a high water bypass channel are shown on the left side of the river.</p>		<p>Root wads, rock riprap, willow plantings stabilize the stream, and fencing will keep livestock out of the water.</p>	

### 3.24 Continued Canyon County BMP Program

<b>Subgrant:</b> S521		<b>DEQ Region:</b> BRO	
<b>Description:</b>			
<p>This project improved surface water quality in Ada and Canyon Counties by installing agricultural BMPs on Tier 1 lands. The sponsor helped implement six projects with this subgrant. All projects were successfully completed.</p> <ul style="list-style-type: none"> <li>• Ada County purchased a 10-foot no-till drill and roller crimper and implemented a rental program to assist small acreage producers in cover cropping. The small drill is in high demand for pasture renovation.</li> <li>• Riverside Hotel in Ada County treats stormwater discharge from their parking lot with a permeable paver system. Discharge draining directly to the Boise River was eliminated.</li> <li>• Gooding Farms implemented a permanent drip irrigation system on 81 acres previously irrigated using siphon tubes. The new system eliminated irrigation return flows and associated pollutant loads.</li> <li>• BPO Farms converted 106 acres of cropland from surface to permanent drip irrigation eliminating irrigation return flows and associated pollutant loads.</li> <li>• Farmer's Co-Operative Ditch Company has an 8.8-acre sediment basin along the existing irrigation channel. This canal receives tail water from approximately 4,000 acres of upstream agricultural lands. The sediment-laden ditch water will now be diverted into the basin to lower suspended sediment and nutrient concentrations. Improving the quality of the irrigation water gives downstream users the ability to convert to more efficient irrigation practices. Bypassed water will return to the Boise River in better condition.</li> <li>• Marchbanks converted from surface irrigation to pivot sprinkler on 70 acres of crop ground that drains to Conway Gulch, a major tributary to the Boise River. Conway Gulch contributes heavy loads of sediment and phosphorus to the Boise River.</li> </ul>			
<b>Status:</b>		This project is complete.	
			
Drip irrigation reduces erosion and soil loss, conserves water, improves growth, discourages weeds, saves time, provides precision chemigation, and is easily adaptable.		The shed houses the electric, pump, and chemigation facilities for the Gooding hops fields.	
			
This mobile pump and filter unit provides drip irrigation to onions and hops fields. Irrigation return flow was eliminated from this 106-acre conversion.		The concrete diversion directs water into the center of the oxbow. The sediment basin removes approximately 65% to 70% of the suspended sediment and attached phosphorus before water is discharged into the canal. The landowner agreed for sediment deposits to be distributed on a nearby field. This maintenance activity will improve marginal farm ground over time.	

### 3.25 Snake Creek Bridge Installation

<b>Subgrant:</b> S519	<b>DEQ Region:</b> LRO
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**Description:**  
 The Snake Creek bridge installation removed a 54-inch diameter round pipe culvert that had a severe cascading outlet drop and was buried over 25 feet deep. This culvert was not sufficient for stream flow, was a fish passage barrier, and had a high potential for failure due to frequent debris buildup on the inlet side. A 65- x 24-foot prefabricated steel bridge supported on precast concrete and wire mesh foundations was installed. The Snake Creek streambed was realigned and reconstructed to pass a 50-year peak stream flow and allow fish and aquatic organism passage.

**Status:** This project is complete.



Complete transformation from a 54-inch undersized culvert to a 65- x 24-foot bridge.



Realigned streambed and reinforced streambank protection.

### 3.26 Middle Snake–Payette Clean Water Project Phase 2

<b>Subgrant:</b>	S493	<b>DEQ Region:</b>	BRO
<b>Description:</b>			
<p>This project protected water quality on the Lower Payette, Weiser, and Snake Rivers by implementing BMPs on private agricultural lands.</p> <p>The Lower Payette Ditch Company and Payette SWCD implemented six projects with this subgrant, including one sediment basin and five irrigation conversions to sprinkler. This review accounts for three project sites not previously visited.</p> <ul style="list-style-type: none"> <li>• Site 1 BMPs include a wheel-line sprinkler irrigation system on a 26-acre crop field. The field is in a corn/grain/hay rotation with an average sediment loss of 168 tons/year. Other BMPs include a structure for water control, pumping plant, and irrigation water conveyance.</li> <li>• Site 2 installed a center pivot sprinkler irrigation system on 38 acres with 960 feet of hand lines. Other BMPs include a structure for water control, pumping plant, irrigation water conveyance, and sprinkler system.</li> <li>• In the Little Willow Creek watershed, Site 3 installed two center pivots on an 85.5-acre crop field in a corn/grain/hay rotation. Average sediment loss was 465 tons/year. In cooperation with NRCS Environmental Quality Incentive Program, this project installed an additional three center pivots on 96.8 acres. Under new irrigation practice, sediment was reduced 582 tons/year to Little Willow Creek and Payette River.</li> </ul>			
<b>Status:</b>	This project is complete.		
			
Flood irrigation allowed surface flow, with sediment and nutrient discharge directly into the Lower Payette Ditch Company canal. After wheel-line installation, there is no discharge to the canal.		Flow in the Willow Creek drainage is mainly influenced by irrigation withdraw and return. The load reduction target for sediment in Little Willow Creek is 70.5%. Irrigation conversion on agricultural land is a priority for implementation. This irrigation conversion project has generated interest from others producers in the watershed.	
			
<p>The pivot and hand line on 38 acres prevent runoff discharge to the Lower Payette Ditch. The ditch provides irrigation water for 13,900 acres of crop and pasture land in Payette and Washington Counties. The canal stretches 32.8 miles from the diversion at the Lower Payette River to the spill at the Weiser River.</p>			

### 3.27 Upper Lanes Creek Restoration (Blackfoot River Tributary)

<b>Subgrant:</b> S492	<b>DEQ Region:</b> PRO	
<b>Description:</b>		
<p>This was a site visit of a previously closed subaward. The project included large-scale active stream channel realignment (~3 miles), grade control, bank shaping, and riparian planting. Off-site water development (eight troughs, several instream/sidestream water intakes and solar pumping plant) with riparian fencing (~6 miles) and stream channel crossing upgrades.</p>		
<p>Since the last evaluation, the property changed hands resulting in a change of priorities and management. The troughs are not working correctly, issues occurred with air locks in the pipelines, and the intakes need repaired or maintained. Seven of the eight troughs had water when we visited but may not provide the required flow. Due to the poor reliability of the troughs, the landowners opened the fenced riparian areas to the livestock. At this point, the banks are not trampled, and the stream looks in great condition. The landowners are repairing the water systems. They want to run larger herds of livestock so they have taken out some of the cross fences. Some pastures had hard use, while others were lightly used. The landowners will need to adjust grazing management practices. Weeds in the pastures have been sprayed.</p>		
<b>Status:</b>	The project is complete.	
		
<p>Some livestock are now grazing inside the enclosures because the water systems have not been reliable. Vegetation is still in good condition and the installed structures are working as planned.</p>	<p>One of eight water troughs. Seven of the eight troughs installed are working and have been maintained.</p>	
		
<p>Fencing around the spring developments was pushed down by the snow and have not been repaired. These areas are critical to keep livestock out so the water collections are not destroyed. The landowner plans on repairing the fencing. Livestock do not appear to be affecting the collection piping.</p>	<p>Fence line contrast between two pastures—one with light use and one with heavy use. It was early in the season so some regrowth will help maintain good roots on the grass plants.</p>	

### 3.28 Potlatch River Watershed Management Plan–Phase 4 Implementation

<b>Subgrant:</b>	S491	<b>DEQ Region:</b> LRO
<b>Description:</b>		
<p>The Potlatch River Watershed Management Plan is designed to restore ESA-listed steelhead habitat in prioritized subwatersheds throughout the Potlatch River system. The proposed BMPs addressed the water quality concerns associated with nonpoint pollution issues within the <i>Potlatch River Subbasin Assessment and TMDLs</i> (2008) and the <i>Potlatch River Subbasin Total Maximum Daily Load Implementation Plan for Agriculture</i> ( DEQ 2010). The BMPs will improve steelhead habitat, through improvements to water quality, and address TMDL water quality parameters.</p> <p>BMPs include access road, conservation cover, fence, grade stabilization, nutrient management, sediment basin, riparian forest buffer, fish passage, pipeline, stream channel bank vegetation, channel stabilization, critical area planting, stream habitat improvement and management, tree/shrub establishment, wetland/meadow restoration, spring development, stream crossing, underground outlet, wetland creation, watering facility, use exclusion, and underground outlet.</p>		
<b>Status:</b>	The project is complete.	
		
<p>Aerial view of Nora Creek meadow restoration. Reconstructed stream channel (center), ditch plugs, and beaver dam analogs provide spring overland flow to reconnect with meadow floodplain and ground water saturation.</p>	<p>Beaver dam analog installed and identified.</p>	
		
<p>Undersized and aquatic organism passage barrier culverts replaced with bridge installation on Corral Creek.</p>	<p>Bank resloping and woody debris installed for stabilization and habitat on Two Mile Meadow Restoration, East Fork Potlatch River.</p>	

### 3.29 Twin Falls Coulee Wetlands Project

<b>Subgrant:</b> S469		<b>DEQ Region:</b> TFRO	
<b>Description:</b>			
<p>This project constructed a series of sediment basins and a large wetland on the Twin Falls Coulee, which is used as an agricultural return drain on the Twin Falls Canal Company system. The 11-acre project area is located northeast of Kimberly. This project constructed approximately 14 sediment basins (which will filter out most of the suspended sediment and nutrients), and one large wetland which will further filter out suspended sediment, nutrients, and bacteria. A 64% reduction in total suspended solids, a 60% reduction in total phosphorus, and an 89% reduction in <i>Escherichia coli</i> bacteria are estimated as a result of the project.</p> <p>Maintenance is performed regularly, and the cells are effective in reducing sediment. All water control structures are functioning as designed. Wetlands are functioning properly and are regularly maintained. These wetlands continue to provide wildlife habitat.</p>			
<b>Status:</b>		The project is complete.	
			
Cleaning cells at the top of the project. Water enters three cleaning cells, then flows into the settling pond.		The large pond settles out heavy materials before water is diverted into sediment basins.	
			
Sediment basins settle out fines. Photo shows sediment removed earlier in the year adjacent to each basin.		Vegetation and bird box provide wetland habitat.	

### 3.30 Pebble Creek Restoration

<b>Subgrant:</b> S467	<b>DEQ Region:</b> PRO
<b>Description:</b>	
<p>This project reduced streambank erosion occurring long two parallel channels of Pebble Creek. These channels were straightened in the 1950s or 1960s, which caused deep down cutting that dewatered the wet meadows and lowered yield in adjacent pastures. When discussing this project with different agencies, it was determined the best way to reduce the sediment erosion and rewater the wet meadows was to restore the stream to the old meandering channels that were still faintly present, and to install stream crossings, riparian fencing, and livestock water.</p>	
<b>Status:</b>	The project is complete.
	
<p>This trough was installed when the stream in the background was fenced to keep livestock out of the creek.</p>	<p>New trees and willows have started to grow on their own. New woody growth appears throughout the project. The grass inside the enclosures is growing well, and little bare ground is evident.</p>
	
<p>The bottomless culvert allows aquatic species to move up and down the stream without any barriers.</p>	<p>New woody riparian species have regenerated and grass has extended inside the enclosures. This part of the channel was in decent shape so no channel reconstruction was done. Livestock was excluded to allow the woody vegetation to grow.</p>

### 3.31 Coeur d’Alene River and Medimont

<b>Subgrant:</b> S464	<b>DEQ Region:</b> CRO
<b>Description:</b>	
<p>The project included bank stabilization and vegetative planting of 4,000 feet of streambank on the Coeur d’Alene River at Medimont. The project is on Idaho Department of Fish and Game property. Kootenai-Shoshone SWCD and DEQ jointly monitored erosion on the Coeur d’Alene River in 2008–2009 using Rosgen methods. This reach was predicted to erode 7 feet per year. This was an overestimate as actual erosion occurs after boat wakes undercut the bank enough for the reach to slough. Bank stabilization was accomplished using 8-inch minus rock and 6,000–8,000 willow/alder whip vegetative plantings.</p>	
<b>Status:</b>	The project is complete.
	
Streambank before stabilization.	Armored riverbank with fencing.
	
Armored riverbank.	Fencing to eliminate wildlife browsing pressure.

### 3.32 Upper Blackfoot Improvement Phase 1

<b>Subgrant:</b> S430	<b>DEQ Region:</b> PRO	
<b>Description:</b>		
<p>This project reduced livestock impacts to streams by installing reliable water sources away from the streams. Accomplishments include installing 5,578 feet of fence, 2 stream crossings, 1 water well, 287 cubic yards of heavy use protection, 2,850 feet of pipeline, 9 solar pump plants, 1 set (8) back-up batteries, 11 watering facilities, 2 irrigation diversions, 400 acres of brush management, 425 acres of pest management, and 113 acres of use exclusion.</p>		
<b>Status:</b>	The project is complete.	
		
<p>Solar panels for a stock water system will provide water away from the stream. The pasture was divided to aid in grazing management, and some of the pastures did not provide access to water.</p>	<p>Livestock water troughs give animals an alternate water source. The landowner sees less livestock sickness, and calves are healthier when they are not in the muddy stream looking for water. The landowner used old tires to deter people from shooting as bullets do not penetrate tires.</p>	

### 3.33 Kootenai Riverbank Restoration

<b>Subgrant:</b> S429	<b>DEQ Region:</b> CRO	
<b>Description:</b>		
<p>The project is located on the Kootenai River upstream of Bonner's Ferry, Idaho, between river mile 158.6 and river mile 156.69. The project was completed in 2011 on a reach of the river and a side channel. It was the first project for the Kootenai River Habitat Restoration Program. This multiyear ecosystem-based restoration program focused on restoring habitat conditions that support all life stages of Kootenai River white sturgeon, burbot, and other native fish. Conditions on the site were steep, with eroding and degrading riverbanks, a hydrologically disconnected floodplain, poor habitat quality, and a lack of riparian vegetation. Cattle had direct access to the river and side channel.</p> <p>Regrading and bioengineering techniques were used on the river banks to expand the developing floodplain, recruit native riparian vegetation, and further reduce erosion. Large wood microtopography was added to create complex niches for plant establishment and fish habitat. Floodplain surfaces are stable and overbank flows occur during high flow events. Log structures remain stable and provide good aquatic habitat. A high magnitude, long-duration flood event after construction resulted in loss of nearly half the planted trees and shrubs. These were replanted the next fall. Riparian plantings have suffered some loss due to browsing by livestock, ungulates, and beaver. The original wildlife/livestock fence intended to be temporary had to be reinforced with a permanent 10-foot permanent fence alongside a barbed-wire fence. A fence on the perimeter of the floodplain was also installed. Younger riparian plants are protected with cages to deter beavers.</p> <p>Surviving planted trees and shrubs are beginning to develop patches of shrub and tree cover. Natural recruitment of cottonwoods and willows is occurring, particularly in areas with topographic diversity and floodplain woody debris. Wetland vegetation is establishing along south side of river and the side channel.</p>		
<b>Status:</b>	The project is complete.	
		
Large wood structures provide roughness, habitat, and bank stability.	Large wood structures.	
		
Perimeter fencing protects from livestock and wildlife browsing.	Cages protect plants from beavers.	

## References

- DEQ (Idaho Department of Environmental Quality). 2008. *Potlatch River Subbasin Assessment and TMDLs*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2010. *Potlatch River Subbasin Total Maximum Daily Load Implementation Plan for Agriculture*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2015. *Idaho Nonpoint Source Management Plan*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2019. *Strategic Plan 2020–2023*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2019. *Water Quality Environmental Performance Partnership Agreement*. Boise, ID: DEQ.
- Idaho Code. 2017. “Declaration of Policy and Statement of Legislative Intent.” Idaho Code §39-3601.
- US Congress. 1987. “Nonpoint Source Management.” Clean Water Act. §319(h).