

Jim Ford Creek Addendum Implementation Plan for Agriculture (17060306)



Photo taken from Jim Ford Monitoring Report (IASCD, 2005)

Prepared by the Idaho Soil and Water Conservation Commission
In cooperation with the Clearwater Soil and Water Conservation District

October 2016

Original Plan: Idaho Soil and Water Conservation Commission (ISWCC). 2000. *Jim Ford Creek TMDL Ag Implementation Plan*. Orofino, ID. (Revised in 2014 to meet privacy policy.)

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Introduction

The purpose of this plan is to address the TMDL addendums and the 5-Year Review for the Jim Ford Creek Subbasin with the goal to help restore designated beneficial uses.

“Pursuant to section 39-3601 et seq., Idaho Code, and IDAPA 58.01.02, Water Quality Standards, the Idaho Soil & Water Conservation Commission (SWCC) is the designated agency for management of nonpoint source pollution on grazing and agricultural land in Idaho and is therefore responsible to lead TMDL implementation activities on grazing and agricultural land in the State.”

The objective of the plan is to outline a process of potential site-specific agricultural best management practices (BMP's) that can be used to help restore the designated beneficial uses by reducing pollutant loads in the Jim Ford Creek subbasin.

Project Setting

Jim Ford Creek (ID17060306) is a tributary of the Clearwater River in the southern part of Clearwater County, Idaho (Figure 1). It drains a 65,838-acre watershed that has two distinct portions. In the upper portion, Jim Ford Creek flows through rolling forested uplands and the Weippe Prairie until it reaches the City of Weippe. Below Weippe, the creek enters a narrow, steep basalt canyon nearly 14 miles long. A 65-foot waterfall at the top of the canyon restricts fish passage upstream. (DEQ, 2016a)

There are currently two point sources identified in the Jim Ford Creek watershed. The Weippe wastewater treatment plant (ID0020354) is located along Jim Ford Creek at the confluence with Grasshopper Creek. Another point source within the Jim Ford Creek watershed is the storm water runoff from Empire Lumber Company (formerly Hutchins Lumber). For the purpose of determining loads and allocations, runoff from this facility was grouped with nonpoint source storm water discharge activities in the TMDL. Timberline High School discharged as a point source to Grasshopper Creek when the TMDL was written but has replaced the system with a drainfield and no longer discharges to Grasshopper Creek. The primary nonpoint sources of pollutants in the Jim Ford Creek watershed are grazing, timber harvest activities, non-irrigated croplands, urban runoff, land development activities, and hydropower. (DEQ, 2016a)

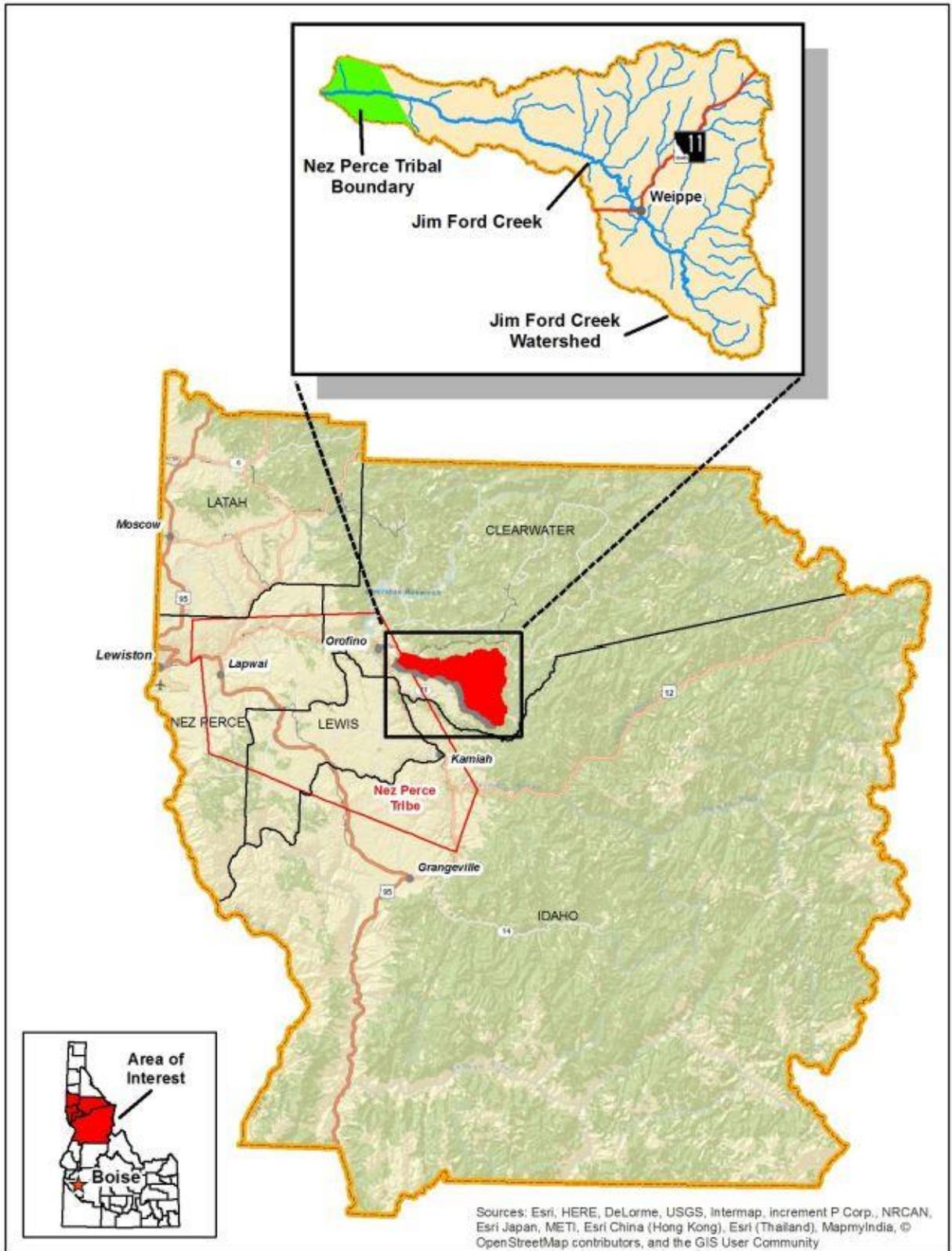


Figure 1. Jim Ford Creek Subbasin and Location (DEQ, 2016a).

Land Use and Land Ownership

Jim Ford Creek is 87% forest land with the primary uses being timber harvest, road construction and maintenance and grazing. Cattle grazing occurs throughout the watershed. There is 14% pasture and hayland, 1% rangeland and 1% non-irrigated cropland. The cropland is centered in the Weippe Prairie area.

Land ownership is 2% Nez Perce Tribe, 35% State, 30% Potlatch Corporation, and 32% non-industrial private lands.

Accomplishments

The “Jim Ford Creek TMDL 5-Year Review” summarizes the implementation work that was done in the Subbasin between 2000 and present (DEQ, 2016a). Table 1 below summarizes the BMP installations from the review.

Table 1. Summary of BMP Installations

BMP	amount	units
Access Road	56	feet
Conservation Tillage (No-Till)	3,716	acres
Culvert replacement	5	each
Fence	116,774	feet
Grade Stabilization Structures	10	each
Heavy Use Protection	17	each
Nutrient Management	10,910	acres
Pasture and Hayland Planting	240	acres
Pipeline	1,996	feet
Ponds	6	each
Prescribed grazing	8,172	acres
Pumping Plant for Water Control	2	each
Riparian Forest Buffer (riparian plantings)	8,780	each
Road Rocking	7,920	feet
Roof Runoff Structure	3	each
Spring Developments	2	each
Stream Buffer / Filter Strips	134	acres
Stream Channel Stabilization	62	feet
Streambank Rehabilitation/re-alignment	1,320	feet
Subsurface Drain	4,700	feet
Tree and Shrub Plantings	21,475	each
Waste Management Facilities	2	each
Waste Storage Facility	4	each

Watering Facility	10	each
Wetland restoration/enhancement	12	acres

Resource Concerns

According to the 5-year review of the Jim Ford Creek TMDL existing pollutant loads are in general improving. Table 2 summarizes the changes recommended for the assessment units (AU's) based on the 5-year review. Overall, the water quality has not significantly changed. (Table 13 and 15 in the 5-year review has detailed data on the beneficial use assessments) (DEQ, 2016a).

Table 2. Summary of recommended changes for AUs based on 5-year review and addendums (DEQ, 2016a)

Assessment Unit Name	Assessment Unit Number	Pollutant	Recommended Changes to Next Integrated Report	Justification
Jim Ford Creek—waterfall (12.5-miles upstream) to mouth	ID17060306CL034_04	Bacteria	Move from Category 4a to 2 for bacteria (<i>E. coli</i>)	Listed in error; data show 126 cfu/100 mL geometric mean criterion is being met, AU fully supports contact recreation beneficial use.
Jim Ford Creek—waterfall (12.5-miles upstream) to mouth	ID17060306CL034_04	Coarse sediment	Keep in Category 4a, remove sediment as an impairment	BURP data score of 2, indicating aquatic life beneficial uses are fully supporting; sediment data show no exceedance of the sediment surrogate.
Jim Ford Creek—waterfall (12.5-miles upstream) to mouth	ID17060306CL034_04	Nutrients (total phosphorous)	Keep in Category 4a, remove nutrients as an impairment	BURP data score of 2, indicating aquatic life beneficial uses are fully supporting; nutrient data show no exceedance of the nutrient surrogate.

Assessment Unit Name	Assessment Unit Number	Pollutant	Recommended Changes to Next Integrated Report	Justification
Heywood, Wilson Creeks and tributaries	ID17060306CL035_02	Coarse sediment	Keep in Category 4a, remove sediment as an impairment	AU listed as impaired by sediment in error; see Section 2.2.3 for further explanation.
Jim Ford Creek—source to Jim Ford Creek waterfall (12.5 miles)	ID17060306CL035_03	Coarse sediment	Keep in Category 4a, remove sediment as an impairment	AU listed as impaired by sediment in error; see Section 2.2.3 for further explanation.
Jim Ford Creek—source to Jim Ford Creek waterfall	ID17060306CL035_04	Coarse sediment	Keep in Category 4a, remove sediment as an impairment	AU listed as impaired by sediment in error; see Section 2.2.3 for further explanation.
Winter Creek—Winter Creek waterfall (3.4-miles upstream)	ID17060306CL037_02	Bacteria (<i>E. coli</i>), nutrients (total phosphorous), and temperature	Move from Category 3 to 4a for bacteria (<i>E. coli</i>), nutrients (total phosphorous), and temperature	AU was assessed under the Jim Ford Creek TMDL but listed as unassessed in error; current data show cold water aquatic life and contact recreation beneficial uses are not being met and AU should be moved to Category 4a.
Winter Creek—waterfall (3.4-miles upstream) to mouth	ID17060306CL037_03	Bacteria (<i>E. coli</i>)	Move from Category 4a to 2 for bacteria (<i>E. coli</i>)	Data show 126 cfu/100 mL geometric mean criterion is being met, AU fully supports contact recreation beneficial use.

Bacteria

Table 3 below outlines the *E. Coli* bacteria load reductions that were determined for the 5-year Review. The *E. Coli* bacteria TMDL for Jim Ford Creek allocates a daily concentration to all nonpoint sources upstream of the sample site. The daily load allocation for nonpoint and point sources alike is 126 cfu/100 mL, the geometric mean concentrations currently allowed by Idaho's water quality standards.

Table 3. E. Coli Bacteria reduction needs. (DEQ, 2016a)

Stream Name and Monitoring Point	Assessment Unit Number	Existing Load (May/June) (cfu/100 mL)	Existing Load (November) (cfu/100 mL)	Load Capacity (cfu/100 mL)	Load Reduction (May/June) (%)	Load Reduction (November) (%)
Grasshopper Creek	ID17060306CL036_02	62	132	126	0	5
Grasshopper Creek	ID17060306CL036_03	120	148	126	0	15
Jim Ford Creek	ID17060306CL034_04	50	28	126	0	0
Heywood Creek Kamiah Gulch Miles Creek Wilson Creek	ID17060306CL035_02	365	330	126	65	62
Jim Ford Creek	ID17060306CL035_03	59	395	126	0	68
Jim Ford Creek	ID17060306CL035_04	38	300	126	0	58
Winter Creek	ID17060306CL037_02	61	166	126	0	24
Winter Creek	ID17060306CL037_03	37	114	126	0	0
Winter Creek	ID17060306CL038_02	127	126	126	1	0

Nutrients

In Idaho, narrative criteria are used for nutrients (IDAPA 58.01.02.200.06). The TMDL (DEQ, 2000) states that phosphorus is the limiting nutrient. Total phosphorus (TP) is the surrogate target, with 0.075 mg/L TP level set as the target for the critical period of April through July. Table 4 displays the load reductions needed.

Table 4. Nutrients (total phosphorous) (DEQ,2016a).

Stream Name	Assessment Unit	Average Daily flow (CFS)	Average Available Load Capacity (lbs/day)	Average Existing Load (lbs/day)	Load Reduction (%)
Grasshopper Creek	ID17060306CL036_02	0.69	0.28	0.19	0
Grasshopper Creek	ID17060306CL036_03	1.58	0.64	0.34	0
Jim Ford Creek	ID17060306CL034_04	5.94	2.4	0.89	0
Heywood Creek	ID17060306CL035_02				
Kamiah Gulch					
Miles Creek					
Wilson Creek		1.08	0.44	0.43	0
Jim Ford Creek	ID17060306CL035_03	1.43	0.58	0.61	5
Jim Ford Creek	ID17060306CL035_04	3.25	1.31	1.03	0
Winter Creek	ID17060306CL037_02	0.38	0.16	0.06	0
Winter Creek	ID17060306CL037_03	0.5	0.2	0.08	0
Winter Creek	ID17060306CL038_02	0.34	0.14	0.09	0

Coarse Sediment

The original TMDL (DEQ, 2000) had several goals related to coarse sediment. These were reviewed. Conclusions found in the 5-Year Review (DEQ, 2016a) include: channel stability has been achieved, potential sediment sources adjacent to the channel have been removed, and watershed improvement efforts should be focused on the upper reaches of Jim Ford Creek, where adding riparian vegetation to increase shade will also stabilize streambanks and decrease the sediment load to the lower channel.

Temperature

Temperature was not included in the original TMDL documents for Jim Ford Creek. There was an addendum Temperature TMDL written in 2016 using the Potential Natural Vegetation (PNV) protocol (DEQ, 2016b). The PNV protocol uses shade as a surrogate target for temperature. Table 5 summarizes the average lack of shade.

Table 5. Total solar loads and average lack of shade (DEQ, 2016b)

Water Body/ Assessment Unit	Total Existing Load	Total Target Load	Excess Load (%Reduction)	Average Lack of Shade (%)
		(kWh/day)		
Jim Ford Creek Tributaries ID17060306CL035_02	440,000	230,000	220,000 (50%)	-39
Grasshopper Creek ID17060306CL036_02	200,000	65,000	130,000 (65%)	-40
Jim Ford Creek ID17060306CL035_03	330,000	280,000	52,000 (16%)	-11
Winter Creek ID17060306CL038_02	65,000	17,000	48,000 (74%)	-31
Grasshopper Creek ID17060306CL036_03	170,000	140,000	26,000 (15%)	-15
Winter Creek tributaries ID17060306CL037_02	33,000	7,300	26,000 (79%)	-32
Jim Ford Creek ID17060306CL034_04	850,000	1,100,000	0 (0%)	-3
Jim Ford Creek ID17060306CL035_04	230,000	320,000	0 (0%)	-1
Winter Creek ID17060306CL037_03	28,000	38,000	0 (0%)	0

Agricultural Inventory and Evaluation

As projects are implemented the existing shade levels should be documented before implementation of practices to verify the PNV aerial photo interpretation of the site. These before values should be compared to shade levels after implementation to determine actual shade increases of each project. This process will help evaluate the approach that was used in developing the temperature TMDL.

Treatment

Agricultural lands that contribute excessive pollutants to waterbodies were defined as critical areas for BMP implementation. Critical areas are prioritized based on proximity to the waterbody; potential for transport and delivery of pollutant to the waterbody; and water quality impact. Critical areas are those areas where treatment is considered necessary to address the resource concerns affecting water quality. Table 6 details the potential treatments to continue working toward the TMDL addendum and Temperature TMDL load allocation reductions.

Table 6. Potential Treatments by critical area

Grasshopper Creek and tributaries		
Stream Restoration	3	miles
Stream Stabilization	3	miles
Riparian Planting	6	miles
Exclusion Fence	3	miles
Critical Area Planting	50	acres
Grade Stabilization Structures	6	structures
Access Road	2,000	feet
Winter Creek and tributaries		
Stream Restoration	2	miles
Stream Stabilization	2	miles
Riparian Planting	5	miles
Exclusion Fence	2	miles
Critical Area Planting	30	acres
Grade Stabilization Structures	4	structures
Access Road	2,000	feet
Jim Ford Creek and other tributaries		
Stream Restoration	4	miles
Stream Stabilization	4	miles
Riparian Planting	8	miles
Exclusion Fence	3	miles
Critical Area Planting	75	acres
Grade Stabilization Structures	6	structures
Access Road	5,000	feet

Funding

Financial and technical assistance for installation of BMPs may be needed to ensure success of this implementation plan. The Clearwater Soil and Water Conservation District can assist interested landowners in actively pursuing potential funding sources

to implement water quality improvements on private agricultural and grazing lands. The SWC and NRCS can provide technical assistance when needed. Many of these programs can be used in combination with each other to implement BMPs. These sources include (but are not limited to):

CWA 319 –These are Environmental Protection Agency funds allocated to Tribal entities and the State of Idaho. The Idaho Department of Environmental Quality (DEQ) administers the Clean Water Act §319 Non-point Source Management Program for areas outside the Tribal Reservations. Funds focus on projects to improve water quality and are usually related to the TMDL process.

http://www.deq.idaho.gov/water/prog_issues/surface_water/nonpoint.cfm#management

Resource Conservation and Rangeland Development Program (RCRDP) –The RCRDP is a loan program administered by the ISWCC for implementation of agricultural and rangeland best management practices or loans to purchase equipment to increase conservation. <http://www.scc.state.id.us/programs.htm>

Environmental Quality Incentives Program (EQIP): EQIP provides financial and technical assistance to agricultural producers in order to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, reduced soil erosion and sedimentation or improved or created wildlife habitat. <http://www.nrcs.usda.gov/programs/eqip/>

Regional Conservation Partnership Program (RCPP) - RCPP promotes coordination between NRCS and its partners to deliver conservation assistance to producers and landowners. NRCS provides assistance to producers through partnership agreements and through program contracts or easement agreements.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/farbill/rcpp/>

The Agricultural Conservation Easement Program (ACEP) – ACEP provides financial and technical assistance to help conserve agricultural lands and wetlands and their related benefits.. Under the Agricultural Land Easements component, NRCS helps Indian tribes, state and local governments and non-governmental organizations protect working agricultural lands and limit non-agricultural uses of the land. Under the Wetlands Reserve Easements component, NRCS helps to restore, protect and enhance enrolled wetlands.

<http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/easements/acep/>

Conservation Technical Assistance (CTA) –The CTA provides free technical assistance to help farmers and ranchers identify and solve natural resource problems on their farms and ranches. This might come as advice and counsel, through the design and implementation of a practice or treatment, or as part of an active conservation plan.

<http://www.nrcs.usda.gov/programs/cta/>

National Grazing Lands Coalition (NatGLC) –The National Grazing Lands Coalition’ promotes ecologically and economically sound management of grazing lands. Grants are available that facilitate the following: (1) demonstration of how improved soil health affects grazing lands sustainability (2) establishment of conservation partnerships, leadership and outreach, (3) education of grazing land managers, professionals, youth and the public (4) enhancement of technical capabilities, and (5) improvement in the understanding of the values and multiple services that grazing lands provide.

<http://www.glci.org/>

Conservation Reserve Program (CRP) –The CRP is a land retirement program for blocks of land or strips of land that protect the soil and water resources, such as buffers and grassed waterways <http://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/index>

Conservation Innovation Grants (CIG) –CIG is a voluntary program to stimulate the development and adoption of innovative conservation approaches and technologies for agricultural production.

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/>

State Revolving Loan Funds (SRF) –These funds are administered through the IDEQ.

<https://www.deq.idaho.gov/water-quality/grants-loans/water-system-construction-loans.aspx>

Conservation Security Program (CSP) –CSP is a voluntary program that rewards the Nation’s premier farm and ranch land conservationists who meet the highest standards of conservation environmental management.

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/alphabetical/csp/>

HIP – This is an Idaho Department of Fish and Game program to provide technical and financial assistance to private landowners and public land managers who want to enhance upland game bird and waterfowl habitat. Funds are available for cost sharing on habitat projects in partnership with private landowners, non-profit organizations, and state and federal agencies. <http://fishandgame.idaho.gov/cms/wildlife/hip/default.cfm>

Partners for Fish and Wildlife Program in Idaho – This is a U.S. Fish and Wildlife program providing funds for the restoration of degraded riparian areas along streams, and shallow wetland restoration. <http://www.fws.gov/partners/pdfs/ID-needs.pdf>

Maintenance, Monitoring, Evaluation

DEQ will continue to monitor the watersheds as per Idaho Code 39-3611, using BURP protocol. Additional monitoring of BMP’s and the maintenance of BMP’s installed will be performed by the designated management agency or the agency that funded the BMP installations. The Clearwater Soil and Water Conservation District follows the Natural Resource Conservation Service guidelines for BMP life expectancy and monitors BMP

installations for the expected life of each practice to ensure proper maintenance of the practices. Typically, when a volunteer approaches the district for BMP assistance the district evaluates the current site-specific resource concerns. Individual conservation planning with willing landowners will determine the most appropriate BMPs to install on a case by case basis.

All BMP's will be maintained by the landowner for the life of the practice. BMP's will be monitored and evaluated upon completion of the project, during annual reviews, and throughout the life of the practice. Monitoring and evaluations will enable staff to ensure practices are maintained and to evaluate BMP effectiveness for future projects.

References

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- Shumar, M.L. and J. DeVarona. 2009. *The Potential Natural Vegetation (PNV) Temperature Total Maximum Daily Load (TMDL) Procedures Manual*. Boise, ID: DEQ.