

2009 Performance and Progress Report

State of Idaho
Nonpoint Source Management Program
2009

Idaho Department of Environmental Quality



State of Idaho Nonpoint Source Program

Cover photo: Fencing along the lower East Fork of the Big Lost River excludes cattle from sensitive streamside areas.

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February 2010

The St. Charles Creek Watershed project involves development and restoration of 4,000 acres of wetlands.



Acknowledgments

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Section 1. Overview

This document presents Idaho's Nonpoint Source Management Program 2009 Performance and Progress Report for the period December 1, 2008 through November 30, 2009. The Department of Environmental Quality (DEQ) administers the program for the state of Idaho.

1.1 Introduction

The Clean Water Act (CWA), Section 319(h), requires the U.S. Environmental Protection Agency (EPA) to make an annual determination of satisfactory progress in meeting the milestones of each state's nonpoint source 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.

The Idaho Nonpoint Source Program

Congress established the national Nonpoint Source (NPS) Program in 1987, when it amended the CWA with Section 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 assuring that Section 319 funds are directed to on-the-ground projects that prevent, reduce, or eliminate NPS pollution in Idaho's surface water and ground water. In Idaho, NPS funding has resulted in over 244 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.

Scope of the Idaho Nonpoint Source Program

DEQ currently manages 62 on-going projects (Table 1, starting on page 7). Each project is described in a formal subgrant agreement established between DEQ and a project sponsor. Project sponsors may be federal and state agencies, counties, municipalities, nonprofit organizations, or private individuals.

1.2 Assessing Program Performance

DEQ has adopted the management plan goals and objectives originally incorporated in the 1999 Idaho Nonpoint Source Management Plan, which provides the structure for the development of annual work plans required to effectively administer the program.

Framework of the Program

The NPS Program operates by doing the following:

- Implementing watershed plans that center on such goals as meeting total maximum daily loads (TMDLs) and the requirements of drinking water and source water protection plans and ground water management plans
- Targeting compliance with water quality standards by following approved guidance, rules, and laws

- Evaluating projects, and their success in implementing their respective work plans, by using approved watershed plans through water quality and various forms of effectiveness monitoring

Program Emphasis and Focus

The majority of projects focus on reducing NPS pollution associated with agriculture and grazing. Other sectors in which the program has invested resources include the following:

- Mining
- Forestry
- Urban and rural storm water
- Transportation

Determining Pollutant Load Reductions

DEQ requires project managers to calculate and report load reductions for sediment, phosphorous, and nitrogen associated with all projects. Most projects take place at a particular site or stream segment. A project's pollution load reduction can be added to load reductions from other projects within a watershed to generate a cumulative load reduction over the entire basin.

Providing Technical Support

The NPS Program provides technical support to project sponsors and helps establish partnerships to implement nonpoint source activities through such actions as the following:

- Serving as the lead agency for facilitating and coordinating implementation of the Management Plan
- Implementing sound technical approaches aimed at improving surface water and ground water impacted by all sources of NPS pollution
- Encouraging the development of natural resource partnerships and interagency collaboration through educational opportunities and information transfer, and by entering into program agreements, such as memoranda of understanding (MOUs)
- Ensuring statewide consistency for base-level implementation activities related to TMDLs, including technical support, education, and information transfer
- Providing statewide training, as requested
- Managing Section 319 funds through appropriate accounting and reporting practices

Public Participation

Public participation is a major element of the NPS Program and is mainly achieved through interaction with watershed and basin advisory groups as outlined in Idaho water quality statutes. Both watershed advisory groups (WAGs) and basin advisory groups (BAGs) are required to evaluate and recommend actions necessary for the successful completion of all projects.

In addition, coordinating activities with other local, state, tribal, and federal agencies, entities, and governments is critical to the success of all projects. Their support is essential to ensure closing the feedback loop, project-by-project, at the habitat and watershed scales throughout each of the major river basins in the state.

1.3 Program and Project Administration

NPS Program tasks are defined in terms of “outputs,” as described in the following.

Task 1: State Office Administration

Output:	Maintain a process for soliciting new nonpoint source related projects, monitor program activities, process and track grant expenditures, ensure compliance with Clean Water Act Section §319 program requirements.
Milestone:	As needed throughout May 1, 2009 through April 30, 2013
Estimated cost of this work plan component:	\$219,831
Staffing Level (number of fulltime positions)	1.59

Task 2: Develop Procedures and Guidance Materials

Output:	Draft procedures and guidance.
Milestone:	As needed
Estimated cost of this work plan component:	\$74,660
Staffing Level (number of fulltime positions)	0.55

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

Output:	Revised MOUs for implementation of the NPS Program plan.
Milestone:	Complete remaining sectors between May 1, 2009 and April 30, 2013
Estimated cost of this work plan component:	\$37,330
Staffing Level (number of fulltime positions)	0.27

Task 4: Program Implementation

Output 4A:	Promote the NPS Program. Work with all designated management agencies and entities to focus areas within the state for NPS project development.
Milestone:	Annually
Output 4B:	Provide information and training to BAGs and WAGs and to various local, state, federal, and private resource agencies.
Milestone:	As necessary, and as opportunities arise to meet NPS management plan objectives.

Output 4C:	Support the annual Idaho Water Quality Monitoring and Management Conference.
Milestone:	February 2-4, 2010
Estimated cost of 4A-4C plan component:	\$186,649
Staffing Level (number of fulltime positions)	1.35

Task 5: Evaluate Fifty Percent of the Active Nonpoint Source Projects

Output:	Assess each project's compliance with work plans and budget.
Milestone:	May thru October, each year
Estimated cost of this work plan component:	\$74,660
Staffing Level (number of fulltime positions)	0.55

Task 6: Support DEQ Water Pollution Control Loan (SRF) Program

Output:	Review NPS project proposals and assist in their ranking using the integrated priority system guidance.
Milestone:	Annually, as requested
Estimated cost of this work plan component:	\$13,826
Staffing Level (number of fulltime positions)	0.10

Task 7: Provide Technical Support, Education, and Information Transfer on Watershed-based Plan and TMDL Implementation Activities

Output:	Provide base-level support on watershed-based plan and TMDL implementation plan development.
Milestone:	Annually, as requested
Estimated cost of this work plan component:	\$27,652
Staffing Level (number of fulltime positions)	0.20

Task 8: Coordinate Development, Review, and Distribution of the Annual Program Performance and Progress Report

Output:	Submit report to EPA Region 10.
Milestone:	Annually, in March
Estimated cost of this work plan component:	\$37,330

Staffing Level (number of fulltime positions)	0.27
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Task 9: Conduct Required Reporting through Grants Reporting and Tracking System (GRTS)

Output:	Complete entry of project load reductions and other mandatory data into GRTS
Milestone:	Ongoing data entry throughout the year, to be completed by February 15 each year.
Estimated cost of this work plan component:	\$37,330
Staffing Level (number of fulltime positions)	0.27

Task 10: Update Idaho Nonpoint Source Management Plan

Output:	Revise Idaho Nonpoint Source Management Plan
Milestone:	December 31, 2010
Estimated cost of this work plan component:	\$37,330
Staffing Level (number of fulltime positions)	0.27

1.4 Schedule and Budget Utilization

For active projects, Figure 1 illustrates how much time each project has been underway, in comparison to the overall project schedule, and Figure 2 shows total expenses, through November 30, for each project in comparison to the subgrant amount.

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Table 1. Budget summary for projects active during 2009, including projects that were closed during 2009.

Subgrant	Project Name	Project Sponsor	Start Date	End Date	319 Grant Amount	Total Spent (through 11/30/2009)	Balance (as of 11/30/2009)
S145	Middle Snake-Payette Clean Water	Payette SWCD ¹	04/01/2005	06/30/2009	\$263,680	\$263,421	\$259
S149	Lower North Fork Clearwater Phase 2	Clearwater SWCD	05/30/2005	12/31/2009	\$349,973	\$292,044	\$57,929
S175	Palouse River WQ Improvement	Latah SWCD	5/15/2006	12/31/2009	\$215,491	\$128,127	\$87,364
S177	Lower Payette River TMDL Phase 2	Gem SWCD	5/15/2006	2/28/2010	\$234,793	\$147,569	\$87,224
S180	SF Clearwater, Kirtner Project	PCEI ²	5/15/2006	1/31/2011	\$181,435	\$163,291	\$18,144
S182	Deep Creek Stabilization, Espy Property	PCEI	5/15/2006	1/31/2011	\$68,407	\$68,407	\$0
S185	Weiser Water Quality Phase 2	Weiser SCD ³	6/1/2006	12/31/2009	\$190,547	\$131,353	\$59,194
S189	St. Charles Creek Watershed Restore	Bear Lake Regional Commission	7/10/2006	2/26/2010	\$250,061	\$228,297	\$21,764
S207	Thomas Fork Stream Stabilization, Hillier Property	Bear Lake Regional Commission	7/15/2007	1/30/2012	\$54,000	\$49,516	\$4,484
S208	Thomas Fork Stream Stabilization, Boehme, Property	Bear Lake Regional Commission	7/15/2007	1/30/2012	\$46,000	\$9,707	\$36,293
S209	Flannigan Creek Riparian Restoration	PCEI	7/15/2007	1/31/2012	\$96,046	\$86,304	\$9,742
S211	Lower NF Clearwater TMDL Phase 3	Clearwater SWCD	7/1/2007	1/30/2012	\$248,709	\$159,810	\$88,899
S212	American River WQ Improvement	Framing Community Inc.	7/9/2007	1/30/2012	\$238,242	\$205,744	\$32,498
S213	Owyhee Restoration Incentive	Owyhee Watershed Council	7/16/2007	2/27/2012	\$201,785	\$162,900	\$38,885
S214	Elk Creek and Mores Creek Sediment Reduction Floodplain Restoration	West Central Highlands	8/15/2007	1/31/2012	\$100,000	\$100,000	\$0
S215	Copper Creek Restoration	Lava Lake Land & Livestock	8/15/2007	1/30/2012	\$150,000	\$14,000	\$136,000
S217	Island Ranch Bank Stabilization	Island Ranch	8/20/2007	1/30/2012	\$12,590	\$8,536	\$4,054
S219	Big Lost River Temp and Sediment Reduction	Trout Unlimited	8/27/2007	1/30/2012	\$112,200	\$57,830	\$54,370
S223	Marsh Creek Watershed Phase 1	Portneuf SWCD	10/15/2007	12/15/2012	\$250,000	\$76,194	\$173,806
S225	Lower Perrine Coulee Wetlands Project, Phase 2	Snake River SWCD	11/9/2007	1/31/2012	67,100.00	67,100.00	\$0
S226	NW Owyhee Co. Water Quality Improvement	Owyhee SCD	11/14/2007	1/31/2012	\$249,543	\$169,044	\$80,499
S227	Lindsay Creek Riparian Management Project	PCEI	12/10/2007	1/31/2012	\$149,774	\$66,141	\$83,633
S231	Dry Creek Streambed Protection, Patterson Property	Ada SWCD	3/17/2008	10/1/2010	\$58,366	\$58,366	\$0
S232	Boise River Side Channel Project/Formerly S104	Trout Unlimited	4/10/2008	12/31/2008	\$34,525	\$32,087	\$2,438
S245	Lanny Holbrook-Upper Portneuf R. Rip Fence	Trout Unlimited	6/9/2008	1/31/2009	\$19,318	\$6,258	\$13,060
S246	Croy Creek Wetland Restoration	Wood River Land Trust	6/15/2008	3/15/2013	\$99,419	\$48,658	\$50,761
S247	Little Weiser R. Stream Bank Protection	Adams SWCD	6/15/2008	3/15/2013	\$201,050	\$87,120	\$113,930
S248	S. Fork Palouse R. Riparian Restoration	PCEI	6/30/2008	3/20/2013	\$158,971	\$92,221	\$66,750
S249	Teton Creek Restoration Project	Friends of Teton River	06/15/2008	03/15/13	\$144,425	\$129,425	\$15,000
S250	N. Idaho AFO Implementation, Phase 4	Latah SWCD	6/20/2008	3/20/2013	\$215,086	\$0	\$215,086
S251	Lawyer Creek Water Quality	Lewis SCD	6/20/2008	3/20/2013	\$250,000	\$89,700	\$160,300
S252	E. Coulee Drain Elimination Project	Balanced Rock SCD.	6/30/2008	6/30/2012	\$204,500	\$0	\$204,500
S255	W. Mtn Road Improvement, French Creek	Valley County Rd. Dept	07/07/2008	7/31/2012	\$104,992	\$4,500	\$100,492
S273	Mosquito Flat Reservoir Project	Custer SWCD	9/1/2008	9/30/2012	\$65,201	\$65,201	\$0
S274	N. Fork Payette River Stream Bank Stabilization	Friends of Cascade Water Park	09/01/2008	4/1/2012	\$43,320	\$6,600	\$36,720
S278	Wildhorse River Restoration	OX Ranch	9/16/2008	12/31/2012	\$9,878	\$9,878	\$0

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Overview

S279	Tammany Road erosion Reduction, Phase 2	Nez Perce SWCD	10/1/2008	12/31/2011	\$185,247	\$0	\$185,247
S280	American Red River Project	Framing Our Community, Inc.	10/15/2008	12/21/2012	\$247,943	\$110,000	\$137,943
S282	WQ Improvement Project, Guthries Property	Portneuf SWCD	11/17/2008	12/31/2008	\$24,633	\$18,859	\$5,774
S291	Marsh Creek Wetlands Restoration Project	Ducks Unlimited	2/2/2009	10/11/2012	\$124,972	\$0	\$124,972
S292	N. Idaho AFO Implementation, Phase 3B (Formerly S181)	IASCD ⁴	4/9/2009	12/31/2010	\$67,100	\$56,221	\$10,879
S295	Marsh Creek Watershed, Phase 2	Portneuf SWCD	4/1/2009	4/1/2011	\$540,800	\$278,471	\$262,329
S296	Bear River AFO Mid Bear Subbasin	Franklin SWCD	04/24/2009	12/31/2009	\$121,302	\$109,171	\$12,131
S297	Danielson Watershed Water Quality Demo	So. Bingham SCD	04/27/20/09	12/31/2009	\$3,450	\$0	\$3,450
S307	Bruneau/Grand View GWQ Mgt Plan	Bruneau River SCD	6/2/2009	12/31/2013	\$238,707	\$24,000	\$214,707
S310	Potlatch River Watershed Mgt Plan Phase 1	Latah SWCD	6/15/2009	12/31/2013	\$205,028	\$0	\$205,028
S311	Pend Oreille Lake *A*Syst Project	Bonner SWCD	6/15/2009	12/31/2013	\$36,368	\$18,365	\$18,003
S312	Camas Prairie GW Nitrate Priority Area, Phase 3	Lewis SCD	6/15/2009	12/31/2013	\$245,000	\$16,550	\$228,450
S313	Fish Creek Rd Improvement Project	Bonner SWCD	6/15/2009	12/31/2013	\$147,268	\$37,840	\$109,428
S321	Latour Creek Rd Improvement	Idaho Dept of Lands	7/1/2009	12/31/2013	\$250,000	\$0	\$250,000
S322	Upper Bear River Stream Bank Stabilization	Bear Lake Regional Commission	7/1/2009	12/31/2013	\$86,280	\$46,935	\$39,345
S323	Canyon Co. BMPs for WQ Improvement	Lower Boise Watershed Council	7/1/2009	12/31/2013	\$178,007	\$34,355	\$143,652
S326	Short-Riley Creeks Porter Memorial	N. Idaho Fly Casters	7/27/2009	12/31/2013	\$20,000	\$0	\$20,000
S327	Lower Payette River TMDL Implementation Phase 3	Gem SWCD	7/20/2009	12/31/2013	\$180,000	\$0	\$180,000
S328	Salmon Falls Creek Ag Implementation	Twin Falls SWCD	7/21/2009	12/31/2013	\$67,080	\$0	\$67,080
S329	Mores Creek Floodplain Restoration	West Central Highlands RC&D	8/1/2009	12/31/2013	\$96,000	\$0	\$96,000
S330	Boulder Ridge Ranch Wetlands	Balanced Rock SCD.	8/1/2009	12/31/2013	\$249,000	\$0	\$249,000
S331	East Fork Potlatch River Riparian	IDFG ⁵	8/1/2009	12/31/2013	\$80,000	\$0	\$80,000
S332	Lapwai Creek Integrated Analysis Project	University of Idaho	8/14/2009	12/31/2013	\$59,301	\$0	\$59,301
S333	N. Idaho AFO Implementation, Phase 3C	IASCD	10/1/2009	12/31/2010	\$41,965	\$0	\$41,965
S334	Hulme Ranch WQ Improvement	Bear Lake SWCD	10/19/2009	12/31/2009	\$4,982	\$0	\$4,982
S335	Fish Haven Creek Watershed Restoration	Trout Unlimited	10/26/2009	10/29/2010	\$45,000	\$0	\$45,000

1 SWCD = Soil and Water Conservation District

2 PCEI = Palouse-Clearwater Environmental Institute

3 SCD = Soil Conservation District

4 IASCD = Idaho Association of Soil Conservation Districts

5 IDFG = Idaho Dept. of Fish and Game

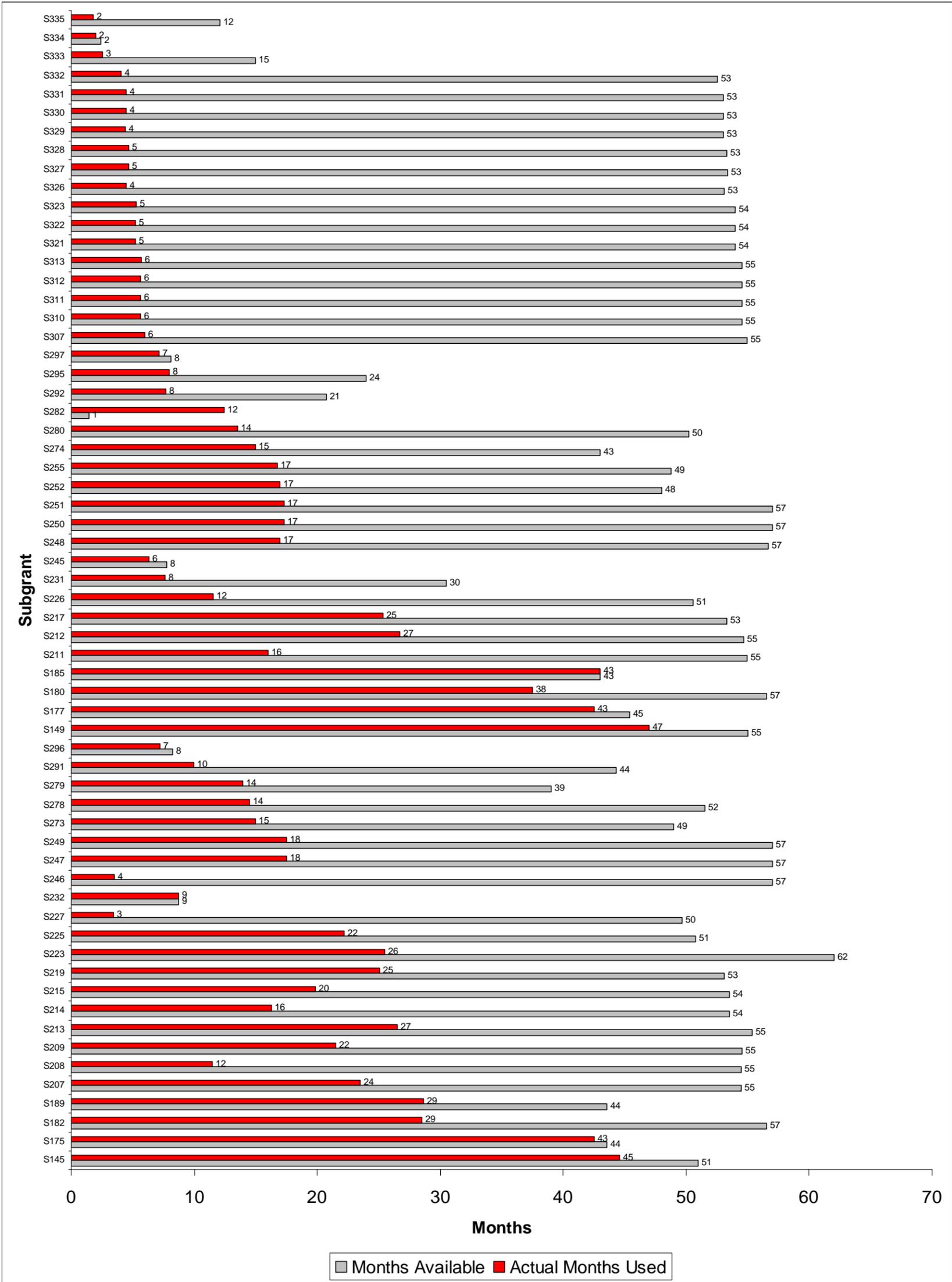


Figure 1. Months provided for subgrant versus months passed since project issued. The gray bars show the number of months contracted for each project, and the red bars show the number of months the project has been underway. (For simplification, each month is assumed to have 30 days).

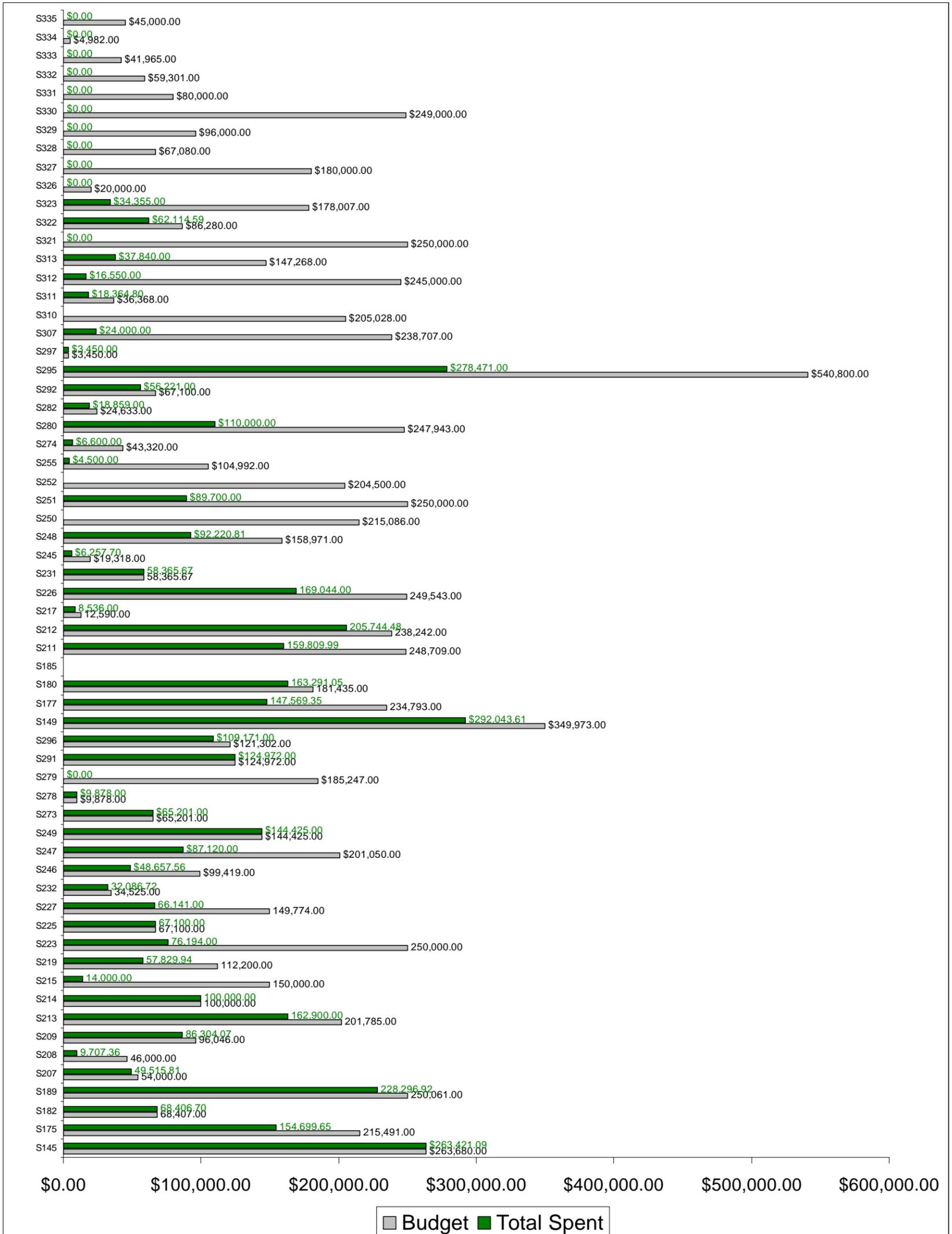


Figure 2. Budget usage by evaluated projects. The gray bars show the total budget available for each project, and the green bars show total expenditures through November 30.

Section 2. 2009 Project Field Evaluations

This section summarizes the project field evaluations performed in 2009. The results of each project evaluation can be found in Section 3.

2.1 Introduction

As of November 30, 2009, DEQ managed 62 projects in Idaho (Figure 3). Of these, 22 projects were closed out. Thirty-two projects were evaluated in 2009 (Figure 4).

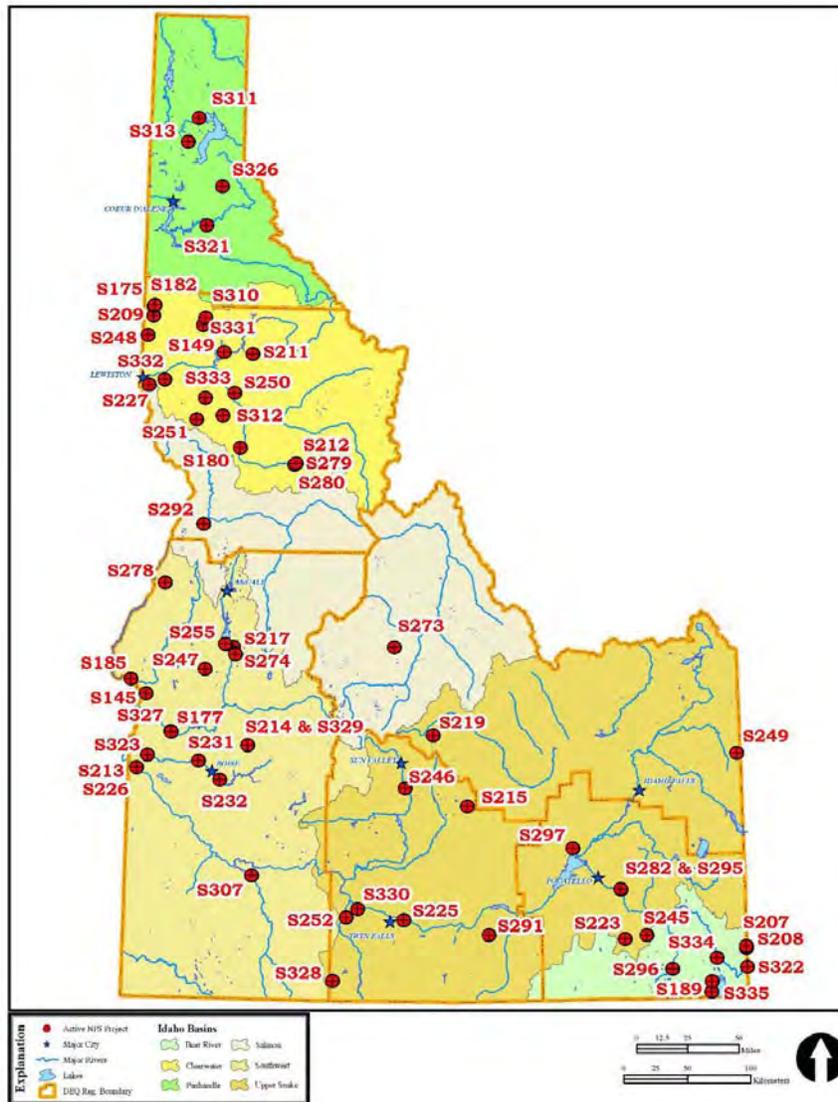


Figure 3. Current active or recently closed nonpoint source projects, as of November 30, 2009.

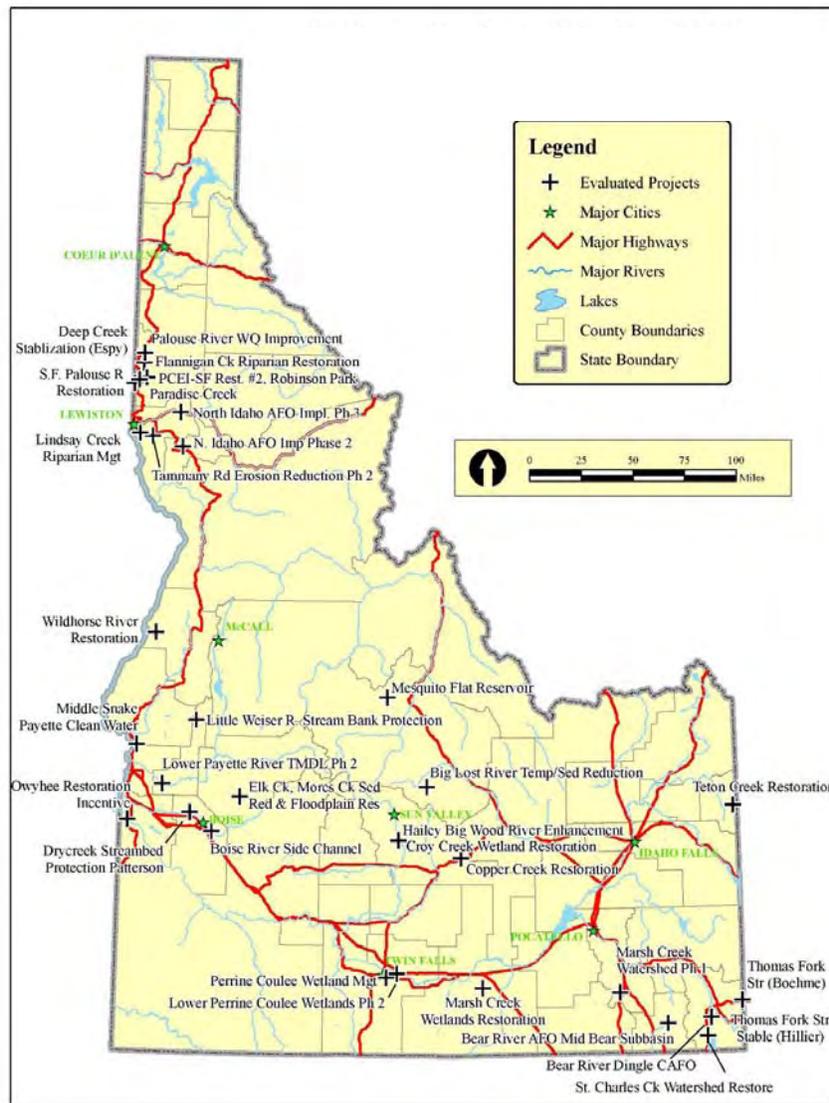


Figure 4. Locations of nonpoint source projects evaluated during 2009.

2.2 Field Evaluation Process

The process used for each evaluation starts with program staff carefully reviewing the project’s subgrant agreement. Compliance with the agreement is then verified in the field by a team of persons that includes the project manager, DEQ regional office staff, and any stakeholders. In all cases, a standard evaluation form is used as a guide to assure that all requirements are being met for each project.

2.3 Results

Table 2 lists and briefly describes all projects that were field-evaluated during 2009.

Table 2. Active or recently completed nonpoint source projects field-evaluated during 2009.

Subgrant Number	Project Name	What Was Done	Category	DEQ Region
Closed Projects Re-Evaluated in 2009 to Assess Effectiveness of BMPs				
Q605	Paradise Creek	The headwaters of Paradise Creek include timberlands of the Moscow Mountain area, highly erosive farmland in the Palouse country below the timberland and urban land within the City of Moscow. BMPs installed on the wheat farmland include filter strips, no-till farming techniques, gully plugs, and stream bank reclamation. Rural BMPs include bank stabilization, meandering channel reconstruction, and riparian plantings.	Agriculture/Grazing	Lewiston
S055	Hailey Big Wood River Enhancement Project	This project consisted of several phases where an abandoned landfill, former wastewater treatment plant, and abandoned bridge abutment along the shore of Big Wood River in Hailey were all removed and the affected land reclaimed.	Storm Water	Twin Falls
S076	South Fork Palouse River Restoration	This riparian restoration project was the fifth project of the Palouse-Clearwater Environmental Institute's (PCEI) effort to decrease nonpoint source pollution to the South Fork Palouse River (SFPR) and restore riparian and floodplain areas.	Agriculture/Grazing	Lewiston
S079	Main Perrine Irrigation Return Flow Wetland	This project involved creation of a combination of a settling ponds and wetlands over an eight acre site designed to treat irrigation return flow coming from 12,000 acres of farm land.	Agriculture/Grazing	Twin Falls
S143	South Fork Palouse Robinson Park	Riparian restoration in a former reservoir is greatly reducing in-stream erosion by stabilizing banks and installing riparian plantings in highly erosive lake bottom sediments.	Agriculture/Grazing	Lewiston
S145	Payette and Middle Snake River's Clean Water Project	The project area consists of 4 miles of drain ditch, servicing 2,300 acres of irrigated agricultural land and other rural land development. BMPs include irrigation water conveyance, sediment basins, sprinkler and surge irrigation systems, land leveling, nutrient management, irrigation water management, and one septic system.	Agriculture/Grazing	Boise
S181	North Idaho AFO Implementation, Phase 3	Old AFOs that were formerly located in riparian environments are being relocated to dry hillsides. The project improves water quality on Section 303(d)-listed water bodies and other locally prioritized segments and tributaries contributing loads to the Clearwater, Palouse, Salmon, and Snake Rivers.	Agriculture/Grazing	Lewiston
S182	Deep Creek Bank Stabilization Project, Espy	Stream banks were re-sloped and approximately 28,500 square feet of variable riparian buffer was added along the creek.	Agriculture/Grazing	Lewiston
S190	Bear River, Dingle	Established a riparian buffer beneficial to wildlife habitat along the Bear River. Reduced stream bank erosion and nutrient loading has produced a marked improvement to water quality. Exclusionary fencing and relocated AFOs were the main BMPs used for this project.	Agriculture/Grazing	Pocatello
S214	Elk Creek Mores Creek Sediment Reduction	This is the scene of historic placer gold mining dating back to the 1860s. By reshaping thousands of linear feet of stacked gravel piles and restoring sinuosity to the stream channel this project restores natural processes within the Mores Creek watershed.	Mining	Boise
S225	Lower Perrine Coulee Wetlands Project, Phase 2	Phase 1 included construction of five 1-acre wetland cells to treat about 30% of the Lower Perrine Coulee irrigation return flow. Phase 2 has already been completed and includes 8 additional wetland cells. The anticipated goal is to remove 100% of the sediment, 84% of the phosphorous, and 78% of the bacteria from irrigation return flow.	Agriculture/Grazing	Twin Falls
S231	Dry Creek Stream Bank Protection, Patterson Property	The project reduces erosion and sediment delivery to Dry Creek by installation of sprinkler irrigation and a large settling/irrigation source water pond along Dry Creek.	Agriculture/Grazing	Boise

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2009 Project Field Evaluations

S232	Boise River Side Channel Project	This is the last part of a former subgrant titled S104 Boise River Side Channel. It includes the design and construction of 310 feet of stream channel between Lake Wardle and the Barber Dam. This new side channel occupies the site of a former saw mill and will soon be excellent fish rearing habitat.	Agriculture/Grazing	Boise
S273	Mosquito Flat Reservoir	The reservoir was in jeopardy because the insert sleeve into the existing outlet pipe was starting to deteriorate. Replacement of the sleeve was accomplished last winter during low water levels.	Agriculture/Grazing	Idaho Falls
S278	Wildhorse River Restoration Project	The goal of the Lick Creek and Bear Creek (both tributaries to Wildhorse River) stream restoration project is to improve water quality and native fish habitat. This project includes stream bank stabilization, revegetation, and fencing components.	Agriculture/Grazing	Boise
Active Projects Evaluated in 2009				
S175	Palouse River Water Quality Improvement Project	The project focuses on implementation of an array of BMPs in riparian restoration, agriculture/rangelands/pasturelands, and rural roads.	Agriculture/Grazing	Lewiston
S177	Lower Payette River TMDL Implementation Phase 2	The project reduces bacteria (<i>E.coli</i>), phosphorus, sediment, and pesticides to help meet Lower Payette TMDL Implementation Plan goals of decreasing nonpoint pollutants by 30%. BMPs include settling ponds, sprinkler irrigation, pipelines, and filter strips.	Agriculture/Grazing	Boise
S189	St. Charles Creek Watershed Restore	This project involves development/restoration of wetland habitat to restore connectivity for the imperiled Bonneville cutthroat trout, while improving water quality through the combined benefits of wetland filtration, riparian restoration, and isolation of identified pollutant sources primarily by installation of exclusionary fencing.	Agriculture/Grazing	Pocatello
S207	Thomas Fork Stream Bank Stabilization Project, Hillier Property	This project involved reshaping stream banks and installation of woody plants on Thomas Fork to reduce loading (sediment, phosphorus, nitrogen), reduce temperature, and improve aquatic habitat.	Agriculture/Grazing	Pocatello
S208	Thomas Fork Stream Bank Stabilization, Boehme Property	This project involved reshaping stream banks and installation of woody plants on Thomas Fork to reduce loading (sediment, phosphorus, nitrogen), reduce temperature, and improve aquatic habitat.	Agriculture/Grazing	Pocatello
S209	Flannigan Creek Riparian Restoration	The project reduces erosion by reshaping and stabilizing 1,500 feet of stream bank to reduce sediment loading to the Palouse River.	Agriculture/Grazing	Lewiston
S213	Owyhee Restoration Incentive	The project provides technical and financial assistance to landowners in the Middle Owyhee, Upper Owyhee, Mid-Snake Succor, and Jordan Subbasins to implement BMPs including settling ponds, replacing flood irrigation with sprinklers, and installation of pipeline to convey irrigation water.	Agriculture/Grazing	Boise
S215	Copper Creek Restoration Project	The purpose of this project is to improve water quality, establish perennial flow, and improve habitat conditions on an approximately 3-mile segment of Copper Creek at Lava Lake Ranch. Work includes removal of landfill debris and installation of exclusionary fencing, pipelines, watering troughs, and creation of a land-friendly grazing plan.	Agriculture/Grazing	Twin Falls
S219	Big Lost River Temperature and Sediment	The project reduces sediment and thermal inputs and stabilizes banks in and along the East Fork of the Big Lost River. BMPs include exclusionary fencing and planting of willows. Approximately 100 badly deteriorating old log drop structures will be removed from the stream channel.	Agriculture/Grazing	Idaho Falls
S223	Marsh Creek Watershed Project Phase 1	The project eliminates runoff from some AFOs by installation of berms, removes some AFOs, and improves riparian habitat and grazing management in the watershed.	Agriculture/Grazing	Pocatello
S227	Lindsay Creek Riparian Animal Management Project	The project helps ensure safe water for secondary contact recreational uses and adequate support for coldwater aquatic life. BMPs include exclusionary fencing, riparian plantings, and stream bank stabilization.	Agriculture/Grazing	Lewiston

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2009 Project Field Evaluations

S246	Croy Creek Wetland Restoration	This project included removal of approximately 5,000 cubic yards of illegal landfill material and regarding the land to restore a more natural floodplain look to the site, controlling noxious weeds, and planting the site with native riparian wetland vegetation.	Storm Water	Twin Falls
S247	Little Weiser River, White Property	This project consists of placement of numerous rock bank barbs, log revetments, and riprap with willow cuttings and bundles incorporated into the bank for stabilization along a 15,000 foot section of the Little Weiser River.	Agriculture/Grazing	Boise
S249	Teton Creek Restoration Project	This section of the creek was decimated by the illegal removal of 1000's of yards of gravel by a developer who was sentenced to 18 months in prison for his actions. This project aims to stabilize the affected areas of the creek by restoring channel sinuosity and preventing headcut and eroding stream banks by reshaping and rip rapping banks.	Storm Water	Idaho Falls
S279	Tammany Rd. Erosion Reduction, Phase II	The Nez Perce Soil and Water Conservation District (District) developed this project to address TMDL needs within Tammany Creek watershed. This project augments work that has already been accomplished in previous projects, including stormwater diversion ditches, settling ponds, and check dams along borrow ditches.	Storm Water	Lewiston
S291	Marsh Creek Restoration Project	The purpose of this project is to improve water quality, supplement late season stream flows and restore off-channel wetland habitat in the lower Marsh Creek watershed that had been damaged because of a breached dam. BMPs include recreation of multiple floodplains and wetlands along Marsh Creek and elimination of cattle from direct contact to Marsh Creek.	Agriculture/Grazing	Twin Falls
S296	Bear River AFO Project	One of the main components of the Bear River TMDL implementation plan involves relocating animal feeding operations (AFOs) from direct contact with Bear River. This project involved the relocation or alteration of six AFOs that were formerly located in or adjacent to the stream.	Agriculture/Grazing	Pocatello

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Section 3. 2009 Evaluation Reports (Subgrant)

DEQ staff traveled to 32 project sites to evaluate and document progress and results of NPS projects. NPS categories for these projects were distributed as follows:

- ❖ 27 projects (approximately 84%) focus on a variety of BMPs for water quality protection related to agriculture or grazing.
- ❖ 4 projects (approximately 13%) focus on urban and rural storm water treatment.
- ❖ 1 project (approximately 3%) focuses on mining.

The following evaluation reports summarize each project; detailed evaluation reports are available from DEQ upon request.

3.1 Closed Projects Re-Evaluated in 2009

Listed first are those closed projects that were re-evaluated in 2009 to assess the continuing effectiveness of the BMPs applied.

Paradise Creek (Q605)

Subgrant	069	Location	HUC 17060108023, in the City of Moscow
Description	The purpose of this evaluation was to see how work conducted up to 13 years ago is holding up today. The headwaters of Paradise Creek include timber lands of the Moscow Mountain area, highly erosive farmland in the Palouse below the timber land, and urban land within the city of Moscow. BMPs installed on the wheat farmland include filter strips, no-till farming techniques, gully plugs, and stream bank reclamation. BMPs installed along the urban portion of the project include re-creation of meandering steam channel, stream bank reshaping, and creation of riparian wetland zones. This reevaluation of Paradise Creek was restricted to the urban BMPs.		
Completion Date	The latest subgrant (S069) was completed in 2003.		
Features evaluated	Vegetation, including trees, shrubs, and grass, that was planted to preserve the recreated stream channel and wetlands of urban Paradise Creek. Much of urban Paradise Creek is now converted to city nature parks where students can learn about water quality and stream protection.		
Project status	These projects were completed on schedule.		
TMDL	These projects combined to create the TMDL implementation plan for the Paradise Creek Watershed.		



Figure 5. Thirteen years ago, the landscape behind this sign consisted of a weed-covered field with a humanmade straight, vertical walled stream channel. Now, trees, grass, and other riparian vegetation all but conceal a healthy meandering stream channel.



Figure 6. Beaver and other typical riparian wildlife have moved back into this 15-acre site.



Figure 7. Vegetation along this section of Paradise Creek is so thick it is difficult to see water in the stream channel during the summer months.



Figure 8. A DEQ staff member points out some of the reclamation work that was done thirteen years ago along the urban section of Paradise Creek in the city of Moscow.

Hailey Big Wood River Enhancement Project (S055)

Subgrant	S055	Location	Lat. 43.5154, Long. -114.3192, at the City of Hailey
Description	This was a reevaluation of three 2002 through 2005 projects in which an abandoned landfill, former wastewater treatment plant, and abandoned bridge abutment along the shore of Big Wood River in Hailey were all removed and the affected land reclaimed. The intent of this reevaluation was to verify that all of the BMPs installed are still functioning as originally intended. The abandoned landfill is now part of a city park, the former wastewater treatment plant is now a storm water retention pond (and a great fishing hole), and the stream bank behind the removed bridge abutment is now a stable and attractive section of the river bank.		
Completion Date	Summer 2003, 2004, and 2005		
Features evaluated	Stream bank stabilization where an abandoned landfill used to be, a storm water retention pond and fishing pond where a wastewater treatment facility used to be, and a section of stable stream bank where an unstable abandoned bridge abutment used to be. There was about 1,300 feet of stream bank restoration; installation of four drop structures in the river; removal of landfill material, including asbestos; and conversion of the 1-acre wastewater treatment plant pond to a stormwater retention pond.		
Project status	The earliest portion of this project was held up due to permitting issues, but the entire project was completed on time and within budget.		
TMDL	These projects are a portion of the Big Wood River TMDL implementation plan.		



Figure 9. This section of stream bank that used to be an abandoned landfill is now part of a city park.



Figure 10. Over 1,300 feet of stream bank was reclaimed from the landfill and planted with a variety of native plants that are doing very well.



Figure 11. One of four drop structures installed in the river channel to reduce downcutting.



Figure 12. This drop structure is collecting debris, which is good for the fishery.

South Fork Palouse River Restoration (S076)

Subgrant	076	Location	Lat. 46.7136, Long. -117.0188, just south of the University of Idaho Arboretum
Description	This reevaluation looked at a riparian restoration project that was the fifth project of the Palouse-Clearwater Environmental Institute's (PCEI) effort to decrease nonpoint source pollution to the South Fork Palouse River and restore riparian and floodplain areas. BMPs included developing a functional floodplain, re-sloping and stabilizing eroding stream banks with various bioengineering techniques, constructing riparian wetlands to treat surface runoff waters before they enter the South Fork Clearwater River, and planting native woody and herbaceous vegetation to create a variable-width riparian forest buffer. The intent of this reevaluation was to check the status of BMPs that were installed in 2003-2004.		
Completion Date	December 30, 2004		
Features evaluated	This evaluation involved a status check of stream bank stabilization, riparian plantings, and wetland protection that was installed in 2004. All of the BMPs have held up quite well. Vegetation has matured to the point that water in the wetlands and in the stream is not easily viewable.		
Project status	This project was completed on schedule and within budget.		
TMDL	This project is part of the North Fork Palouse River TMDL Implementation Plan.		



Figure 13. Vegetation planted in 2004 has matured and has almost completely covered this section of the river.



Figure 14. The wetlands area is still present but is largely covered by vegetation.



Figure 15. The wetland receives and treats storm water from the arboretum area of the University of Idaho campus



Figure 16. Storm water in this area typically contains herbicides and fertilizer from the university's arboretum.

Main Perrine Irrigation Return Flow Wetland (S079)

Subgrant	079	Location	Lat. 42.5301, Long. -114.4111, two miles southeast of the City of Twin Falls
Description	This reevaluation looked at a 2003 project that involved creation of a settling pond and wetlands over an 8 acre site designed to treat irrigation return flow coming from 12,000 acres of farmland. The project area was first evaluated in 2003 (during construction) and again in 2005. The intent of this reevaluation was to verify that the BMPs installed six years ago are still functioning as they were intended. The vegetation has matured, and approximately 45 to 50 cubic feet per second (cfs) of the Main Perrine irrigation return flow is being treated for phosphorous, nitrogen, and sediment contamination. Prior to this project, all of this untreated return flow was being discharged directly to the Snake River.		
Completion Date	December 2004		
Features evaluated	The 8-acre combination of settling ponds and wetlands is treating 45 to 50 cfs of contaminated irrigation return flow. A head gate was set up at the top end of the BMPs to control flow. During occasional scheduled maintenance, flow can be diverted from the BMPs directly to the Snake River.		
Project status	The project was completed ahead of schedule.		
TMDL	This project is a major component of the Mid Snake River TMDL implementation plan.		



Figure 17. The main settling pond is known locally as Britt Pond.



Figure 18. The intake where approximately 50 cfs of irrigation return flow is sent to the settling pond.



Figure 19. This elongated settling pond is the first point where pollutants begin to settle out.



Figure 20. The wetland portion of the project is fully matured and functioning as intended to reduce nutrients from irrigation return flow prior to discharge to the Snake River.

South Fork Palouse Robinson Park (S143)

Subgrant	143	Location	HUC 17060108, three miles northeast of the City of Moscow
Description	The purpose of this reevaluation is to check on the condition and effectiveness of the BMPs for a project originally evaluated in 2006. Riparian restoration activities in the site of a former reservoir (now completely filled with sediment) are reducing in-stream erosion by stabilizing banks and reducing sediment delivery from upland erosion through filtration. Designed to reduce excessive nutrient loading, reduce water temperatures, and improve riparian habitat, the project is also providing flood mitigation and public safety improvements at the site of what is now a very popular county park located just three miles northeast of Moscow, Idaho. The BMPs are all in good condition and performing as they were intended.		
Completion Date	Project was completed in 2006.		
Features evaluated	BMPs observed include stream bank restoration, installation of stabilization features, and plantings to create and enhance a park environment.		
Project status	The project was completed ahead of schedule.		
TMDL	This project is part of the South Fork Palouse River TMDL.		



Figure 21. Robinson Park was created in a reservoir that became filled with silt over several decades. Once exposed, the silt became extremely vulnerable to erosion.



Figure 22. Vegetation planted in 2006 (seen in this photo and the next two) is doing extremely well. Prior to this project near vertical stream banks were severely eroding especially during spring runoff.



Figure 23. Robinson Park vegetation.



Figure 24. Robinson Park vegetation.

Payette and Middle Snake Rivers Clean Water Project (S145)

Subgrant	145	Location	HUC 17050122-060, four miles north of the City of Payette
Description	The reevaluation looked at a subproject consisting of 4 miles of drain ditch servicing 2,300 acres of irrigated agricultural land and other rural land development. The entire Phase I project area that drains to the Snake River is approximately 3,230 acres in size. The project involves 19 landowners. Many of the landowners and members of the Canyon County Soil and Water Conservation District (SWCD) board attended this reevaluation, which focused on four of the subproject sites.		
Completion Date	January 12, 2009.		
Features evaluated	BMPs include irrigation water conveyance, sediment basins, sprinkler and surge irrigation systems, land leveling, nutrient management, and irrigation water management, which includes spring development, livestock watering facilities with a solar-powered water pump and pipeline, and livestock exclusionary fencing.		
Project status	The project life was extended, and additional 319 funds were added because there was great interest from local landowners.		
TMDL	The project is within the Snake River-Hells Canyon TMDL, Upstream Snake River Segment, a high priority TMDL. The proposed project area occurs within the boundaries of the Weiser Nitrate Priority. This nitrate priority area is ranked as #1 in importance in Idaho.		



Figure 25. Canyon County SWCD Board Chairman Claude Bruce explains how multiple landowners worked together to convert from flood irrigation to a more efficient and economic pressurized sprinkler system.



Figure 26. One of 16 settling ponds where irrigation return flow is treated prior to reuse or release to the Snake River. Previously, irrigation return flow discharged directly to the river.



Figure 27. Another site where flood irrigation was converted to pressurized sprinkler irrigation, resulting in less water being used and less contaminated water being discharged to ground water or returned to the Snake River.



Figure 28. One method of capturing irrigation return flow is via this buried pipeline. The intake is shown at the upper-right center of the photograph.

North Idaho AFO Implementation, Phase 3 (S181)

Subgrant	181	Location:	Clearwater:	Hydrologic Unit Code (HUC) 17060306, 17060305, 17060304
		Across	Palouse:	HUC 17060108
		Central Idaho	Salmon:	HUC 17060209, 17060210, 17060207
			Snake:	HUC 17060103, 17060101
Description	This reevaluation looked at Phase 3 BMP implementation on animal feeding operations (AFOs). Poorly designed AFOs contribute pollutant loads to the Clearwater, Palouse, Salmon, and Snake Rivers. The project consists of numerous reconfigured small AFO subprojects over hundreds of square miles, so this evaluation was confined to four subprojects near Keuterville, northwest of Grangeville. This AFO modification project is also funded by the Idaho Soil Conservation Commission's Water Quality Program for Agriculture.			
Completion Date	December 2008			
Features evaluated	Exclusionary fence, watering troughs and devices, pipelines, barn roof runoff control, waste storage facility, and wells were visited.			
Project status	The project was completed ahead of schedule.			
TMDL	Phase 3 supports TMDLs and related implementation plans that reduce pollutant loads on private lands through voluntary mechanisms. Through this proposal, conservation districts will continue to serve as the primary conduit for implementing conservation practices on private-land livestock operations.			



Figure 29. At site #1, 200 head of cattle annually were excluded from a creek and are now watered via cattle-operated watering stations.



Figure 30. At site #2, watering stations were placed around this barn. Runoff is captured from the roof and infiltrated into the ground rather than into a nearby creek.



Figure 31. At site #2, water is supplied by a shallow well drilled nearby.



Figure 32. At site #3, gravity-fed watering stations and exclusionary fencing keep cattle out of the nearby creek.

Deep Creek Bank Stabilization Project, Espy (S182)

Subgrant	182	Location	HUC 17060108, , two miles northwest of the Town of Potlatch
Description	This reevaluation looked at work completed in 2008 that is reducing erosion along 1,800 feet of stream bank. Banks were re-sloped and 28,500 square feet of riparian buffer added. The project is adjacent to another recent project (S175) that will reduce sediment loading to the Palouse River. In addition to bank stabilization, regrowth of riparian vegetation provides shade to the creek, decreasing elevated summer water temperatures. This project is an excellent example of neighbors influencing neighbors; as a result of this project, two nearby downstream neighbors are participating in similar efforts.		
Completion Date	May 2008		
Features evaluated	BMPs include stream bank re-sloping and stabilization, settling ponds, buffer strips, and exclusionary fencing.		
Project status	The project finished on schedule.		
TMDL	The project is designed under the guidance of the Palouse River Tributaries Watershed Advisory Group (WAG) and the Palouse River Tributaries TMDL and represents early action activities identified in the Palouse River Tributaries TMDL Implementation Plan.		



Figure 33. Looking upstream to the Espy Deep Creek project area completed in Spring 2008.



Figure 34. Looking downstream to work scheduled for completion in December 2009. The 2008 phase of the Espy project influenced the landowner downstream to participate in 2009.



Figure 35. Vegetation in this sediment pond on the Espy property is beginning to flourish after one growing season.

Bear River, Dingle (S190)

Subgrant	190	Location	HUC 16010201 Bear Lake Subbasin, three miles southwest of the City of Montpelier
Description	This reevaluation looked at two ranches situated along the Bear River that have been contributing substantial cattle-related nutrients and bacteria to the river for many years. To protect newly planted riparian vegetation, cattle were fenced off of the stream and new off-site watering was installed. Corral berms help keep any nutrients and bacteria from leaving the confined feeding areas and entering the stream. These two subprojects have resulted in the establishment of a riparian buffer beneficial to wildlife habitat and reestablishment of a continuous woodland corridor along the Bear River. Reduced stream bank erosion and nutrient loading have had a marked improvement on water quality.		
Completion Date	December 2008		
Features evaluated	BMPs evaluated include two AFO relocations involving exclusionary fencing, corrals, a covered calving and feeding facility, pipelines, and numerous watering troughs.		
Project status	This project had to receive a no-cost time extension due to weather conditions but was completed on schedule		
TMDL	This project is part of the TMDL implementation plan for the Bear River and Bear Lake.		



Figure 36. How this AFO looked in September 2007. After each precipitation event, and especially during each spring runoff, animal waste was flushed directly into the Bear River.



Figure 37. After completion of BMPs, including a covered calving barn, exclusionary fencing, a new corral, and watering troughs, this stretch of the Bear River is healthy.



Figure 38. BMPs include this calving barn and corrals.

Elk Creek/Mores Creek Sediment Reduction Floodplain Restoration (S214)

Subgrant	214	Location: one half mile north of Idaho City, Idaho	HUC 1705011207
Description	The project is part of a three-phase effort to restore the Mores Creek Watershed floodplain. Project partners developed a 5-year plan to restore natural processes, primarily by restoring floodplain and riparian function. The entire project will restore 9 miles of Mores Creek, 17 miles of Grimes Creek, and 3 miles of Elk Creek. A grant has been submitted to Bonneville Power Administration, requesting three million dollars to complete the entire watershed.		
Completion Date	December 2008		
Features evaluated	This evaluation covers four constructed settling ponds that capture runoff from the historic placer and hydraulic giant gold mining area of Gold Hill. The upper pond is about 300 feet long, and the set of four ponds can hold up to 200 cubic yards of sediment. The ponds were put to the test last spring during runoff and functioned very well, resulting in the first spring in many years that residents of Idaho City did not have to boil their drinking water.		
Project status	This project was completed ahead of schedule.		
TMDL	Practices that reduce sediment will facilitate meeting water quality standards for Elk Creek and Mores Creek. Current designated uses include cold water communities, salmonid spawning, primary contact recreation, and domestic water supply. Wilderness Ranch Subdivision, located downstream of the project area and adjacent to Mores Creek, gets its water from Mores Creek; this project will help protect the water supply intake by reducing sediment and peak flows in Mores Creek.		



Figure 39. The first in a series of four settling ponds; this one is 300 feet long.



Figure 40. The second settling pond.



Figure 41. The fourth pond discharges to Elk Creek.



Figure 42. County prisoner volunteers clean out the system yearly.

Lower Perrine Coulee Wetlands Project, Phase 2 (S225)

Subgrant	225	Location	Upper Snake Rock Subbasin, HUC 17040212, two miles north of the City of Kimberly
Description	This project began as the Middle Snake River Water Quality Improvement A10 Lateral Project but was changed to become Phase 2 of the earlier Lower Perrine Coulee Wetlands Project due to property conflicts. Phase 1 included construction of five 1-acre wetland cells to treat about 30% of the Lower Perrine Coulee irrigation return flow, removing about 55% of the sediment, 25% of the phosphorous, and 54% of the bacteria in the return flow. Phase 2 has already been completed and includes eight additional cells. The goal is to remove 100% of the sediment, 84% of the phosphorous, and 78% of the bacteria. The 13 wetland cells treat 60 to 70 cubic feet per second of irrigation return flow formerly discharged untreated to the Snake River.		
Completion Date	October 2009		
Features evaluated	Thirteen in-line settling ponds and associated wetlands were visited. This project is removing a high percentage of the pollutants from a lateral return flow and is benefiting both recreation and wildlife through the construction of sediment retention ponds.		
Project status	The project was completed ahead of schedule.		
TMDL	This section of the Middle Snake River has been defined and described under the Upper Snake Rock Watershed Management Plan. The Lower Perrine discharges directly into the Middle Snake River and is considered a "high priority corridor" under the Upper Snake Rock TMDL. With additional wetland cells, the Lower Perrine can capture virtually all of the sediment and the great majority of the nutrients and bacteria currently being discharged to the Snake River.		



Figure 43. Irrigation return flow is diverted to 13 individual settling/wetland treatment cells prior to its journey through the City of Twin Falls and into the Snake River.



Figure 44. Untreated water enters one of the eight new cells.



Figure 45. This photograph looks across several of the new cells.



Figure 46. All 13 cells have similar intake pipes.

Dry Creek Streambed Protection, Patterson (S231)

Subgrant	231	Location	HUC 17050114, at Eagle, Idaho
Description	Landowner Heidi Patterson is committed to resolving the erosion and sediment delivery from this site on Dry Creek. The project consists of repairing a concrete water control system, restoring stream banks, and installing a sprinkler irrigation delivery system. The Natural Resources Conservation Service (NRCS) provided planning and design assistance for this project, and the Ada Soil and Water Conservation District took the lead on technical and administrative assistance.		
Completion Date	November 2008		
Features evaluated	This evaluation covers the installation of a large irrigation head gate that creates a pool for sprinkler irrigation and also functions as storm water control for one of the major drainage basins in the Boise Foothills area. The project also includes the installation of an irrigation pump and sprinkler system.		
Project status	This project was completed ahead of schedule.		
TMDL	This project supports the Lower Boise River TMDL. Eliminating this source of stream bank erosion will yield significant reductions in the sediment load in Dry Creek, leading to positive impacts on the water quality where Dry Creek enters the Boise River, near the western edge of the city of Eagle.		



Figure 47. The diversion structure and flood control spillway. The previously built concrete structure was undermined by floodwater to the point that the entire spillway area beneath these people had to be rebuilt.



Figure 48. The spillway was engineered by an NRCS engineer and built by a contractor for the Ada Soil and Water Conservation District.



Figure 49. The railed overpass allows farm equipment to pass from one irrigated field to another.



Figure 50. The sump and pump system that supplies water for sprinkler irrigation to 120 acres of farmland.

Boise River Side Channel Project (S232)

Subgrant	232	Location	Lat. 43.5622, Long. -116.1278, at Harrison Ranch in Boise
Description	This is the last part of a former subgrant titled S104 Boise River Side Channel. It included the design and construction of 310 feet of stream channel between areas known as Lake Wardle and the Barber Dam. S232 also included the installation and maintenance of woody plants along the stream channel. Cobble and gravel had to be trucked in and placed over a geofabric. This project had a very short life because the 2004 EPA grant that this project was derived from permanently expired in early 2009.		
Completion Date	December 2008		
Features evaluated	Although there was considerably more work completed under the previous subgrant (S104), this evaluation was restricted to the limited area along the new stream channel and vegetation that was installed in an adjacent area.		
Project status	The project was completed on schedule.		
TMDL	This project addresses water temperature, which is included in the TMDL for the Lower Boise River.		



Figure 51. A portion of the 310-foot long channel built by this project. The channel is underlain with geofabric covered with hand-placed cobbles and gravel.



Figure 52. Some of this vegetation was planted during this project.



Figure 53. The vegetation to the left was installed during this project.

Mosquito Flat Reservoir (S273)

Subgrant	273	Location	HUC 17060201; Lat 44.5112 X -114.4333, about 10 air miles west of the City of Challis
Description	Mosquito Flat Reservoir has been supplying irrigation water and recreational activities for many years, but the reservoir was in jeopardy because the insert sleeve into the existing outlet pipe was starting to deteriorate. Replacement of the sleeve had to be accomplished during the winter, when the water level is low. The project was accomplished last winter.		
Completion Date	November 2009		
Features evaluated	This evaluation involved a brief tour of the reservoir dam and flow control system. The work accomplished on this project included replacement of the flow stem, which regulates flow and water level of the reservoir.		
Project status	Project was completed ahead of schedule.		
TMDL	This project is related to the Challis Creek TMDL.		



Figure 54. A badly corroded flow control system was in danger of failing, which could have resulted in dam failure. The system was replaced during the winter, when the reservoir was nearly empty.



Figure 55. The newly replaced flow control system is shown top left in this photograph.



Figure 56. Close-up of the newly installed control system.



Figure 57. The water discharge area below the dam also had to be repaired.

Wildhorse River Restoration Project (S278)

Subgrant	278	Location	HUC 17050201; Lat. 44.993, Long. -116.664, 30 miles northwest of the City of Council
Description	The goal of the stream restoration project for Lick Creek and Bear Creek (both tributaries to Wildhorse River) is to improve water quality and native fish habitat. This project includes stream bank stabilization, revegetation, and fencing. The design of this project incorporates log revetments and rock riprap to stabilize the banks. Vegetation will quickly conceal the BMPs and will ultimately result in increased fish refugia, improved spawning habitat, decreased instream temperature, and decreased sediment delivery from eroding banks. Temperature has been determined to be a limiting factor in this watershed by the Wild horse River TMDL (December 2006).		
Completion Date	November 2009		
Features evaluated	The evaluation covers restored eroding stream bank, revegetation, and fencing. The design of this project incorporates log revetments to stabilize the banks.		
Project status	The project was completed ahead of schedule.		
TMDL	This project is part of the Wildhorse River TMDL implementation plan.		



Figure 58. Consultant Trent Stumph teaches his son to anchor locally harvested willows that have been bound together in bundles along the shoreline of Bear Creek.



Figure 59. Rock riprap armor will prevent this road culvert from being washed out during high flows.



Figure 60. Some sections required larger boulders to assure that the shoreline will hold up during heavy spring runoff.



Figure 61. These workers are using a hydraulic water jet stinger to create holes in the bank for planting willow stakes that will grow into willow plants.

3.2 Active Projects Evaluated in 2009

The following active projects were evaluated in 2009.

Palouse River Water Quality Improvement Project (S175)

Subgrant	N/A	Location	HUC 17060108, two miles northwest of the Town of Pottlatch
Description	The Palouse River Water Quality Improvement Project focuses on the implementation of best management practices in three categories: riparian restoration, agriculture/rangelands/pasturelands, and rural roads. These three categories function as semi-independent, but coordinated, project proposals. This evaluation covers the riparian restoration portion of the project at the Deep Creek Alder subproject area, where 1,800 feet of highly erodible vertical stream bank have been reduced to a 3:1 slope and stabilized with riparian plants. The landowner was motivated by a previous stream bank restoration project immediately upstream.		
Anticipated completion	December 2009		
Features evaluated	BMPs evaluated included stream bank resloping, stabilization and vegetation, sediment pond construction, and exclusionary fencing.		
Project status	An extension was granted until December 31, 2010.		
TMDL	With the draft 2004 Palouse River TMDL, TMDLs were developed for six watersheds within the Palouse River basin: Big Creek, Deep Creek, Flannigan Creek, Gold Creek, Hatter Creek, and Rock Creek. TMDLs were developed for temperature, sediment, bacteria, and nutrients.		



Figure 62. Several miles of Deep Creek have been damaged due to past improper grazing and farming techniques. Here approximately 1,800 feet of Deep Creek have been re-sloped from near vertical to a 3:1 angle, covered in a protective coconut fabric, and planted with riparian vegetation.



Figure 63. This settling pond was located at the bottom end of a horse pasture to treat storm and winter runoff for nutrients, bacteria, and sediment prior to discharge to Deep Creek.



Figure 64. This electric fence was constructed as part of the project and will be maintained by the landowner to keep livestock out of Deep Creek.



Figure 65. A sea of blue plastic collars protects woody vegetation from browsing elk and deer until plants are large enough to survive on their own. An adjacent section of upstream Deep Creek (background) was stabilized by a previous project in 2006.

Lower Payette River TMDL Implementation, Phase 2 (S177)

Subgrant	177	Location	HUC 17050122-0400, at the City of Payette
Description	The main goals of Phase 2 are to 1) reduce total bacteria loading (<i>E. coli</i>) into the lower Payette River, 2) reduce total nutrient (phosphorus) and sediment loading, 3) raise awareness and accountability among Gem County agricultural producers and small-acreage landowners regarding practices that have a detrimental affect on water quality, and 4) use the project as a public education tool.		
Anticipated completion	February 2010		
Features evaluated	This evaluation looked at two small-acreage subprojects involving conversion from flood irrigation to sprinkler irrigation to reduce water being applied to the fields and achieve zero discharge to the Payette River.		
Project status	A time extension was requested due to local interest in participation. With the time extension, the project is on schedule and within budget.		
TMDL	The project will focus on the same treatment units identified in the Lower Payette River TMDL Implementation Plan and will add one additional treatment unit that falls in line with the goals of the project.		



Figure 66. This sprinkler system is designed for easy movement by hand while being resistant to damage from livestock grazing in the pasture.



Figure 67. This formerly flood-irrigated pasture has been converted to pressurized sprinkler irrigation, resulting in zero discharge of contaminated irrigation return flow to the Payette River.



Figure 68. Several of the horses that graze in the converted pasture.



Figure 69. This pump draws irrigation water from a shallow sump for the pressurized sprinkler system.

St. Charles Creek Watershed Restore (S189)

Subgrant	189	Location:	St. Charles Creek Watershed Restoration Bear Lake
Description	This project involves development and restoration of federal and privately managed wetland habitat (4,000 acres wetland, 9.2 miles riparian), including screening existing irrigation diversion structures and providing accurate measuring devices intended to restore connectivity for the imperiled Bonneville cutthroat trout while improving water quality through the combined benefits of wetland filtration, riparian restoration, and isolation of identified pollutant sources.		
Anticipated completion	December 2009		
Features evaluated	This evaluation included visits to exclusionary fencing, water gaps, and a water control/fish ladder structure.		
Project status	This project was delayed due to landowner conflicts but is now on an extended schedule. Field work is on schedule to be completed by December 31, 2009. However, an extension will be given until February 2010 to allow time for the completion of the final report.		
TMDL	A TMDL has been developed for the Bear River, which is a priority water body for the Idaho Department of Environmental Quality, Bear River Water Quality Task Force, Bear Lake Regional Commission, Bear Lake Soil and Water Conservation District, and the St. Charles Creek Working Group. A TMDL has been written for the Bear River, identifying sediment and nutrients as constituents that prohibit attainment of beneficial uses. The TMDL has not yet been approved by the U.S. Environmental Protection Agency.		



Figure 70. Fencing was installed along 2.5 miles of Paris Creek to prevent grazing cattle from entering the riparian zone. This section of the creek is just above Bear Lake.



Figure 71. Water gaps were installed along Paris Creek to allow cattle limited access.



Figure 72. This 2.5 mile section of lower Paris Creek has a healthy riparian zone now that cattle have been excluded.

Thomas Fork Stream Bank Stabilization Project, Lou Hillier (S207)

Subgrant	207	Location	HUC 106010102, at Geneva, Idaho
Description	This project involved reshaping stream banks on a 4,200-foot section of the Thomas Fork of the Bear River. Banks were reshaped from unstable, near vertical slopes to 3:1 stable slopes to reduce sediment load, phosphorus loading associated with soil erosion, nitrogen via nutrient uptake in the restored riparian zone, and daily temperature fluctuations in the water column through increased vegetative canopy. Aquatic habitat improved as well.		
Anticipated completion	January 2012		
Features evaluated	The evaluation looked at several typical sections of reshaped and stabilized stream bank.		
Project status	This project is ahead of schedule and should be completed by mid-summer of 2010.		
TMDL	This project addresses sediment and associated nutrient problems. Stream banks with unstable conditions and little riparian vegetation contribute sediment to Thomas Fork Creek. A TMDL was recently completed for Bear River, which includes Thomas Fork as a tributary. Cold water aquatic life and salmonid spawning are beneficial uses requiring target concentrations for sediment and nutrients.		



Figure 73. After two growing seasons, this stretch is typical of the 4,200 feet of re-sloped stream banks, where vertical banks were knocked down to a 3:1 slope, riprapped with native rock, and planted with native vegetation.



Figure 74. There are a few areas where the riprap is still showing after two growing seasons.



Figure 75. The taller willows were brought in as rooted clumps and planted with a backhoe.

Thomas Fork Stream Bank Stabilization, Boehme (S208)

Subgrant	208	Location	HUC 160101020306, one mile north of Geneva, Idaho
Description	This project involves re-sloping and stabilizing along 3,200 linear feet of degraded stream bank as a means of reducing sediment and nutrient concentrations.		
Anticipated completion	January 2012		
Features evaluated	BMPs evaluated include bank shaping, riprap placement, bank barbs, willow plantings, and emplacement of willow wattles.		
Project status	This project is ahead of schedule and will likely be completed during summer 2010.		
TMDL	Thomas Fork is a 303d listed tributary (for sediment, phosphorous, and nitrogen) to the Bear River, which has a TMDL implementation plan.		



Figure 76. Visible along the far shore of the creek bank (near the center) is riprap placed along a 3,200 foot section of Thomas Fork Creek.



Figure 77. After two growing seasons, stream banks are stable, and vegetation has nearly covered the riprap that was placed along the re-sloped banks of the creek.



Figure 78. One of the few small sections of re-sloped stream bank that could use some additional vegetation. However, the riprap is preventing erosion of the bank even without complete vegetative cover.

Friends of Flannigan Creek Riparian Restoration Project (S209)

Subgrant	209	Location	HUC 17060108, four miles northeast of Viola, Idaho
Description	The project, located in the upper Flannigan Creek Watershed on private property, is considered a critical target area for sediment and temperature reduction. The project reduces erosion by stabilizing approximately 1,500 feet of stream bank that had been damaged due to improper grazing practices. Banks have been re-sloped, and approximately 22,500 square feet of variable riparian buffer was installed. Regrowth of the riparian vegetation is beginning to provide shade to the creek, which will result in decreased summer water temperatures.		
Anticipated completion	January 2012		
Features evaluated	BMPs looked at include stream bank re-sloping and stabilization, rock barbs, riparian vegetative plantings, and wetland creation.		
Project status	This project was completed ahead of schedule.		
TMDL	The Flannigan Creek Riparian Restoration Project was designed under the priorities developed by the Palouse River Tributaries Watershed Advisory Group (WAG) during the creation of the Palouse River tributaries TMDL Implementation Plan.		



Figure 79. Project manager Tracy Brown describes how riparian plants are doing one year after planting. Landowner responsibilities including mowing the grass to allow more room for sunlight and growth.



Figure 80. Electrified fencing was installed to keep livestock away from the project area. The blue plastic collars serve to protect new woody plants from grazing deer and elk.



Figure 81. Stream banks along Flannigan Creek were re-sloped from near vertical to a 2.5:1 slope. Then, coconut fiber matting was laid down, and riparian vegetation was planted.



Figure 82. This crushed rock will soon be used to construct a hardened crossing on Flannigan Creek for use by livestock and farm equipment.

Owyhee Restoration Incentive, Phase 2 (S213)

Subgrant	213	Location: Marsing to Gives Hot Springs, Idaho	HUC 17050107 (Middle Owyhee), 17050104 (Upper Owyhee), 17050103 (Mid-Snake Succor), 17050108 (Jordan)
Description	The goals of the Owyhee Restoration Incentive Program are to provide technical and financial assistance to landowners in the Middle Owyhee, Upper Owyhee, Mid-Snake Succor, and Jordan subbasins for the implementation of on-the-ground projects, including restoration of streams and waterways, development of animal waste management plans and small animal feeding operations (AFOs), grazing management systems, irrigation water management plans, reduction of nutrient loading to local waterways through the development of nutrient management plans, and implementation of invasive juniper control. The entire project area covers hundreds of square miles, including 12 subprojects.		
Anticipated completion	February 2012		
Features evaluated	This evaluation was limited to visits to three irrigation subprojects where flood irrigation has been replaced by sprinklers.		
Project status	This project is on schedule to be completed in early 2012.		
TMDL	The Middle Owyhee Subbasin TMDL Implementation Plan was completed in early 2002. The Upper Owyhee TMDL was completed in 2003. The Mid-Snake Succor TMDL was completed in 2004. The Jordan Subbasin TMDL was scheduled for completion in 2005 but is currently still in progress.		



Figure 83. Elongated 200-foot long settling pond services irrigation runoff from 1,000 acres of farmland. Approximately 1,000 cubic yards of sediment (shown on right side of stream) are scooped up by farmers annually.



Figure 84. One portion of the 1,000 acres of farmland that was converted from flood irrigation to sprinkler irrigation.



Figure 85. At this site, 2,000 feet of pipe will replace an irrigation ditch and greatly reduce sediment in irrigation water.



Figure 86. The low-lying area beyond the settling pond will be used to store sediment excavated from the pond every year.

Copper Creek Restoration Project (S215)

Subgrant	215	Location: 11 miles east northeast of Carey, Idaho at Lava Lake	HUC 17040209
Description	The purpose of this project is to improve water quality, establish perennial flow, and improve habitat conditions on a 3-mile segment of Copper Creek at Lava Lake Ranch. Landowner Lava Lake Land & Livestock, L.L.C. (Lava Lake), the Idaho Department of Fish & Game, U.S. Fish & Wildlife Service, The Nature Conservancy, the Office of Species Conservation, and the North American Grouse Partnership are conducting riparian restoration and protection, wetland expansion and protection, and restoration of adjacent upland habitat. Restoration is occurring in and adjacent to the irrigated agricultural land of Lava Lake Ranch and will include detailed site planning, stream channel restoration, establishment of buffers between agricultural use and riparian zones, and upland and riparian plantings within the watershed.		
Anticipated completion	January 2012		
Features evaluated	This evaluation covered some of the stream channel reconstruction, stream bank restoration, and settling ponds that also function as brood ponds for waterfowl. Much of the area where work took place had to first be reclaimed from a preexisting illegal land fill.		
Project status	Only \$14,000 of the \$150,000 budget has been used to date, resulting in restoration work on one area of stream bank several thousand feet long. However, the subgrant is not due to expire until January of 2012. The project is still considered to be on schedule.		
TMDL	The project area is within the Lake Walcott watershed, which has an approved TMDL in place and is in the process of implementation. The project is a high-priority concern for water quality implementation planning, particularly on streams impaired due to sediment, nutrient, and bacteria pollutants entering as a consequence of lateral erosion across croplands and pasturelands.		



Figure 87. Settling ponds in Copper Creek also act as waterfowl brooding ponds.



Figure 88. Banks along 2,640 feet of Copper Creek were resloped and planted with riparian vegetation.



Figure 89. Another settling/brooding pond along Copper Creek.



Figure 90. Woody vegetation planted last year is slowly becoming established.

Upper Big Lost River Temperature and Sediment Reduction (S219)

Subgrant	219	Location: in Copper Basin 25 air miles northeast of Ketchum, Idaho	East Fork Big Lost River - HUC 1704021806
Description	Trout Unlimited proposes to reduce sediment and thermal input and stabilize banks in and along several miles of the East Fork of the Big Lost River by fencing off cattle from a private land portion of the lower East Fork and planting willows along the upper East Fork. The project will increase bank stability and stream shading and decrease bank disturbance. The project also involves removal of log drop structures, installed decades ago, that now impede fish migration as the structures rot away and become dislodged. At the time of evaluation, field work was in its infancy.		
Anticipated completion	January 2012		
Features evaluated	This evaluation covered exclusionary fencing along the lower East Fork of the Big Lost River, stream bank stabilization, typical log drop structures to be removed, and a view of the upper section of the river where scores of drop structures will be removed.		
Project status	Although the project was delayed due to landowner conflicts, it has started and will likely be completed by the deadline.		
TMDL	Endemic populations of Big Lost mountain whitefish have declined over 20 years and are a priority for recovery to prevent possible federal listing as a threatened/endangered species. DEQ considers the East Fork the highest priority of 303(d)-listed waters within the Big Lost River that have TMDLs.		



Figure 91. Jackleg fencing being prepared on-site. Lodgepole pine was harvested locally, and no post holes are required in this rocky terrain.



Figure 92. Jackleg fencing is well-suited to this area because it is very durable in heavy snow.



Figure 93. A finished section of exclusionary fencing that will eventually span about 2.4 miles.



Figure 94. These log drop structures, placed along the river several decades ago, are beginning to rot and displace, obstructing fish migration.

Marsh Creek Watershed Project, Phase 1 (S223)

Subgrant	223	Location	HUC 17040208 Portneuf River Subbasin, about 40 miles south of Pocatello
Description	The goal of this project is to reduce sediment, nutrients, and bacteria loads on 20 miles of stream by eliminating runoff from animal feeding operations, creating waste storage facilities, and improving grazing management with planned grazing, offstream water developments, exclusion fencing, and improved riparian and stream channel habitat. The project is in its early stages.		
Anticipated completion	October 2012		
Features evaluated	This evaluation looked at exclusion fencing, a new corral that replaced an older corral that was in Marsh Creek, and a well head that supplies water to several hundred head of livestock fenced out of Marsh Creek.		
Project status	This project is on schedule to be completed by October 2012.		
TMDL	The Portneuf River TMDL Agricultural Implementation Plan identified 112 animal feeding operations with lack of drinking water sources, inadequate waste storage, and runoff from corrals or pens.		



Figure 95. An overview of some of the 20 miles of riparian land adjacent to Marsh Creek involved in the project.



Figure 96. Three hundred to four hundred head of cattle will be excluded from Marsh Creek once 2,000 feet of fencing, a new well, and watering troughs are constructed on this stretch.



Figure 97. New corrals of heavy-gauge steel pipe will help contain livestock and keep them out of Marsh Creek.



Figure 98. One of the new wells supplying water to cattle, thus allowing their exclusion from Marsh Creek.

Lindsay Creek Riparian Animal Management Project, Walton (S227)

Subgrant	227	Location	Lat. 46.41, Long. -116.98, HUC 17060103, one mile east of the City of Lewiston
Description	The evaluation covers a stretch of Tammany Creek several hundred feet long that had been seriously abused by buffalo and cattle corralled directly on the creek. The project complements restoration activities on adjacent properties, extending riparian restoration to protect and rehabilitate over one mile previously impacted and degraded. The stream bank restoration and livestock exclusion BMPs are reducing erosion, water velocity, water temperature, and inputs of bacteria and nutrients.		
Anticipated completion	January 2012		
Features evaluated	BMPs include stream bank restoration, riparian planting, and exclusionary fencing.		
Project status	The project was completed ahead of schedule and within budget.		
TMDL	The project is designed under the guidance of the Tammany Creek TMDL Implementation Plan developed by the Tammany Creek Watershed Advisory Group to improve water quality and riparian habitat. BMPs reduce erosion, water velocity, water temperature, and inputs of bacteria and nutrients. This work will help ensure safe water for secondary contact recreational uses and adequate support for coldwater aquatic life.		



Figure 99. Palouse Clearwater Environmental Institute (PCEI) has completed numerous projects in the Lewiston/Moscow area. The nonprofit organization routinely informs the public about their good work with signage.



Figure 100. This section of Tammany Creek was formerly a buffalo corral that straddled the creek. The area was denuded of vegetation and covered with manure.



Figure 101. Each blue collar protects native species of woody plants from browsing deer and rodents.



Figure 102. Stream banks along the project area had to be re-sloped and stabilized prior to planting.

Croy Creek Wetland Restoration (S246)

Subgrant	246	Location	HUC 17040221; Lat. 43.51599, Long. -114.32021, at the Big Wood River, Hailey, Idaho
Description	Wood River Land Trust is proposing to restore the Croy Creek wetlands, essentially creating a larger, naturally functioning riparian wetland. This effort will include removing approximately 5,000 cubic yards of fill and dumped material to restore more natural elevation to the site, controlling noxious weeds, and planting with native riparian wetland vegetation.		
Anticipated completion	March 2013		
Features evaluated	The evaluated features include landfill reclamation, irrigation system, riparian planting, and stream bank stabilization.		
Project status	The project will likely be completed before its scheduled end date.		
TMDL	This project is part of the Big Wood River TMDL.		



Figure 103. Project manager Kathryn Goldman is standing in the middle of the reclaimed landfill that is the main focus of this project. The Big Wood River is just beyond the cottonwood trees behind her.



Figure 104. The Big Wood River is a major tributary in Central Idaho. This project is one aspect of the TMDL implementation plan for the river. The city of Hailey is situated directly across the river from the project.



Figure 105. This area was formerly strewn with old car bodies, household appliances, and other typical household debris.



Figure 106. The area was tested for hazardous waste, and monitoring wells are routinely checked to assure no contaminated ground water exists in the area.

Little Weiser River, White (S247)

Subgrant	247	Location	HUC 17050124; eight miles east of the City of Cambridge
Description	This project consists of placement of numerous rock bank bars, log revetments, and riprap with willow cuttings and bundles incorporated into the bank for stabilization along a 15,000-foot section of the Little Weiser River. There were eight subproject areas. Near vertical cut banks eroding at a high rate were knocked down to a 2:1 slope and stabilized. During the evaluation, we walked along much of the BMP installation area.		
Anticipated completion	March 2013		
Features evaluated	BMPs include numerous rock bank bars, log revetments, rip-rap with willow cuttings and bundles of willows all anchored into the bank for stabilization along the Little Weiser River.		
Project status	This project is moving along within schedule and will likely be finished ahead of the March 2013 deadline.		
TMDL	This project is part of the Weiser River Basin TMDL.		



Figure 107. The project includes stream bank stabilization along 15,000 feet of severely eroding meanders on the Little Weiser River. Erosion problems worsened when the stream channel was altered years ago.



Figure 108. Lateral recession rates are extremely high during spring runoff, resulting in thousands of tons of sediment per year being washed down the river.



Figure 109. This project began in April 2008.



Figure 110. After stream banks are re-sloped from near vertical to a 2:1 or 3:1 angle, log and rock bars are keyed into the banks to force fast-moving water away from shore.

Teton Creek Restoration Project (S249)

Subgrant	249	Location	HUC 17040204; Lat. 43.73167, Long. -111.07861, one mile east of the City of Driggs
Description	Teton Creek has been abused by various entities, but the most severe abuse came from a developer who channelized 4,000 feet of the creek. This project aims to stabilize affected areas by restoring channel sinuosity and reshaping and riprapping banks. Banks will be revegetated with willows, cottonwoods, and native grasses. A series of V-weirs will stop downcutting and help maintain a low-flow channel with pools. BMPs will benefit fish passage and improve fish habitat. Nearly 800 feet of stream banks currently lined with riprap are being reshaped to improve channel sinuosity, stability, and ability to dissipate the effects of flood events. Twenty-two hundred feet of eroding stream banks will be stabilized with rock and willow revetments to slow bank erosion, capture sediment, foster willow and cottonwood growth, and provide fish habitat.		
Anticipated completion	March 2013		
Features evaluated	Since fieldwork is just beginning, this evaluation covers damaged areas along Teton Creek where work will soon begin.		
Project status	This project will likely finish ahead of the scheduled end date of March 15, 2013.		
TMDL	The project is in the Teton Watershed, which has an approved TMDL. The Teton River is impaired due to sediment and nutrient pollution (nutrient below the Highway 33 bridge). Sediment from Teton Creek is 6,416 tons per year. Estimated reduction from restoration is approximately 750 tons per year.		

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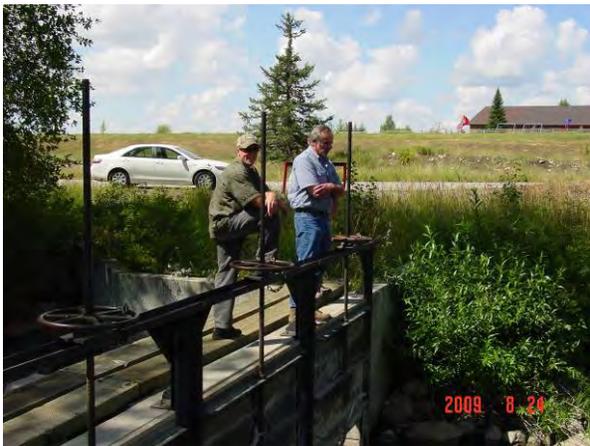


Figure 111. Late summer, this diversion gate takes 100% of Teton Creek's water for irrigation. Trout Unlimited has worked out an agreement that allows some of the water to remain in the creek after a lower segment is repaired.



Figure 112. Diverted water headed for farmers' fields is a good example of how Teton Creek used to look downstream before the stream channel was damaged.



Figure 113. The developer removed thousands of yards of gravel from Teton Creek, resulting in severe headcutting.



Figure 114. This old irrigation diversion gate shows where the stream gradient was prior to the damage.

Tammany Road Erosion Reduction, Phase II (S279)

Subgrant	279	Location	HUC 17060103; Lat. 46.26639, Long. -116.87250, three miles southwest of Lewiston
Description	The Nez Perce Soil and Water Conservation District developed this project to address TMDL needs within the Tammany Creek Watershed. This project augments work that has already been accomplished in previous projects.		
Anticipated completion	December 31, 2011		
Features evaluated	We looked at areas where BMPs will soon be implemented, including farmland to be contracted to receive no-till crop planting techniques, vegetative planting to reduce erosion or filter strips, stream bank stabilization, and other sediment control structures along roads.		
Project status	Little field work has been accomplished on this project to date. However, the project's projected end date is December of 2011, which gives ample time to complete the proposed work.		
TMDL	This project is part of the Tammany Creek TMDL Implementation Plan.		

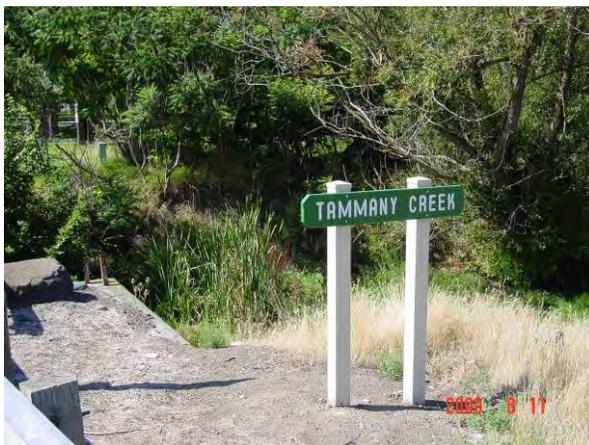


Figure 115. Tammany Creek passes through Hells Gate State Recreational Area and empties into the Snake River just south of Lewiston.



Figure 116. Tammany Creek only flows about six months out of the year, but the creek is continuously impacted by urban development and agricultural sources.

Marsh Creek Restoration Project (S291)

Subgrant	291	Location	HUC 17040209; Lat. 42.46833, Long. -113.51389, six miles northeast of the City of Albion
Description	The purpose of this project is to improve water quality, supplement late-season stream flows, and restore off-channel wetland habitat along a 7-mile reach of Marsh Creek, on the Six S Ranch, near Declo. The ranch is working with several partners, including Ducks Unlimited, Idaho Department of Fish and Game, and U.S. Fish and Wildlife Service to complete this work along this major bird migration route. They hope to restore 60 acres of high quality seasonal and semi permanent wetlands that will filter suspended sediment, nutrients, and bacteria; contribute to ground water recharge; and provide habitat.		
Anticipated completion	October 11, 2012		
Features evaluated	The evaluation covered constructed wetlands including levees, head gates, and spillways.		
Project status	This project is progressing ahead of schedule and will likely be completed during summer 2010.		
TMDL	The TMDL for the Lake Walcott subbasin was approved by EPA in June 2000, and implementation is under way. Eight contributing impaired water bodies in the subbasin, including Marsh Creek, are not meeting beneficial uses—in this case, salmonid spawning and cold water biota. Pollutants of highest concern in this subbasin include sediment, dissolved oxygen, nutrients, pesticides, and oil and grease.		



Figure 117. This project includes the construction of four wetland cells, creating nesting and feeding enhancement for one of Idaho's principal migratory bird routes.



Figure 118. The lower end of the first cell will have a concrete spillway to regulate water depth over a 4-acre pond.



Figure 119. This area will be covered in water and riparian plants for feeding and nesting migratory birds.



Figure 120. Flow to the inlet pipe for the second wetland cell can be regulated as needed.

Bear River AFO Project, Mid Bear Subbasin (S296)

Subgrant	296	Location	HUC 16010202, five miles northeast of Riverdale
Description	The mid-section of the Bear River has been heavily impacted by livestock operations. One of the main components of the Bear River TMDL Implementation Plan involves relocating animal feeding operations (AFOs) from direct contact with these waters. This project involves relocation or alteration of six AFOs.		
Anticipated completion	December 31, 2009		
Features evaluated	Relocated AFOs that are being built away from surface water.		
Project status	This project was delayed due to illness of soil conservation staff, and the original funding was suspended by DEQ. The project was reconstituted by request of the Franklin Soil and Water Conservation District and given a new subgrant agreement. The project is now on track to be completed by December 31, 2009.		
TMDL	This project is one of the main components of the Bear River TMDL.		



Figure 121. This photograph was taken during our July 7, 2006 evaluation, when this AFO was situated on Mink Creek.



Figure 122. This September 3, 2009 photograph shows the future site of the AFO, several hundred feet from the creek.



Figure 123. This November 9, 2009 photograph shows the nearly completed AFO.



Figure 124. The original site, abandoned for only several weeks, is showing signs of revegetation.

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- Idaho Soil Conservation Commission (SCC). 2000. Cascade Reservoir Phase II Implementation Plan Available at <http://www.scc.idaho.gov/TMDL%20Plans/CascadeResPhase2Summary.pdf>.

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Acronyms and Abbreviations

AFO	animal feeding operation
BAG	basin advisory group
BMP	best management practice
CAFO	confined animal feeding operation
CWA	Clean Water Act
DEQ	Idaho Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
FTE	full-time equivalent
GRTS	grants reporting and tracking system
HUC	hydrologic unit code
IASCD	Idaho Association of Soil Conservation Districts
mg/L	milligrams per liter
MOU	memorandum of understanding
NPS	nonpoint source
PCEI	Palouse-Clearwater Environmental Institute
Section 303(d), 303(d) list	Impaired waters, or the list of impaired waters required by Section 303(d) of the Clean Water Act
Section 319	Section 319(h) of the Clean Water Act
SWCD	Soil and Water Conservation District
TMDL	total maximum daily load
WAG	watershed advisory group

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