2014 Performance and Progress Report

State of Idaho Nonpoint Source Management Program

State of Idaho
Department of Environmental Quality

March 2015

Cover photo: Little Salmon River upstream of New Meadows. The vegetation has recovered in an area where the landowner constructed a fence to exclude livestock from the river.

Printed on recycled paper, DEQ March 2015, PID 319M, CA 82808. Costs associated with this publication are available from the State of Idaho Department of Environmental Quality in accordance with Section 60-202, Idaho Code.

2014 Performance and Progress Report

State of Idaho Nonpoint Source Management Program

April 2015

Prepared by
Idaho Department of Environmental Quality
Nonpoint Source Management Program
1410 North Hilton
Boise, Idaho 83706

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.

Contents

List of Figures

List of Tables

Acronyms and Abbreviations

BAG	basin advisory group
BMP	best management practice
DEQ	Idaho Department of Environmental Quality
DMA	designated management agency
EPA	US Environmental Protection Agency
gpm	gallons per minute
GRTS	grants reporting and tracking system
LBWC	Lower Boise Watershed Council
IDFG	Idaho Department of Fish and Game
IDL	Idaho Department of Lands
LPDC	Lower Payette Ditch Company
mg/L	milligrams per liter
MOU	memorandum of understanding
NPS	nonpoint source
PCEI	Palouse-Clearwater Environmental Institute
Section 319 (§319)	Section 319(h) of the Clean Water Act
SRF	State Revolving Fund
SWCD	soil and water conservation district
TMDL	total maximum daily load
WAG	watershed advisory group

This page intentionally left blank for correct double-sided printing.

Section 1 Overview

This document summarizes the State of Idaho Nonpoint Source Management Program's performance and progress for the period from December 1, 2013, through November 30, 2014. 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.

State Revolving Fund and 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 adjustment to the interest rate charged on a traditional SRF wastewater project loan 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 reducing the interest rate on the SRF loan.

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

Scope of the Program

DEQ managed 65 active projects (Table 1) in 2014. Each project is described in a subgrant agreement established between DEQ and the project sponsor. Project sponsors may include federal or state agencies, counties, municipalities, nonprofit organizations, or private individuals.

Table 1. Nonpoint source funding summary for projects active during 2014, including projects closed during 2014.

Subgrant	Project Name	Project Sponsor	Start Date	End Date	§319 Grant Amount	Total Spent (through 11/30/2014)	Balance (as of 11/30/2014)
S307	Bruneau-Grand View GWQ Management Plan	Bruneau River SWCD	6/2/2009	12/31/2013	$238,707.00	$238,575.00	$132.00
S310	Potlatch River Watershed Management Plan, Phase 1	Latah SWCD	6/15/2009	12/31/2013	$205,028.00	$190,988.05	$14,039.95
S311	Pend Oreille Lake *A*Syst	Bonner SWCD	6/15/2009	12/31/2013	$36,368.00	$26,441.99	$9,926.01
S312	Camas Prairie GW Nitrate Priority Area, Phase 3	Lewis SCD	6/15/2009	12/31/2013	$245,000.00	$244,771.77	$228.23
S313	Fish Creek Road Improvement	Bonner SWCD	6/15/2009	12/31/2013	$147,268.00	$89,244.89	$58,023.11
S321	Latour Creek Road Improvement	Idaho Department of Lands	7/1/2009	12/31/2013	$178,007.00	$174,723.00	$3,284.00
S327	Lower Payette River TMDL Implementation, Phase 3	Gem SWCD	7/20/2009	12/31/2013	$183,162.00	$182,572.30	$589.70
S331	East Fork Potlatch River Riparian	Idaho Department of Fish and Game	8/1/2009	12/31/2013	$80,000.00	$73,449.76	$6,550.24
S332	Lapwai Creek Integrated Analysis	University of Idaho	8/14/2009	12/31/2013	$59,301.00	$59,301.00	$0.00
S356	Ada County BMPs Four Corners	Ada SWCD	12/10/2009	12/31/2013	$48,000.00	$36,000.00	$12,000.00
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	06/15/10	12/31/14	$41,405.00	$39,854.05	$1,550.95
S393	Blackfoot River Water Quality	Three Rivers RC&D	06/22/10	12/31/14	$93,474.00	$92,678.71	$795.29
S394	South Fork Clearwater Watershed Vegetation	PCEI	06/02/10	12/31/14	$246,261.00	$99,699.54	$146,561.46
S396	Potlatch River Watershed Management Plan, Phase 2	Latah SWCD	06/01/10	12/31/14	$207,302.00	$110,427.15	$96,874.85
S399	Marsh Creek Middle Portneuf River Watershed, Phase 3	Portneuf SWCD	07/01/10	12/31/14	$249,550.00	$249,245.95	$304.05
S401	Little Weiser River Streambank Stabilization and Restoration	Adams SWCD	7/19/2010	12/31/2014	$187,386.00	$175,956.14	$11,429.86
S406	American Red River, Phase 2	Framing Our Community, Inc.	9/13/2010	12/31/2014	$250,000.00	$250,000.00	$0.00
S425	Potlatch River Watershed Management Plan, Phase 3	Latah SWCD	7/25/2011	5/31/2015	$207,523.00	$90,674.29	$116,848.71
S427	St Maries River Road Improvement	Benewah County	7/25/2011	5/31/2015	$237,504.00	$194,936.76	$42,567.24
S428	Grimes Creek Restoration Cooling Waters	Trout Unlimited	8/1/2011	5/31/2015	$60,000.00	$34,447.05	$25,552.95
S430	Upper Blackfoot River Improvement, Phase 1	Caribou SWCD	8/15/2011	5/31/2015	$195,255.00	$173,594.81	$21,660.19
S431	Bear River and Whisky Creek Animal Feeding Operations	Caribou SWCD	8/15/2011	5/31/2015	$212,615.00	$173,603.68	$39,011.32
S432	Boulder and Willow Creek Restoration	Idaho Department of Fish and Game	8/18/2011	5/31/2015	$10,250.00	$0.00	$10,250.00
S433	Little Salmon River Watershed Improvement	Idaho Department of Fish and Game	8/18/2011	5/31/2015	$51,700.00	$0.00	$51,700.00
S434	Upper Bear River Streambank Restoration (Peterson Property)	Bear Lake Regional Commission	9/1/2011	4/1/2014	$75,488.00	$71,512.36	$3,975.64
S443	Canyon County BMPs	Lower Boise Watershed Council	01/18/12	12/31/15	$250,000.00	$225,379.11	$24,620.89
S444	Mud Creek /Silo Creek Water Quality Improvement	Balanced Rock SWCD	05/14/12	12/31/13	$158,622.00	$158,622.00	$0.00
S458	Cold Springs Creek Riparian Restoration	Elmore SWCD	08/06/12	12/31/16	$40,476.00	$4,047.60	$36,428.40
S459	Rock Creek BMPs	Idaho SWCD	08/13/12	12/31/16	$95,764.00	$32,111.60	$63,652.40
S460	Potlatch River, Phase 4	Latah SWCD	08/13/12	12/31/16	$207,302.00	$27,452.45	$179,849.55
S461	Upper Bear River Streambank Stabilization, Phase 2	Bear Lake Regional Commission	08/13/12	12/31/16	$54,350.00	$28,249.55	$26,100.45
S463	Cove Creek Wetlands	Weiser River SWCD	08/16/12	12/31/16	$127,698.00	$115,732.80	$11,965.20
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	$52,562.25	$52,437.75
S467	Pebble Creek	Portneuf SWCD	09/14/12	12/31/16	$180,729.00	$116,880.92	$63,848.08

Subgrant	Project Name	Project Sponsor	Start Date	End Date	§319 Grant Amount	Total Spent (through 11/30/2014)	Balance (as of 11/30/2014)
S468	St. Maries River Road, Phase 2	Benewah County	09/26/12	12/01/16	$238,821.00	$140,477.36	$98,343.64
S469	Twin Falls Coulee	Snake River SWCD	10/03/12	12/01/16	$106,300.00	$90,030.00	$16,270.00
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	10/17/12	12/31/15	$135,721.00	$24,548.98	$111,172.02
S490	Fish Creek Restoration	Twin Lakes Improvement Association	08/05/13	05/31/17	$84,000.00	$38,203.84	$45,796.16
S491	Potlatch River Watershed Management Plan, Phase 5	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	$60,000.00	$190,000.00
S493	Middle Snake-Payette Clean Water, Phase 2	Payette SWCD	08/07/13	05/31/17	$202,729.00	$23,034.58	$179,694.42
S494	Owyhee Restoration Incentive Program	Owyhee Watershed Council	10/01/13	10/01/17	$132,750.00	$0.00	$132,750.00
S495	PBJ Division	Bear Lake SWCD	09/01/13	12/31/16	$123,857.37	$12,384.50	$111,472.87
S496	Wide Hollow Erosion Reduction	Oneida SWCD	08/26/13	12/31/17	$249,750.00	$140,093.64	$109,656.36
S498	Mica Creek Sediment and Nutrient Reduction (Swendig Property)	Kootenai Shoshone SWCD	11/01/13	12/31/14	$28,365.00	$28,365.00	$0.00
S500	Western Stockgrowers Association Enhancement	Twin Falls SWCD	02/18/14	05/01/14	$10,460.00	$10,460.00	$0.00
S514	Weiser Irrigation Automated Headgate Project	Weiser River SWCD	03/05/14	04/25/14	$54,856.00	$54,855.91	$0.09
S516	Wolf Lodge Creek Restoration	Kootenai-Shoshone SWCD	07/08/14	12/31/14	$46,554.00	$46,554.00	$0.00
S518	Lewis County Soil Health BMP Implementations	Lewis Soil Conservation District	08/08/14	12/31/18	$60,000.00	$52,487.71	$7,512.29
S519	Snake Creek Bridge Installation	Clearwater SWCD	08/07/14	12/31/17	$124,299.00	$0.00	$124,299.00
S520	Alder Creek Road 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	$0.00	$250,000.00
S522	Weiser Flat Wetlands Project, Phase 3	Weiser River SWCD	08/15/14	12/31/18	$94,106.00	$5,439.25	$88,666.75
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	$0.00	$17,094.08
S527	PC Pipeline, Off-Site Watering, and Fish Screening	Caribou SWCD	09/12/14	12/31/18	$214,861.53	$21,480.00	$193,381.53
S528	Stauffer Creek Project	Bear Lake SWCD	10/24/14	12/31/17	$186,361.20	$27,722.99	$158,638.21
WW1010	Middle Bear River Watershed (Mound Valley)	Franklin SWCD	12/24/09	01/01/16	$103,000.00	$0.00	$103,000.00
WW1103	Teton Creek Channelization Repair	Friends of the Teton River	04/30/11	04/30/13	$150,000.00	$150,000.00	$0.00
WW1201	Trout Creek Animal Feeding Operation	Caribou SWCD	09/05/12	12/31/14	$248,804.00	$36,486.48	$212,317.52
WW1205	North Fork Payette River	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	$50,294.91	$34,080.09

Notes: GWQ = ground water quality, SWCD = soil and water conservation district, GW = ground water, BMP = best management practice, TMDL = total maximum daily load, PCEI = Palouse-Clearwater Environmental Institute

Assessing Program Performance

DEQ operates under the goals and objectives incorporated in the 1999 *Idaho Nonpoint Source Management Plan*, which provides guidance for developing an annual work plan required to effectively administer the program (DEQ 1999). 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 total maximum daily loads (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 NPS pollution sources in which the program has invested resources include the following:

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

Determining Pollutant Load Reductions

DEQ requires project sponsors to submit estimated load reductions of sediment, phosphorous, and nitrogen resulting from the completion of each project. Most projects take place within or close to a particular water body. A project's pollutant load reduction can be added to load reductions resulting from other projects within the watershed to show a cumulative load reduction over the entire subbasin or basin.

Providing Technical Support

Idaho's NPS Program provides technical support through various actions:

- Facilitating and coordinating implementation of the *Idaho Nonpoint Source Management Plan* (DEQ 1999)
- Developing and assisting with new technical approaches aimed at improving surface water and ground water quality
- Promoting natural resource partnerships, interagency collaboration, environmental education, and information transfer
- Ensuring consistency of base-level implementation activities related to TMDLs

- Training for project application, invoicing, and reporting
- Managing §319 funds in accordance with standard accounting and reporting practices

Public Participation

Public participation is an important component of the NPS Program and is mainly achieved through interaction 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, whose support is essential to closing the feedback loop as provided for in the 1999 *Idaho Nonpoint Source Management Plan*, project-by-project, within each of the major river basins in the state.

1.2 Calendar Year 2014 Nonpoint Source §319 Grant Work Plan

NPS Program tasks are defined in terms of *outputs*, as described for the following tasks.

Task 1: DEQ State Office Administration

Output:	Maintain a process for soliciting proposals for projects seeking to address problems related to nonpoint sources, conduct public outreach when necessary, oversee program activities, and track grant expenditures to ensure compliance with Clean Water Act §319 program requirements and federal grant conditions.
Milestone:	As needed: June 1, 2014, through May 31, 2015
Estimated cost:	$164,578
Staffing level:	1.10 full-time positions

Task 2: Develop Procedures and Guidance Documents

Output:	Draft procedure and guidance to support new and ongoing program implementation efforts.
Milestone:	As needed
Estimated cost:	$55,689
Staffing level:	0.70 full-time 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:	$23,719
Staffing level:	0.23 full-time positions

Task 4: Program Implementation

Output 4A:	Collaborate with various partners to implement NPS projects in priority watersheds across the state.
Milestone:	June 1, 2014, through May 31, 2015
Output 4B:	Implement the program in a manner that meets the goals and objectives of the Strategic Plan and the Performance Partnership Agreement. DEQ and all DMAs will encourage water quality monitoring and be performed as agreed to assess improvements to water quality. Routine program evaluations will be performed to assess the effectiveness of implementation activities and to allow corrective action to be taken, as needed.
Milestone:	June 1, 2014, through May 31, 2015
Output 4C:	Support the Idaho Water Quality Monitoring and Management Conference.
Milestone:	February 2015
Estimated cost:	$166,035
Staffing level:	1.71 full-time positions

Task 5: Evaluate Nonpoint Source Projects

Output:	Perform on-site evaluations on a minimum of 50% of all open projects and a predetermined number of closed projects to assess contractor performance and maintenance of previously negotiated and installed best management practices (BMPs).
Milestone:	Annually, May through October
Estimated cost:	$55,689
Staffing level:	0.66 full-time positions

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

Output:	Leverage SRF-generated funding to implement projects that meet respective program criteria.
Milestone:	Annually
Estimated cost:	$11,344
Staffing level:	0.11 full-time positions

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

Output:	Support to watershed-based planning efforts provided.
Milestone:	Annually, as requested
Estimated cost:	$19,594
Staffing level:	0.19 full-time positions

Task 8: Take Action to Generate the Annual NPS Program Performance and Progress Report

Output:	Final report submitted to EPA
Milestone:	March 2015
Estimated cost:	$22,688
Staffing level:	0.22 full-time positions

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

Output:	Complete entry of mandatory data into GRTS.
Milestone:	Annually, by February 15
Estimated cost:	$22,688
Staffing level:	0.22 full-time positions

Task 10: Update Idaho Nonpoint Source Management Plan

Output:	Final draft of Idaho NPS Management Plan submitted to EPA.
Milestone:	By September 30, 2014
Estimated cost:	$22,688
Staffing level:	0.22 full-time positions

Task 11: Surface Water Quality Management

Output:	Support 319 Program goals and objectives by developing water quality standards, conducting assessments, and completing the biannual Integrated Report.
Milestone:	Ongoing
Estimated cost:	$375,405
Staffing level:	3.70 full-time positions

1.3 Schedule and Budget Utilization

For active projects, Figure 1 illustrates how much time each project has been underway compared to the amount of time provided to complete the project, while Figure 2 shows funds expended (through November 30, 2014) for each active project compared to the project budget.

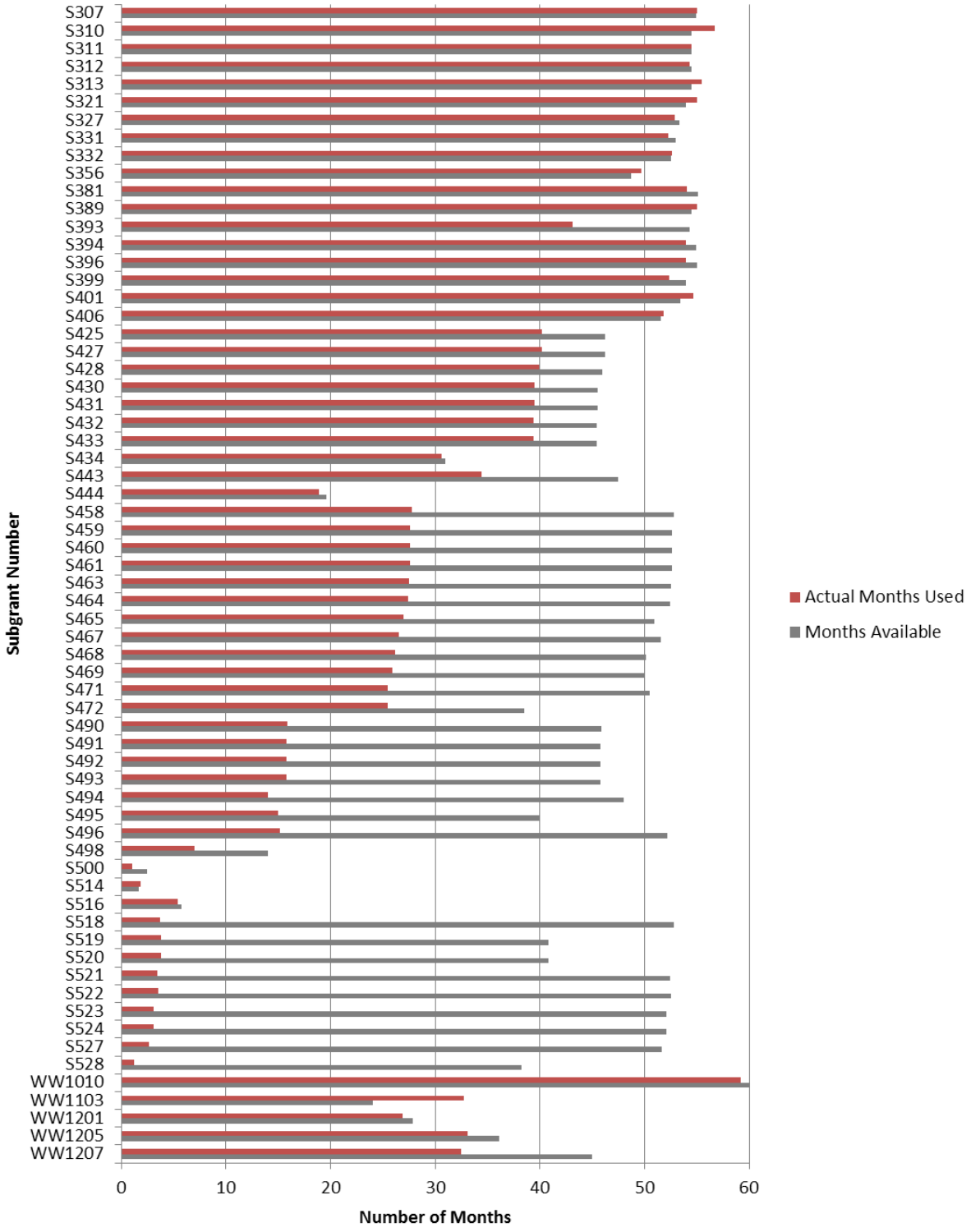

Figure 1. Active projects, time used, and total time available. The red bars represent the total number of months the project has been underway. The gray bars represent total months available for project completion. (Note: Active projects are any projects funded in federal grant years 2009–2014, inclusive.)

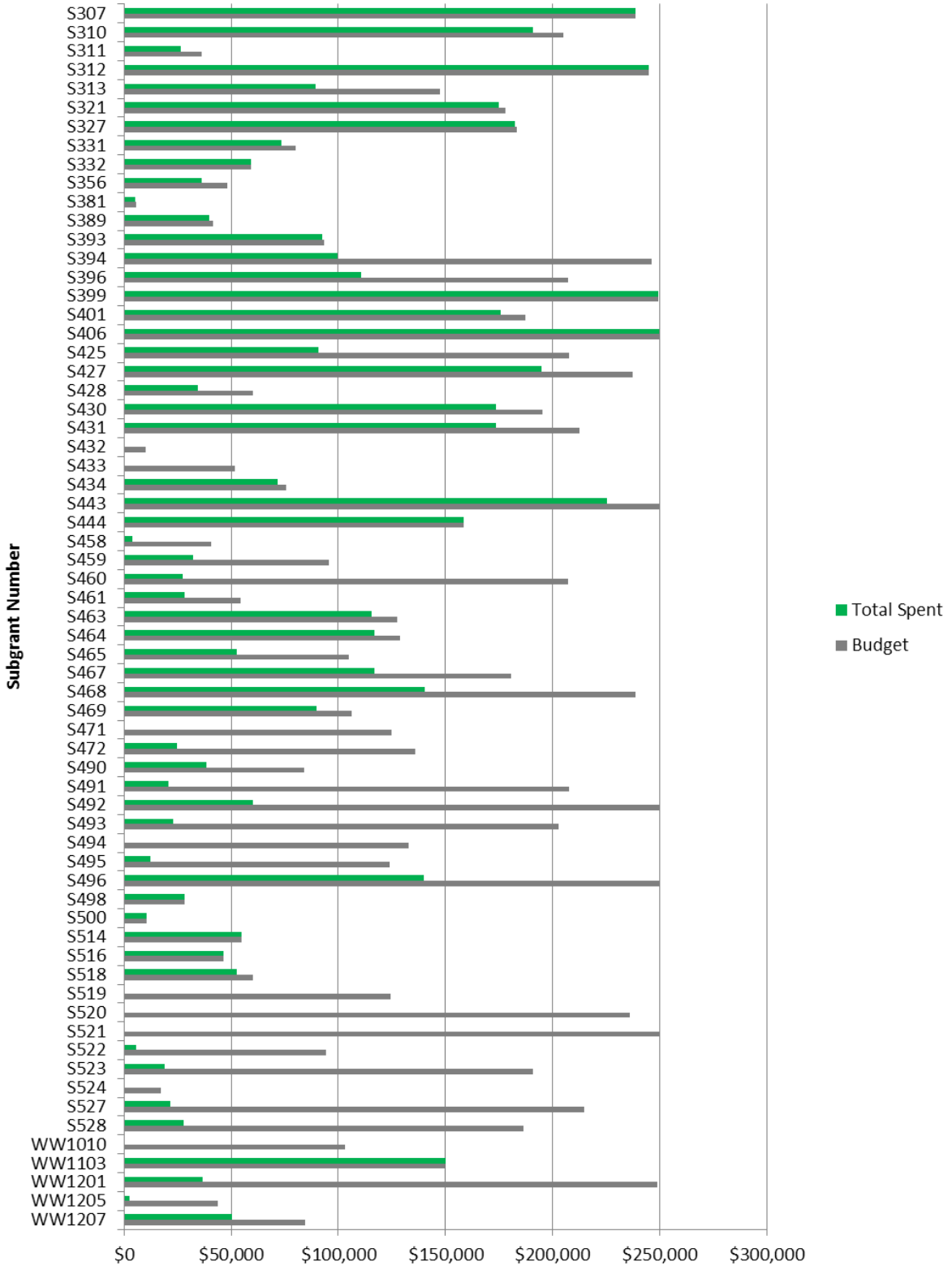

Figure 2. Budget usage by active projects. The gray bars represent the total federally funded budget for each project. The green bars show the amount expended through November 30, 2014.

Section 2 Project Field Evaluations—2014

This section summarizes the project field evaluations DEQ performed in 2014. Section 3 continues 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 2014, DEQ managed 65 active projects across the state (Figure 3). Of these, 18 were determined to be complete and were closed out during the reporting period. DEQ conducted field evaluations 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 and subgrant agreement. An on-site visit follows to determine the project sponsor's compliance with the agreement. A standard evaluation form is used to report on compliance with the project work plan and budget.

2.3 Results

Table 2 lists and briefly describes the 2014 field-evaluated projects.

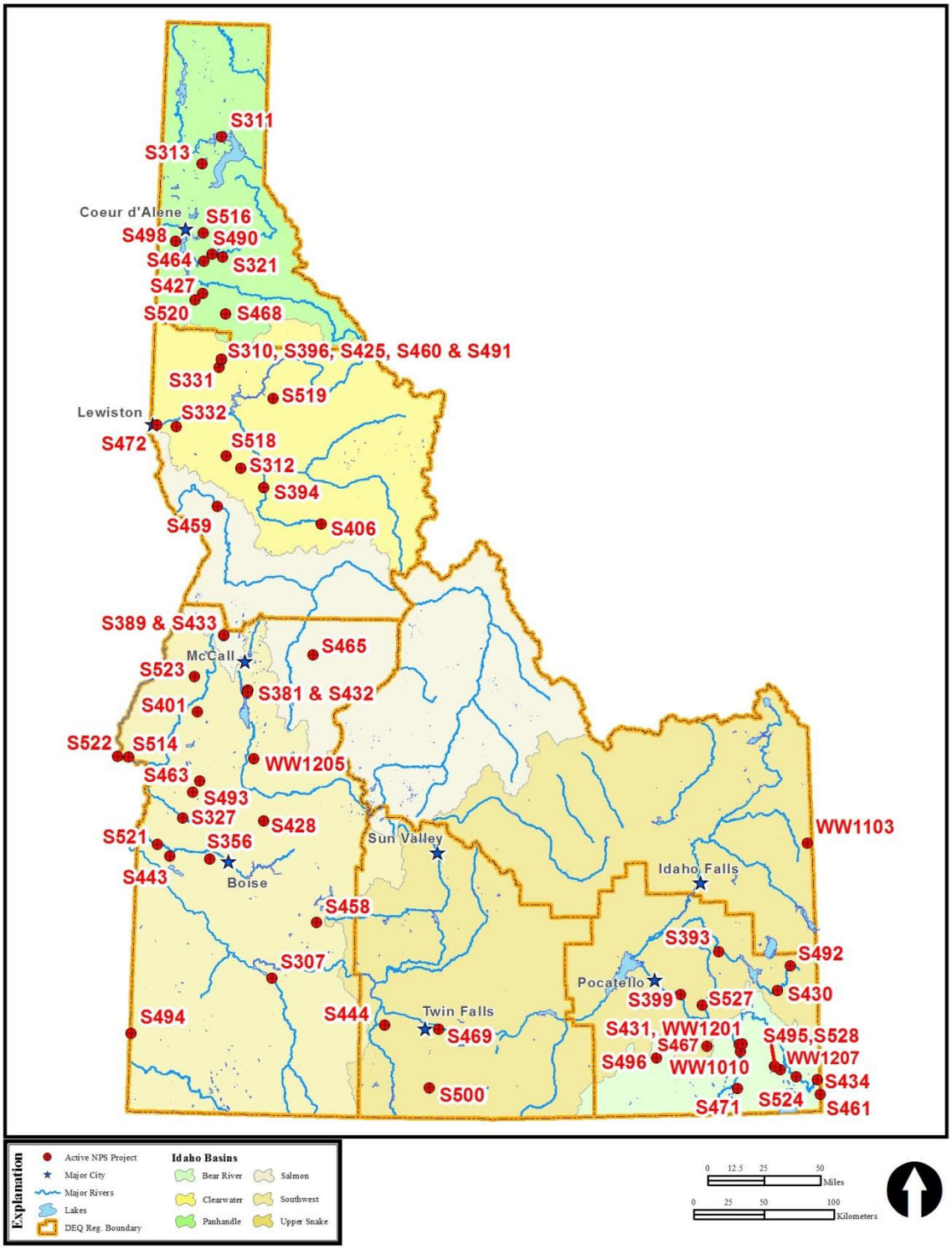

Figure 3. Active or recently closed nonpoint source projects, as of November 30, 2014. For project information, see Table 1.

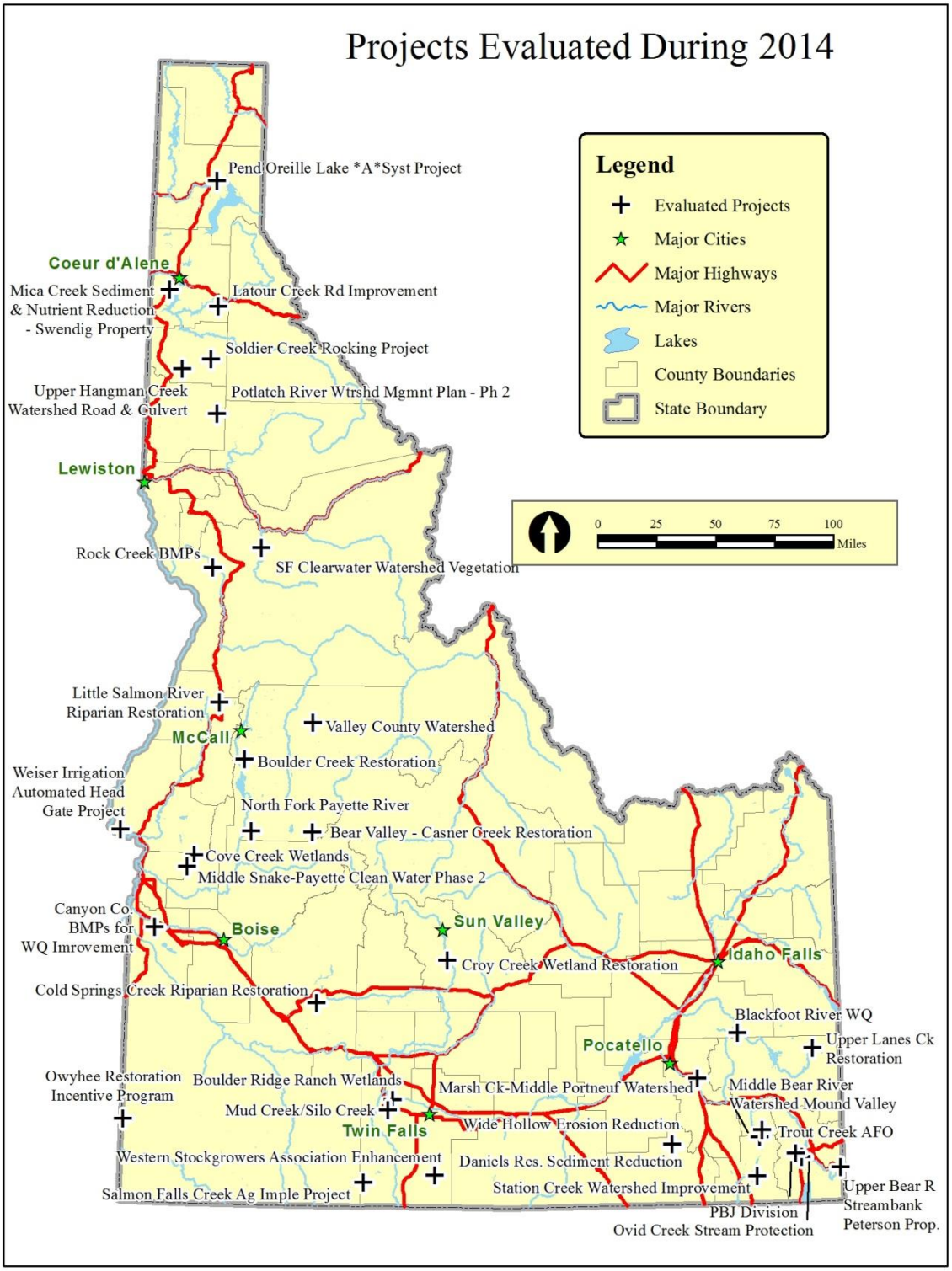

Figure 4. Nonpoint source projects evaluated during 2014. For project information, see Table 2.

Table 2. Projects field-evaluated during 2014.

Sub-grant	Project Name	Project Goals and Evaluation Conclusions	Category	DEQ Region
S183	Soldier Creek Rocking	After 6 years, the project site restoration appears successful, with no real signs of erosion or sedimentation that would be of concern. (See page 18 for more information.)	Transportation	Coeur d'Alene
S246	Croy Creek Wetland Restoration	This project restored the Croy Creek wetlands area by removing 5,000 cubic yards of fill and dumped material, controlling noxious weeds, planting the site with native riparian wetland vegetation, and creating a park. (See page 19 for more information.)	Urban and rural stormwater	Twin Falls
S311	Pend Oreille Lake *A*Syst	Public demonstration sites were designed to educate and demonstrate to private landowners the riparian buffer best management practices (BMPs) they can implement on their own property using attractive vegetation. (See page 20 for more information.)	Urban and rural stormwater	Coeur d'Alene
S321	Latour Creek Road Improvement	This project made improvements to this road near Latour Creek. The road and development on the floodplain cause constriction to the creek. (See page 21 for more information.)	Transportation	Coeur d'Alene
S323	Canyon County BMPs for Water Quality Improvement	The project installed best management practices (BMPs) designed to improve water quality within Canyon County. (See page 22 for more information.)	Agriculture	Boise
S328	Salmon Falls Creek Agricultural Implementation	This project provided for the annual exclusion of approximately 600 head of cattle from 13.4 acres of land adjacent to House Creek, a tributary to Salmon Falls Creek and the Snake River. (See page 23 for more information.)	Agriculture	Twin Falls
S330	Boulder Ridge Ranch Wetlands	This project's goal was to improve water quality in Silo Creek, a tributary to Mud Creek and the Snake River. (See page 24 for more information.)	Agriculture	Twin Falls
S381	Boulder Creek Restoration	A fifth grade class conducted this streambank stabilization project adjacent to their school on Boulder Creek in Donnelly, Idaho. (See page 25 for more information.)	Forestry	Boise
S389	Little Salmon River Riparian Restoration	The goal of this project is to protect and restore native riparian habitat along the Little Salmon River and its tributaries Fourmile and Round Valley Creeks. (See page 26 for more information.)	Agriculture	Boise
S393	Blackfoot River Water Quality	This project consisted of fencing portions of the main stem Blackfoot River and providing off-stream water sources for livestock. (See page 27 for more information.)	Agriculture	Pocatello
S394	South Fork Clearwater River Watershed Vegetation	This project will reduce sediment, nutrients, and bacteria to help meet state water quality standards and to reduce stream temperatures to attain full support for beneficial uses. (See page 28 for more information.)	Agriculture	LRO
S395	Upper Hangman Creek Watershed Road/Culvert Repair	Project efforts included replacing culverts, installing drop structures, and improving the road surface to reduce sedimentation to the creek. (See page 29 for more information.)	Agriculture	Coeur d'Alene
S396	Potlatch River Watershed Management Plan, Phase 2	The goal of this multi-phase project is to reduce sediment by controlling erosion on nearby farmlands and stabilizing riverbanks. Replanting disturbed riparian areas will also increase shade over the river, which helps reduce water temperature. (See page 30 for more information.)	Agriculture/ Forestry	Lewiston
S399	Marsh Creek/Middle Portneuf River Watershed, Phase 3	This project involves work at five different locations: in three locations, corral containment will be improved, and at two sites, streambank restoration work took place. (See page 31 for more information.)	Agriculture	Pocatello

Sub-grant	Project Name	Project Goals and Evaluation Conclusions	Category	DEQ Region
S402	Daniels Reservoir Sediment Reduction	This project consisted of installing off-stream water sources for livestock to reduce the need for access to the stream for water and decrease bank trampling. Permanent cover and water and sediment basins or terraces on dry cropland also helped reduce soil erosion. (See page 32 for more information.)	Agriculture	Pocatello
S404	Bear Valley Casner Creek Restoration	Long-term restoration objectives of this project include stream channel restoration, habitat improvement, and sediment load reductions. (See page 33 for more information.)	Agriculture	Boise
S434	Upper Bear River Streambank Restoration (Peterson Property)	This project involved rehabilitation of approximately 6,000 linear feet of riverbank through bank shaping and protecting the toe with woody plantings. Riparian fencing was installed to limit livestock access to the riverbanks. (See page 34 for more information.)	Agriculture	Pocatello
S444	Mud Creek/Silo Creek Water Quality Improvement	This project consisted of two cleaning cells (approximately 200 feet long x 45 feet wide) and two large finishing ponds. The project includes a 20-year conservation easement. (See page 35 for more information.)	Agriculture	Twin Falls
S458	Cold Springs Creek Riparian Restoration	The main goal of this project is to maintain and improve water quality in the 1st- and 2nd-order sections of Cold Springs Creek. (See page 36 for more information.)	Agriculture	Boise
S459	Rock Creek BMPs	The goal of the project is to implement BMPs (e.g., exclusion fencing, off-site water development, roof runoff systems, manure collection pads, no-till seeding) to reduce the sediment load in the creek. (See page 37 for more information.)	Agriculture	Lewiston
S463	Cove Creek Wetlands	This project will help reduce total phosphorus and sediment loading to Cove Creek and eventually the Weiser River. (See page 38 for more information.)	Agriculture	Boise
S465	Valley County Watershed	This project involves developing private landowner and local government partnerships to plan and implement various water quality improvement projects. Targeted water bodies include Boulder Creek, the North Fork Payette River, and Beaver Creek. (See page 39 for more information.)	Agriculture	Boise
S471	Station Creek Watershed Improvement	At five sites along Station Creek, work will focus on repairing culverts, restoring streambanks, fencing the stream, providing off-stream water sources, and planting vegetation. (See page 40 for more information.)	Agriculture	Pocatello
S492	Upper Lanes Creek Restoration	This project involves large-scale active stream channel realignment, grade control, bank shaping, and riparian planting. It also includes off-site water development with riparian fencing and stream channel crossing upgrades. (See page 41 for more information.)	Agriculture	Pocatello
S493	Middle Snake-Payette Clean Water, Phase 2	The plan for this phase of the project is to install 25 sediment basins, which would have the potential to reduce sediment in the ditch water that eventually discharges into the lower Payette, Weiser, and Snake Rivers (See page 42 for more information.)	Agriculture	Boise
S494	Owyhee Restoration Incentive Program	This subgrant will fund projects addressing temperature, sediment, and nutrient pollution in the Mid-Snake/Succor Creek subbasin. (See page 43 for more information.)	Agriculture	Boise
S495	PBJ Division	This project consists of upgrading and repairing an irrigation diversion to prevent ongoing bank erosion and better manage water withdrawals. (See page 44 for more information.)	Agriculture	Pocatello
S496	Wide Hollow Erosion Reduction	This project includes six subprojects that address different resource concerns. Those concerns include cropland erosion, streambank erosion, nutrients, and inadequate water for livestock. (See page 45 for more information.)	Agriculture	Pocatello

Sub-grant	Project Name	Project Goals and Evaluation Conclusions	Category	DEQ Region
S498	Mica Creek Sediment and Nutrient Reduction (Swendig Property)	This project involved bank stabilization with rocks and vegetation. A possible wetlands improvement project is also being discussed. (See page 46 for more information.)	Agriculture	Coeur d'Alene
S500	Western Stockgrowers Association Enhancement	This follow-up project added a storage tank that was needed to provide the capacity to water stock not only in water deficit years but in nondrought years as well. Two solar-powered pumps and solar panels were also installed. (See page 47 for more information.)	Agriculture	Twin Falls
S514	Weiser Irrigation Automated Headgate Project	This project funded the purchase and installation of automated headgate controls and measuring devices on the Galloway Canal and Monroe, Jenkins, and Warm Springs Creeks. (See page 48 for more information.)	Agriculture	Boise
WW1010	Middle Bear River Watershed (Mound Valley)	This project involves bank restoration at two sites along the Bear River. (See page 49 for more information.)	Agriculture	Pocatello
WW1201	Trout Creek Animal Feeding Operation	This project involves relocating a corral to an upland site. An old cement pad will be removed and the streambank restored and planted. An off-stream water source will also be provided. (See page 50 for more information.)	Agriculture	Pocatello
WW1205	North Fork Payette River	The Alzar School plans to treat a portion of riparian area along the bank by planting shrubs and installing willow weavings in severely eroding bank areas. Tree revetments will also be used, if appropriate. (See page 51 for more information.)	Agriculture	Boise
WW1207	Ovid Creek Stream Protection	This project involved excluding livestock from two streams through fencing, off-site watering development, and corral relocation. (See page 52 for more information.)	Agriculture	Pocatello

Section 3 Project Field Evaluation Reports—2014

DEQ staff traveled to 35 project sites to evaluate and document progress on active projects and to assess how BMPs on older projects were functioning and being maintained:

- 29 projects addressed NPS water quality issues related to agriculture or grazing.
- 2 projects addressed issues related to transportation.
- 2 projects addressed issues related to urban and rural stormwater.
- 1 project addressed issues related to forestry.
- 1 project addressed issues related to both forestry and agriculture.

The following pages include summaries of the projects evaluated in 2014. More detailed evaluation reports for each project are available from DEQ upon request.

DEQ is committed to seeing that BMPs installed many years ago continue to function as designed. This commitment is important because properly functioning BMPs result in cleaner water in Idaho.

3.1 Soldier Creek Rocking (Re-evaluation)

Subgrant: S183 **Latitude and Longitude:** 47.18135, -116.47028

Description:
After 6 years, the project site restoration appears successful with no signs of erosion or sedimentation that would be of concern. Culvert inlets and outlets are well vegetated and/or armored. Water drainage infrastructure on the road is intact and properly routing water.

Completion date:
The project was completed and closed out with DEQ in 2008.

Project status:
Although much of the road runs through private land, landowners lack interest in maintaining the road infrastructure. The Idaho Department of Lands has property served by the road, so the agency has taken on the responsibility of maintaining the road as needed. Monitoring was done using sediment traps until 2008 when the project was completed.

Figure 5. Culvert replaced using project dollars.

Figure 6. New Soldier Creek road surface.

Figure 7. Culvert with a fish ladder installed using project dollars.

Figure 8. Well-vegetated relief culver inlet.

3.2 Croy Creek Wetland Restoration (Re-evaluation)

Subgrant: S246 **Latitude and Longitude:** 43.51266, -114.32034

Description:

For decades, the Lions Park site was used as the primary landfill for the City of Hailey. Over time, river flow became restricted and a portion of the wetland complex was filled in. The Wood River Land Trust worked with multiple partners to restore the Croy Creek wetlands area by removing 5,000 cubic yards of fill and dumped material, controlling noxious weeds, planting the site with native riparian wetland vegetation, and creating a park.

Completion date:

This project was completed on schedule and was closed out in 2012.

Project status:

Existing and newly added best management practices are in excellent condition. Weekly monitoring occurs with trail clean up and noxious weed control from the Wood River Land Trust. The public frequently uses the local park area and helps monitor this project. No on-going water quality monitoring is performed.

Figure 9. A pavilion and informational kiosk greet visitors as they arrive at the Croy Creek Wetlands boardwalk.

Figure 10. Approximately 5,000 cubic yards of waste material was removed from the project site, which was an old landfill. Efforts to restore the wetland riparian complex were successful.

Figure 11. The wetland boardwalk provides the public with opportunities for recreational activities and wildlife viewing, with minimal impact on the resources. An anonymous donor provided funding for construction of a bridge across the Big Wood River, allowing access to additional foot trails.

Figure 12. The project provided riparian and native plantings and an irrigation system. Noxious weeds are removed throughout the year.

3.3 Pend Oreille Lake *A* Syst (Re-evaluation)

Subgrant: S311 **Latitude and Longitude:** 48.28019, -116.46694

Description:
Public demonstration sites were designed to educate and demonstrate to private landowners the riparian buffer best management practices (BMPs) they can implement on their own property using attractive vegetation. Public education was also part of the project using Lake*A*Syst materials. With the materials, watershed residents and lake users were informed about how their activities and land-use practices affect the lake.

Completion date:
The project was closed in 2013.

Project status:
The Dover Bay demonstration riparian buffer BMP has not been well maintained. At the project's onset, the project manager did not understand the importance of getting buy-in from the Dover City Council. The council did not commit personnel for weeding the buffer, so the Lake*A*Syst coordinator maintained it for a few years. The buffer was not weeded this year. New members of the Dover City Council seem more supportive of the demonstration site, so the coordinator hopes personnel will be committed to maintain the site. The Water Life Discovery Center demonstration site has been well maintained. Every year, the Idaho Fish and Game master naturalists spend volunteer hours weeding and maintaining the site. It is in very good condition. The only monitoring done under this project was a postcard survey asking shoreline landowners if they received the Lake*A*Syst book and if they found it useful.

Figure 13 and Figure 14. Riparian buffer at Dover Bay.

Figure 15. Riparian buffer at the Water Life Discovery Center.

Figure 16. Pond at the Water Life Discovery Center.

3.4 Latour Creek Road Improvement

Subgrant: S321 **Latitude and Longitude:** 47.50875, -116.41888

Description:

Latour Creek Road runs primarily through private and state land and is managed by the Idaho Department of Lands (IDL). The road near Latour Creek causes local constriction to the creek in many places. Homes within the floodplain on lower Latour Creek provide additional constriction. A large historical bedload exists in lower Latour Creek, which manifests as exaggerated point bars or large midstream bars. Much of the lower Latour Creek channel morphology is braided as a result. This unstable channel morphology poses challenges to IDL when managing the road. IDL will continue to maintain the road to minimize erosion and sedimentation into Latour Creek.

Completion date:

The project was completed and closed out with DEQ in 2014.

Project status:

IDL has done a very good job maintaining the road surface, cutbanks, and drainage infrastructure. Since project completion, over 10 million board-feet of wood has been transported on the road. The road is still in good condition with proper best management practices in place. IDL has addressed local problems posing an erosion/sedimentation concern by using more relief pipes to properly route water and using rock or seeding vegetation on erosive surfaces to reduce erosion that would compromise the road structure or cause sedimentation into Latour Creek. No project monitoring has been done since the final monitoring report.

Figure 17. Bridge surface replaced using project dollars.

Figure 18. New Latour Creek road surface.

Figure 19. Grass revegetation stabilized this cutslope.

Figure 20. Rock stabilization where grass stabilization was not successful.

3.5 Canyon County BMPs for Water Quality Improvement (Re-evaluation)

Subgrant: S323 **Latitude and Longitude:** 43.68626, -116.79801

Description:
The project installed best management practices (BMPs) designed to improve water quality within Canyon County. Canyon County encompasses 450,000 acres that drain either to the lower Boise River and its tributaries or to the Snake River. The majority of these acres have agricultural land uses. As of 2004, available funding (mostly through the Environmental Quality Incentives Program) is the factor that most limits the effectiveness and schedule of total maximum daily load implementation. Five projects implemented between 2009 and 2013 largely consisted of nutrient and irrigation water management, irrigation conversion, sediment ponds, and cover cropping.

Completion date:
Projects were completed in 2013.

Project status:
To date, all BMPs are being maintained. All subprojects were visited and documented during development of the subgrant final report, which was submitted to DEQ in September 2013. The report focused on future maintenance and follow up of BMPs implemented with this subgrant. BMP installation documented by the Lower Boise Watershed Council (LBWC) and Canyon Soil Conservation District (SCD) is included in the final report. Individual landowner/operator contracts commit to conducting inspections, completing repairs, and doing maintenance as needed for the life of the BMP. Each landowner/operator was directed to review the Natural Resources Conservation Service Practice Standard for that particular BMP for direction and information. Project tracking and monitoring are limited to the life of this cost-share program. The LBWC recognizes the benefit of water quality sampling and plans to build some required form of water sampling into their 2011 project subgrants.

Figure 21. This portable drip irrigation practice will be applied to other fields in the area that are planted to onions in the following years.

Figure 22. This project consisted of installing a center pivot irrigation system to properly apply irrigation water to the field while also eliminating soil erosion and surface water runoff. A pond was also constructed to temporarily store irrigation water and help clean water from the Farmer Co-op Canal.

Figure 23. This project installed a drip tape micro-irrigation system to manage adequate water supply while eliminating erosion, deep percolation, and runoff.

Figure 24. Nine sediment ponds were installed to reduce sediment and attached chemicals from irrigation tailwater.

3.6 Salmon Falls Creek Agricultural Implementation (Re-evaluation)

Subgrant: S328 **Latitude and Longitude:** 42.14129, -115.00845

Description:
This project provided for the annual exclusion of approximately 600 head of cattle from 13.4 acres of land adjacent to House Creek, a tributary to Salmon Falls Creek and the Snake River. This project included installing 11,800 feet of buck and pole fencing to exclude livestock from the riparian area and constructing five rock-lined water gaps.

Completion date:
This project was completed in June 2011 and has been closed out.

Project status:
During this visit, all best management practices were in excellent condition. DEQ has performed Beneficial Use Reconnaissance Program monitoring on House Creek.

Figure 25. Stable streambanks, renewed riparian vegetation, and decreased pollutant loads were some of the benefits realized after successfully completing this project on House Creek.

Figure 26. The construction of 11,800 feet of buck and pole fence along House Creek excluded approximately 600 head of cattle from the riparian area. This type of fencing is necessary in areas of heavy snowfall, spring flooding, and marshy conditions where traditional fences can sink or become unstable.

Figure 27. The landowner reports that the benefits of implementing this project far outweigh the costs. The site now provides better cover for wildlife in winter and an improved fishery.

Figure 28. This photograph shows one of the five rock-lined water gaps that were constructed. Although the area is used as a winter-feeding ground for up to 600 head of cattle, the banks along these gaps are stable.

3.7 Boulder Ridge Ranch Wetlands (Re-evaluation)

Subgrant: S330 **Latitude and Longitude:** 42.65340, -114.77400

Description:
This project's goal was to improve water quality in Silo Creek, a tributary to Mud Creek and the Snake River. Work included enlarging an existing in-channel pond and dredging a second pond that serves as a water source for the landowner's irrigation needs. Approximately 700 feet of streambank along both sides of Silo Creek were stabilized by planting filter strips and placing waddles at strategic locations to reduce the potential for storm-related erosion. Grade stabilization structures installed in Silo Creek reduced the water velocity under high-energy conditions.

Completion date:
The project was completed and closed out in May 2012.

Project status:
All best management practices (BMPs) are being maintained. BMPs are visually monitored by Twin Falls Canal Company staff and the landowners. The sponsor does not have the funds needed to perform water quality monitoring.

Figure 29. The project included enlarging an existing in-channel pond near Clear Lakes Road.

Figure 30. Irrigation return water flows from a large sediment pond into a second smaller pond. The banks of the ponds were planted with vegetation to help filter the water, and approximately 700 feet of Silo Creek streambank was planted to reduce the potential for erosion.

Figure 31. A new landowner installed several pivots on adjacent farmland and plans to install several more in the future. Specialized irrigation pipe was installed to prevent leaks and pollutants from discharging to nearby waters. A 10-year farming lease ensures the land will not be developed over that time.

Figure 32. Silo Creek flows from the project site to where it discharges into Mud Creek and eventually into the Snake River.

3.8 Boulder Creek Restoration (Re-evaluation)

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

Description:

Deirdre Bingaman oversaw her fifth grade class in the design, contractor bidding, and construction of a streambank stabilization project adjacent to their school on Boulder Creek in Donnelly, Idaho. After the design and bidding process, the project's on-the-ground best management practices involved constructing 100 feet of log cribbing and installing 750 feet of riparian plantings during the low-flow late summer months of 2011. With a subgrant of only $5,400; contractor match of donated equipment, time, and materials; and a lot of kids' time, the project was successfully completed ahead of schedule.

Completion date:

This project was completed ahead of schedule.

Project status:

The Donnelly school kids continue to monitor the progress of this restoration project, and the school uses the project as part of their science curriculum for water quality and monitoring.

Figure 33. Before the project, this section of streambank had become unstable due to realignment of Boulder Creek for driveway construction.

Figure 34. This photo from a 2012 site visit shows the interlocking wood planks acting as a live retaining wall but with less of an environmental impact. Vegetation is planted between the planks. Installation of cribbing and vegetation has allowed the streambank to stabilize.

Figure 35. This photo from the 2014 site visit shows several years of bank stability and well-established vegetation. The cribbing has helped to stabilize this outside channel bend.

3.9 Little Salmon River Riparian Restoration

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

Description:

The goal of this project is to protect and restore native riparian habitat along the Little Salmon River and its tributaries Fourmile and Round Valley Creeks. Since the last site visit in 2012, many vegetative and woody plants have been installed on the Little Salmon River and Round Valley Creek. To date, 2.5 miles of Round Valley Creek have been planted with native shrubs and trees. During the project evaluation, DEQ made contact with a new landowner on the Little Salmon River who was interested in entering into a partnership to stabilize and plant his portion of the river. During the evaluation period, this subgrant also enabled a partnership with a local landowner on the Little Salmon River who was in danger of losing his home to a rapidly deteriorating bank.

Completion date:

Work is on schedule for all tasks at this stage of the project.

Project status:

Best management practices are being maintained; however, there is a section on Fourmile Creek where the new lessee does not like the fence that was installed. The willows, with time to establish, are doing well. Across project locations, the survival rate for the plants installed is quite high due to the efforts by Idaho Department of Fish and Game (IDFG) and volunteers who watered the plants until they became established. Thirty-six monitoring points were established for this project. Sites are visited regularly to document seasonal or annual growth.

Figure 36. This private landowner has experienced some severe bank scouring along this section of the Little Salmon River. Approximately 150 feet of bank was treated with rock rip-rap interspersed with willow clumps to help stabilize the bank and reduce stream velocities. Unlike cuttings, the use of willow clumps provides lower failure rate and faster site protection. Plantings were completed with the help of 45–50 volunteers.

Figure 37. A 2.5-mile section of Round Valley Creek is private land that was historically farmed and grazed up to the edge of the creek. Nearly all riparian vegetation was lost, and the creek became shallow and wide. IDFG and hundreds of volunteers have been working to restore the native riparian habitat. This photo, at the upper end of the private reach, shows some of the first treatments given to Round Valley Creek.

Figure 38. Since the project began in 2000, the creek has narrowed and deepened. The full 2.5 miles have been planted with a density similar to what is seen in this photograph.

Figure 39. Five-gallon willow clumps were planted in spring 2013 to withstand erosion from spring runoff and to shorten the establishment period.

3.10 Blackfoot River Water Quality

Subgrant: S393 **Latitude and Longitude:** 43.04756, -111.89084

Description:
This project consisted of fencing portions of the main stem Blackfoot River and providing off-stream water sources for livestock.

Completion date:
The project was completed in 2014.

Project status:
Best management practices are being maintained since the last visit. Monitoring occurred during construction, and photos continue to be taken on occasion to document conditions.

Figure 40. A cattle guard installed in the road where the exclusion fence crosses the road.

Figure 41. A tank and trough (shown at left) were installed upslope from the river as a source of water for livestock and to prevent trailing pressure on the river near Morgan's Bridge.

Figure 42. Barbwire exclusion fence installed along the top of the canyon to prevent livestock from accessing the riparian area and the Blackfoot River.

3.11 South Fork Clearwater River Watershed Vegetation

Subgrant: S394 **Latitude and Longitude:** 46.03173, -115.97481

Description:
This project will reduce sediment, nutrients, and bacteria to help meet state water quality standards and to reduce stream temperatures to attain full support for beneficial uses. An enhanced riparian area will improve water quality by filtering nutrients and bacteria from runoff.

Completion date:
Work is on schedule for all tasks at this stage of the project.

Project status:
New plants are being continuously watered and competing reed canary grass and wild rose are being removed. Project work includes photo documentation, vegetation establishment, bank stabilization, and monitoring for percent canopy cover and water quality. Palouse-Clearwater Environmental Institute (PCEI) staff, AmeriCorps members, students, and volunteers will participate in monitoring activities. PCEI will work with DEQ and local agencies to coordinate monitoring at the restoration sites and throughout the watershed. To ensure quality data collection, experienced PCEI staff will train staff and volunteers on data collection protocol and methodology.

Figure 43. This project established a mock beaver dam to enhance the engineered wetland.

Figure 44. The streambank was resloped and erosion matting installed to help establish a functional floodplain.

Figure 45. Weed control matting was installed, and a riparian buffer was planted.

Figure 46. A wetland was established adjacent to Butcher Creek.

3.12 Upper Hangman Creek Watershed Road/Culvert Repair (Re-evaluation)

Subgrant: S395 **Latitude and Longitude:** 47.11692, -116.72758

Description:
The project site looks very good, with no signs of erosion or sedimentation from the road surface that would be of concern. Culvert inlets and outlets are well vegetated and/or armored. The fish ladder is intact. Water drainage infrastructure on the road is intact and properly routing water.

Completion date:
The project was completed and closed out with DEQ in 2012.

Project status:
The Coeur d'Alene Tribe visits the site often to ensure culverts are working efficiently and no problems exist. The Coeur d'Alene Tribe fisheries biologist regularly performs electrofishing in the creek near the project site to ensure fish passage is maintained. To date, fish readily move up and down the project site with no obstruction at the culvert. Photo monitoring was completed before and after the project was installed.

Figure 47. Culvert replaced using project dollars.

Figure 48. A series of drop structures below the culvert were installed by the Coeur d'Alene Tribe fisheries personnel to provide jump pools for the migrating fish.

Figure 49. This relief culvert needs to be watched for sedimentation.

Figure 50. New Hangman Creek road surface.

3.13 Potlatch River Watershed Management Plan, Phase 2

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

Description:
The second phase of the Potlatch River Watershed Management Plan project continues to support making water quality improvements by implementing best management practices that are best suited for forest lands, agricultural lands, livestock operations, and rural roads.

Completion date:
Work is on schedule for all tasks at this stage of the project.

Project status:
The Potlatch River Watershed Management Plan outlines a multiphase effort to implement many best management practices (BMPs). The Latah Soil and Water Conservation District is required to monitor and maintain all BMPs implemented under the plan. The district periodically conducts oversight monitoring that involves visiting implementation sites and addressing any observed issues. During a September 11, 2014, field evaluation, DEQ found that overall the project was proceeding on schedule. Road rocking had been completed. Subsequent maintenance of road surfaces is accomplished as needed and as funding allows.

Figure 51. A recently rocked forest road.

Figure 52. Culvert replacement.

3.14 Marsh Creek/Middle Portneuf River Watershed Project, Phase 3

Subgrant: S399 **Latitude and Longitude:** 42.77595, -112.23270

Description:

This project involves work at five different locations: in three locations, corral containment will be improved, thereby attempting to forego having to relocate the corrals, and at two sites, streambank restoration work took place. One project goal is to keep approximately 600 head of livestock from accessing the streams for water. Restoration efforts will take place on approximately 445 feet of streambank to reduce the excessive sediment load that can occur during periods of high runoff. The site on Indian Creek withstood a flashflood in summer 2014, and the streambank improvements held together well during the event.

Completion date:

Work is on schedule for all tasks at this stage of the project. The Portneuf Soil and Water Conservation District is in the process of completing a final report on the project.

Project status:

Two containment berms will need repair following an intense thunder shower this past summer. The landowner was contacted and was planning to make repairs this past fall. Monitoring is being performed on this project.

Figures 53 and 54. Streambank condition near the Topaz Gage Station before restoration (left), and a view of the same site after restoration of the streambank (right). A stream barb and toe rock were installed, willows were planted, and sedge mats were placed on the bank.

Figures 55 and 56. A downstream look at the streambank before installing the exclusion fencing (left), and an upstream look after the exclusion fence was installed (right).

3.15 Daniels Reservoir Sediment Reduction (Re-evaluation)

Subgrant: S402 **Latitude and Longitude:** 42.35697, -112.44648

Description:
This project consisted of installing off-stream water sources for livestock to reduce the need for access to the stream for water and decrease bank trampling. Permanent cover and water and sediment basins or terraces on dry cropland have been installed to reduce soil erosion.

Completion date:
This project was completed and finalized in 2013.

Project status:
Best management practices are being maintained. Monitoring occurred throughout the life of the project.

Figure 57. Solar panels power a submersible pump for a system with three water troughs and a storage tank.

Figure 58. One of two spring collection boxes that provides water for two stock water lines that gravity feed 12 troughs.

Figure 59. A self-regulating watering trough was installed to ensure a steady supply of fresh water is available to livestock.


Figure 60. A storage tank capable of providing a 1.5-day supply of water for livestock.

3.16 Bear Valley Casner Creek Restoration (Re-evaluation)

Subgrant: S404 **Latitude and Longitude:** 44.29156, -115.48267

Description:

Long-term restoration objectives include the following:

- Restoring the stream channel similar to the downstream reach of Casner Creek
- Improving the habitat conditions and ground water residence by removing the berm and allowing the creek to use its floodplain
- Restoring pool frequency to bring back Bull Trout, summer steelhead, and spring Chinook Salmon
- Reducing sediment load to Bear Valley Creek by increasing sinuosity and aggrading the streambed of Casner Creek

Completion date:

The project was completed on schedule and closed in 2013.

Project status:

Best management practices are being maintained, and monitoring is being performed. CH2M Hill collected the most recent data in 2013. Parameters include channel cross-sections and longitudinal profiles, pebble counts, vegetation, electrofishing data, and photo points. Vegetation is recovering, and species richness has increased during the 4-year monitoring period. The biologs are stable and show signs that they are functioning as designed to increase channel-floodplain interaction, provide channel complexity, elevate the streambed, create sinuosity, and provide scour for pools.

Figure 61. This biology helps create channel complexity and sort substrates in the Casner Creek channel.

Figure 62. Vegetation has regrown along Casner Creek 3 years after project completion.

3.17 Upper Bear River Streambank Restoration (Peterson Property)

Subgrant: S434 **Latitude and Longitude:** 42.20633, -111.06716

Description:
This project involved rehabilitation of approximately 6,000 linear feet of riverbank through bank shaping and protecting the toe with woody plantings. Riparian fencing was installed to limit livestock access to the riverbanks.

Completion date:
This project was completed in 2013.

Project status:
Best management practices are being maintained, and monitoring is being performed.

Figure 63. Bank shaping.

Figure 64. Willow starts taking shape.

Figure 65. Riparian fencing will limit livestock access to the river.

3.18 Mud Creek/Silo Creek Water Quality Improvement

Subgrant: S444 **Latitude and Longitude:** 42.59149, -114.81191

Description:

The Mud Creek/Silo Creek water quality improvement project consisted of two cleaning cells (approximately 200 feet long x 45 feet wide) and two large finishing ponds. The project includes a 20-year conservation easement on the approximately 6-acre site and a cost-share for a center pivot irrigation system on 80 acres adjacent to the wetland complex. The Twin Falls Canal Company's I-6 Drain (part of the I Coulee) enters Silo Creek above the 319 Boulder Ridge Ranch Wetland Projects (completed in 2011), making this a multiproject approach on a watershed level. The I Coulee drains approximately 10,000 acres of irrigated land in western Twin Falls County. The landowner and the Twin Falls Canal Company will maintain the sediment ponds as needed.

Completion date:

This project was completed in December 2013, and the project has been closed out.

Project status:

Best management practices were in excellent condition during the evaluation. The Twin Falls Canal Company previously contracted with the University of Idaho to monitor the I Coulee system for 20 years. Monitoring for total suspended sediment and total phosphorus is completed every 2 weeks throughout the irrigation season. The historical data established baseline water quality data for the project, with future monitoring used to evaluate the project's effectiveness. The Balanced Rock Soil and Water Conservation District is also conducting weekly monitoring during the irrigation season. Average monitoring results from April through July 2014 were reported as 120 milligrams/liter (mg/L) above the project and 55 mg/L below the project, demonstrating that sediment levels decreased through the project area.

Figure 66. The first cleaning cell in the series of four settling ponds. The field on the left is steep and highly erodible. A center pivot irrigation system was installed in this field as part of the irrigation improvement project.

Figure 67. Flow from the first cleaning cell entering the second cleaning cell.

Figure 68. Two large finishing ponds continue the cleaning process before discharging into the canal.

Figure 69. This is the final discharge point of the project. The average flow is 7–8 cubic feet per second.

3.19 Cold Springs Creek Riparian Restoration

Subgrant: S458 **Latitude and Longitude:** 43.24489, -115.42067

Description:

The main goal of this project is to maintain and improve water quality in the 1st- and 2nd-order sections of Cold Springs Creek. Two primary objectives are to (1) reduce sedimentation by reducing streambank and channel erosion and (2) develop and implement a project administration, evaluation, and environmental stewardship program to assist with determining the effectiveness of best management practice (BMP) implementation activities and to promote their long-term use. To accomplish these objectives, the project will attempt to implement riparian BMPs on 3.2 miles of west fork Cold Springs Creek and implement upland BMPs on portions of the 2,885 acres of rangeland that drain into the creek.

Completion date:

Work is on schedule for all tasks at this stage of the project. The grant is scheduled to end December 31, 2016.

Project status:

During the visit, we observed a site where two bulls had been fighting earlier in the day. They crashed into a fence, pulling it into a draw. The landowner had since penned the bulls and was planning to reset the fence. Prior to the project, the Stream Visual Assessment Protocol was followed to provide a benchmark of site conditions. Annual BMP effectiveness monitoring will be conducted for 3 years following implementation. Monitoring will be done by Elmore Soil and Water Conservation District staff and board supervisors after they are trained using the Natural Resources Conservation Services training modules.

Figure 70. The headwaters of Cold Springs Creek were previously unfenced and cattle freely roamed the area. The fencing helps manage the cattle with a rest rotation protocol that will let vegetation establish and reduce the effect grazing could have on downstream water quality.

Figure 71. After just one season, fencing and rotational grazing is having a positive impact on riparian vegetation.

Figure 72. Spring developments provide a clean source of water for livestock and protect the stream from damage and contamination. This spring delivers water by gravity flow to the tractor tire in the background. The spring box consists of a 50-gallon perforated drum with a pipe going from the box to the trough. Concrete seals the bottom of the trough.

Figure 73. Overflow from the trough returns back to the creek. Providing an off-spring water supply keeps cattle from negatively impacting the wetland and ensures an excellent and plentiful supply of clean water.

3.20 Rock Creek BMPs

Subgrant: S459 Latitude and Longitude: 45.90518, -116.39697

Description:
For this project, 28 producers have volunteered to implement best management practices (BMPs) on their lands. BMPs include 1 mile of fence, 8 off-stream water systems, 1 roof runoff system, 2 manure collection pads, 500 acres of manure management, 600 acres of hay and pasture seeding, and 600 acres of conversion to no-till.

Completion date:
All work is on schedule. The grant is scheduled for completion by December 31, 2016.

Project status:
Landowners are working with the soil and water conservation district to maintain and further implement the best management practices included in the conservation plan. The district is performing periodic site visits to observe the work in progress. The landowner is frequently on site to ensure proper function. When the project is complete, the district will record and report any required measurements.

Figure 74. One well and a pump station have been drilled and installed.

Figure 75. A water trough and heavy use rock pad were installed. Some water lines have been installed, and others will be installed to adjacent troughs.

Figure 76. Two heavy-use concrete pads were installed.

Figure 77. Project involved seeding 50 acres of reclaimed pasture with grass and forbs.

3.21 Cove Creek Wetlands

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

Description:

Cove Creek contributes phosphorus and sediment to the Weiser River. Total phosphorus reduction is required in the Weiser River to achieve the targets set in the Snake River-Hells Canyon subbasin assessment and total maximum daily load (DEQ and ODEQ 2004); this reduction also applies to its tributaries. Total phosphorus levels in Cove Creek must be reduced by 76%. A project goal is to reduce phosphorus by 1,044 pounds. A constructed wetland will filter water running off 1,600 acres of dry land, 130 gravity irrigated acres, and 17,117 surrounding rangeland acres. The area around the ponds and steeper banks of Cove Creek will be heavily planted.

Completion date:

This project experienced a delay at the start, but the Weiser Soil and Water Conservation District (SWCD) remains confident the project will be completed on time.

Project status:

Best management practices (BMPs) are being maintained. Monitoring will be done by the Idaho State Department of Agriculture, DEQ, and Weiser River SWCD. Once the wetland is installed, comparative testing will determine the effect of BMPs on water quality, specifically on phosphorus. Testing was completed on Cove Creek from May through September. Phosphorus levels will continue to be monitored May–September for 2 years following wetland construction.

Figure 78. A fence is being installed along Cove Creek to exclude cattle and allow the riparian area to re-establish. The plan calls for fencing 1.25 miles of Cove Creek for riparian protection and grazing management.

Figure 79. Plans for this area include constructing three sediment ponds and two grow plots. The wetlands will treat phosphorus, particularly orthophosphate.

3.22 Valley County Watershed

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

Description:

This project involves developing private landowner and local government partnerships to plan and implement various water quality improvement projects. Projects along Boulder Creek, the North Fork Payette River, and Beaver Creek have been identified with goals of reducing sediment and nutrient loads by restoring riparian areas and improving irrigation practices. Funding source availability, allowing landowners to pursue small scale but effective projects, is expected to increase the number of landowners involved in protecting the watershed. Other potential projects under development are in the Gold Fork and North Fork Payette River subwatersheds.

Completion date:

Work is on schedule for all tasks at this stage of the project. All funds awarded to the Valley Soil and Water Conservation District (SWCD) for this project have been obligated for use on 12 specific subprojects.

Project status:

This visit is the first on-site evaluation of the project. Best management practice status is documented in the photos below. The Valley SWCD will continue to implement photo point monitoring throughout the project.

Figure 80. This root wad barb was strategically placed to deflect flow and reduce bank erosion by decreasing near-bank slope, water velocity, stream power, and sheer stress.

Figure 81. This pole and rail fence was installed by a Cascade High School construction class. The 1,321-linear-foot fence runs along a high-traffic public trail near the bank of the North Fork Payette River. The fence restricts access to the highly erodible streambank. To protect the bank further, hundreds of trees and shrubs were planted and cared for by the Cascade High School advanced biology and advanced research lab classes.

Figure 82. French drains were installed in a parking area close to the North Fork Payette River, a popular recreation destination, to help manage stormwater runoff. The 3–4 foot deep drain is lined with geotextile fabric and the trench is armored with rock. Stormwater runoff is now diverted to the basin seen in the background of this photograph.

Figure 83. Rock was used to provide slope stability. School groups volunteered to plant these areas next spring with plants obtained from the Aberdeen Plant Materials Center in Aberdeen, Idaho.

3.23 Station Creek Watershed Improvement

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

Description:
The project will take place at five sites along Station Creek. Work will focus on repairing washed out culverts, restoring streambanks, fencing the stream where livestock have unlimited access, providing off-stream water sources, and planting vegetation.

Completion date:
The project is slightly behind what the project manager would like as the Franklin Soil and Water Conservation District is waiting for project design specifications from an engineer.

Project status:
No best management practices have been implemented as of this time. Monitoring is being performed (i.e., preconstruction photos were taken).

Figure 84. This photo shows the lack of woody vegetation along the stream channel and a stretch of the bank that has collapsed and fallen into the channel.

Figure 85. The photo shows how close to the stream edge the landowner farms.

Figure 86. The stream channel has become incised through the property.

3.24 Upper Lanes Creek Restoration

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

Description:
This project involves large-scale active stream channel realignment on approximately 3 miles, grade control, bank shaping, and riparian planting. It also includes off-site water development (eight troughs, several instream/side-stream water intakes, and solar pumping plant) with riparian fencing (approximately 6 miles) and stream channel crossing upgrades.

Completion date:
Work is on schedule for all the tasks at this stage of the project. The grant's scheduled end date is May 31, 2017.

Project status:
Best management practices are being maintained, and monitoring is being performed.

Figure 87. A new box culvert replaced a decrepit crossing.

Figure 88. Instream grade control with integrated water intake structure moves water to an off-stream trough.

Figure 89. The solar pumping plant seen in the background powers the off-stream livestock-watering trough.

Figure 90. A view of the active channel restoration effort (fall 2014).

3.25 Middle Snake-Payette Clean Water, Phase 2

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

Description:

The Lower Payette Ditch Company (LPDC) discharges into the lower Payette, Weiser, and Snake Rivers. The project's pollutants of concern include nutrients, bacteria, sediment, and pesticides. The LPDC allows adjacent landowners to pump irrigation water out of the canal to irrigate crops or pastureland, after which tail water re-enters the canal. The LPDC wants to treat tail water on the farmland to ensure the return water meets the state's water quality standards. For phase 2 of this project, the Payette SWCD wants to install 25 sediment basins, which would have the potential to reduce sediment in the ditch water—and eventually in the lower Payette, Weiser, and Snake Rivers—by over 1,000 tons per year.

Completion date:

Work is on schedule for all tasks at this stage of the project. The grant is scheduled to end May 31, 2017.

Project status:

Best management practices (BMPs) are being maintained. For the past 6 years, the LPDC board of directors had water quality committee and technical staff monitor sediment, pH, turbidity, and conductivity in the ditch. Plans are in place to continue this level of effort. Data have been collected at the lower Payette River diversion and at six spills along the canal system. Photo monitoring will take place at various times during and after BMP implementation. After the basins are installed, the Payette SWCD plans to measure and record the amount of sediment collected in the basins during the irrigation season.

Figure 91. The sediment basin in the foreground captures runoff from a 20-acre parcel.

Figure 92. A potential future project site, this highly erodible parcel has a 4% slope that has historically been flood irrigated. Tail water from the site is pumped back into the Payette Ditch, which is located to the right in the photo, on top of the bank. The proposed treatment calls for establishing permanent pasture on this site and irrigating it with sprinklers.

Figure 93. This sediment basin receives runoff from 20 acres of furrow-irrigated cropland and eventually discharges directly back to the Lower Payette Ditch. The ditch eventually discharges to the lower Payette River.

3.26 Owyhee Restoration Incentive Program

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

Description:

This subgrant will fund projects addressing temperature, sediment, and nutrient pollution in the Mid-Snake/Succor Creek subbasin. Plans call for constructing two sediment basins in the Jump Creek drainage that will collect sediment and nutrients from approximately 400 acres of furrow-irrigated row cropland. Another subproject will involve bank stabilization on Catherine and Reynolds Creeks to protect the banks from eroding and increasing the sediment load during periods of high water. This effort will include planting willows to stabilize the bank and provide shade to reduce water temperature. Converting 100 acres from furrow to sprinkler irrigation will help reduce the sediment and nutrients entering Catherine Creek, Castle Creek, and the Snake River. In the Jordan Creek subbasin, plans are to implement off-site watering practices and stabilize the streambank to help reduce water temperature and sediment loading. Subsurface weirs will be installed to prevent head-cutting and reduce sediment loading into the stream, and willows will be planted to help reduce stream temperature. Developing off-site water sources will pull livestock away from the stream, allowing the riparian area to stabilize and reducing impacts to the banks.

Completion date:

Work is on schedule for all tasks at this stage of the project. The grant is scheduled to end October 1, 2017.

Project status:

Best management practices are being maintained. Photos will be taken at specific points before implementation and after the project is completed.

Figure 94. From this inlet structure to the pivot involves a 15-foot fall; 2,200 feet of 12-inch pipe will be used to supply water for pivot irrigation. Pivot irrigation has eliminated any discharge to Castle Creek from this site. The more efficient delivery system also allows more water to remain in Castle Creek.

Figure 95. Historically, these highly erodible acres were flood irrigated through a pond and ditch system. This practice resulted in significant water loss and erosion. Irrigation return water discharged directly to Castle Creek, which runs in the tree line seen in the background. Irrigation conversion and leveling ditches on these 113 acres will result in less water removal from Castle Creek and a decreased sediment load in the water discharged back into the creek.

3.27 PBJ Diversion

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

Description:
This project consists of upgrading and repairing an irrigation diversion to prevent ongoing bank erosion and better manage water withdrawals. The current diversion presents a barrier to upstream fish migration. The upgrades will allow water use to be managed on a week-to-week basis. Diverted water will slowly flow back into the channel downstream of the diversion to prevent negative impacts on aquatic life.

Completion date:
Work is on schedule for all the tasks at this stage of the project. The Bear Lake Soil and Water Conservation District missed the opportunity in fall 2013 to install the best management practices (BMPs) during low water, so BMPs were scheduled for implementation fall 2014 during low flow. Monitoring is being performed on this project.

Project status:
No BMPs had been installed at the time of evaluation.

Figure 96. Photo looking downstream at the diversion.

Figure 97. Barren banks upstream of the diversion. Woody vegetation will be planted along these banks.

3.28 Wide Hollow Erosion Reduction

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

Description:
This project includes six subprojects that address different resource concerns. Those concerns include cropland erosion, streambank erosion, nutrients, and inadequate water for livestock.

Completion date:
Work is on schedule for all tasks at this stage of the project. The grant is scheduled to end in December 2017.

Project status:
Best management practices are being maintained, and monitoring is being performed.

Figure 98. One of the eight troughs installed under the two contracts.

Figure 99. Solar panels on a hill above the spring power pumps to supply water to nearby troughs.

Figure 100. The spring and spring development box surrounded by exclusion fence to keep animals out.

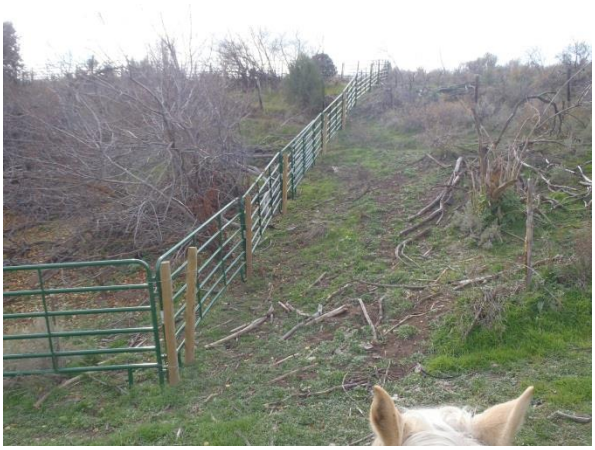

Figure 101. An exclusion fence constructed around the area of spring development is intended to keep animals out of the spring. Because of snowdrifts in this area, the Oneida Soil and Water Conservation District fenced a larger area to lessen the chance of snow pushing the fence over.

3.29 Mica Creek Sediment and Nutrient Reduction (Swendig Property)

Subgrant: S498 **Latitude and Longitude:** 47.59940, -116.86880

Description:

This project on the Swendig property was completed in November 2013. The bank was successfully stabilized with rock. The plantings are well established due to the effort by the landowner to water the plants. Based on observations during the visit, DEQ identified other opportunities for water quality improvement on this reach of Mica Creek. The Idaho Department of Fish and Game (IDFG) owns the adjacent property. A wetlands improvement project would decrease the sediment discharged into Coeur d'Alene Lake from Mica Creek. The Swendigs are amenable to the idea of using their land to help with such a project. Discussions with the landowner and IDFG are underway.

Completion date:

Work has been completed on this project.

Project status:

The landowner is watering the riparian plants, which has allowed them to establish root structure. Photo monitoring is being done by the Kootenai-Shoshone Soil and Water Conservation District and landowner.

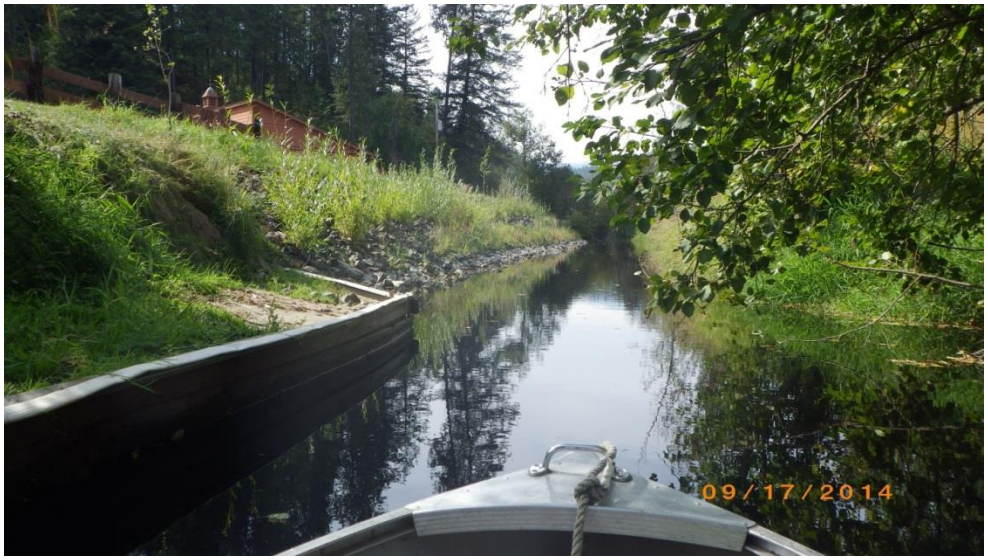

Figure 102. Looking upstream at bank stabilization project.

Figure 103. Looking downstream at bank stabilization project.

3.30 Western Stockgrowers Association Enhancement

Subgrant: S500 **Latitude and Longitude:** 42.19083, -114.41944

Description:

This subgrant funded work that could not be accomplished under an earlier subgrant (S224, the Shoshone Creek Water Quality Improvement Project, successfully completed in 2009). The project was to be completed in fall 2013. However, a winter storm forced an early Forest Service road closure and heavy runoff the following spring further delayed the start of the project. After completing the first project, the landowners realized an additional storage tank was needed to provide the capacity to water stock, not only in water deficit years, but in nondrought years as well. To add this capacity, Western Stockgrowers purchased a second 6,000-gallon tank and installed two 30-gallon-per-minute (gpm) solar-powered pumps. Solar panels were installed on two specially designed portable metal trailers. The watering system can be used at the site when the allotment's entire 1,500 head herd is turned out together. The solar panels and pumps can be moved throughout the watershed as cows are moved through grazing allotments to minimize their impact on both grass and water resources.

Completion date:

This project was completed on schedule in July 2014, and the subgrant has been closed out.

Project status:

Best management practices have only been in place a short time and are in good condition. The day-to-day grazing operation is managed by Western Stockgrowers, with regular oversight by Snake River Soil and Water Conservation District and US Forest Service staff.

Figure 104. The black 6,000 gallon tank was installed on site next to a previously installed tank. The second tank increased the storage capacity by two-thirds, ensuring the cattle have an ample supply of clean water throughout the season.

Figure 105. Eight 45-watt solar panels were attached to a portable trailer. The panels generate enough power to run the 30-gpm pump for 12 hours to supply water to the off-site holding tanks. Because the water is pumped out at a slow, continuous rate, there is little impact to the creek.

Figure 106. A new 30-gpm solar-powered pump replaced an old diesel-powered pump. The blue hose attached to the side of the pump is used by operators to wash off the solar panels, when needed, to maximize efficiency.

Figure 107. The two larger storage tanks supply water to over 20 smaller off-site watering tanks. The tanks are located throughout the grazing allotments, and the supply can be shut off to conserve water when cattle are moved. These tanks have been successful in providing a clean water source for cattle and wildlife, decreasing their impacts on nearby streambanks and riparian areas.

3.31 Weiser Irrigation Automated Headgate Project

Subgrant: S514 **Latitude and Longitude:** 44.27660, -117.12240

Description:
This project funded the purchase and installation of automated headgate controls and measuring devices on the Galloway Canal and Monroe, Jenkins, and Warm Springs Creeks. Measuring devices were installed near the inflows to the Weiser River to help quantify actual use of unregulated water upstream. Automating the headgates at these diversion dams also helps to regulate the amount of water diverted from the Weiser River, ensuring that only the amount needed enters the delivery system. Precision at the diversions will result in more water left in the Weiser River, which provides better flows in other reaches that are nearly dewatered during summer months. This project will virtually eliminate excess water in the irrigation delivery and return drain system, reducing the pollutant load discharged to the Snake River/Hells Canyon Complex.

Completion date:
Project was completed and closed out in 2014.

Project status:
Kirk Campbell, Idaho State Department of Agriculture (ISDA), completed background monitoring on these sites. The Weiser Irrigation Company will continue to monitor the areas along with DEQ (Weiser Flat Monitoring Project) and ISDA, as funding allows.

Figure 108. With the help of automated headgates, water diverted from the Weiser River is managed more efficiently. More water is left in the river to maintain higher flows, and less water is lost in the irrigation delivery and drain system. With less irrigation water returned, less sediment and nutrients enters the Weiser and Snake Rivers.

Figure 109. The automated headgate on the Galloway Canal into Monroe Creek will help to conserve water in the Weiser River, ensure adequate flows in Monroe Creek, reduce excess spill, and help maximize water delivery on demand.

Figure 110. A still well is used with a weight and float mechanism to measure water level and provide data for automated adjustments.

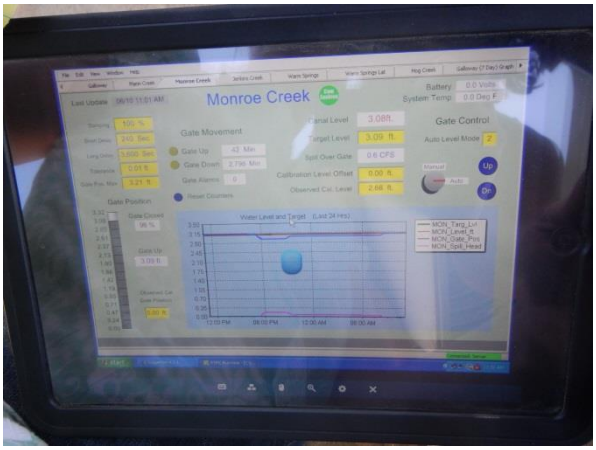

Figure 111. The data recorded by data loggers at remote sites can be viewed in real time, eliminating the need for staff to travel to these sites to collect data and make any necessary adjustments.

3.32 Middle Bear River Watershed (Mound Valley)

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

Description:

This project involves bank restoration at two sites along the Bear River. The bank along this stretch is vertical, 3 to 4 feet high, and consists of very fine material. To repair the banks, barbs will be placed at two sites in the channel to deflect flow away from the bank. Most of the work has been completed, and the landowner has been reimbursed. One landowner still must install some barbs on his stretch of the river to keep the project on schedule.

Completion date:

Work was on schedule for all the tasks at this stage of the project when the field evaluation was conducted.

Project status:

Best management practices are being maintained since the last visit. Monitoring has occurred using photo points.

Figure 112. Rock was placed on the bank near where each barb will be installed in the river.

Figure 113 and 114. Installed barbs.

3.33 Trout Creek Animal Feeding Operation

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

Description:
This project involves relocating a corral to an upland site. An old cement pad will be removed and the streambank restored and planted. An off-stream water source will be provided at the new corral site and will include containment berms to contain runoff. The winter before, lightning started a haystack on fire and burned the hayshed, shop, old milk barn, and loafing sheds. Separate from this project's requirements, a new hayshed was built in the location of some of the old loafing sheds.

Completion date:
The Caribou Soil and Water Conservation District and the landowner have a work plan with dates when BMPs will be implemented. Adhering to the plan will keep the project on schedule.

Project status:
The landowner has been removing old corrals. No best management practices have been installed at this point. Monitoring is being performed on this project.

Figure 115. Looking upstream on Trout Creek. The cement wall in the foreground will be removed and the streambank restored.

Figure 116. Looking downstream on Trout Creek. The cement wall seen in this photo will be removed and the streambank restored. Located at the downstream end of the wall is a waste storage pit that will also be removed.

Figure 117. These corrals will be removed.

Figure 118. Removing loafing sheds and relocating the corrals was part of the project, but a fire destroyed the loafing sheds. A new hayshed was constructed at the site.

3.34 North Fork Payette River

Subgrant: WW1205 **Latitude and Longitude:** 44.29140, -116.00426

Description:

The Alzar School, a high school outdoor adventure and leadership program, is located on a 100-acre parcel along the North Fork Payette River south of Cascade. Alzar fenced its property in June 2012 to exclude livestock from the 1 mile of actively eroding riverbank located on its land. The school plans to treat a portion of the riparian area along the bank by planting shrubs and installing willow weavings in severely eroding bank areas. Tree revetments will also be used, if appropriate (logs are available on site). Project partners include the Idaho Department of Fish and Game (IDFG) volunteer crew and Trout Unlimited.

Completion date:

The project's focus is on 150 meters of severely eroding bank. Installing the revetments was more work and took longer than expected. The water level at that bank is quite high, making work conditions difficult. At this time, Alzar is looking into different treatment options. DEQ and Natural Resources Conservation Service officials will continue to help the school outline a path forward.

Project status:

The upland plantings are being watered frequently to help with survival. The Alzar School students will monitor bank stability to evaluate the rate of erosion and sediment loss. Photo point monitoring will provide a record of riparian recovery. For four semesters, students will monitor and plot data on water oxygen, nitrogen, phosphorus, temperature, and macroinvertebrates using LaMotte chemistry kits.

Figure 119. Alzar students helped select the trees that were planted and placed a revetment at the toe of this eroding length of bank. The revetment will be enhanced and more securely anchored to the bank in the future. Willow poles that were planted along this bank had a high mortality rate. In response, alternative techniques were recommended to achieve good soil-to-stem contact and to keep live cuttings viable for a longer period.

Figure 120. Alzar is partnering with IDFG to select and plant upland foliage as part of the restoration efforts. Runoff and erosion can be reduced if an effective upland buffer zone can be established.

3.35 Ovid Creek Stream Protection

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

Description:
This project involved excluding livestock from two streams. At one site, fencing was installed on one side of an unnamed tributary to Ovid Creek, and an off-stream water source was provided, which was fed by a stock watering system. The landowner had fenced one side, but livestock were still entering and degrading the stream from the unfenced side. The second site required relocating some corrals on Spring Creek to another site, installing a cross fence to keep livestock out of an extremely wet meadow, and installing water troughs to prevent the livestock from entering the stream for water.

Completion date:
Work is on schedule for all the tasks at this stage of the project. The project was on track to be completed in fall 2014 at the time of the evaluation.

Project status:
Best management practices are being maintained since the last visit. Monitoring is being performed on this project. Before and after photos have been taken.

Figure 121. New corrals were relocated away from the stream, and new water troughs were installed.

References

DEQ (Idaho Department of Environmental Quality). 1999. *Idaho Nonpoint Source Management Plan*. Boise, ID: DEQ.

DEQ and ODEQ (Idaho Department of Environmental Quality and Oregon Department of Environmental Quality). 2004. *Snake River – Hells Canyon Total Maximum Daily Load (TMDL)*. Available at http://www.deq.idaho.gov/media/454498-snake_river_hells_canyon_entire.pdf.

Idaho Code. 2012. "Declaration of Policy and Statement of Legislative Intent." Idaho Code 39-3601.