

2010 Performance and Progress Report



**State of Idaho
Nonpoint Source Management Program
2010**



State of Idaho Nonpoint Source Program

Cover photo: Irrigation return flow is being treated by wetland ponds prior to discharge to Rock Creek.

2010 Performance and Progress Report

State of Idaho Nonpoint Source Management Program

February 2011



Dogwoods are doing well since cattle have been fenced off of Boulder Creek (S367).

Acknowledgments

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

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Section 1. Overview

This document presents Idaho's Nonpoint Source Management Program 2010 Performance and Progress Report for the period December 1, 2009 through November 30, 2010. 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 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.

Scope of the Idaho Nonpoint Source Program

DEQ currently manages 67 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 (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 include 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 the success that project managers are realizing in implementing their respective work plans developed under 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:

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

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 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 consistency for base-level implementation activities related to TMDLs, including technical support, education, and information transfer
- Providing 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 FY 2010 Nonpoint Source 319 Grant Workplan

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

Task 1: State Office Administration

| | |
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| 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, 2010 through April 30, 2013. |
| Estimated cost of this work plan component: | \$161,225 |
| Staffing Level (number of fulltime positions) | 1.59 |

Task 2: Develop Procedures and Guidance Materials

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| Output: | Draft procedures and guidance to support project development, analysis, and reviews. |
| Milestone: | As needed. |
| Estimated cost of this work plan component: | \$55,769 |
| Staffing Level (number of fulltime positions) | 0.55 |

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

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| Output: | Revised MOUs for implementation of the NPS Program plan. |
| Milestone: | May 1, 2010 through April 30, 2011; Complete all remaining sectors by April 30, 2013. |
| Estimated cost of this work plan component: | \$25,350 |
| Staffing Level (number of fulltime positions) | 0.25 |

Task 4: Program Implementation

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| Output 4A: | Promote the NPS Program. Work with all designated management agencies and entities to focus on areas within the state for NPS project development. |
| Milestone: | Annually. |

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| Output 4B: | Implement objectives aimed at meeting the key elements of developed TMDL Implementation Plans. In partnership with DMA's (Designated Management Agencies) WQ monitoring and other efforts will be undertaken to assess the level of success in meeting WQ goals. Routine evaluation of results will provide ongoing insight of implementation effectiveness and allow adjustments to be made, as needed. |
| Milestone: | Ongoing, with comprehensive evaluation on an annual basis by June 1. |
| Output 4C: | Support the annual Idaho Water Quality Monitoring and Management Conference. |
| Milestone: | February 2-4, 2010. |
| Estimated cost of 4A-4C plan component: | \$155,602 |
| Staffing Level (number of fulltime positions) | 1.62 |

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

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| Output: | Assess each project's compliance with work plan and budget. |
| Milestone: | May thru October, annually. |
| Estimated cost of this work plan component: | \$55,769 |
| Staffing Level (number of fulltime positions) | 0.55 |

Task 6: Support DEQ Water Pollution Control Loan Program

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| 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: | \$10,140 |
| 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

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| 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: | \$20,280 |

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| Staffing Level (number of fulltime positions) | 0.20 |
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Task 8: Coordinate Development, Review, and Distribution of the Annual Program Performance and Progress Report

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| Output: | Submit report to EPA Region 10. |
| Milestone: | Annually, in March. |
| Estimated cost of this work plan component: | \$24,336 |
| Staffing Level (number of fulltime positions) | 0.27 |

Task 9: Conduct Required Reporting through Grants Reporting and Tracking System (GRTS)

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| 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: | \$24,336 |
| Staffing Level (number of fulltime positions) | 0.24 |

Task 10: Update Idaho Nonpoint Source Management Plan

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| Output: | Continue revision of Idaho Nonpoint Source Management Plan. |
| Milestone: | Ongoing work towards the revision for the period of May 1, 2010 through April 30, 2011. Revised plan scheduled for completion by December 31, 2013. |
| Estimated cost of this work plan component: | \$24,336 |
| Staffing Level (number of fulltime positions) | 0.24 |

Task 11: SW Quality Management

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| Output: | Provide foundation to 319 programs by developing water quality standards, conducting assessment, and submit Integrated Report leading to TMDL development and 319 activities. |
| Milestone: | Ongoing |
| Estimated cost of this work plan component: | \$371,429 |

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| Staffing Level (number of fulltime positions) | 3.68 |
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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 the total project subgrant budget expended through November 30, 2010 for each project in comparison to the subgrant amount.

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Table 1. Budget summary for projects active during 2010, including projects that were closed during 2010.

| Subgrant | Project Name | Project Sponsor | Start Date | End Date | 319 Grant Amount | Total Spent (through 11/30/2010) | Balance (as of 11/30/2010) |
|----------|--|--|------------|------------|------------------|----------------------------------|----------------------------|
| S175 | Palouse River Water Quality Improvement | Latah Soil and Water Conservation District | 5/15/2006 | 1/18/2011 | \$215,491.00 | \$215,491.00 | \$0.00 |
| S180 | South Fork Clearwater, Kirtner | Palouse-Clearwater Environmental Institute | 5/15/2006 | 1/31/2011 | \$181,435.00 | \$163,291.05 | \$18,143.95 |
| S207 | Thomas Fork Stream Stabilization (Heller) | Bear Lake Regional Commission | 7/15/2007 | 3/8/2010 | \$54,000.00 | \$54,000.00 | \$0.00 |
| S208 | Thomas Fork Stream Stabilization (Boehme) | Bear Lake Regional Commission | 7/15/2007 | 5/17/2010 | \$46,000.00 | \$18,305.79 | \$27,694.21 |
| S209 | Flannigan Creek Riparian Restoration | Palouse-Clearwater Environmental Institute | 7/15/2007 | 1/11/2011 | \$96,046.00 | \$95,777.11 | \$268.89 |
| S211 | Lower NF Clearwater TMDL Phase 3 | Clearwater Soil and Water Conservation District | 7/1/2007 | 9/13/2010 | \$248,709.00 | \$248,709.00 | \$0.00 |
| S212 | American River Water Quality Improvement | Framing Community Inc. | 7/9/2007 | 1/30/2012 | \$238,242.00 | \$214,441.48 | \$23,800.52 |
| S213 | Owyhee Restoration Incentive | Owyhee Watershed Council | 7/16/2007 | 2/27/2012 | \$201,785.00 | \$162,900.00 | \$38,885.00 |
| S215 | Copper Creek Restoration | Lava Lake Land & Livestock | 8/15/2007 | 1/30/2012 | \$150,000.00 | \$26,539.00 | \$123,461.00 |
| S217 | Island Ranch Bank Stabilization | Island Ranch | 8/20/2007 | 1/30/2012 | \$12,590.00 | \$10,168.00 | \$2,422.00 |
| S219 | Big Lost River Temperature and Sediment Reduction | Trout Unlimited | 8/27/2007 | 1/30/2012 | \$112,200.00 | \$75,378.15 | \$36,821.85 |
| S223 | Marsh Creek Watershed Phase 1 | Portneuf Soil and Water Conservation District | 10/15/2007 | 12/15/2012 | \$250,000.00 | \$76,194.00 | \$173,806.00 |
| S226 | NW Owyhee Co. Water Quality Improvement | Owyhee Soil Conservation District | 11/14/2007 | 1/31/2012 | \$249,543.00 | \$224,643.00 | \$24,900.00 |
| S227 | Lindsay Creek Riparian Management | Palouse-Clearwater Environmental Institute | 12/10/2007 | 1/31/2012 | \$149,774.00 | \$66,141.00 | \$83,633.00 |
| S245 | Lanny Holbrook-Upper Portneuf River Rip Fence | Trout Unlimited | 6/9/2008 | 1/26/2010 | \$19,318.00 | \$6,257.70 | \$13,060.30 |
| S246 | Croy Creek Wetland Restoration | Wood River Land Trust | 6/15/2008 | 3/15/2013 | \$99,419.00 | \$89,342.35 | \$10,076.65 |
| S247 | Little Weiser River Stream Bank Protection | Adams Soil & Water Conservation Dist. | 6/15/2008 | 3/15/2013 | \$201,050.00 | \$87,120.00 | \$113,930.00 |
| S248 | S. Fork Palouse River Riparian Restoration | Palouse-Clearwater Environmental Institute | 6/30/2008 | 3/20/2013 | \$158,971.00 | \$92,220.81 | \$66,750.19 |
| S249 | Teton Creek Restoration | Friends of Teton River | 6/15/2008 | 1/20/2010 | \$144,425.00 | \$144,425.00 | \$0.00 |
| S250 | North Idaho Animal Feeding Operator (AFO) Implementation Phase 4 | Latah Soil and Water Conservation District | 6/20/2008 | 3/20/2013 | \$215,086.00 | | \$215,086.00 |
| S251 | Lawyer Creek Water Quality | Lewis Soil Conservation Dist | 6/20/2008 | 3/20/2013 | \$250,000.00 | \$89,700.00 | \$160,300.00 |
| S252 | E. Coulee Drain Elimination | Balanced Rock Soil Conservation Dist. | 6/30/2008 | 6/30/2012 | \$204,500.00 | | \$204,500.00 |
| S255 | West Mountain Road Improvement, French Creek | Valley County Rd. Dept | 7/7/2008 | 5/28/2010 | \$104,992.00 | \$104,992.00 | \$0.00 |
| S274 | North Fork Payette River Stream Bank Stabilization | Friends of Cascade Water Park | 9/1/2008 | 1/6/2011 | \$43,320.00 | \$39,020.00 | \$4,300.00 |
| S279 | Tammany Road erosion Reduction Phase 2 | Nez Perce Soil & Water Conservation Dist. | 10/1/2008 | 12/31/2011 | \$185,247.00 | \$21,015.08 | \$164,231.92 |
| S280 | American Red River | Framing Our Community, Inc. | 10/15/2008 | 12/21/2012 | \$247,943.00 | \$162,776.00 | \$85,167.00 |
| S292 | North Idaho Animal Feeding Operator (AFO) Implementation Phase 3-B (Formerly S181) | Idaho Association of Soil Conservation Districts | 4/9/2009 | 12/31/2010 | \$67,100.00 | \$56,221.00 | \$10,879.00 |
| S295 | Marsh Creek Watershed Phase 2 | Portneuf Soil and Water Conservation | 4/1/2009 | 4/1/2011 | \$540,800.00 | \$486,671.00 | \$54,129.00 |

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| Subgrant | Project Name | Project Sponsor | Start Date | End Date | 319 Grant Amount | Total Spent (through 11/30/2010) | Balance (as of 11/30/2010) |
|----------|--|--|------------|------------|------------------|----------------------------------|----------------------------|
| | | District | | | | | |
| S296 | Bear River Animal Feeding Operator (AFO) Mid Bear Subbasin | Franklin Soil and Water Conservation District | 4/24/2009 | 2/12/2010 | \$121,302.00 | \$121,302.00 | \$0.00 |
| S297 | Danielson Watershed Water Quality Demonstration | So. Bingham Soil Conservation District | 4/27/2009 | 1/22/2010 | \$3,450.00 | \$3,450.00 | \$0.00 |
| S307 | Bruneau-Grand View Ground Water Quality Management Plan | Bruneau River Soil Conservation District | 6/2/2009 | 12/31/2013 | \$238,707.00 | \$133,950.00 | \$104,757.00 |
| S310 | Potlatch River Watershed Management Plan Phase 1 | Latah Soil and Water Conservation District | 6/15/2009 | 12/31/2013 | \$205,028.00 | \$28,585.87 | \$176,442.13 |
| S311 | Pend Oreille Lake *A*Syst Project | Bonner Soil and Water Conservation District | 6/15/2009 | 12/31/2013 | \$36,368.00 | \$26,441.99 | \$9,926.01 |
| S312 | Camas Prairie Ground Water Nitrate Priority Area Phase 3 | Lewis Soil Conservation District | 6/15/2009 | 12/31/2013 | \$245,000.00 | \$39,675.00 | \$205,325.00 |
| S313 | Fish Creek Road Improvement | Bonner County SWCD | 6/15/2009 | 12/31/2013 | \$147,268 | \$68,962 | \$78,306 |
| S321 | Latour Creek Road Improvement | Idaho Dept of Lands | 7/1/2009 | 12/31/2013 | \$250,000.00 | \$94,500.00 | \$155,500.00 |
| S322 | Upper Bear River Stream Bank Stabilization | Bear Lake Regional Commission | 7/1/2009 | 12/31/2013 | \$86,280.00 | \$86,280.10 | -\$0.10 |
| S323 | Canyon Co. BMPs for Water Quality Improvement | Lower Boise Watershed Council | 7/1/2009 | 12/31/2013 | \$250,000.00 | \$212,465.00 | \$37,535.00 |
| S326 | Short-Riley Creeks Porter Memorial | N. Idaho Fly Casters | 7/27/2009 | 12/31/2013 | \$20,000.00 | \$18,000.00 | \$2,000.00 |
| S327 | Lower Payette River TMDL Implementation Phase 3 | Gem Soil and Water Conservation District | 7/20/2009 | 12/31/2013 | \$180,000.00 | \$36,326.56 | \$143,673.44 |
| S328 | Salmon Falls Creek Agriculture Implementation Project | Twin Falls Soil and Water Conservation District | 7/21/2009 | 12/31/2013 | \$67,080.00 | \$0 | \$67,080.00 |
| S329 | Mores Creek Floodplain Restoration Project | West Central Highlands Resource Conservation & Development | 8/1/2009 | 12/31/2013 | \$96,000.00 | \$47,888.99 | \$48,111.01 |
| S330 | Boulder Ridge Ranch Wetlands | Balanced Rock Soil Conservation Dist. | 8/1/2009 | 12/31/2013 | \$249,000.00 | \$0 | \$249,000.00 |
| S331 | East Fork Potlatch River Riparian | Idaho Department of Fish and Game | 8/1/2009 | 12/31/2013 | \$80,000.00 | \$0 | \$80,000.00 |
| S332 | Lapwai Creek Integrated Analysis Project | University of Idaho | 8/14/2009 | 12/31/2013 | \$59,301.00 | \$26,431.20 | \$32,869.80 |
| S333 | N. Idaho Animal Feeding Operator (AFO) Implementation -Phase III-C | Idaho Association of Soil Conservation Districts | 10/1/2009 | 12/31/2013 | \$41,965.00 | \$0 | \$41,965.00 |
| S334 | Hulme Ranch Water Quality Improvement | Bear Lake Soil and Water Conservation District | 10/19/2009 | 3/5/2010 | \$4,982.00 | \$4,982.00 | \$0.00 |
| S335 | Fish Haven Creek Watershed Restoration | Trout Unlimited | 10/26/2009 | 2/11/2010 | \$45,000.00 | \$45,000.00 | \$0.00 |
| S356 | Ada County BMPs: Four Corners | Ada Soil and Water Conservation District | 12/10/2009 | 12/31/2013 | \$48,000.00 | \$0 | \$48,000.00 |
| S367 | N. Fork Payette River Watershed Restoration | Trout Unlimited | 03/01/2010 | 12/31/2013 | \$10,823.00 | \$10,024.82 | \$798.18 |
| S381 | Boulder Creek Restoration | Trout Unlimited | 05/28/2010 | 12/31/2014 | \$5,400.00 | \$4,000.00 | \$1,400.00 |
| S382 | Twenty Mile Creek Improvement | Idaho Department of Lands | 05/28/2010 | 12/31/2011 | \$40,000.00 | \$0 | \$40,000.00 |
| S385 | I Coulee Wetland | Balanced Rock Soil and Water Conservation District | 6/1/10 | 12/31/2014 | \$52,200.00 | \$0 | \$52,200.00 |
| S389 | Little Salmon River Rip Rest | Idaho Department of Fish and Game | 06/15/2010 | 12/31/2014 | \$41,405.00 | \$6,144.50 | \$35,260.50 |
| S392 | Upper Bear River Stream Bank Stabilization | Bear Lake Regional Commission | 07/02/2010 | 12/31/2014 | \$24,970.00 | \$14,694.73 | \$10,275.27 |
| S393 | Blackfoot River Water Quality | Three Rivers Resource Conservation & | 06/22/2010 | 12/31/2014 | \$93,474.00 | \$0 | \$93,474.00 |

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| Subgrant | Project Name | Project Sponsor | Start Date | End Date | 319 Grant Amount | Total Spent (through 11/30/2010) | Balance (as of 11/30/2010) |
|----------|---|--|------------|------------|------------------|----------------------------------|----------------------------|
| | | Development | | | | | |
| S394 | SF Clearwater Watershed Vegetation | Palouse-Clearwater Environmental Institute | 06/02/2010 | 12/31/2014 | \$246,261.00 | \$0 | \$246,261.00 |
| S395 | Upper Hangman Creek Watershed Road & Culvert | Benewah Soil and Water Conservation District | 06/21/2010 | 12/31/2014 | \$17,538.00 | \$0 | \$17,538.00 |
| S396 | Potlatch River Watershed Management Plan Phase 2 | Latah Soil and Water Conservation District | 06/01/2010 | 12/31/2014 | \$207,302.00 | \$0 | \$207,302.00 |
| S397 | Mica Creek Sediment & Nutrient Reduction Phase 2 | Kootenai-Shoshone Soil and Water Conservation District | 07/01/2010 | 12/31/2014 | \$91,080.00 | \$0 | \$91,080.00 |
| S399 | Marsh Creek-Middle Portneuf Watershed Phase 3 | Portneuf Soil and Water Conservation District | 07/01/2010 | 12/31/2014 | \$249,550.00 | \$24,955.00 | \$224,595.00 |
| S400 | Teton Creek Restoration | Friends of Teton River | 07/19/2010 | 12/31/2014 | \$200,000.00 | \$178,000.00 | \$22,000.00 |
| S401 | Little Weiser River Stream Bank Stabilization & Restoration | Adams Soil and Water Conservation District | 7/19/2010 | 12/31/2014 | 187,386.00 | 74,235.00 | \$113,151.00 |
| S402 | Daniels Res. Sediment Reduction | Oneida Soil and Water Conservation District | 7/20/2010 | 12/31/2014 | 170,329.00 | \$0 | \$170,329.00 |
| S404 | Bear Valley-Casner Creek Restoration | Trout Unlimited | 7/27/2010 | 12/31/2014 | 33,000.00 | \$0 | \$33,000.00 |
| S405 | Payette Ditch Water Discharge Treatment | Weiser River Soil Conservation District | 8/10/2010 | 12/31/2014 | 51,737.00 | 46,493.00 | \$5,244.00 |
| S406 | American Red River Phase 2 | Framing Our Community, Inc. | 9/13/2010 | 12/31/2014 | 250,000.00 | 168,086.45 | \$81,913.55 |

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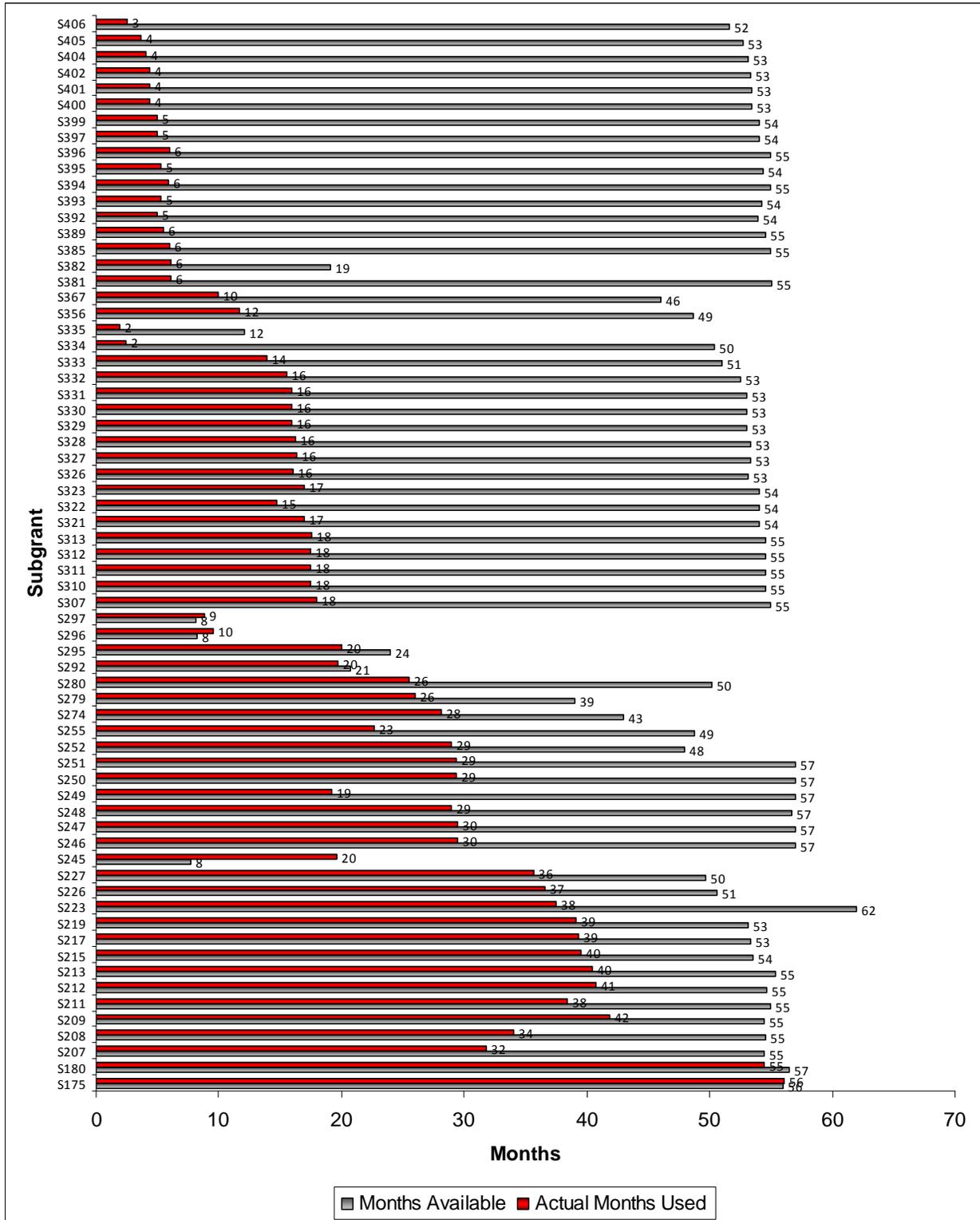


Figure 1. Subgrant term in months versus time elapsed since issued in months. The gray bars show the number of months contracted for each project, and the red bars show the number of months the project has been underway. (For simplification, each month is assumed to have 30 days).

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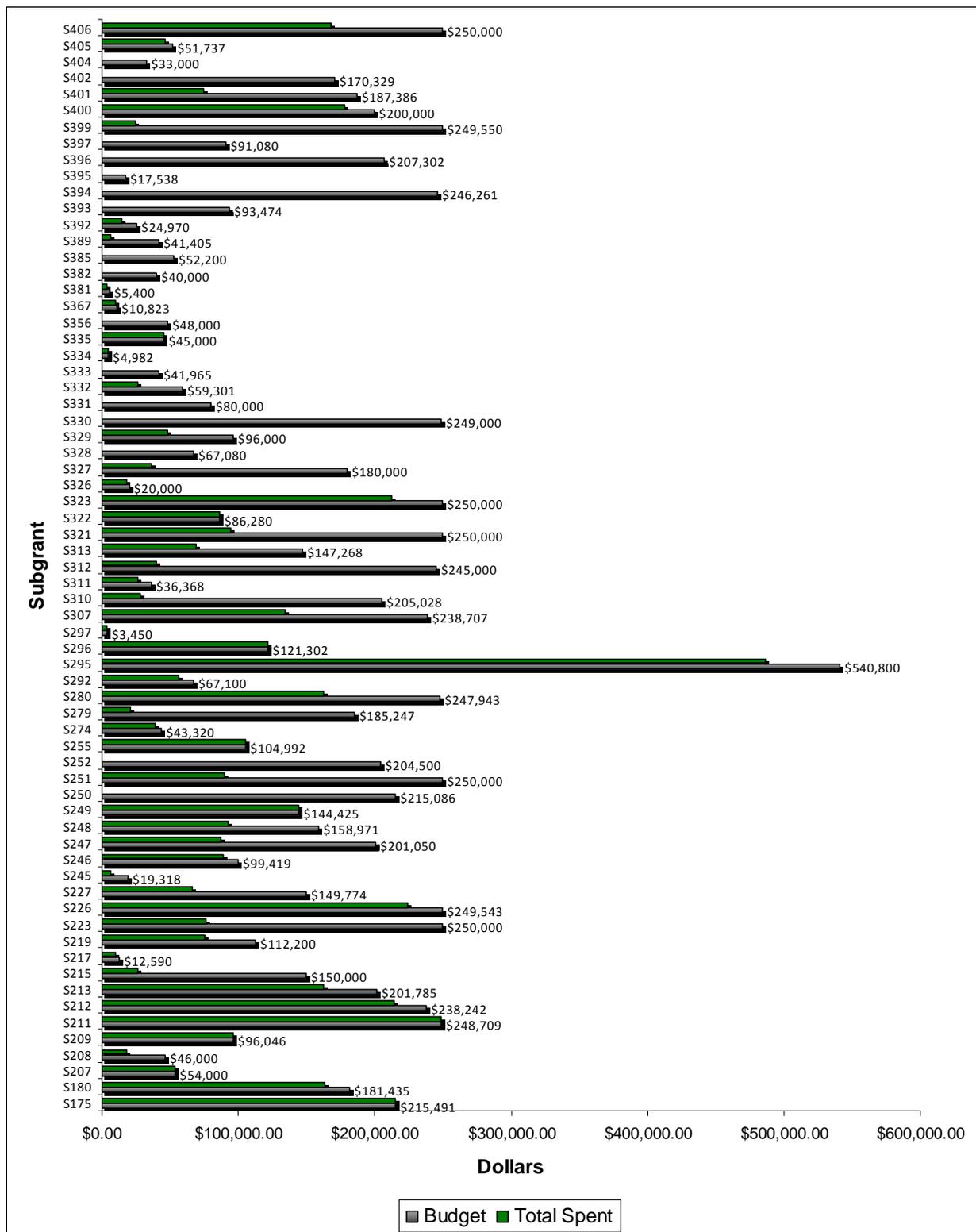


Figure 2. Budget usage by active projects. The gray bars and numbers show the total budget for each project, and the green bars show total budget expended through November 30, 2010.

Section 2. 2010 Project Field Evaluations

This section includes a summary of the project field evaluations performed in 2010. A report on each evaluation can be found in Section 3.

2.1 Introduction

As of November 30, 2010, DEQ managed 67 projects in Idaho (Figure 3). Of these, 16 projects were closed out. In 2010, DEQ evaluated 29 projects (Figure 4).

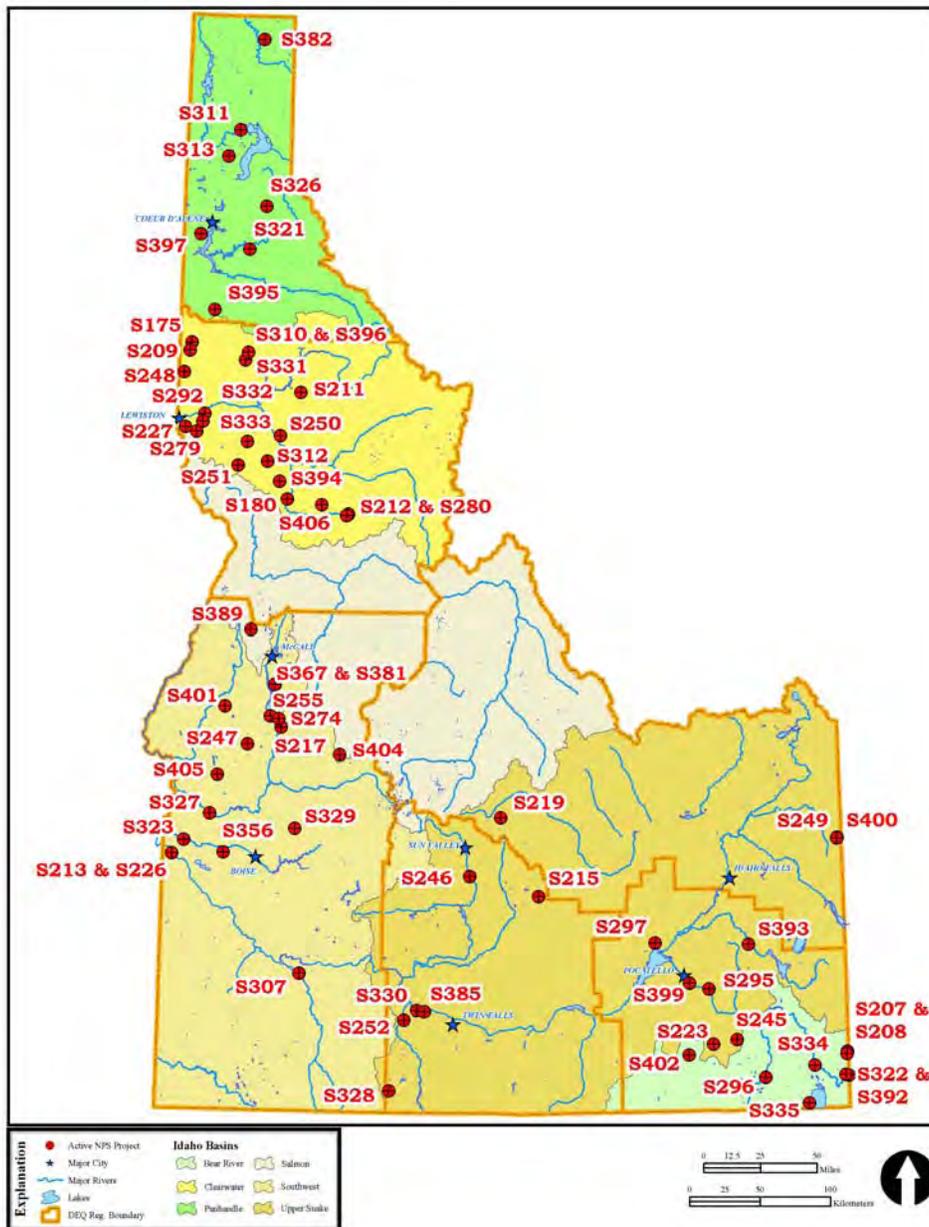


Figure 3. Current active or recently closed nonpoint source projects, as of November 30, 2010.

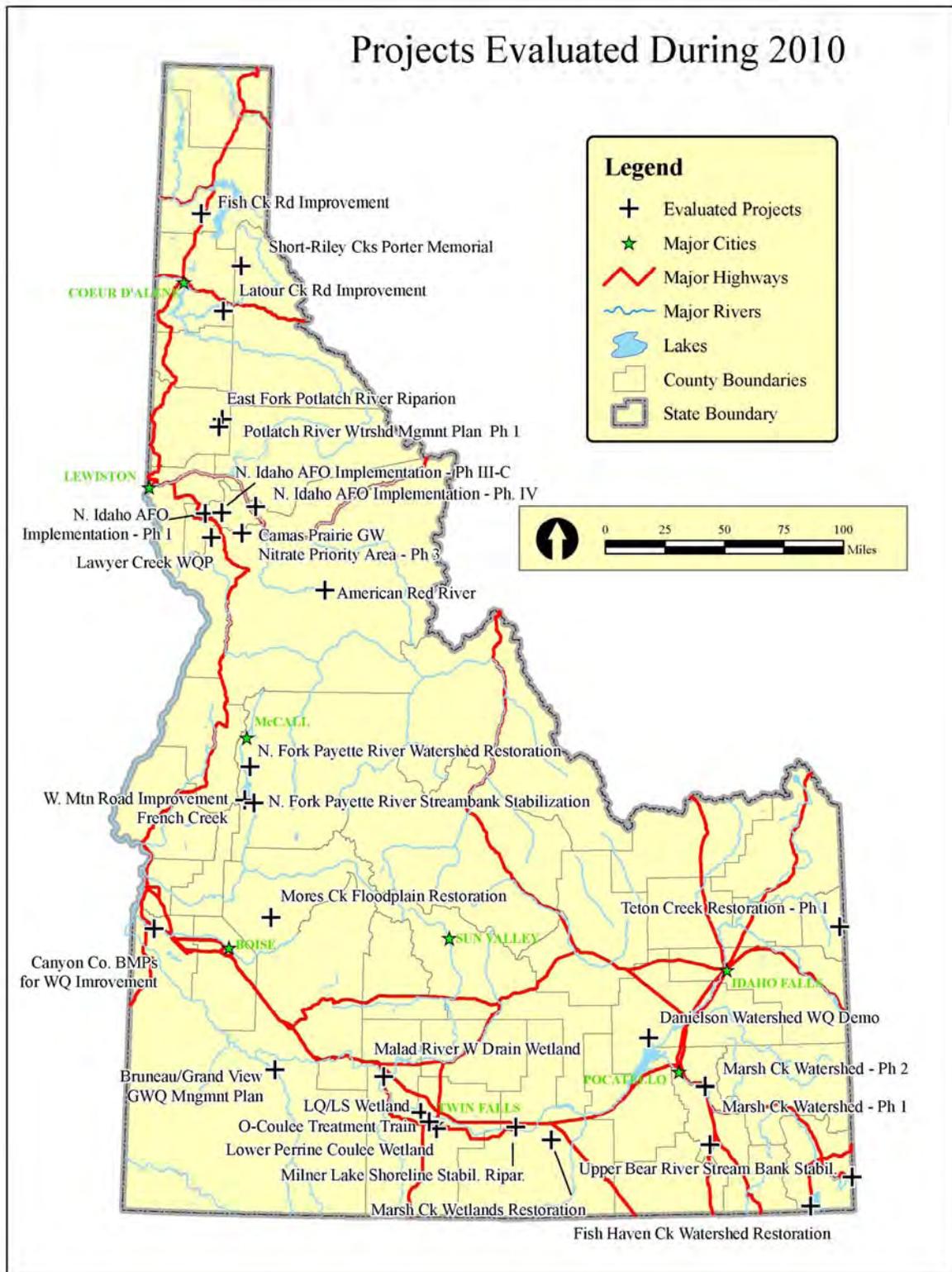


Figure 4. Locations of nonpoint source projects evaluated during 2010.

2.2 Field Evaluation Process

The evaluation process begins with a staff review of the project's subgrant agreement. Compliance with the agreement is later verified in the field by a team that includes the project manager, DEQ staff, and any interested or vested stakeholders. A standard evaluation form is used to assure that all requirements are being met for the project. A more detailed description of the evaluation process can be found in Chapter 8 of the Idaho Nonpoint Source Management Plan. The full report on each field evaluation, including captioned photographs, is on file at the DEQ State Office.

2.3 Results

Table 2 lists and briefly describes all projects that were field-evaluated during 2010.

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Table 2. Active or recently completed nonpoint source projects field-evaluated during 2010.

| Subgrant Number | Project Name | What Was Done | Category | DEQ Region |
|---|---|--|-----------------------------|-------------|
| Closed Projects Re-Evaluated in 2010 to Assess Effectiveness of BMPs | | | | |
| S039 | North Idaho Animal Feeding Operation (AFO) Relocation | The Soil Conservation District developed contracts with local farmers to install BMPs that restrict livestock from surface water. (See page 20 for more information) | Agriculture/Grazing | Lewiston |
| S126 | LS LQ Wetlands Creation | The site formerly contained abandoned fish raceways where untreated irrigation return flow was directly discharged to the Snake River. Constructed wetlands reduced sediment, phosphorous and nitrogen by 90%. (See page 21 for more information) | Agriculture/Grazing | Twin Falls |
| S138 | Lower Perrine Wetlands Creation | Constructed wetlands reduce phosphorous, nitrate, sediment, and bacteria by approximately 90% prior to discharge to the Snake River. (See page 22 for more information) | Agriculture/Grazing | Twin Falls |
| S139 | O Coulee Wetlands Creation | Constructed wetlands are removing a very high percentage of the pollutants from irrigation return flow that benefits water quality for both recreation and wildlife. (See page 23 for more information) | Agriculture/Grazing | Twin Falls |
| S169 | Milner Lake Shoreline Stabilization | Rock riprap and tree plantings reduce sediment, nutrients, and bacteria that may be tied to the sediment. Restoration of the riparian plant community adjacent to the shoreline filters nutrients and sediment released from adjacent agricultural fields. (See page 24 for more information) | Agriculture/Grazing | Twin Falls |
| S197 | Malad River W Drain Elimination | An existing state park irrigation system conveys a large volume of irrigation return flow to a constructed 99 acre-foot settling pond. After pollutants settle out a high-pressure pipeline delivers water to the irrigation systems of other land users down gradient resulting in zero discharge of untreated water to the Snake River. (See page 25 for more information) | Agriculture/Grazing | Twin Falls |
| Active Projects Evaluated in 2010 | | | | |
| S223 | Marsh Creek Phase I | Exclusionary fencing and relocated AFOs reduces sediment, nutrients, and bacteria loads on 20 miles of Marsh Creek. (See page 27 for more information) | Agriculture/Grazing | Pocatello |
| S249 | Teton Creek Channel Restoration | Carefully engineered weirs, buried rock toe protection, root wads, and bank vegetation is stabilizing areas of Teton Creek destroyed by illegal development. Work results in restoring channel sinuosity and prevention of aggressive headcut upstream and prevents eroding stream banks. (See page 28 for more information) | Storm Water | Idaho Falls |
| S250 | North Idaho AFO Relocations Phase 4 | Phase 4 is continuing the work of previous projects by adding ten to fifteen more water quality improvement projects on AFOs within north central Idaho. (See page 29 for more information) | Agriculture/Grazing | Lewiston |
| S251 | Lawyer Creek BMP Implementation | Tree plantings, exclusionary fencing, and settling ponds are being constructed on private property within the Clear Creek Watershed, which is reducing sediment, temperature, nutrients, bacteria, and organics. (See page 30 for more information) | Agriculture/Grazing | Lewiston |
| S255 | West Mountain Road Rehab- French Creek | Continuing from the FY 2007 project end-point, this project added another mile of stable, minimally erosive road bed adjacent to Cascade Reservoir at French Creek. (See page 31 for more information) | Transportation/ Storm Water | Boise |
| S274 | North Fork Payette Riverbank Stabilization | This project, which is part of larger plan to create a kayak whitewater park, used a combination of large and medium sized rocks and bank revegetation to stop excess bank erosion. (See page 32 for more information) | Agriculture/Grazing | Boise |
| S280 | American /Red River Pollution Reduction | Exclusionary fencing, stream bank stabilization and a new bridge that is being built by local laborers will result in reduced sediment and bacteria delivery to American River and Red River. (See page 33 for more information) | Agriculture/Grazing | Lewiston |
| S291 | Marsh Creek Wetlands Restoration | Constructed large wetlands and settling ponds supplements late season stream flows in Marsh Creek, and restores off-channel wetland habitat in the lower Marsh Creek watershed, which is a major migratory waterfowl route. (See page 34 for more information) | Agriculture/Grazing | Twin Falls |
| S295 | Marsh Creek Pollution Reduction Phase 2 | This Phase 2 project continues reducing sediment, nutrients, and bacteria loads to Marsh Creek through installation of exclusionary fencing, relocation of a major AFO, and stream bank stabilization. (See page 35 for more information) | Agriculture/Grazing | Pocatello |

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| Subgrant Number | Project Name | What Was Done | Category | DEQ Region |
|-----------------|---|--|---|---------------|
| S297 | Danielson Watershed Livestock Exclusion | Stream bank restoration and protection is reducing sediment, nutrient, and bacterial loading into a large spring area that drains into the Springfield Reservoir and then into Danielson Creek. (See page 36 for more information) | Agriculture/Grazing | Pocatello |
| S307 | Bruneau Grandview Groundwater Cleanup | Cooperation of landowners that farm thousands of acres in the Bruneau/Grandview area is cleaning up groundwater by reducing fertilizer application without reducing crop production. The project reduces leaching of nitrates past the crop root zone. (See page 37 for more information) | Agriculture/Grazing | Boise |
| S310 | Potlatch River Pollution Reduction Phase 1 | University of Montana environmental science students are learning the value of excluding cattle from streams, closing un-needed logging roads, and stabilizing stream banks in this multi-year program to address prioritized steelhead habitat areas identified in the Potlatch River Watershed Management Plan. (See page 38 for more information) | Agriculture/Grazing, Transportation, Forestry | Lewiston |
| S312 | Camas Prairie Groundwater Nitrate Reduction Phase 3 | This is the third phase of a major effort to implement best management practices, in the Camas Prairie Groundwater Area, that focus on nitrate reductions through split fertilizer applications and nutrient management to reduce nitrate applications. (See page 39 for more information) | Agriculture/Grazing | Lewiston |
| S313 | Fish Creek Road Improvements | Undersized culverts were replaced, unstable areas in the road drainage network were stabilized, and magnesium chloride was applied to dirt roads to reduce the chance of future road failures and excess sediment and nutrient delivery to Fish Creek. (See page 40 for more information) | Transportation | Coeur d'Alene |
| S321 | Latour Creek Road Improvements | Work accomplished on 5.7 miles of a major logging road that is adjacent to Latour Creek included installation of filter cloth, road base, silt fence and straw wattles, mulching and grass seed. (See page 41 for more information) | Transportation | Coeur d'Alene |
| S322 | Upper Bear River Livestock Exclusion | Treatments included bank shaping, rock revetments, willow plantings, exclusion fencing, and reseeding of disturbed areas. (See page 42 for more information) | Agriculture/Grazing | Pocatello |
| S323 | Canyon County BMPs to Protect Lower Boise River | The project adjacent to the Lower Boise River includes flood irrigation conversion to drip irrigation, reduced fertilizer application, sediment basin installation, wetland installation, cattle exclusionary fencing, and buffer strips. (See page 43 for more information) | Agriculture/Grazing | Boise |
| S326 | Short and Riley Creeks Fish Habitat Improvement | The Forest Service has decommissioned roads, conducted instream restoration measures, and removed culvert crossings. The project also involves removal and replacement of a failing bridge and culvert with a new bridge that allows fish passage beneath it. (See page 44 for more information) | Forestry | Coeur d'Alene |
| S329 | Mores Creek Floodplain Restoration | The project is stabilizing and re-vegetating approximately 10 acres of abandoned placer mine hill slopes and improving five acres of roads used for recreational activities. (See page 45 for more information) | Mining | Boise |
| S331 | East Fork Potlatch river Restoration | Installation of root wads, log barbs, and woody plantings is increasing the riparian canopy and reducing sediment deposition into the East Fork Potlatch River sub-watershed, which was heavily impacted by logging. (See page 46 for more information) | Forestry | Lewiston |
| S333 | North Idaho AFO Relocations Phase 3C | The project is the continuation of AFO relocations out of surface water to improve water quality on 303(d) listed water bodies and other locally prioritized segments and tributaries contributing pollutant loads to the Clearwater, Palouse, Salmon, and Snake Rivers. (See page 47 for more information) | Agriculture/Grazing | Lewiston |
| S335 | Fish Haven Creek Stormwater BMPs | Work involved the removal of a 220-foot long concrete box culvert that was a fish migration barrier for decades and the installation of an All-Terrain Vehicle (ATV) bridge where heavy traffic had been causing sediment deposition into Fish Haven Creek. (See page 48 for more information) | Stormwater | Pocatello |
| S367 | North Fork Payette River Watershed Restoration | Donnelly Elementary School students, Idaho Fish and Game volunteers, and students from the College of Idaho Environmental Studies Program and the McCall Outdoor Science School (MOSS) planted shrubs and willow weavings to stabilize the river bank and create a riparian buffer. (See page 49 for more information) | Agriculture/Grazing | Boise |

Section 3. 2010 Field Evaluation Reports (Subgrants)

DEQ staff traveled to 29 project sites to evaluate and document progress and results of the funded work. A breakdown of the projects evaluated showed that:

- ❖ 21 projects focus on water quality protection related to agriculture or grazing.
- ❖ 3 projects focus on forestry.
- ❖ 1 project focuses on mining.
- ❖ 2 projects focus on urban and rural stormwater treatment.
- ❖ 2 projects focus on transportation.

The following pages include summaries of 29 evaluation reports that were completed during 2010. More detailed evaluation reports for each project are available from DEQ upon request.

3.1 Closed Projects Re-Evaluated in 2010

The following pages include summaries of closed projects that were re-evaluated in 2010 to assess the continuing effectiveness of the BMPs applied.

North Idaho Animal Feeding Operation (AFO) Implementation (S039)

| | | | |
|-----------------------|---|----------|---|
| Subgrant | 039 | Location | Latitude and Longitude: 46.449, -116.808; ten miles east of Lewiston. |
| Description | The Soil Conservation District developed contracts with local farmers to install BMPs that restrict livestock from Lapwai Creek. The intent of the evaluation was to see how BMPs are holding up after ten years of use. This evaluation covered just two of the AFO relocations associated with the much larger overall project that began in 2001 and was completed in 2006. The entire project area covers a five county section of central Idaho. BMPs at this facility are holding up very well. | | |
| Close Out Report Date | 12/31/05 | | |
| Features evaluated | BMPs evaluated include berms, fencing, and on-site watering facilities. The evaluation group also visited a second site where for many decades cattle were allowed uncontrolled access to 303(d) listed Lapwai Creek. | | |
| Project status | The project was completed by the modified end date in 2006. | | |



Figure 5. One of several AFO relocation subprojects for this 2001 subgrant. Lapwai Creek is just beyond the fence, a berm, and trees in the background.



Figure 6. Annually, about 250 head of cattle are confined at this AFO. Since cattle are fenced off from the creek, water is provided by an on-site well and roof rainwater collection system.



Figure 7. Lapwai Creek is a 303(d)-listed stream.



Figure 8. The gutter and down spout form part of the stormwater collection system. Previously, stormwater ran across the AFO and into the creek.

LQ/LS Wetlands (S126)

| | | | |
|-----------------------|--|----------|---|
| Subgrant | 126 | Location | Latitude and Longitude: 42.630, -114.59; six miles northwest of Twin Falls. |
| Description | This site formerly contained abandoned fish raceways where untreated irrigation return flow discharged directly to the Snake River. The goal of this 2010 re-evaluation was to verify the maintenance and continued effectiveness of BMPs after five years of operation. Constructed BMPs, including an initial treatment sediment pond and wetland area followed by two five-acre finishing ponds and associated wetlands, reduced sediment, phosphorous and nitrogen by 90%. Twin Falls Canal Company obtained an easement to ensure the project remains in operation for perpetuity. As a condition of this project, the Twin Falls Canal Company created a successful recreational fishing pond for the local community, where the Idaho Department of Fish and Game regularly stock golden trout. | | |
| Close Out Report Date | 12/16/2009 | | |
| Features evaluated | The evaluation included a visit to the ponds and wetlands. All BMPs are doing well, and the fishing pond is very popular with local anglers. | | |
| Project status | This project was completed on schedule and within budget. | | |



Figure 9. Samples collected during the evaluation. The cloudy sample (left) is untreated irrigation water from the top end of the system, and the clear sample (right) is from the outflow.



Figure 10. Outflow from the constructed wetlands and settling ponds is being discharged to the Snake River.



Figure 11. This project has produced clean water, an excellent fishery, and great habitat for waterfowl.



Figure 12. Twin Falls Canal Company has been an excellent partner during and after the project.

Lower Perrine Wetlands (S138)

| | | | |
|-----------------------|--|----------|---|
| Subgrant | 138 | Location | Latitude and Longitude: 42.542, -114.461; one mile south of Twin Falls. |
| Description | Prior to this project untreated irrigation return flow discharged directly to the Snake River. This re-evaluation confirms that BMPs installed five years ago are still serving their original intent to capture and treat irrigation return flow from a 9,000-acre area of cultivated farmland. This project reduces phosphorous, nitrate, sediment, and bacteria by approximately 90% prior to discharge to the Snake River. | | |
| Close Out Report Date | 2/28/2007 | | |
| Features evaluated | BMPs evaluated included conveyance canals, wetlands, and settling ponds. | | |
| Project status | This project was completed on time and within budget. | | |



Figure 13. Irrigation water flows to 14 settling ponds where pollutants are deposited.



Figure 14. After approximately 90% of the pollutants settle, treated irrigation water is discharged from each of the 14 settling ponds.



Figure 15. Return flow from farmland cultivation.



Figure 16. Wetland vegetation in some of the settling ponds is quite lush.

O Coulee Wetlands (S139)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 139 | Location | Latitude and Longitude: 42.58, -114.52; two miles northwest of Twin Falls. |
| Description | The re-evaluation confirms that all BMPs at this project, just west of the Magic Valley Regional Medical Center in Twin Falls, are functioning well. The project is removing pollutants from irrigation return flow and benefitting water quality for recreation and wildlife. This project was completed in February 2007 and was first evaluated in September of 2008. | | |
| Close Out Report Date | 12/28/2007 | | |
| Features evaluated | The team evaluated sediment retention ponds. | | |
| Project status | This project was completed on schedule and within budget. | | |



Figure 17. This project consists of a single settling pond that treats irrigation return flow from cultivated farmland.



Figure 18. Prior to the installation of the settling pond, irrigation return flow discharged directly into Rock Creek and ultimately, into the Snake River.



Figure 19. After treatment in the settling pond, where about 90% of the nutrients are removed, the water is allowed to enter Rock Creek.



Figure 20. When needed, water from the settling pond can be reused to irrigate an adjacent farm field. The fencing in the background keeps cattle away from the treatment pond.

Milner Lake (S169)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 169 | Location | Latitude and Longitude: 42.525, -113.995; on Snake River two miles west of Burley. |
| Description | Because it was treated with rock rip-rap and tree plantings, the shoreline upstream and downstream of the property is stable. Benefits of the project include reduction in sediment, nutrients, and bacteria. In addition, restoration of the riparian plant community helps filter nutrients and sediment that may be released from adjacent agricultural fields. | | |
| Close Out Report Date | 12/31/2006 | | |
| Features evaluated | BMPs observed during this visit included installed riprap and vegetation along the shoreline and vegetation that was planted as a filter strip farther back from the shoreline. | | |
| Project status | This project had to be completed over a three-month period during the winter of 2005, when the river and reservoir levels were low. | | |



Figure 21. Shoreline along Milner Lake was eroding at the rate of tens of feet per year prior to this project. Rip-rap and vegetation have eliminated the problem.



Figure 22. Prior to this project, waves generated by wind and boats severely eroded the shoreline.



Figure 23. Now that the shoreline is stable, vegetation is taking over, helping to stabilize and filter overland runoff from adjacent farmland.



Figure 24. Over the next several years, vegetation will most likely cover the riprap completely.

Malad River W. Drain Wetland (S197)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 197 | Location | Latitude and Longitude: 42.851, -114.901; on Snake River two miles southwest of Gooding. |
| Description | This project utilizes an existing state park irrigation system to direct irrigation water from the North Side Canal Company to the western area of Malad State Park, where it flows into a 99 acre-foot settling pond. From the pond, a pipeline delivers tail water to land users. The pipeline is approximately 10,000 feet long, and supplies irrigation to 22 square miles of farmland along the Snake River. The irrigation phase of this project was not completed with Section 319 funds — landowners with other state and federal funding assistance completed it. | | |
| Close Out Report Date | 2/29/2008 | | |
| Features evaluated | The team evaluated the dam and settling pond, and determined that they were performing as designed. | | |
| Project status | This project was finished and originally evaluated in 2008. | | |



Figure 25. Most of the bottomland is now irrigated from the 99-acre settling pond, which treats irrigation return flow prior to releasing it.



Figure 26. The irrigation pipeline is buried under the dirt trail that appears in the foreground.



Figure 27. This is a small portion of Malad State Park, where the project is located. Irrigation water for the park comes from the settling pond.



Figure 28. This is the eastern half of the settling pond.

3.2 Active Projects Evaluated in 2010

The following pages include summaries of active projects that were evaluated in 2010.

Marsh Creek Phase 1 (S223)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 223 | Location | Latitude and Longitude: 42.427, -112.208; on Marsh Creek, 5.5 miles south of Pocatello. |
| Description | The goal of this project is to reduce sediment, nutrients, and bacteria loads on 20 miles of stream. The Jim Guthrie property is one of many subprojects achieving better water quality along Marsh Creek by eliminating runoff from animal feeding operations, improving grazing management, and improving riparian and stream channel habitat. | | |
| Projected completion date | 12/15/2012 | | |
| Features evaluated | The team evaluated an Animal Feeding Operation (AFO) relocation, riparian buffers, exclusionary fencing, wildlife wetland creation and enhancement, nutrient management, a waste storage facility, a watering facility, prescribed grazing, a water well, and stream bank protection. | | |
| Project status | This ongoing project is on schedule. | | |



Figure 29. Ranch owner Jim Guthrie describes a new corral that pulled cattle away from Marsh Creek.



Figure 30. Prior to the construction of this new corral, livestock were watered directly in Marsh Creek.



Figure 31. The yellow box with the red top is a float-operated watering facility. Cattle press the ball to get a drink, greatly reducing polluted surface runoff to Marsh Creek.



Figure 32. For many years, the corral was located at this site along Marsh Creek. The site was void of vegetation and piled high with manure. After one growing season, the abandoned corral site is a lush healthy stream bank.

Teton Creek Restoration (S249)

| | | | |
|---------------------------|---|----------|---|
| Subgrant | 249 | Location | Latitude and Longitude: 43.73167, -111.07861; on Teton Creek one mile east of Driggs. |
| Description | This project is stabilizing areas of Teton Creek destroyed by illegal development that resulted in the developer going to prison. The well-engineered project is restoring channel sinuosity, preventing aggressive headcut, and eroding stream banks. A recently installed series of V-weirs have already begun to stop down-cutting and help maintain a low-flow channel with pools. Banks are being revegetated with willows, cottonwoods, and native grasses. These BMPs will also benefit fish passage and improve fish habitat. | | |
| Projected Completion Date | 1/20/2010 | | |
| Features evaluated | The team evaluated BMPs in the process of being constructed. | | |
| Project status | This project is on schedule. | | |



Figure 33. Tree trunks being placed into excavated slots along the shoreline will push the current away from the bank during high flows.



Figure 34. This trackhoe was used to place each boulder on its proper grade along the toe of the constructed bank.



Figure 35. Considerable engineering and expertise goes into stream channel restoration.



Figure 36. This V-weir was engineered and constructed last fall and after one spring runoff has already caused the streambed immediately up stream to rise by several feet.

North Idaho AFO Implementation Phase 4 (S250)

| | | | |
|---------------------------|---|----------|---|
| Subgrant | 250 | Location | Latitude and Longitude: 46.15, -115.98; In Central Idaho from Grangeville north to Orofino. |
| Description | Phase 4 of this project includes water quality improvement on AFOs within north-central Idaho. Landowners at two subproject locations have signed contracts with the Latah Soil and Water Conservation District with one more about to sign up. Once completed, this modification will keep about 100 cow-calf pairs out of Big Canyon Creek. | | |
| Projected Completion Date | 3/20/2013 | | |
| Features evaluated | The team evaluated just one the subprojects, which consists of 1500 feet of exclusionary fencing (already installed), as well as 4000 feet of fencing yet to be installed. | | |
| Project status | The project is in its first year and is on schedule. | | |



Figure 37. Fencing installed near the community of Reubens keeps cattle out of the creek.



Figure 38. As part of the in-kind match work for this subgrant a rancher attempted to install a rock crossing but it did not turn out well. He will be asked to rebuild this BMP.



Figure 39. One of the AFO relocation subprojects is at the small historic community of Reubens, which is private land within the Nez Perce Indian Reservation.



Figure 40. To date, 1,500 feet of fencing has been installed. Another 4,000 feet will soon be added to exclude cattle from surface water.

Lawyer Creek Water Quality Project (S251)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 251 | Location | Latitude and Longitude: 46.124, -116.463; in Lawyer Creek watershed, four miles southwest of Ferdinand. |
| Description | The project focuses on private property within the Clear Creek Watershed. The subprojects prioritized by the Lewis Soil Conservation District board, include bank stabilization and decreased cattle access. These BMPs, along with other land management changes on cropland and grazing, are reducing deposition of sediment, nutrients, bacteria, and organics to Lawyer Creek. | | |
| Projected Completion Date | 3/20/2013 | | |
| Features evaluated | The team observed BMPs, including hundreds of recently planted ponderosa pine saplings, exclusionary fencing, and a settling pond. | | |
| Project status | The project is on schedule. | | |



Figure 41. Plastic collars protect the hundreds of recently planted ponderosa pines from browsing deer and elk.



Figure 42. Planted along the edge of wheat farmland, woody vegetation captures nutrients before they enter Lawyer Creek in the canyon below.



Figure 43. Ponderosa seedlings will do well in this environment if they are watered and protected for the first couple of years.



Figure 44. Fencing has been added to this hay field to keep cattle off the creek just beyond.

West Mountain Road Improvement–French Creek (S255)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 255 | Location | Latitude and Longitude: 44.52819, -116.10877; on southwest shore of Cascade Reservoir. |
| Description | Continuing from the FY 2007 project end-point, approximately 1.0 mile north from West Mountain Lodge, this project added another mile of stable, minimally erosive road bed adjacent to Cascade Reservoir at French Creek. Cross drainage culverts were installed or replaced as needed, to allow for proper drainage. Inlet basins were constructed at culvert crossings to retain sediments. Collected water is now dispersed into natural grassy swales or vegetated areas that reduce water velocity and minimize sedimentation to Cascade Reservoir. A final road surface, consisting of crushed gravel compacted per Valley County Road Standards, is to be applied. | | |
| Close Out Report Date | 5/28/2010 | | |
| Features evaluated | The team evaluated BMPs that included a reconstructed road base, fish–friendly and adequately–sized culverts, sediment retention ponds, and exclusionary fencing. | | |
| Project status | On schedule. | | |



Figure 45. This project involved installing one mile of new roadbed adjacent to Cascade Reservoir. The old roadbed was a major source of sediment pollution to Cascade Reservoir.



Figure 46. The roadbed was treated with calcium chloride to bind the very fine-grained material, resulting in a stable road with almost no sediment runoff.



Figure 47. Eighteen inches of coarse angular basalt laid down on geofabric forms the base of the roadbed. The base was overlain by four more inches of crushed basalt to form the top of the road surface.



Figure 48. Prior to this roadwork, the old culvert at French Creek prevented fish from migrating up-stream. Now, fish have easy access.

North Fork Payette River Stream Bank Stabilization (S274)

| | | | |
|---------------------------|---|----------|---|
| Subgrant | 274 | Location | Latitude and Longitude: 44.51121, -116.0296; on Payette River at Cascade. |
| Description | This project, part of larger plan to create a kayak whitewater park, used a combination of large and medium sized rocks and bank revegetation to stop excessive bank erosion. The increased use of the bank due to the presence of the kayak park necessitated installation of larger material to prevent bank degradation. The larger rocks were properly keyed into the upstream and downstream sections to prevent new erosion. The rock also created pool and overhang areas that serve as fish refugia. Once mature, the vegetation will provide additional shade and serve to filter overland runoff. | | |
| Projected Completion Date | 1/6/2011 | | |
| Features evaluated | The team evaluated this innovative project that used biodegradable fabric, vegetation, and rock to stabilize a shoreline. | | |
| Project status | The project was completed on schedule and within budget. | | |



Figure 49. Rock left over from the kayak park up stream was used to reinforce a limited section of the stream.



Figure 50. This boat ram installed for rafters prevents heavy foot and vehicle traffic from destroying the stream bank.



Figure 51. Grass is beginning to sprout through recently installed coconut fabric.



Figure 52. Willow canes planted last spring are beginning to sprout.

American Red River (S280)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 280 | Location | Latitude and Longitude: 45.8178, -115.4586; in the vicinity of Elk City. |
| Description | The project focuses on three categories of BMPs: forest roads, riparian restoration, and rangelands/pasturelands. | | |
| Projected Completion Date | 12/21/2012 | | |
| Features evaluated | The team evaluated the following BMPs: the site where a bridge will be installed to span the American River; jack-pole fencing built to withstand elk, moose, and deep snow; temporary wire fencing to protect young plantings; and stream-bank restoration. | | |
| Project status | The project is on schedule. | | |



Figure 53. Uncontrolled grazing caused severe stream bank erosion. Stream banks will quickly stabilize themselves and allow the newly planted riparian vegetation to thrive now that cattle have been excluded.



Figure 54. Cattle are being kept off the Red River by Jack pole fencing which stands up to harsh winter conditions, elk, and moose.



Figure 55. This heavily used crossing on Red River causes considerable sedimentation down stream.



Figure 56. A bridge will be rebuilt at this location on Red River.

Marsh Creek Wetlands Restoration Project (S291)

| | | | |
|----------------------|--|----------|---|
| Subgrant | 291 | Location | Latitude and Longitude: 42.46854, -113.514375; on Marsh Creek one to two miles north of Albion. |
| Description | The project was constructed along a ten mile reach of Marsh Creek on the Six S Ranch, near Declo, Idaho. The Six S Ranch, which totals 20,000 acres, teamed up with Ducks Unlimited, the Idaho Department of Fish and Game, and the U.S. Fish and Wildlife Service, to restore 60 acres of high-quality seasonal and semi-permanent wetland. By filtering sediment, nutrients, and bacteria from Marsh Creek, this wetland helps recharge groundwater and provides excellent habitat for wetland-dependent birds and other wildlife. | | |
| Closeout Report Date | 01/08/2010 | | |
| Features evaluated | The team evaluated four large wetlands spread over 2500 acres of prime wildlife habitat. Each of the engineered wetlands includes levees, head gates, and spillways built to Natural Resources Conservation Service standards. | | |
| Project status | This project was completed on schedule. | | |



Figure 57. Uppermost of four engineered wetlands. During bird migration season, this area is full of waterfowl.



Figure 58. The lower portion of the uppermost wetland. There is a concrete head gate at the bottom end of the pond.



Figure 59. The second constructed wetland is flooded during nesting season but must be allowed to go dry during summer months, when the water is needed for irrigation downstream.



Figure 60. Vegetation in the second (now dry) wetland cannot be sustained during the long hot summer. However, the pond continues to capture sediment during spring high flow.

Marsh Creek Phase 2 (S295)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 295 | Location | Latitude and Longitude: 42.7814, -112.2375; in the vicinity of Inkom on Marsh Creek. |
| Description | This project continues to reduce sediment, nutrients, and bacteria loads to Marsh Creek. It does so by eliminating runoff from animal facilities, improving grazing management, improving riparian vegetation and stream channel habitat, and reducing cropland erosion. There are eleven subprojects within this subgrant, all of which are situated along Marsh Creek. | | |
| Projected Completion Date | 4/1/2011 | | |
| Features evaluated | This team evaluated three individual landowner operations. | | |
| Project status | This project is on a tight schedule because the funding has a very limited availability. The project is on schedule. | | |



Figure 61. Over 700 cattle are confined in this pasture, excluding them from Marsh Creek.



Figure 62. Stormwater and spring runoff are now conveyed beneath this manure storage area and feed lot via a subsurface pipe. Surface runoff was funneled right through this area prior to this project.



Figure 63. The lower ends of all confined feeding areas are now contained by constructed berms that capture surface runoff.



Figure 64. Prior to the exclusionary fencing, cattle watered at this tributary to Marsh Creek.

Danielson Watershed Water Quality Demonstration (S297)

| | | | |
|-----------------------|--|----------|---|
| Subgrant | 297 | Location | Latitude and Longitude: 43.08149, -112.69802; on Danielson Creek one mile south of Springfield. |
| Description | The main goal of this demonstration project, located at the Chandler property, was to reduce sediment, nutrient, and bacterial loading into a large spring area. The area consists of 500 feet of pond bank and eight acres of watershed; it first drains into the Springfield Reservoir and then into Danielson Creek. The project achieved its goal by installing exclusionary fencing, improving water gap access for cattle, planting riparian and wetland plants, and constructing field berms around the pond. | | |
| Close Out Report Date | 1/22/2010 | | |
| Features evaluated | Best management practices visited included exclusion fence, riparian buffer plantings, a diversion berm, and heavy riprap application along a portion of the pond. | | |
| Project status | The project was completed on schedule. | | |



Figure 65. This project has very high visibility, and the landowner has considerable influence with his neighbors.



Figure 66. Protecting the Danielson Reservoir is important because the water flows directly into American Reservoir and, ultimately, to the Snake River.



Figure 67. The project area is in the foreground and the landowner's residence is in the background. The landowner routinely monitors the project.



Figure 68. Lynn VanEvery, from DEQ's Pocatello office, points out some of the trees planted for this project.

Bruneau/Grand View Ground Water Quality Management (S307)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 307 | Location | Latitude and Longitude: 42.88200, -115.80070; farmland between Bruneau and Grandview. |
| Description | The project seeks to reduce nitrates that leach past the crop root-zone. It uses nutrient management planning based on soil-sampling methodology and soil-amendment recommendations developed by the University of Idaho. The project manages irrigation water by monitoring crop water use and measuring soil moisture from selected fields. The project manager takes soil samples at one foot and two foot intervals for every acre of land over the entire 8179 acre project area. These results will be used to calculate the right amount of fertilizer to be applied over each field. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The project manager showed the team many of the fields that are under contract for nutrient management planning, as well as where he collects soil samples. Eventually, he will collect approximately 15,000 samples. The data from these efforts will be analyzed and compiled into reports, so that each land owner will know recommended fertilizer application rates, proper manure storage, and wellhead protection methods | | |
| Project status | This project is on schedule. | | |



Figure 69. A typical domestic wellhead that can be found at farmhouses adjacent to cropland across the Bruneau and Grandview area.



Figure 70. Much of the Gingrich farm is adjacent to the Snake River (in distance), where groundwater is quite shallow.



Figure 71. Corn is this year's crop at 545 acre Koehn farm.



Figure 72. This portion of the Becker farm (in background) has just undergone its first harvest of hay for the season.

Potlatch River Watershed Management Plan Phase 1 (S310)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 310 | Location | Latitude and Longitude: 46.85, -116.4; in the vicinity of Bovill. |
| Description | The purpose of this project is to restore steelhead habitat and protect areas identified in the Potlatch River Watershed Management Plan. Based on the priorities established within the plan, BMPs are being implemented for forest lands, agricultural lands, livestock operations, and rural roads. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team evaluated BMPs at three subprojects in various stages of construction. These subprojects include several miles of logging and recreational road re-rocking, multiple culvert replacements, logging road abandonment, livestock exclusionary fencing, wetland restoration, and new channel construction. | | |
| Project status | This project is on schedule. | | |



Figure 73. Road rocking is perhaps one of the least glamorous yet most effective BMPs. This 1.7-mile project will prevent tons of sediment from entering the Potlatch river.



Figure 74. Figure 6: Fencing exclude cattle from the wetlands and the soon-to-be reopened original channel that had been closed by logging operations.



Figure 75. Wetlands will replace this portion of the new channel. The original channel, which is in the trees in the distance, will be reopened.



Figure 76. Free-roaming cattle have caused water pollution and made this portion of the new channel unstable.

Camas Prairie Ground Water Nitrate Priority Area Phase 3 (S312)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 312 | Location | Latitude and Longitude: 46.155578, -116.195183; on the Camas Prairie between Grangeville and Craigmont. |
| Description | Phase three of this project focuses on reducing nitrates by using split fertilizer applications and effective nutrient management. This reduction is important because excessive fertilizer application is one of the main sources of elevated nitrates in groundwater. The project also focuses on riparian enhancements, animal operations, abandoned wells, and septic system repairs. Additionally, direct seeding continues to reduce mobilization of extremely erosive soil on the Camas Prairie. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | Camas Prairie is home to rural farms and farming communities. Much of the work involves committing landowners to direct seed contracts and the promotion of reduced fertilizer applications. Since these types of BMPs are not very conducive to photographic documentation, the BMPs observed during this visit mainly involve residential septic system replacements, exclusionary fencing, and a typical view of farmland where direct seeding techniques and reduced fertilizer practices have been implemented. | | |
| Project status | This project is on schedule. | | |



Figure 77. A new septic system was installed to replace an old leaky system that was polluting groundwater.



Figure 78. Ground water is being better protected by a newly installed septic system.



Figure 79. The concrete pad and frost-free ball-watering trough were installed to replace a corral situated in the nearby creek.



Figure 80. In addition to the concrete pad and watering trough, rain gutters were installed to collect stormwater for cattle consumption rather than allowing runoff to contact manure.

Fish Creek Road Improvement (S313)

| | | | |
|---------------------------|--|----------|---|
| Subgrant | 313 | Location | Latitude and Longitude: 48.100381, -116.645107; on Fish Creek one mile southwest of Cocolalla Lake. |
| Description | Undersized culverts were replaced, unstable areas in the road drainage network were stabilized, and magnesium chloride was applied to dirt roads to reduce the chance of future road failures and excess sediment and nutrient delivery to Fish Creek. Fish Creek discharges to Cocolalla Lake, which has been identified as a water body of concern in the area's TMDL. | | |
| Projected Completion Date | 12/31/13 | | |
| Features evaluated | The team evaluated BMPs, including undersized culvert replacements; road cut stabilization through re-sloping, vegetation, and rock armor; graveling and sloping dirt roads and driveways. | | |
| Project status | The project is on schedule. | | |



Figure 81. This last area to be worked on shows how the ditch looked prior to the work. BMPs here will include a cleaned out ditch, resloped bank, and grass.



Figure 82. Some areas received heavy armor when sloping and grass alone would not work.



Figure 83. This driveway was ankle deep in mud prior to this project.



Figure 84. This culvert was installed where a major blow occurred last winter.

Latour Creek Road Improvement Project (S321)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 321 | Location | Latitude and Longitude: 47.508751, -116.418879; on Latour Creek, one through six miles upstream from the confluence of Coeur d' Alene River. |
| Description | To bring the road into compliance with Forest Service standards the road system needed new bridges, culverts, roadbed reclamation, and surface upgrades. Filter cloth, road base, silt fence and straw wattles, mulching, and grass seed were installed on a 5.7-mile stretch of road. Road reconstruction also included a process that ground up native rock within the existing roadbed and redistributed it. Nine culverts were replaced with larger fish-friendly culverts. Other road work included upgrading ditches and outside shoulders, as well as aligning and crowning rolling dips designed for logging trucks. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team evaluated two new bridges and one greatly enhanced existing third bridge. They also traveled the 5.7 miles of newly constructed logging road. | | |
| Project status | The original timeline for this project had to be rewritten due to a delay in funding. The project is now on schedule. | | |



Figure 85. Rails were redesigned and installed on this bridge to help keep sediment from passing vehicles from entering Latour Creek.



Figure 86. Stormwater BMPs minimize sediment runoff to the creek. A good road base, properly sloped road surface and next season's vegetative growth will minimize pollution to the creek.



Figure 87. A new prefabricated steel bridge was installed at Lost Girl Creek.



Figure 88. The new bridge was designed to minimize sediment discharge to the creek.

Upper Bear River Stream Bank Stabilization (S322)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 322 | Location | Latitude and Longitude: 42.205236, -111.048047; on the Bear River adjacent to the Idaho-Wyoming boarder. |
| Description | Treatments included: shaping banks, installing rock revetments, planting willows, installing exclusionary fencing, and reseeding disturbed areas. | | |
| Close Out Report Date | 9/23/2010 | | |
| Features evaluated | The team evaluated BMPs including stream banks that were resloped from a nearly vertical slope to a 3:1 slope; bank toe armor; four strategically placed engineered rock barbs; willow plantings, including bundles and whole plantings; 5400 feet of exclusionary fencing; and grass seeding. | | |
| Project status | This project was completed ahead of schedule. | | |



Figure 89. Prior to this work, the slope of this section of stream bank was nearly vertical, and was also undergoing severe head cut.



Figure 90. As unstable vertical areas of the stream were re-sloped, rock barbs were keyed into the bank to deflect fast moving water. Willow bundles were anchored all along the reshaped banks and soon will take root and sprout.



Figure 91. Recently planted willow bundles appear to be dead, but most will soon take root and flourish.



Figure 92. This photograph shows it all, including bank re-sloping, rock barbs, willow and grass plantings, and exclusionary fencing.

Canyon County BMPs for Water Quality (S323)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 323 | Location | Latitude and Longitude: 43.72149, -116.842346; on the Dixie Slough between Wilder and Notus. |
| Description | This project promotes BMPs that improve water quality, including converting flood irrigation to drip irrigation and reducing fertilizer application. They also included installing sediment basins, wetlands, exclusionary fencing, and buffer strips. The project has increased funding to implement agricultural BMP-related activities that have a real impact on sediment, nutrients, bacteria, and temperature. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team evaluated BMPs, including drip irrigation, reduced fertilizer application, sediment basins, wetlands, exclusionary fencing, and buffer. Local farmers and ranchers have been very receptive to the Lower Boise Watershed Council and the Conservation District's mission to improve water quality by installing the BMPs. | | |
| Project status | This project is on schedule. | | |



Figure 93. Farm owner Brad Watson describes how the sand filter and pump system delivers water to his drip irrigation system, covering 500 acres.



Figure 94. The drip irrigation system uses less water, which significantly reduces runoff while increasing yield.



Figure 95. Settling ponds were installed. During each growing season, this pond collects annually about 60 tons of phosphorus-laden sediment that used to be discharged into the Snake River.



Figure 96. Even with drip irrigation, tons of valuable topsoil erodes from this field each growing season as a result of irrigation and storm events. This erosion is why settling ponds are necessary.

Short Creek, Riley Creek Porter Memorial Project (S326)

| | | | |
|---------------------------|---|----------|--|
| Subgrant | 326 | Location | Latitude and Longitude: 47.788248, -116.269855; about 20 miles northeast of Coeur d'Alene and 5 miles south of Tepee Peak. |
| Description | The U.S. Forest Service decommissioned roads, conducted instream restoration measures, and removed culvert crossings. They also replaced a failing bridge and culvert with a new bridge. Additionally, instream restoration work reestablished a flood plain and created a new channel that mimics a functional stream course. Later, habitat and gradient control structures will be installed to help prevent high-flow degradation. These structures will be constructed from large logs to help control water velocity and erosion during peak flows while also creating a more diverse aquatic habitat. Replacements of stream crossings on main travel routes are allowing fish and other aquatic organisms passage into the watersheds for spawning and rearing. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team evaluated a covered road closure that affected 14 miles of unwanted Forest Service road, two culvert removals, and the replacement of a failing bridge with a bridge that allows fish passage beneath it. | | |
| Project status | This project was originally delayed due to the availability of EPA funding but is now on track. | | |



Figure 97. This new bridge replaces an undersized culvert that prevented fish from migrating upstream on Short Creek.



Figure 98. A new drop structure above the new bridge allows fish passage.



Figure 99. One of several recently closed roads. Closure of 14 miles of road reduces sediment deposition to Short and Riley Creeks.



Figure 100. Re-vegetation due to vehicular exclusion is already beginning to occur on this section of closed road.

Mores Creek Floodplain Restoration (S329)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 329 | Location | Latitude and Longitude: 43.81, -115.865; on Mores Creek in the vicinity of Idaho City. |
| Description | This project involves stabilizing and re-vegetating approximately 10 acres of abandoned placer mined hill slopes and improving five acres of roads used for recreational activities. The project has also stabilized five stream segments and created seven acres of riparian buffer adjacent to Mores Creek. | | |
| Close Out Report Date | 12/31/2013 | | |
| Features evaluated | The team evaluated the first phase of this project, which concentrated on stabilizing segments of Mores Creek, where turn-of-the-century placer mining forced the stream into highly-erosive weathered granite (now sand). The team also evaluated a log diversion structure installed to redirect sediment-laden runoff into a wetland area rather than into Mores Creek. | | |
| Project status | Work is on schedule for this project. | | |



Figure 101. Noble Gulch, which was formerly placer mined, now sends huge quantities of sand and clay to Mores Creek during spring runoff.



Figure 102. Carefully placed toe armor now stabilizes a 30-foot head cut that was badly eroding during each high water event.



Figure 103. This rock armored toe with willow plantings covers a stretch of about 100 feet and is built high enough to hold up during the anticipated high water events.



Figure 104. This 100-foot long log wall diverts sediment-laden flood water from Noble Gulch to a wetland treatment area, where the sediment is deposited prior to entering Mores Creek.

E. Fork Potlatch River Riparian Canopy Enhancement Project (S331)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 331 | Location | Latitude and Longitude: 46.798723, -116.425917; on the East Fork Potlatch, 2 miles east of Helmer. |
| Description | This project aims to increase the riparian canopy within the East Fork Potlatch River subwatershed by identifying areas where overstory canopy is limited and then implementing BMPs that enhance the overstory and reduce sedimentation to the river. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team evaluated BMPs that included an array of stream bank protection methods, including installing and securing tree trunks with root wads, embedding tree trunk barbs, anchoring willow bundles, and planting woody vegetation. These BMPs show how stream bank protection should be implemented. | | |
| Project status | This project is on schedule. | | |



Figure 105. Root wads are held in place by burying about 30 feet of the tree trunk in the stream bank.



Figure 106. Anchored root wads may look unappealing at first, but they will soon create a healthy, stable stream bank.



Figure 107. These log bars were placed so that they are angled upstream. The logs are anchored into 20-foot slots cut in the stream bank. They will deflect water away from the bank and prevent erosion.



Figure 108. A variety of evergreens were planted to help stabilize the stream bank and add shade to the stream.

North Idaho AFO Implementation 3-C (S333)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 333 | Location | Latitude and Longitude: 46.53, -116.6; in the Palouse Country of Central Idaho, southeast of Moscow. |
| Description | By implementing BMPs on AFOs located in north-central Idaho, this project aims to improve water quality on 303(d)-listed water bodies—as well as other locally prioritized segments and tributaries—that contribute pollutants to the Clearwater, Palouse, Salmon, and Snake Rivers. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | Because the selection process for AFO relocations has only just begun, there were only two sites for the team to evaluate -- the Boyer property and the Burgess property. At the Boyer property, the team could only see where the AFO, and its associated well, will be located. At the Burgess property, the team evaluated exclusionary fencing installed next to Long Hollow Creek, as well as the beginning stages of a well-sinking within the new AFO site. This work is scheduled to be completed over the next two months. There will be a total of five AFO relocations on the Burgess property by the end of the project. | | |
| Project status | This project is on schedule. | | |



Figure 109. Future site of an AFO on the Boyer property. The AFO will enclose cattle currently corralled on a stream.



Figure 110. This site on the Burgess property is another AFO relocation. The double fence creates a corridor for cattle access to an upper pasture while preventing access to the nearby creek.



Figure 111. Also at the Burgess property, a well (in construction) will soon provide water for cattle.



Figure 112. This pasture will soon become the site of the Burgess AFO. The cattle will be excluded from the creek.

Fish Haven Creek (S335)

| | | | |
|-----------------------|--|----------|--|
| Subgrant | 335 | Location | Latitude and Longitude: 42.03467, -111.39498; at Fish Haven. |
| Description | A flume—a 220-foot long concrete-box culvert—located downstream from the crossing on Highway 89, was removed during phase two of the Fish Haven Restoration Project. This flume has been documented as a fish migration barrier for many decades. In addition, a permanent bridge upstream of the flume was installed to provide a crossing for the heavy All-Terrain Vehicle (ATV) traffic that occurs during the summer. | | |
| Close Out Report Date | 2/11/2010 | | |
| Features evaluated | The team evaluated the replacement flume as well as the new bridge installed upstream of the culvert. | | |
| Project status | This project was completed on schedule and within budget. | | |



Figure 113. After the old culvert was removed, there was considerable preparatory work to be accomplished prior to construction of the new culvert.



Figure 114. A new stream bottom was constructed prior to the arch placement.



Figure 115. This ATV and pedestrian bridge was installed on Fish Haven Creek to reduce sediment erosion.



Figure 116. ATV traffic at this crossing and resulting sedimentation is quite high during the summer, which is why the bridge was necessary.

North Fork Payette River Watershed Restoration (S367)

| | | | |
|---------------------------|--|----------|--|
| Subgrant | 367 | Location | Latitude and Longitude: 44.728981, -116.073094; at Donnelly. |
| Description | Students from Donnelly Elementary School, volunteers from Idaho Fish and Game, and students from the College of Idaho Environmental Studies program and the McCall Outdoor Science School (MOSS) joined forces to stabilize the bank and create a riparian buffer along 1500 feet of Boulder Creek. They did so by planting shrubs and installing willow weavings. The shrub plantings will soon bring shade over the stream closer to the target established in the TMDL for this river. Through this project, students learned about stream morphology and stream restoration. | | |
| Projected Completion Date | 12/31/2013 | | |
| Features evaluated | The team observed BMPs designed to increase shading along Boulder Creek, including woody plantings and exclusionary fencing. | | |
| Project status | This project is on schedule. | | |



Figure 117. About 1300 of exclusionary fencing was installed to keep cattle off the river.



Figure 118. Woody vegetation was planted by volunteers from the community.



Figure 119. Plants and grass are taking over where cattle have been excluded.



Figure 120. Fence posts have to be installed at four to five foot intervals to prevent damage from heavy snowfall.

References

Idaho Department of Environmental Quality (DEQ). 1999. Nonpoint Source Management Plan.

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 |
| NPS | nonpoint source |
| 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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