

2015 Performance and Progress Report

State of Idaho Nonpoint Source Management Program



**State of Idaho
Department of Environmental Quality**

May 2016

Cover photo: A bridge installed over Snake Creek in Clearwater County. The bridge replaced a covered culvert that would routinely plug, obstructing fish passage and increasing the sediment load in the creek. For more information, see page 45.



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May 2016



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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

| | |
|--------------------------|--|
| AFO | animal feeding operation |
| BAG | basin advisory group |
| BMP | best management practice |
| BRO | Boise Regional Office |
| cfs | cubic feet per second |
| CRO | Coeur d'Alene Regional Office |
| DEQ | Idaho Department of Environmental Quality |
| DMA | designated management agency |
| EPA | US Environmental Protection Agency |
| 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 |
| OCD | Owyhee Conservation District |
| 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 |
| TP | total phosphorus |
| TSS | total suspended solids |
| 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, 2014, through November 30, 2015. 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 neighboring 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 49 active projects (Table 1) in 2015. 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 2015.

| Sub-grant | Project Name | Project Sponsor | Start Date | End Date | \$319 Grant Amount | Total Spent (through 11/30/15) | Balance (as of 11/30/15) |
|-----------|--|---|------------|----------|--------------------|--------------------------------|--------------------------|
| S381 | Boulder Creek Restoration | Trout Unlimited | 05/28/10 | 12/31/14 | \$5,400.00 | \$5,000.00 | \$400.00 |
| S389 | Little Salmon River Riparian Restoration | Idaho Department of Fish and Game (IDFG) | 06/15/10 | 12/31/14 | \$41,405.00 | \$39,854.05 | \$1,550.95 |
| S394 | South Fork Clearwater Watershed Vegetation | Palouse-Clearwater Environmental Institute | 06/02/10 | 12/31/14 | \$246,261.00 | \$246,261.05 | -\$0.05 |
| S396 | Potlatch River Watershed Management Plan Phase 2 | Latah Soil and Water Conservation District (SWCD) | 06/01/10 | 12/31/14 | \$207,302.00 | \$207,302.00 | \$0.00 |
| S401 | Little Weiser River Streambank Stabilization and Restoration | Adams SWCD | 07/19/10 | 12/31/14 | \$187,386.00 | \$175,956.14 | \$11,429.86 |
| S406 | American River and Red River Phase 2 | Framing Our Community, Inc. | 09/13/10 | 12/31/14 | \$250,000.00 | \$250,000.00 | \$0.00 |
| S425 | Potlatch River Watershed Management Plan Phase 3 | Latah SWCD | 07/25/11 | 05/31/15 | \$237,504.00 | \$209,239.46 | \$28,264.54 |
| S427 | St. Maries River Road Improvement | Benewah County Highway District | 07/25/11 | 05/31/15 | \$237,504.00 | \$194,936.76 | \$42,567.24 |
| S428 | Grimes Creek Restoration Cooling Waters | Trout Unlimited | 08/01/11 | 05/31/15 | \$60,000.00 | \$60,000.00 | \$0.00 |
| S430 | Upper Blackfoot River Improvement Phase 1 | Caribou SWCD | 08/15/11 | 05/31/15 | \$195,255.00 | \$185,917.99 | \$9,337.01 |
| S431 | Bear River and Whisky Creek Animal Feeding Operations (AFOs) | Caribou SWCD | 08/15/11 | 05/31/15 | \$212,615.00 | \$202,556.69 | \$10,058.31 |
| S432 | Boulder and Willow Creek Restoration | IDFG | 08/18/11 | 05/31/15 | \$10,250.00 | \$10,241.00 | \$9.00 |
| S433 | Little Salmon River Watershed Improvement | IDFG | 08/18/11 | 12/31/15 | \$51,700.00 | \$51,691.08 | \$8.92 |
| S443 | Canyon County Best Management Practices (BMPs) | Lower Boise Watershed Council | 01/18/12 | 12/31/15 | \$250,000.00 | \$249,244.09 | \$755.91 |
| S458 | Cold Springs Creek Riparian Restoration | Elmore SWCD | 08/06/12 | 12/31/16 | \$40,476.00 | \$33,436.60 | \$7,039.40 |
| S459 | Rock Creek BMP Implementation | Idaho SWCD | 08/13/12 | 12/31/16 | \$95,764.00 | \$40,325.02 | \$55,438.98 |
| S460 | Potlatch River Phase IV | Latah SWCD | 08/13/12 | 12/31/16 | \$207,302.00 | \$27,452.45 | \$179,849.55 |
| S461 | Upper Bear River Streambank Stabilization | Bear Lake Regional Commission | 08/13/12 | 12/31/16 | \$54,350.00 | \$37,848.36 | \$16,501.64 |
| S463 | Cove Creek Wetlands | Weiser River SWCD | 08/16/12 | 12/31/16 | \$127,698.00 | \$127,697.82 | \$0.18 |
| S464 | Coeur D'Alene River at Medimont | Kootenai-Shoshone SWCD | 08/17/12 | 12/31/16 | \$129,000.00 | \$116,906.00 | \$12,094.00 |
| S465 | Valley County Watershed | Valley SWCD | 09/01/12 | 11/30/16 | \$105,000.00 | \$105,000.00 | \$0.00 |
| S467 | Pebble Creek | Portneuf SWCD | 09/14/12 | 12/31/16 | \$180,729.00 | \$173,263.65 | \$7,465.35 |
| S468 | St. Maries River Road Phase II | Benewah County Highway District | 09/26/12 | 12/01/16 | \$238,821.00 | \$140,477.36 | \$98,343.64 |
| S469 | Twin Falls Coulee Wetlands | Snake River SWCD | 10/03/12 | 12/01/16 | \$106,300.00 | \$106,300.00 | \$0.00 |
| S471 | Station Creek Watershed Improvement | Franklin SWCD | 10/16/12 | 12/31/16 | \$125,008.00 | \$0.00 | \$125,008.00 |
| S472 | Lindsay Creek Water Quality Improvement Phase 1 | Nez Perce SWCD | 11/26/12 | 12/31/15 | \$135,721.00 | \$87,499.46 | \$48,221.54 |

| Sub-grant | Project Name | Project Sponsor | Start Date | End Date | \$319 Grant Amount | Total Spent (through 11/30/15) | Balance (as of 11/30/15) |
|-----------|---|------------------------------------|------------|----------|--------------------|--------------------------------|--------------------------|
| 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 | 05/31/17 | \$207,674.00 | \$20,767.40 | \$186,906.60 |
| S492 | Upper Lanes Creek Restoration | Trout Unlimited | 08/06/13 | 05/31/17 | \$250,000.00 | \$250,000.00 | \$0.00 |
| S493 | Middle Snake-Payette Clean Water Phase 2 | Payette SWCD | 08/07/13 | 05/31/17 | \$202,729.00 | \$123,349.17 | \$79,379.83 |
| S494 | Owyhee Restoration Incentive Program | Owyhee Watershed Council | 10/01/13 | 10/01/17 | \$132,750.00 | \$77,280.97 | \$55,469.03 |
| S495 | PBJ Division | Bear Lake SWCD | 09/01/13 | 12/31/16 | \$123,857.37 | \$19,512.50 | \$104,344.87 |
| S496 | Wide Hollow Erosion Reduction | Oneida SWCD | 08/26/13 | 12/31/17 | \$249,750.00 | \$146,933.68 | \$102,816.32 |
| S516 | Wolf Lodge Creek Restoration | Kootenai-Shoshone SWCD | 07/08/14 | 12/31/14 | \$51,554.00 | \$51,554.00 | \$0.00 |
| S518 | Lewis County Soil Health BMP Implementations | Lewis Soil Conservation District | 08/08/14 | 12/31/18 | \$60,000.00 | \$59,957.62 | \$42.38 |
| S519 | Snake Creek Bridge Installation | Clearwater SWCD | 08/07/14 | 12/31/17 | \$124,299.00 | \$123,995.00 | \$304.00 |
| S520 | Alder Creek Road Total Maximum Daily Load (TMDL) Implementation Project | Benewah County | 08/07/14 | 12/31/17 | \$235,990.00 | \$0.00 | \$235,990.00 |
| S521 | Continued Canyon County BMP Program | Lower Boise Watershed Council | 08/18/14 | 12/31/18 | \$250,000.00 | \$71,695.21 | \$178,304.79 |
| S522 | Weiser Flat Wetlands Project, Phase III | Weiser River SWCD | 08/15/14 | 12/31/18 | \$94,106.00 | \$41,365.55 | \$52,740.45 |
| S523 | Upper Weiser River Restoration | Adams SWCD | 08/28/14 | 12/31/18 | \$190,796.00 | \$19,079.60 | \$171,716.40 |
| S524 | Bear River Streambank Stabilization | Bear Lake Regional Commission | 08/29/14 | 12/31/18 | \$17,094.08 | \$2,174.51 | \$14,919.57 |
| S527 | PC Pipeline, Off-Site Watering, and Fish Screening | Caribou SWCD | 10/20/14 | 12/31/18 | \$214,861.53 | \$185,100.00 | \$29,761.53 |
| S528 | Stauffer Creek Project | Bear Lake SWCD | 10/24/14 | 12/31/17 | \$186,361.20 | \$18,600.00 | \$167,761.20 |
| S529 | 39/39A Lateral Drain Sediment Reduction Project | Balanced Rock SWCD | 02/06/15 | 12/31/17 | \$54,526.00 | \$0.00 | \$54,526.00 |
| S530 | Wimpey and Pratt Creek Restoration | Trout Unlimited | 02/25/15 | 12/31/17 | \$250,000.00 | \$8,922.00 | \$241,078.00 |
| WW1010 | Middle Bear River Watershed (Mound Valley) | Franklin SWCD | 12/24/09 | 01/01/16 | \$103,000.00 | \$71,236.00 | \$31,764.00 |
| WW1201 | Trout Creek AFO | Caribou SWCD | 09/05/12 | 12/31/14 | \$248,804.00 | \$173,570.37 | \$75,233.63 |
| WW1205 | North Fork Payette River Bank Stabilization | Alzar School | 02/28/12 | 03/01/15 | \$43,680.00 | \$2,400.00 | \$41,280.00 |
| WW1207 | Ovid Creek Stream Protection | Bear Lake SWCD | 03/15/12 | 12/15/15 | \$84,375.00 | \$75,627.00 | \$8,748.00 |

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 agricultural 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 to estimate reductions of sediment, phosphorous, and nitrogen loads resulting from 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 2015 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, 2015–June 30, 2016

Estimated cost: \$118,278

Staffing level: 1.09 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: \$54,256

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: \$24,958
Staffing level: 0.23 fulltime positions

Task 4: Program Implementation

Output 4A: Collaboration with partners to implement NPS projects in priority watersheds.
Milestone: July 1, 2015–June 30, 2016
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, 2015–June 30, 2016
Output 4C: Support the Idaho Water Quality Monitoring and Management Conference.
Milestone: February 2016
Estimated cost: \$183,021
Staffing level: 1.80 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: \$93,320
Staffing level: 0.86 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 projects that met the respective program criteria.

Milestone: Annually

Estimated cost: \$11,936

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: \$19,532

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 2016

Estimated cost: \$20,617

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: \$10,851

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: Annually, by December 30.

Estimated cost: \$14,107

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: | \$372,174 |
| Staffing level: | 3.70 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, 2015) on each active project to the amount of funding that was granted to the project at the outset. [Note: for an explanation of the aberrations noted in figures 1. and 2. for S471 reference the project status narrative found on page 39]

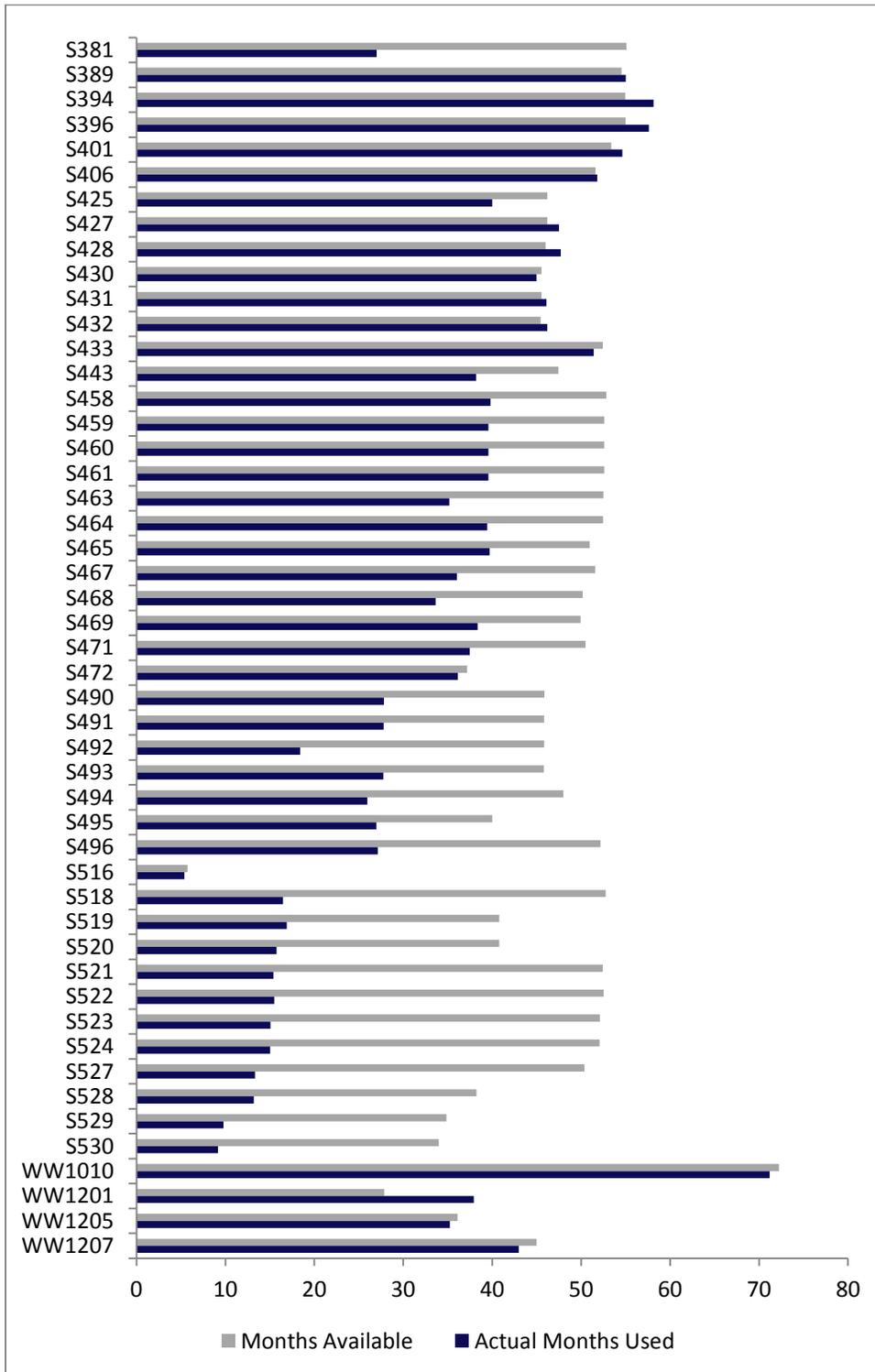


Figure 1. Active projects, time used, and total time available. The blue bars represent the total number of months the project has been underway. The gray bars represent total months available for project completion. (Note: Active projects are any projects funded in federal grant years 2009–2015, inclusive.)

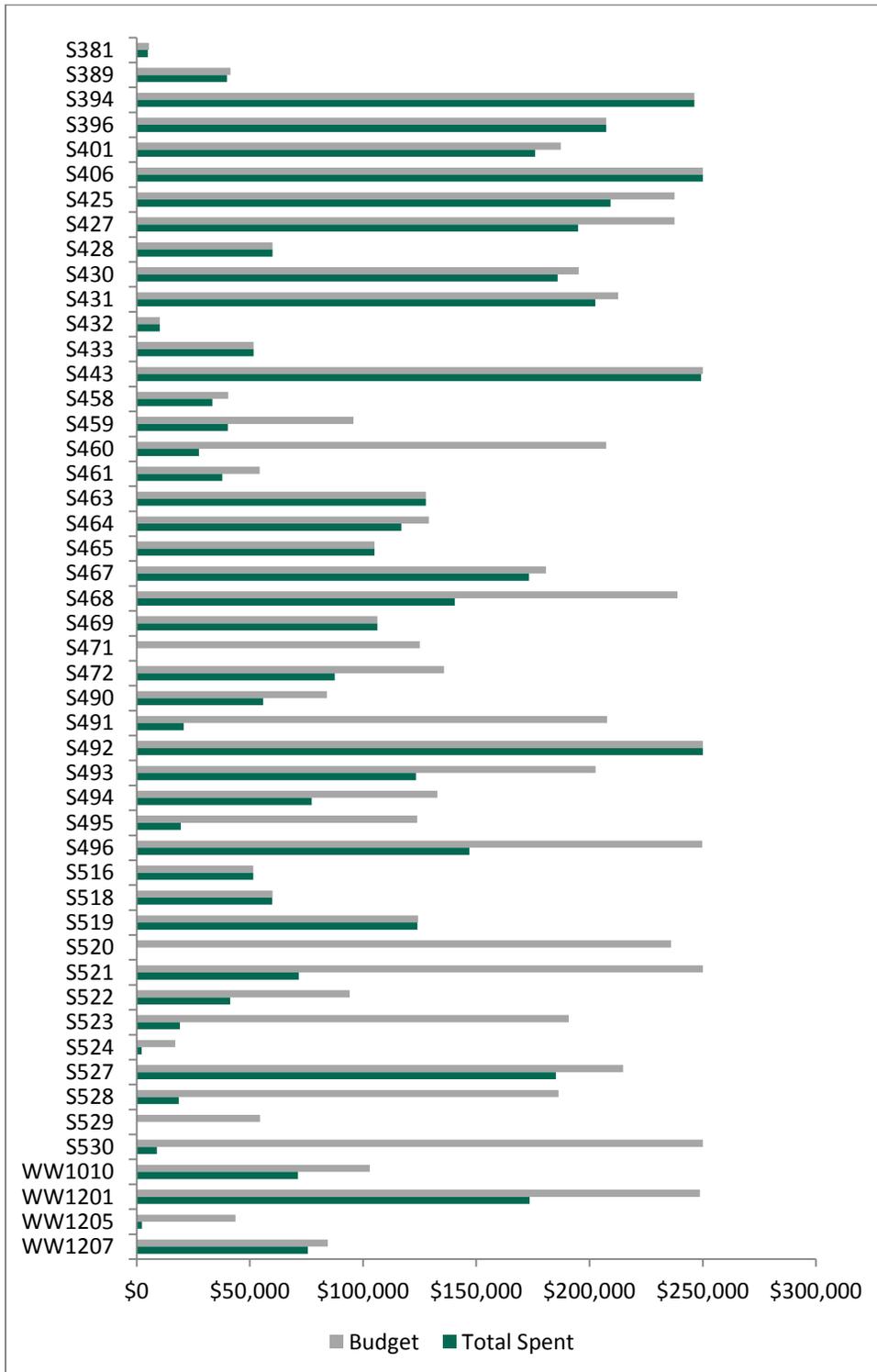


Figure 2. Budget usage by active projects. The gray bars represent the total federal funding for each project. The green bars show the amount spent by each, through November 30, 2015.

Section 2. Project Field Evaluations—2015

This section includes summaries of the project field evaluations DEQ performed in 2015. Section 3 follows with a short report on each completed evaluation. The full report on each field evaluation is available at the DEQ State Office.

2.1 Introduction

In 2015, DEQ managed 49 active projects across the state (Figure 3). Of these, 20 were determined to be complete and were closed out. Field evaluations were completed on 35 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 2015.



Figure 3. Active or recently closed nonpoint source projects, as of November 30, 2015. For project information, see Table 1.

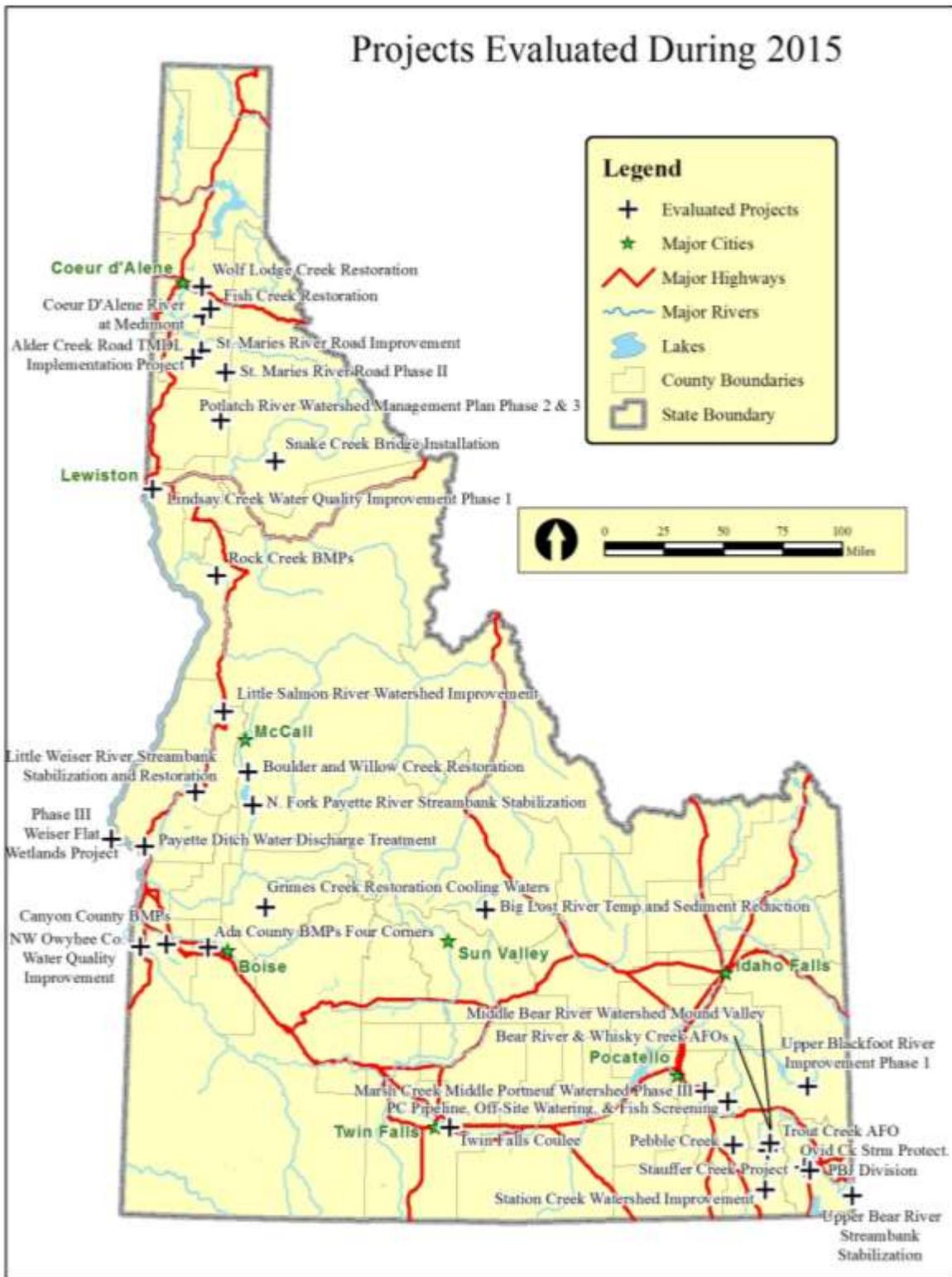


Figure 4. Nonpoint source projects evaluated during 2015. For project information, see Table 2.

Table 2. Projects field-evaluated during 2015.

| Sub-grant | Project Name | Project Goals and Evaluation Conclusions | Category | DEQ Region ^a |
|------------------|--|--|---|-------------------------|
| S219 | Big Lost River Temperature and Sediment Reduction | Trout Unlimited's goal was to protect and enhance the riparian zone and water quality conditions in the upper Big Lost River drainage by constructing fence, revegetating the riparian area, and removing ineffective log-drop structures. | Agriculture | IFRO |
| S226 | NW Owyhee Co. Water Quality Improvement | The goal of this project was to develop and implement nutrient management plans to reduce the amount of pollution generated by agricultural sources located on 19,224 acres. | Agriculture | BRO |
| S274 | North Fork Payette River Streambank Stabilization | Large and medium-size boulders and new vegetation were used to stabilize river banks. The goal of this project was to address a persistent bank erosion problem and in doing help reduce the sediment load in the river. | Agriculture | BRO |
| S356 | Lower Boise River No-Till Drill | This project involved planning, designing, scheduling, and implementing no-till farming practices and cover cropping systems within the lower Boise River watershed. | Agriculture/ Urban and Rural Stormwater | BRO |
| S396 | Potlatch River Watershed Management Plan Phase 2 | This project involved rocking 0.8 miles of forest road and placing six new culverts adjacent to Bobs Creek. This road is heavily used during logging operations. | Forestry | LRO |
| S399 | Marsh Creek, Middle Portneuf River Watershed Phase 3 | This project will reduce sediment and nutrients from animal feeding areas that have a direct influence on water quality and will address streambank erosion by installing barbs, toe rock, and riparian vegetation. | Agriculture | PRO |
| S401 | Little Weiser River Streambank Stabilization and Restoration | This project will stabilize the streambank by resloping, planting trees, and adding root wads, barbs, and other treatments. | Agriculture | BRO |
| S405 | Payette Ditch Wetlands Construction | The Weiser River Soil Conservation District partnered with the Lower Payette Ditch Company to construct a wetlands. The wetlands will be used to treat the nutrient and sediment laden tail water it receives from the ditch before it discharges back into the Weiser River. | Agriculture | BRO |
| S425 | Potlatch River Watershed Management Plan Phase 3 | The Potlatch River Watershed Management Plan addresses a multitude of habitat and water quality issues by implementing various BMPs designed for that purpose. | Agriculture | LRO |
| S427, S468, S520 | St. Maries River Road Improvement, St. Maries River Road Phase II, and Alder Creek Road TMDL Implementation Projects | Each of these three subgrants had similar goals that aimed at improving 9 miles of gravel road that provides residents living in the Alder Creek area year-around access to the nearby city of St. Maries. Each project included resizing culverts, installing relief culverts, providing roadside ditches, improving the alignment and pitch of the roads, stabilizing cut and filled roadside slopes, and improving road drainage by providing a new base and surface rock to help reduce the amount of sediment being discharged into the tributary streams and the main stem St. Maries river. | Transportation | CRO |
| S428 | Grimes Creek Restoration Cooling Waters | BMPs—including floodplain improvements, plantings, channel narrowing and deepening, and pool creation—were implemented to address temperature and sediment impairments. | Mining | BRO |
| S430 | Upper Blackfoot River Improvement Phase 1 | The goal of this project was to reduce livestock impacts to streams by installing reliable alternate water sources upslope from tributaries and the main stem. Additional protection to riparian areas was provided by installing exclusion fencing at certain locations along tributary streams and the main stem of the river. | Agriculture | PRO |
| S431 | Bear River and Whiskey Creek AFOs | This project's goal was to reduce nutrients from entering Bear River and Whiskey Creek by reducing livestock impacts to the streams. The goal was met by reconstructing 300 feet of streambank, adding off-site watering, and re-planting riparian vegetation. | Agriculture | PRO |
| S432 | Boulder Creek and Willow Creek Restoration | The goal of this project was to restore and protect the degraded channels of Boulder and Willow Creeks. IDFG employees and volunteers planted shrubs and other vegetation. Willow weavings were used effectively in certain areas where streambanks were unstable. | Agriculture | BRO |
| S433 | Little Salmon River Watershed Improvement | The goal of this project was to collaborate with landowners to install BMPs that would protect and restore native riparian habitats along the Little Salmon River, Fourmile and Round Valley Creeks, and other tributaries. | Agriculture | BRO |

| Sub-grant | Project Name | Project Goals and Evaluation Conclusions | Category | DEQ Region ^a |
|-----------|--|---|-------------|-------------------------|
| S443 | Canyon County BMPs | This project supports the continuing effort of the Lower Boise Watershed Council to promote and facilitate BMPs designed to improve water quality in streams and rivers located in Ada and Canyon Counties. This subgrant provided funding to a total of six different subprojects. | Agriculture | BRO |
| S459 | Rock Creek BMP Implementation | The Lower Salmon River and Hells Canyon subbasin assessments and TMDLs identified Rock Creek as having the greatest potential to achieve its desired load reductions. Having been identified as the regional water body with the highest priority ranking for implementing BMPs, planned activities include spring development and installing livestock pipeline, a watering facility, and heavy use area protection. | Agriculture | LEW |
| S461 | Upper Bear River Bank Stabilization | The goal of this project was to stabilize 1,500 feet of bank along the Bear River by re-sloping it to a stable angle and planting willows. Any existing vegetation was salvaged and later replanted on the newly sloped bank and fencing was installed. | Agriculture | PRO |
| S464 | Coeur D'Alene River at Medimont | Goals for this project include bank stabilization by rocking and planting approximately 4,000 linear feet of Coeur d'Alene River near Medimont on land owned and managed by the Idaho Department of Fish and Game. | Agriculture | CRO |
| S467 | Pebble Creek Channel Restoration | The goal of this project was to reduce streambank erosion occurring along two parallel channels of Pebble Creek. Actions were taken to restore the previously straightened stream channel to their more natural meandering condition. Additional efforts included stream crossings, riparian fencing, and new livestock water sources. | Agriculture | PRO |
| S469 | Twin Falls Coulee Wetlands | The goal of this project was to reduce pollutant loads in irrigation return flows from several thousand acres of irrigated farmland by excavating three cleaning cells, one large finishing pond, and nine wetland cells to route return flows through prior to discharging directly into the Snake River just east of Twin Falls. | Agriculture | TFRO |
| S471 | Station Creek Watershed Improvement | The focus of this project is to reduce sediment input to Station Creek resulting from streambank and channel bed erosion. BMPs include constructing rock checks, planting streamside riparian areas, installing fence to exclude livestock from entering the stream or damaging the riparian area, and excavating water and sediment basins at key locations in the watershed. | Agriculture | PRO |
| S472 | Lindsay Creek Water Quality Improvement Phase 1 | This project had three goals: reduce nutrient and sediment delivery watershed-wide by 30%; reduce bacteria loading by 20%; and develop an inventory of road and streambank segments that are most responsible for delivering high sediment loads. BMPs being installed or already in use include invasive weed control, riparian planting, and weed mats. | Agriculture | LRO |
| S490 | Fish Creek Nutrient and Sediment Reduction | Project goals included bank stabilization and riparian planting of 1,200 feet of stream and cattle exclusion fencing with two stream crossings. Bank armoring, exclusion fencing, and rock barbs were observed during the latest evaluation. | Agriculture | CRO |
| S495 | PBJ Diversion | The goals of the project are to upgrade an irrigation structure that is causing erosion up- and downstream of the diversion and to install head gates that can be opened and closed as needed during the irrigation season. | Agriculture | PRO |
| S516 | Wolf Lodge Creek Restoration | Funding was used to address three areas of bank erosion on Wolf Lodge Creek: (1) a significant size debris jam, (2) a steep, vertical bank encroaching on a secondary road, and (3) a heavily eroding length of bank along an outside meander. All of the project goals had been achieved and were observed during the evaluation. | Agriculture | CRO |
| S519 | Snake Creek Bridge Installation | The goal of this project was to remove a problem culvert and replace it with a 24 x 60 ft steel bridge. The channel will be restored with its natural substrate and the banks will be stabilized. | Forestry | LRO |
| S522 | Weiser Flat Wetlands Project, Phase III | This grant will provide for improvements at two project sites: the Galloway-Warm Springs wetland and Smith/Hemmenway wetland. Wetlands were constructed at each site and concrete structures were put in place to divert canal water to the wetlands. Both sites were fenced to exclude livestock from the area. The project is expected to reduce phosphorous, sediment, and nitrate loads in the water, which eventually reaches the Snake River. | Agriculture | BRO |
| S527 | Pebble Creek Pipeline, Off-Stream Watering, and Fish Screen Installation | This project will remove several small irrigation diversions and replace them with one larger diversion and remove an irrigation ditch from use and replace it with a pipe. Gravity flow will deliver water to downstream irrigators. These actions will eliminate the need to install fish screens on each of the diversions and also will reduce the sediment load entering the Portneuf River. | Agriculture | PRO |
| S528 | Stauffer Creek Project | The goal of this project is to reduce the need for yearly maintenance on irrigation diversions and at stream crossings by combining some of the existing diversions, installing more permanent structures, and installing a culvert where a road crosses the creek. An open canal will be replaced with a pipe to help reduce evaporation and seepage loss. | Agriculture | PRO |

| Sub-grant | Project Name | Project Goals and Evaluation Conclusions | Category | DEQ Region^a |
|------------------|--|---|-----------------|-------------------------------|
| WW1010 | Middle Bear River Watershed Mound Valley | The goal of this project was to stabilize two banks of the Bear River by installing five rock/log barbs at one location and another three barbs with toe rock, willow plantings, and sedge mats at a second location. | Agriculture | PRO |
| WW1201 | Trout Creek AFO | The goal of this project was to remove an old dairy facility from its current location close to the creek. In the process, corrals, a cement lagoon, and a water gap were removed and a length of streambank was revegetated. New corrals were constructed upslope on the property, farther from the stream, with containment for runoff. | Agriculture | PRO |
| WW1207 | Ovid Creek Stream Protection | This project took place at two locations: on an unnamed tributary to Ovid Creek and on Spring Creek (Big Arm of St. Charles Creek). The goal for both sites was to restrict livestock access to the streams. | 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 35 project sites to evaluate and document progress. A number of these evaluations were done on 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 2015.

- 31 projects addressed NPS water quality issues related to agriculture or grazing, 1 of which also addressed urban and rural stormwater issues.
- 2 projects addressed issues related to forestry.
- 1 project addressed issues related to mining.
- 1 project addressed issues related to transportation.

The following pages include summaries of the projects that were evaluated in 2015. More detailed evaluation reports for each project are available from DEQ upon request.

3.1 Upper Big Lost River Temperature and Sediment Reduction (Re-Eval)

Subgrant: S219 **Latitude and Longitude:** 43.89300, -114.04800

Description:

Trout Unlimited proposed to protect and enhance riparian, stream, and water quality conditions in the upper Big Lost River drainage by accomplishing the following actions:

- Fenced 1.75 miles of the lower East Fork Big Lost River to exclude cattle from the river.
- Create and implement a woody vegetation re-establishment plan for the upper East Fork Big Lost River, which includes planting willows (potted and cuttings) along 6.2 miles of river.
- Remove existing, ineffective log-drop structures and bank treatments.

Completion date:

Work was completed on February 9, 2012.

Project status:

Trout Unlimited has monitored willow growth and overall riparian conditions and repaired fencing since the project was completed.



The effort to manage riparian grazing included fencing 1.75 miles of the lower East Fork Big Lost River to exclude cattle.



Restricting streamside grazing allowed a previously trampled riparian area to revegetate.



Another stretch of previously trampled bank is in recovery with willow planting.



Trout Unlimited helped to reduce thermal loading by creating and implementing a woody vegetation re-establishment plan for the upper East Fork Big Lost River. The plan called for planting willows (potted and cuttings) along 6.2 miles of river.

3.2 Northwest Owyhee County Water Quality Improvement Project (Re-Eval)

Subgrant: S226 **Latitude and Longitude:** 43.63100, -116.94600

Description:

The Northwest Owyhee County Water Quality Improvement project utilized \$319 grant funds and financial and technical assistance provided by the Owyhee Soil Conservation District, the Idaho Association of Soil Conservation Districts, ISWCC, and the landowner to develop and implement nutrient management plans. These plans are intended to guide producers on a path to reduce the amount of fertilizer used on 19,224 acres of croplands, and as a result, create less nonpoint source pollution over the course of the 3-year project. The following table shows the number of producers and acres enrolled in the project from 2008 through 2010.

| Year | Number of Producers Participating | Number of Fields Enrolled | Average Field Size (acres) | Total Acres Enrolled |
|--------------|-----------------------------------|---------------------------|----------------------------|----------------------|
| 2008 | 18 | 128 | 24.6 | 3,150.4 |
| 2009 | 22 | 267 | 30.0 | 8,017.2 |
| 2010 | 18 | 286 | 28.2 | 8,056.5 |
| Total | 24 | 681 | 28.2 | 19,224.1 |

Completion date:

This project was completed in 2011.

Project status:

DEQ determined that visiting project sites to conduct the evaluation was not necessary. Instead, the Owyhee Soil Conservation District distributed a simple, 3-question survey (summarized below) to all landowners who participated in the project. The survey was designed to learn more about the long-term effects the project has had on nutrient and irrigation water management practices in northwest Owyhee County. Results were provided to DEQ in October 2015.

The survey results are as follows:

- Number of surveys mailed to project participants: 27
- Number of surveys returned as undeliverable: 3
- Number of surveys presumed to have been delivered to participants: 24
- Number of completed surveys returned by participants: 15

| Question | Yes | No | % Adopting BMPs |
|---|-----|----|-----------------|
| Since participating in the project, I use soil test results to help manage my crop nutrient program more often than I did before. | 14 | 1 | 93% |
| Since participating in the project, I manage my irrigation water more carefully than I did before. | 12 | 3 | 80% |
| Since participating in the project, other farmers I know have adopted better nutrient and/or irrigation water management practices as a result of having observed the benefits to my operation. | 9 | 4 | 60% |

3.3 North Fork Payette River Streambank Stabilization (Re-Eval)

Subgrant: S274 **Latitude and Longitude:** 44.51121, -116.02960

Description:

This project was part of a larger plan to create a kayak whitewater park. Riverbanks in this stretch suffered excessive erosion due to high river flows and foot traffic. Project implementation consisted of placing large- and medium-size boulders combined with vegetation to help stabilize the bank. The goal of this project was to reduce the sediment load identified in the North Fork Payette River TMDL (DEQ 2005).

Completion date:

This project was completed in 2011.

Project status:

All BMPs are being maintained and additional BMPs have been installed by other entities on this stretch of the North Fork Payette River. Local volunteers are regularly monitoring the project site to ensure the BMPs are maintained and functioning as intended. This is a high-profile project because it is adjacent to the City of Cascade and the kayak park.



In 2010, this section of bank required reinforcement using rock.



This 2015 photo shows the same reinforced stretch of bank as seen in the photo on the left. Plantings further stabilize the bank and reduce soil loss by dissipating energy created by wave action and high flows.



This rock barb was installed early in the project to divert flow from the downstream eroding bank. The landowner has since declined to allow the agencies to have access to the site to take additional actions to further protect the bank.



This section of newly stabilized bank is just downstream of the rock barb seen in the picture on the left. On the far bank the landowner stabilized the eroding bank himself and fenced cattle from accessing this stretch.

3.4 Lower Boise River No-Till Drill (formerly Ada County BMPs at Four Corners)

Subgrant: S356 **Latitude and Longitude:** 43.63917, -116.37527

Description:

The Ada SWCD partnered with the Canyon Soil Conservation District, Ada County Parks and Waterways and Weed Abatement, ISWCC, Natural Resources Conservation Service (NRCS), and private landowners to plan, design, schedule, and implement no-till farming practices and cover cropping systems within the lower Boise River watershed. The district's objective was to purchase a *John Deere 1590 No-Till Drill* and later make it available for use by farmers at a reasonable cost. The drill is stored and maintained in a central location at the Ada County West Campus in Meridian and in fall, 2013 became available for use by farmers at a rental rate of \$12/acre.

No-till farming reduces sheet and till erosion, improves soil quality and organic matter content, reduces energy use, improves air quality, increases plant-available moisture, improves carbon sequestration in the soils, and provides food and escape cover for wildlife. No-till farming also improves soil biological activity and diversity, thus reducing the need for applying commercial fertilizers and pesticides.

Completion date:

This project was completed on January 31, 2014.

Project status:

Ada SWCD has provided DEQ with all project-related results from fall 2013 through spring 2015. In the last 2 years, the no-till drill has been rented to over 45 growers to plant 2,895 acres in Ada, Canyon, Gem, Payette, and Owyhee Counties. The response of the farming community has been extremely positive. The majority of the ground planted with the no-till drill is sprinkler irrigated; 650 acres planted with the drill has been furrow irrigated. Modeling results estimate a 1/3 ton reduction in sediment loss per acre the first year, and 100% reduction within 5 years of using no till practices.



A demonstration of the benefit of no-tilled soil matrix compared to a matrix from a field that had been conventionally tilled was just one of several talks that took place during a field trip held last summer to promote the equipment and the no-till concept.



A rain simulation example demonstrated how soil covered with plant residues is the most important factor influencing water infiltration into the soil. A no-tillage system under cover of crop residues is the most efficient method for preventing and controlling erosion.



A roller crimper can turn a lush stand of cover crop into a thick, weed-suppressing mulch.



After crimping the cover crop, a no-till drill is used to penetrate the soil and to cut or move heavy surface residues creating a furrow. Seeds are dropped at a uniform depth and in firm contact with the moist soil to ensure a good stand.

3.5 Potlatch River Watershed Management Plan Phase II Implementation

Subgrant: S396 **Latitude and Longitude:** 46.85025, -116.40170

Description:

This project involved rocking 0.8 miles of forest road and placing six new culverts adjacent to Bobs Creek. The road is heavily used during logging operations.

Completion date:

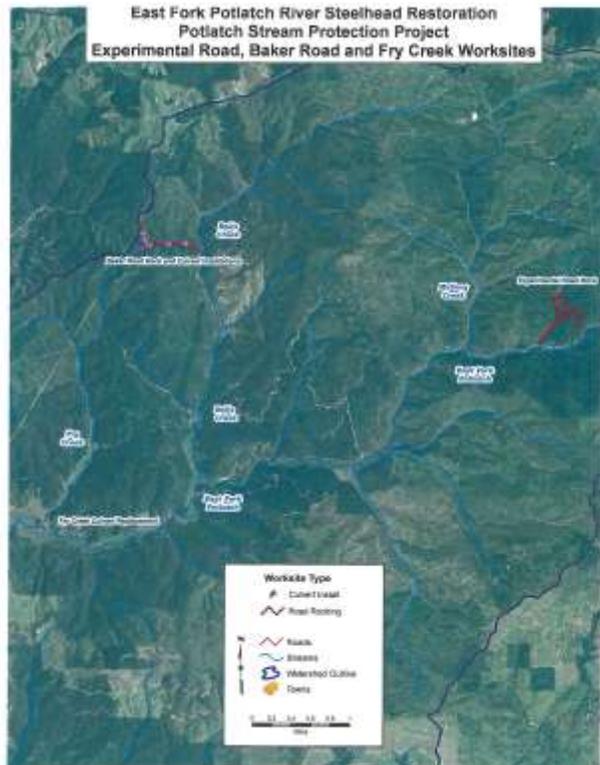
Work is on schedule for on-time completion.

Project status:

The Potlatch River Watershed Management Plan is a multiphase project, implementing many BMPs. The Latah SWCD is required to monitor and maintain BMPs under the terms of the Potlatch River Watershed Management Plan. The results of the evaluation confirmed that BMPs were being maintained. The District will periodically visit the project sites and, if necessary, will address any issues that arise.



Recently rocked forest road.



Potlatch River Watershed Management Plan project area.



Culvert installation/replacement.

3.6 Marsh Creek and Middle Portneuf Watershed Phase 3 (Re-Eval)

Subgrant: S399 Latitude and Longitude: 42.77595, -112.23270

Description:

This project helped reduce the amount of sediment and nutrients entering streams from animal feeding areas. These sources often have a direct influence on water quality. Streambank erosion was addressed by installing barbs, toe rock, and riparian vegetation. Feeding areas were relocated to new sites farther away from the stream, and containment berms were built to control runoff from leaving these areas. Berms also divert clean water from running through the feeding area. Off-stream water sources were installed to eliminate the need for livestock to access the streams for water.

Completion date:

Work was completed on November 13, 2014.

Project status:

BMPs are being maintained in accordance with the design, operation, and maintenance plan.



Looking upstream at an area where bank restoration work was completed. On the left side of the photo is the Topaz Gage Station. Work started at the post on the left and continued upstream to a point just past the Gage. The riparian area was fenced to exclude livestock.



A section of streambank that was restored during the project. In 2011 one runoff event caused high water to wash around the end of the natural rock structure and erode about 11 feet of bank.

3.7 Little Weiser River Streambank Stabilization and Restoration (Re-Eval)

Subgrant: S401 **Latitude and Longitude:** 44.58310, -116.52162

Description:

Several decades ago, the Army Corps of Engineers straightened and channelized a section of the Little Weiser River in an attempt to minimize bank erosion. This effort resulted in decreasing the length of the river, which thereby increased the channel gradient and stream velocity. As a result, the River began to down cut as it attempted to reestablish its former meandering course. This project served to stabilize the banks by resloping, planting trees, adding root wads, and installing barbs and other treatments.

Completion date:

The project was completed in December 2014.

Project status:

BMPs are in good condition despite a very low water year. Photo point monitoring and measuring the lateral recession rate has taken place.



Barbs were built to deflect erosional energy away from bank.



Willows planted along the bank are helping to restore the riparian area.



Prior to the start of this project, this section of the Little Weiser River was starting to erode and threatened to breach the Lindsay Ditch embankment. After installing river barbs and replanting the riparian area one can now observe sediment deposition occurring between the barbs, and willows establishing themselves along the banks.

3.8 Payette Ditch Wetlands Construction (Re-Eval)

Subgrant: S405 **Latitude and Longitude:** 44.24313, -116.93834

Description:

The Weiser River SWCD partnered with the Lower Payette Ditch Company to treat the tail water discharging from the Lower Payette Ditch before it empties into the Weiser River. The Lower Payette Ditch receives drain water from over 3,200 acres of irrigated cropland. A 7-acre wetland consisting of two ponds and spillways was built for this purpose. The first pond is deeper, allowing sediments to settle to the bottom. From there, the water discharges over a rock spillway into a second shallower, larger pond. The water flows slowly through the second pond allowing aquatic plants to take up nutrients. At the bottom end of the second pond the water discharges at another rock spillway into an outlet ditch before eventually flowing into the Weiser River. The Lower Payette Ditch Company maintains this wetland complex.

Completion date:

The project was completed in March 2012.

Project status:

The Payette Ditch Company maintains the BMPs. In spring, 2015 sediment was removed from the wetland for the first time. The Ditch Company intends to remove sediment every spring to retain the capacity of the wetland. Sediment that was removed has been used for road and ditch maintenance. The Idaho State Department of Agriculture performs the monitoring on this project .



The spillway into the second pond, as observed in 2013.



The same spillway into the second pond, as seen in 2015.. Established vegetation serves to intercept runoff from nearby fields. Slowing down runoff further allows the wetland to function to remove pollutants from the water.



This picture shows the point where the spillway for the second/polishing pond discharges into the outlet ditch. During the irrigation season ditch water can be diverted into the wetland complex or can remain in the ditch until it eventually enters a large pipe and head gate and discharges into the River. The bypass allows options for scheduling maintenance during the irrigation season to be considered.

3.9 Potlatch River Watershed Management Plan Phase III

Subgrant: S425 **Latitude and Longitude:** 46.84804, -116.40134

Description:

The Potlatch River Watershed Management Plan addresses a multitude of habitat and water quality concerns in the watershed. The BMPs to be implemented in Phase III will be selected to target a specific concern or problem issue addressed in the Plan.

Completion date:

Work is proceeding on schedule.

Project status:

The Plan directs a course of action that is best pursued as a multiphase project that requires a host of BMP's to be considered. All BMPs observed during the evaluation were well maintained and functioning as intended. The Latah SWCD is responsible for monitoring and maintaining the BMPs. The District periodically visits the project site and addresses any issues that arise.



An overflow persuasion channel with large woody debris is restored in a meadow.



6,275 linear feet of fence was installed to protect 10.2 acres of stream channel and meadow.



An offsite watering pond with the proper slope and reinforced access was installed.



Riparian vegetation plantings and sedge mats provide streambank stabilization and proper meadow function.

3.10 St. Maries River Road (Phase I and Phase II) and Alder Creek Road (Phase III) (Re-Eval)

Subgrant: S427, **Latitude and Longitude:** 47.26983, -116.59618
 S468, 47.14220, -116.37460
 S520 47.22452, -116.66699

Description:

The mutual goal of the three projects was to improve the surface and base of 9 contiguous miles of unpaved road. The road provides residents living in the area year around access to the town of St. Maries. Successfully implementing this project would result in reduced levels of sediment entering the St. Maries River and several of its tributary streams. BMP's used on these projects include installing new resized culverts and relief culverts to improve road drainage, excavating roadside ditches to handle water coming off of the road surface, improving the road's alignment by reducing steep pitches, and stabilizing any unstable slopes that are adjacent to the road.

Completion date:

Phase I work was completed on July 10, 2015. Phase II work had been partially completed when, unexpectedly, Benewah County officials decided to forego further work and forfeit the balance of its funding. Phase III is scheduled to be completed by a new partner, Benewah SWCD, under a revised workplan. The SWCD intends to complete the work that had been initially planned for this stretch of Road by the end of December 2016.

Project status:

The BMPs that were installed during the early phases of the Project are being well maintained with few problems noted. The ditches and culverts are functioning properly, and there is no sign of rill erosion or runoff from the road surface. During the evaluation DEQ personnel noted that some of the new culverts had partially filled with rock and sand, and certain plantings on cut slopes had failed to take root and were dead. The effects of erosion were observed in several of these areas. A turbidity meter and sediment traps were used early in the project to monitor the condition of nearby streams; however, no monitoring was underway at the time of the evaluation.



St. Maries River Road in May 2010, before the start of Phase I work, had numerous pot holes.



St. Maries River Road in September 2013, after newly crushed rock was laid over a surface of base rock.



In September 2015 some lengths of unvegetated cut slope were showing signs of erosion.



A new culvert was installed as required under the workplan for Phase I.

3.11 Grimes Creek Restoration Cooling Waters (Re-Eval)

Subgrant: S428 **Latitude and Longitude:** 43.89155, -115.90349

Description:

Grimes Creek is both temperature and sediment impaired. Historic mine tailings and related activities have resulted in creeks becoming channelized and riparian zones where vegetation has failed to grow. The BMP's implemented included reconnecting the floodplain and planting vegetation streamside to improve shade canopy. Boulders were strategically placed in the channel causing it to narrow and be deeper during periods of low flow. All practices that were implemented were done with the intention of decreasing the water temperature of the creek and reducing the rate of bank erosion.

Completion date:

This project was completed in May 2015.

Project status:

All BMPs were designed to be selfsustaining. Monitoring done as part of the project included electrofishing, recording water temperature, photo point monitoring, and recording the success of pool development. All monitoring efforts ceased following completion of the project. DEQ will use its 5-year review of Grimes Creek to determine whether riparian vegetation conditions in the treated reaches have improved over time.



Sediment traps were created in tailings piles. Along Granite Creek, a tributary to Grimes Creek, traps were constructed to collect floodwaters and retain sediment. This year, low water and very dry conditions resulted in this sediment trap not receiving overland flows of any type.



The results of stabilizing a length of streambank with rip-rap, compared to one that used bioengineering techniques to achieve a similar outcome. Using rip-rap to stabilize a length of eroding streambank is being discouraged in some circles in favor of using softer, bioengineered techniques.



Actions were taken downstream of the rip-rap project to stabilize a stretch of bank by using log revetments, pole plantings, root wads, and slope stabilization fabric planted with a native seed mix.



Bioengineered techniques used in the project were successful even during this very dry, low water year. Willows and other bushes were growing and appeared to be in good shape. In time, as root structures take hold, they are expected to provide subsurface stabilization and protection. As the riparian area grows expectations call for it to reduce stream velocity, reduce scour, and promote sediment deposition at the toe of the bank.

3.12 Upper Blackfoot Improvement

Subgrant: S430 **Latitude and Longitude:** 42.78618, -111.38552

Description:

The goal of this project is to reduce livestock impacts on tributary streams by installing reliable water sources farther away from the streams. Exclusion fencing was installed in some areas to keep livestock from entering the riparian area and the river.

Completion date:

Work was completed in July 2015.

Project status:

All BMPs were being maintained. Landowners were contacted and on-site evaluations of BMPs were performed to verify that the installed practices were in place and functioning as intended.



Fencing was installed in some areas to exclude livestock from grazing in riparian areas



An old water gap that was used as a source of water for livestock was no longer needed after a trough was installed for the same purpose.



Old tires placed upslope and farther from the stream serve as troughs to hold water for livestock.



Solar panels are used to provide the energy needed to operate pumps that deliver water to troughs.

3.13 Bear River/Whiskey Creek AFOs

Subgrant: S431 **Latitude and Longitude:** 42.44645, -111.73365

Description:

The goal of this project was to reduce the nutrient load in Bear River and Whiskey Creek by reducing livestock access to the streams and river. At the Bear River site, off-stream water was provided to three troughs. The vegetation in the riparian areas is rebounding very well. The Whiskey Creek site was home to an old dairy facility that was built over the creek. The facility was torn down and the Creek was daylighted by removing it from the pipe it had flowed through under the facility; 300 feet of the stream channel was reconstructed. Pools and riffles were created in the channel to reduce the stream velocity and continued erosion of the banks and streambed. Vegetation was planted in the riparian area to help stabilize the bank. These plantings were observed growing extremely well. Construction finished late in the year and heavy fall rains created ideal conditions for placing Kentucky blue grass sod in disturbed areas to reduce further erosion of the banks.

Completion date:

This project was completed in June 2015

Project status:

All practices are being maintained and functioning as designed. The Caribou SWCD is monitoring the project, annually.



An overview of a restored stretch of Whiskey Creek.



The rock that was placed along the banks is now mostly covered by new riparian vegetation growth.



The riparian vegetation shown in the picture includes a mix of willows and dogwood. The willows grew 3–4 feet in year one, with many new branches. To this date 98% of the willows planted had survived.

3.14 Boulder Creek and Willow Creek Restoration

Subgrant: S432 **Latitude and Longitude:** 44.71406, -116.07837

Description:

The goal of this project was to restore degraded sections of Boulder and Willow Creek stream channel. IDFG employees and volunteers planted shrubs in the riparian area. Willow weavings were built in areas where the streambanks were unstable. Plant growth in the riparian area over time will shade the stream, resulting in a reduced thermal load in these streams. Streambank stability will increase and sediment and nutrient loads will be reduced.

Completion date:

This project was completed in June 2015.

Project status:

BMPs are being maintained. A considerable effort was spent hand watering plants and controlling weeds in project areas. Hand watering occurred on 50 occasions this year, due to very dry conditions and low water levels. The plantings are being well cared for and maintained. The survival rate of new plantings is high. DEQ and Idaho Association of Soil Conservation Districts staff used the stream visual assessment monitoring protocol as part of the 5-year TMDL review process established to assess riparian health, shading, and bank stability. Annual photo point monitoring was conducted by IDFG and will continue as part of their commitment to the project.



Dry conditions and low water levels compelled IDFG to increase their number of hand watering visits. This photograph shows willow weaving treatments at the water's edge and pole plantings on the bank of Boulder Creek. Over time the bank will collapse and create a more stable angle of repose.



Pods are hand dug to a depth of 3-4 feet to ensure the plants roots are wet and able to reach water at any time of the year. IDFG and volunteers hand weed the sites and water pods to ensure successful rooting.

3.15 Little Salmon River Watershed Improvement (Re-Eval)

Subgrant: S433 **Latitude and Longitude:** 45.07912, -116.30320

Description:

Historical uses of the Meadow Valley include ranching and logging. These activities have resulted in a reduced number of trees, shrubs and native forbs living in large stretches of riparian area. This loss of vegetation has resulted in elevated stream temperatures. The goal of this project is to work collaboratively with landowners on ways to protect and restore native riparian habitats along the Little Salmon River, Fourmile and Round Valley Creeks, and other tributaries to the Little Salmon River.

Completion date:

Personnel issues at IDFG caused this project to fall off schedule. DEQ granted a time extension through 12/31/2015 to complete the project and submit the final paperwork.

Project status:

The plantings that were done in the riparian area are healthy and largely thriving. DEQ observed some dead plants in areas where moisture was insufficient; however, DEQ determined that the level of mortality observed on-site was reasonable. IDFG and volunteers are making a considerable effort to achieve success, by hand watering new plantings and controlling weeds in the planted areas. This extra effort will make it easier for new plants to compete with other vegetation to survive. IDFG conducts, and plans to continue conducting, annual photo point monitoring of this project into the future.



IDFG and volunteers planted 700 plants in 2015 on 68 acres adjacent to the Little Salmon River. This image shows pod plantings at the top of bank and willow poles stung lower into the bank. As the willows establish, the vertical bank will slump between the plantings to create greater stability.



A steer auger was used to drill holes 6 feet deep into the capillary zone. Planting willows at this depth will ensure the roots remain wet, thereby increasing their chances of survival.

3.16 Canyon County BMPs for Water Quality Improvement (Re-Eval)

Subgrant: S443 **Latitude and Longitude:** 43.64999, -116.72699

Description:

This project was the second phase of work that began under subgrant S323 (phase 1). The goal of the project was to promote and facilitate implementation of BMPs designed to improve water quality in Canyon County, and parts of Ada County. The success of this project was contingent on maintaining a strong partnership between the Lower Boise Watershed Council, Canyon Soil Conservation District, ISWCC, NRCS, and DEQ. Together these entities provided in-kind and cash match sufficient to implement six BMP subprojects in Canyon County under the terms of this subgrant: (1) McKellip Drip System #1 and #2 (2) Hungate Wheel Line System, (3) Burris Surface Upgrade, (4) Marchbanks Center Pivot, (5) Idaho Watershed Solutions (IWS) Constructed Wetland, and (6) Maxwell Permanent Drip Irrigation.

Completion date:

This project was completed in March 2015.

Project status:

All BMPs are being maintained. Monitoring data have been collected by USGS and other local stakeholders (Lower Boise Watershed Council and multiple municipalities and agencies) at the mouth of each tributary for over 15 years. These data provide one measure of baseline conditions on the regional scale, before BMP's were implemented.



Burris Surface Upgrade. The irrigation water used on these fields was supplied by an earthen ditch. Conversion to a mainline eliminated washouts and water loss on the main ditch. Water management is now more efficient and crop yields have improved. Runoff and erosion has been reduced.



IWS Constructed Wetland. Water from North Alkali Drain is diverted to a sediment pond. Water is discharged from the pond and moves through these two grow plots. The plots serve to filter the water, removing nutrients and sediment in the process. From the plots the water passes through a series of structures and gated pipe to the outlet, where a measuring device collects data before the water is discharged back to the drain.



Maxwell Drip Irrigation. This system helps to reduce the amount of sediment and nutrient running off hops fields and into the lower Boise River. Nutrients and pesticides can now be added to the drip system and delivered directly to the plants.



Hungate Wheel Line. Iron levels in irrigation water can cause rust to form on pipes. Using a wheel line to supply water for crops results in reduced levels of runoff, phosphorus mobilization, deep percolation, and erosion. After the wheel line system was installed runoff from fields was eliminated.

3.17 Rock Creek BMP Implementation

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

Description:

The Lower Salmon River and Hells Canyon subbasin assessments and TMDLs identified Rock Creek as the watershed having the greatest potential for pollutant loads to be reduced, and the highest priority for BMPs to be implemented (DEQ 2009). BMPs planned for use on this project include developing a spring, installing a pipeline to deliver water to livestock, constructing a watering facility, and protecting areas that are heavily used by livestock.

Completion date:

Work is expected to be completed on schedule.

Project status:

A number of BMPs were recently completed. Under NRCS contracts the landowner is responsible for maintaining BMPs for a minimum of 10 years. Some BMP monitoring is underway. Sediment, nutrient, bacteria, and temperature monitoring will be performed in the watershed before, during, and after BMP's are implemented. Long-term monitoring is scheduled to be done on a 5-year cycle, as budgets allow. All monitoring, sampling, and analyses will be performed in accordance with accredited procedures. Monitoring will be done as part of a team effort involving a number of agencies including the ISWCC, Idaho Association of Soil Conservation Districts, NRCS, Idaho Department of Lands, US Bureau of Land Management, IDFG, US Forest Service, and the Nez Perce Tribe.



Water is collected and stored at the spring, allowing sediment to settle. A pipeline buried 3 feet underground runs 120 feet to the spring box.



The spring box provides a source of water for livestock in the area.



The watering facility and a heavy use protection area.



The heavy use protection area includes a concrete pad and a gravel base.

3.18 Upper Bear River Bank Stabilization

Subgrant: S461 **Latitude and Longitude:** 42.11130, -111.04457

Description:

The goal of this project is to stabilize 1,500 feet of bank along the Bear River by grading to a stable angle and planting the disturbed area. Before work commences the vegetation growing along the bank will be salvaged to be replanted later on the newly sloped bank.

Completion date:

Work is expected to be completed on schedule.

Project status:

The grass and sedge plantings were observed growing very well. The willow survival rate was approximately 30%. Some willows did not survive the first planting. Those were removed by the project sponsor and replaced with new willow starts. The streambank was fenced and the fence was in very good condition. Under low flow conditions cows can enter the river at the end of the fence. The project sponsor performs yearly monitoring of the site.



The new-sloped bank with the exclusion fence showing in the background. There is evidence of livestock having entered the excluded area. No invasive plants were observed on the site.



Willow poles were implanted in the bank at the water's edge. Livestock had foraged the willows causing many of the plantings to be lost. A few of the more hardy ones survived and are still growing.



A number of small willows were observed growing naturally along the bank..

3.19 Coeur d’Alene River at Medimont

Subgrant: S464 **Latitude and Longitude:** 47.47830, -116.59530

Description:

The goal of this project was to stabilize and revegetate 4,000 feet of Coeur d’Alene River bank located on IDFG property at Medimont. The Kootenai-Shoshone SWCD and DEQ jointly monitored erosion on the River in 2008–2009 using methods described by Rosgen (1994). The monitoring results predicted that this reach would erode at a rate of 7 feet per year. This value may be an overestimate, as most erosion is known to occur seasonally, when boat wakes undercut the bank enough for the reach to slough.

Completion date:

Project fieldwork has been completed, but the final report needs to be submitted before the project can be closed.

Project status:

There is no maintenance plan for this project. Due to the difficulty associated with accessing the site for maintenance purposes the project was designed to be selfsustaining. Photo monitoring occurs once per year.



The condition of the streambank in the project area before stabilization efforts began.



Some planted vegetation had survived and was seen thriving within the newly armored bank.



Some stretches of bank within the project area experienced better survival rates of plantings than others.



The US Forest Service undertook a similar bank stabilization project at a site directly across the River from the IDFG site. The USFS used bioengineering techniques and supplemental watering to achieve optimal plant growth.

3.20 Pebble Creek Channel Restoration

Subgrant: S467 **Latitude and Longitude:** 42.44270, -112.01180

Description:

The goal of this project was to reduce streambank erosion occurring along two parallel channels of Pebble Creek. The channels were straightened sometime in the 1950s or 1960s, which resulted in the channels becoming severely down-cut, and causing what were normally wet meadows to be dewatered. After evaluating these problems with the help of many other agencies DEQ determined the best approach to take to reduce erosion and allow water to once again enter the meadows would be to restore the stream in its old meandering channels, and later install stream crossings, fence the riparian area and create alternate water sources for livestock to use.

Completion date:

At the time of the evaluation the project was in its final stages of completion. It has since closed, on October 13, 2015.

Project status:

All BMPs are being maintained and are functioning as designed. Under 2 years of high flows the new stream channels appeared to be holding up very well. Woody vegetation is taking hold along the streambanks and is growing well. The Portneuf SWCD oversees the continuing development of the site multiple times per year. The visits are used to ensure that the channels continue to function as designed and that no maintenance is needed. The project manager and other partners continue to monitor conditions on the site.



The old, straightened channels followed the row of trees and willows seen in the picture. The redesigned channels follow courses similar to the ones they followed prior to when the channels were straightened. Note the fencing built along the new channels to control grazing.



The restored south channel includes a covered, bottomless culvert that was installed to allow equipment and livestock to cross the stream. The round circle seen in the bottom left corner is a trough, built off-stream as a source of water for livestock.



A float in the trough controls the flow of water to the site.



Pebble Creek flows unimpeded through this bottomless culvert, built to allow fish to migrate upstream towards the headwaters.

3.21 Twin Falls Coulee Wetlands

Subgrant: S469 **Latitude and Longitude:** 42.56810, -114.34170

Description:

This project is located on the Twin Falls Coulee about 2 miles northeast of Kimberly, Idaho. Three cleaning cells, one large finishing pond, and nine wetland filter cells will be constructed to clean up return flows from several thousand acres of irrigated farmland before they discharge directly into the Snake River just east of Twin Falls. The flow rates in the Twin Falls Coulee vary from 29 cubic feet per second (cfs) in the spring to 7.6 cfs in the summer. The wetlands filter suspended sediment, phosphorus, nitrogen, and bacteria from the water in the Coulee, thus indirectly helping to improve water quality in the Snake River. The wetlands complex is approximately 8 acres.

Completion date:

Work on the project was completed in November 2014.

Project status:

All BMPs evaluated were in excellent condition. DEQ staff evaluated this project each of the last 2 years, taking grab samples and using a Hydrolab to obtain short-term deployment data. Monitoring results from the first half of the 2014 irrigation season showed that the system had achieved 58% total suspended solids (TSS) and 34% total phosphorus (TP) removal efficiency. The greatest load reductions occurred in July 2014 when removal rates of 79% TSS and 63% TP were recorded. The Twin Falls Canal Company, in conjunction with the University of Idaho, conducted biweekly water quality monitoring from April to October 2015.



A series of head gates control water flow from the feeder lateral, under the road, and into nine wetland cells.



Water from the Coulee flows from a ditch into a series of three cleaning cells and then discharges into a large finishing pond.



Water from the finishing pond flows into nine filter cells before it is discharged into the Snake River.



Wetland plants and grasses surround the filter cells. Cattails and bulrush serve to finalize the filtering process before the water is discharged into the River.

3.22 Station Creek Watershed Improvement

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

Description:

The goal of this project is to reduce sediment inputs to Station Creek by reducing livestock impacts and channel bed erosion, and by stabilizing the eroding streambank. To affect these changes rock checks will be installed and woody riparian vegetation will be planted. Livestock will be excluded from the stream until riparian vegetation is established. Water and sediment basins will be constructed to control runoff and reduce erosion of croplands.

Completion date:

The start of work on this project was significantly delayed due to difficulties that were encountered finalizing BMP designs.

Project status:

The District currently has contracts in place with 3 landowners. One landowner has stabilized the Creek bank through his property by planting willows, he installed 3 troughs and developed a spring source, he constructed a rocked Creek crossing and seeded a pasture to prevent soil from eroding and entering the Creek, and he installed a fence to keep cattle from entering the Creek. The second landowner is installing a series of water and sediment basins under a design developed by a ISWCC engineer. Landowner #3 is working with a Commission engineer on a design for a canal measuring device that he will install later this summer during low flows. The District is preparing to submit an invoice seeking over \$40,000 to reimburse the landowners for their costs, to date.



Plumbing to this trough must be installed before it can serve as a reliable site of off-stream water.



Rock checks were built to prevent the channel from further incising, which in turn will allow the riparian area to retain the level of moisture needed for vegetation to recover.



Brace posts are being used on cross fence to increase the life of the fence and to aid grazing management.



A rainstorm passed through the area the night before DEQ's evaluation resulting in severe cropland erosion. Plans are in place to construct water and sediment basins to prevent similar outcomes from occurring in the future following periods of high precipitation.

3.23 Lindsay Creek Water Quality Improvement

Subgrant: S472 **Latitude and Longitude:** 46.41632, -116.98534

Description:

The Clearwater River subbasin Lindsay Creek TMDL (June 2007) was established to control bacteria, excess nutrients, and sediment. The Lindsay Creek TMDL implementation plan for agriculture outlines an adaptive management approach for implementing BMPs and resource management systems on agricultural lands to meet the requirements of the Lindsay Creek TMDL. Project goals are as follows:

- Reduce nutrient and sediment loads from 2,000 acres of cropland by 30%.
- Inventory road and streambank runoff sources and develop a treatment strategy.
- Reduce the number of nutrient sources.
- Reduce the bacteria load by 20%.

Completion date:

Work on this project was approved to begin in November 2012 and conclude by December 31, 2015. Due to a series of delays the project manager experienced at the outset DEQ determined that the project manager will need to make a concerted effort if there is to be any chance of completing work by the deadline date.

Project status:

The Nez Perce SWCD is using a Decagon monitoring system to monitor three parameters in Lindsay Creek: precipitation, temperature, and electrical conductivity. It was noted in the April 2015 evaluation report that the project manager had just started implementing the terms of the workplan, which includes installing BMPs.



Ponderosa pine plantings (2-year seedlings).



An installed weed mat.



A Redosier dogwood planting.

3.24 Fish Creek Nutrient and Sediment Reduction

Subgrant: S490 **Latitude and Longitude:** 47.52300, -116.52300

Description:

Fish Creek is a tributary to Upper Twin Lake in Kootenai County. The project site is located at the mouth of Fish Creek on private property owned by a cattle rancher. Years of cattle accessing the creek has resulted in channel incision, loss of riparian vegetation, bank instability and the stream losing access to its floodplain. The goals of the project are to stabilize the banks, replant 1,200 feet of denuded riparian area, install fencing to exclude cattle from the creek, and construct two hardened sites where cattle can cross the creek.

Completion date:

Work is on schedule for completion by the May 2017 subgrant expiration date.

Project status:

During the first year of the project the Twin Lakes Improvement Association planted new riparian vegetation along the creek and provided supplemental water to help the vegetation establish. The Association installed exclusion fencing and maintained it later, during periods of spring runoff and when cattle were on-site. The fence was removed once cattle were off the property. The site is being photo-monitored by the Association on a regular basis. In 2013 DEQ’s Beneficial Use Reconnaissance Program used its protocols to monitor Fish Creek upstream of the project site. The segment monitored received passing scores. Monitoring downstream of the project site will be performed in 2016.



A length of cattle exclusion fence and well established riparian plantings.



A stretch of stabilized bank and successful riparian plantings.



At the start of the project sharply incised bare bank was laid back and bioengineering techniques were used for stabilization purposes. Rock barbs were installed in the channel to keep the thalweg out from the bank.



A hardened cattle crossing.

3.25 PBJ Diversion

Subgrant: S495 **Latitude and Longitude:** 42.29991, -111.43158

Description:

The goal of this project is to upgrade an older irrigation diversion on Ovid Creek to prevent it from washing out, as it had in the past. The washouts caused erosion to occur up- and downstream of the Diversion. A second goal involves installing adjustable head gates to manage the amount of water being diverted to crops throughout the growing season. The current practice requires the irrigator to manually add or remove wooden boards at the diversion structure itself to regulate the amount of water being diverted to crop fields for irrigation purposes.

Completion date:

Work is proceeding well and the project is on schedule to be complete by its December 31, 2016 deadline.

Project status:

Two years of preconstruction monitoring was performed, with monitoring expected to continue during construction. A monitoring plan was developed and is being used to direct continuing efforts to ensure the BMPs are maintained after construction has finished. Because of extremely wet conditions at the site on the day of the evaluation photos were not taken. Construction was expected to start again in early November 2015.

3.26 Wolf Lodge Creek Restoration

Subgrant: S516 **Latitude and Longitude:** 47.65889, -116.60944

Description:

Multiple partners will collaborate and merge resources to address three sites on Wolf Lodge Creek where significant bank erosion is causing problems for landowners and the public: (1) a debris jam is causing lateral migration of the channel and increasing the sediment load in the creek (2) a near vertical bank on an outside meander of the Creek is eroding at a rate of several feet per year and, as a result, is threatening to cause the collapse of a public road, and (3) a second highly erosive outside meander is threatening to avulse and cause the downstream channel to reconfigure and cause other problems.

Completion date:

This project was completed on December 31, 2014.

Project status:

All BMPs were designed to be self-sustaining under a standard NRCS conservation design plan. Photo monitoring is being conducted to document before and after conditions at the site; once during high flow to see if structures are working properly and once during low-flow conditions.



Large boulders were placed in the channel to serve as barbs to redirect flow



Barbs were constructed in place during low flow conditions



During runoff the barbs functioned as intended, to move the thalweg out from the bank of the creek.

3.27 Snake Creek Bridge Installation

Subgrant: S519 **Latitude and Longitude:** 46.60833, -115.91238

Description:

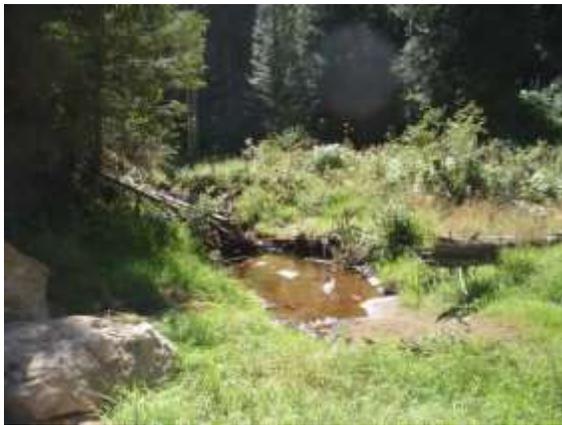
This project took place on Potlatch Forest Holdings property within the Clearwater River subbasin. An existing 54-inch culvert was determined to be insufficient to contain the streamflow at certain times of the year, and to allow aquatic organisms and fish to migrate to the upper reaches of the drainage. The workplan calls for the culvert to be removed and a 24 x 60 ft prefabricated steel bridge installed in its place. Over time, the streambed is expected to return to its natural substrate and the banks will stabilize. A coffer dam will be built and used during the construction period to hold water back and divert flow away from the working area. Three excavator hoes will be used for construction.

Completion date:

Work is on schedule to be completed by mid-January 2016.

Project status:

All BMPs were being implemented. Visual turbidity monitoring is being performed while construction is underway. Once the bridge is in place Potlatch intends to monitor this bridge and all other bridges and culverts on its properties regularly, to evaluate flow capacity and structural integrity.



As the undersized culvert would become blocked, large amounts of sediment would accumulate upstream.



Large native rock is being used to stabilize the bank near the bridge site. One of the three excavator hoes used on the project can be seen on the right bank.



Outflow of water diverted from the job site.



The bridge and supporting structures, near the end of the project.

3.28 Weiser Flat Wetlands Project, Phase III

Subgrant: S522 **Latitude and Longitude:** 44.27667, -117.22412

Description:

This project will include work at two job sites:(1) the Galloway-Warm Springs wetland and (2) the Smith/Hemmenway wetland. This evaluation pertains only to the Smith/Hemmenway wetland. A goal of the project is to redirect irrigation water from the canal to the wetland as part of an effort to reduce the levels of phosphorous, sediment, and nitrate in the water from what they were entering the wetland, to what they are when the water leaves the wetland and re-enters the canal. The wetland will function to reduce the ortho-phosphorus load in the irrigation water as a result of plant uptake within the wetland. The wetland will be constructed at the end of the Smith/Hemmenway Canal. The canal water eventually discharges directly into the Snake River. The project targets achieving a 60–70% reduction of sediment in the canal water at the point where the water is discharged .

Completion date:

Work on this project is expected to be completed by December 31, 2018.

Project status:

BMPs were being maintained during this first year of implementation. The Idaho State Department of Agriculture performed background monitoring on both the Galloway-Warm Springs and Smith/Hemmenway wetlands in 2014, on behalf of the Weiser Irrigation District.



The Smith/Hemmenway wetland was constructed to receive irrigation water discharged from a point on the canal to a cement structure built to help manage the flow of water entering the wetland.



The wetland discharges through an outlet into a riparian area adjacent to the Snake River. Approximately 400 feet of fence is being installed to prevent children who play in the area from entering the water.



The NRCS designed this ½ acre pond and wetland on property donated by two adjacent landowners. Flow enters the pond in a 2-foot deep area that gradually slopes to a depth of 3-4 feet at the point of discharge. The Weiser Irrigation District has agreed to maintain this wetland.

3.29 Pebble Creek Pipeline, Off-Stream Watering, and Fish Screen Installation

Subgrant: S527 **Latitude and Longitude:** 42.70766, -112.04544

Description:

This project will result in eliminating seven small irrigation diversions and replacing them with one large diversion. A pipe will replace the open ditch that currently carries irrigation water, to convey gravity pressurized water to irrigators. Closing the smaller diversions will eliminate the need to maintain fish screens that are currently in place on each diversion. Piping will also result in a lower sediment load in the Portneuf River by eliminating the canal wash outs that would occur and cause large amounts of sediment to be directly discharged into the River.

Completion date:

Work is on schedule and expected to be finished by December 31, 2018.

Project status:

This project is still in the early stages of implementation. The larger diversion was recently constructed and the fish screen put in place. The District is in the process of hiring a contractor to install the pipeline. The District conducted preconstruction monitoring and have agreed to continue monitoring on an annual basis over the life of the project.



The fish screen was fenced to keep animals out.



A close-up view of the screen and the point where fish can return to the creek.



The head gate and clean out head gate will be used to control the flow into the irrigation system. The clean out head gate is partially open in this picture. Constructed closer to ground level than the other, it will be used to flush out sediment that builds up in front of the head gate.

3.30 Stauffer Creek Project

Subgrant: S528 **Latitude and Longitude:** 42.29635, -111.42986

Description:

The goal of this project is to improve the health of the riparian area and, in so doing, improve habitat conditions for the threatened Bonneville Cutthroat Trout. The landowner involved in this project will convert his method of irrigating from flood to sprinkler. Area around all existing diversions will be stabilized to reduce the chances of the bank collapsing and causing an increased sediment load in the creek. All diversions will be screened to prevent fish from entering the canal. A fish-friendly culvert will be installed at the point where the creek currently flows over a road. An irrigation canal will be converted to pipe, resulting in reduced evaporation and seepage loss, while also providing gravity-pressured water to irrigators.

Completion date:

Work is on schedule for completion by December 31, 2017.

Project status:

The BMPs that have been installed are being maintained and seem to be working as designed.



A crossing was installed over a new culvert. Cement was laid as the road surface above the culvert to provide added strength for heavy semi-trucks passing over the stream.



Due to the location of the crossing the approach of the stream could not be straightened. Instead, the bank was hardened to prevent the stream from washing around the culvert.

3.31 Bear River Mound Valley

Subgrant: WW1010 **Latitude and Longitude:** 42.40310, -111.72546

Description:

The goal of this project is to stabilize two stretches of bank along the Bear River. Five rock barbs will be installed at one location. Three rock barbs will be installed at a second site, with toe rock, willow plantings, and sedge mats also used to further stabilize the bank. This project is being funded by DEQ's Grants and Loans Program, with money that was made available from the State Revolving Fund (SRF).

Completion date:

Work is underway and on schedule.

Project status:

The landowner, in accordance with the construction specifications, was maintaining the BMPs that were observed during the evaluation. The District conducts annual photo monitoring to document conditions at the sites over time.



A rock barb was installed to protect the river bank from continuing to erode.



Allowing cattle unrestricted access to the riparian area reduced the success of willow plantings.



Some planted willows were damaged by rodents but were still managing to survive.

3.32 Trout Creek AFO Project

Subgrant: WW1201 **Latitude and Longitude:** 42.44909, -111.70776

Description:

This project will take place at the site of an old dairy facility. One of the goals is to tear down the dairy and reconstruct it at a site upslope from the creek. A cement lagoon located adjacent to the creek was built to collect runoff from the feedlot. The cement has since cracked, allowing waste in the lagoon to leak and enter the creek. Runoff could also enter the creek at a water gap. The lagoon, water gap and nearby corrals will all be removed. Vegetation will be planted along the streambank to create a functioning riparian area. New corrals with containment will be built upslope and farther away from the creek.

Completion date:

Work is proceeding on schedule.

Project status:

All BMPs were being maintained and appeared to be functioning as intended. Vegetation was planted along the banks of the creek to re-establish a riparian area that had been denuded and was void of grasses, shrubs, and trees. A second planting had taken place several months later to replace vegetation that had not survived after the initial planting. The newest vegetation appeared to be thriving and growing well.



The riparian area was thriving following the latest round of plantings. A waste storage lagoon and water gap that were previously located on the left bank had been removed, with little evidence of their prior existence remaining.

3.33 Ovid Creek Stream Protection (Re-Eval)

Subgrant: WW1207 **Latitude and Longitude:** 42.27640, -111.38369

Description:

This project involved two sites: one an unnamed tributary to Ovid Creek and the second on Spring Creek (Big Arm of St. Charles Creek). The goal at each site was to restrict livestock access to the streams.

Completion date:

This project was completed and the final report submitted to DEQ on October 15, 2015.

Project status:

The fencing and upslope corrals that were installed with the SRF/319 funding obtained for this project were being maintained and are functioning as intended. The District evaluates the site and the condition of the management practices on an annual basis.



Fencing was installed to exclude livestock from accessing this unnamed tributary to Ovid Creek.



A trough was placed in the fence line to allow access from both corrals

References

- DEQ (Idaho Department of Environmental Quality). 2005. *North Fork Payette River Subbasin Assessment and Total Maximum Daily Load*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2007. *Lindsay Creek Watershed Assessment and Total Maximum Daily Loads*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2010. *Lower Salmon River and Hells Canyon Tributaries Assessments and TMDLs*. Boise, ID: DEQ.
- DEQ (Idaho Department of Environmental Quality). 2015. *Idaho Nonpoint Source Management Plan*. Boise, ID: DEQ.
- Idaho Code. 2015. "Declaration of Policy and Statement of Legislative Intent." Idaho Code §39-3601.
- Rosgen, D.L. 1994. "A Classification of Natural Rivers." *Catena* 22:169–1999.