

Draft Kootenai River Total Maximum Daily Load Implementation Plan



November 2005

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

303(d)	refers to section 303 subsection (d) of the Clean Water Act, or a list of impaired water bodies required by this section	GPS	Global Positioning Systems
		HUC	Hydrologic Unit Code
		IDAPA	refers to citations of Idaho administrative rules
§	Section (usually a section of federal or state rules or statutes)	IASCDC	Idaho Association of Soil Conservation Districts
BAG	Basin Advisory Group	IDEQ	Idaho Department of Environmental Quality
BMP	Best Management Practice	IDFG	Idaho Department of Fish and Game
BSCD	Boundary Soil Conservation District	IDL	Idaho Department of Lands
BURP	Beneficial Use Reconnaissance Program	IFP	Idaho Forestry Program
CRP	Conservation Reserve Program	ITD	Idaho Transportation Department
CSP	Conservation Security Program	IPNF	Idaho Panhandle National Forests
CWA	Clean Water Act	ISCC	Idaho Soil Conservation Commission
CWAL	cold water aquatic life	KVRI	Kootenai Valley Resource Initiative
CWE	cumulative watershed effects	LA	load allocation
CWEMP	Cumulative Watershed Effects Management Practice	LC	load capacity
EPA	United States Environmental Protection Agency	LEAP	Logger Education and Professionalism
FPA	Idaho Forest Practices Act	LWD	large woody debris
EQIP	Environmental Quality Incentives Program	mi²	square miles
FS	Fully Supporting	MOS	margin of safety
GIS	Geographical Information Systems	NFS	Not Fully Supporting

NRCS	Natural Resources Conservation
NTU	nephelometric turbidity unit
RPZ	Riparian Protection Zone
SBA	Subbasin Assessment
SFI	Sustainable Forestry Initiative
SPZ	Stream Protection Zone as defined in the Idaho FPA.
SSBMPs	site specific BMPs
SFPA	State Forest Practices Act
TMDL	total maximum daily load
TMDL-IP	TMDL Implementation Plan
tons/yr	tons per year
TSS	total suspended solids
USDA	United States Department of Agriculture
USFS	United States Forest Service
USF&WS	United States Fish & Wildlife Service
WAG	Watershed Advisory Group
WBAG Guidance	Waterbody Assessment
WQPA	Water Quality Program for Agriculture
WRP	Wetland Reserve Program

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SECTION 1.0 ABSTRACT

The Kootenai/Moyie TMDL identified three waterbodies requiring a reduction in sediment and or temperature loading to the system. These waterbodies are Boundary, Cow, and Deep Creek. This document lays out a plan to reduce pollutant loading to these streams to meet the TMDL. The document is organized into 3 main sections. Section 2 provides the background for the sub-basin and the TMDL effort to date. Section 3. deals with the industry specific actions that are proposed to meet the goal of the TMDL. Appendix A includes the table of completed projects and proposed projects within the sub-basin.

SECTION 2.0 INTRODUCTION, SUMMARY OF THE KOOTENAI RIVER TMDL, AND BASIC FEATURES OF THE IMPLEMENTATION PLAN

2.1 Introduction to TMDL Implementation Plans

The Coeur d'Alene Regional Office of Idaho Department of Environmental Quality (IDEQ) considers a Total Maximum Daily Load Implementation Plan (TMDL-IP) as Phase 2 of the Total Maximum Daily Load (TMDL) process. Phase 1 begins with a Subbasin Assessment of a §303(d) listed waterbody and determination of beneficial use support status. If a Not Fully Supporting status is determined (i.e., "water quality impaired"), then a TMDL for the listed pollutant of concern(s) is developed. The final TMDL document is submitted to EPA for approval. Upon United States Environmental Protection Agency (EPA) approval, IDEQ initiates the TMDL-IP process. Phase 3 would be on-the-ground implementation of the actions specified in the plan.

The EPA views the TMDL implementation plan "as a description of the tools, methods, and authorities that will be used to achieve applicable water quality standards" (IDEQ 2005a). The implementation plan will include measurable milestones set within a schedule for implementing the called-for actions. Further, an implementation plan can be viewed as a mechanism for establishing specific plans to monitor progress toward water quality standards attainment and correcting the TMDL.

TMDLs tend to be a broad subbasin or watershed approach of estimating current load of the pollutant of concern from numerous categories of nonpoint sources, and in some watersheds, point sources. For example, in estimating sediment load from a forested road network, calculated load estimates may be applied to hundreds of miles of road and hundreds of stream crossings, based on a small or best moderate sample size of the road network in the watershed.

The TMDL-IP process leads to identification of specific projects or policy changes to meet the load reduction goals of a TMDL. The TMDL-IP process affords a second, more focused examination of pollutant load estimates. Within a forested road system, projects may be identified such as culvert upgrades with larger pipes, addition of road prism relief culverts, or adding gravel to the road surface. It is important to prioritize a list of projects, in part by cost-benefit in terms of tons of sediment reduced/unit cost. With a smaller scale to work with on a project specific basis of a TMDL-IP, and more specific information, calculation of pre-project and post-project sediment loads should be more refined.

2.2 Summary of the Kootenai River TMDL

The federal Clean Water Act (CWA) requires that states and tribes restore and maintain the chemical, physical, and biological integrity of the nation's waters. States and tribes, pursuant to Section 303 of the CWA, are to adopt water quality standards necessary to protect fish, shellfish, and wildlife while providing for recreation in and on the nation's waters whenever possible. Section 303(d) of the CWA establishes requirements for states and tribes to identify and prioritize water bodies that are water quality limited (i.e., water bodies that do not meet water quality standards). States and tribes must periodically publish a priority list (a "§303(d) list") of impaired waters. Currently this list must be published every two years. For waters identified on this list, states and tribes must develop a TMDL for the pollutants, set at a level to achieve water quality standards.

The Kootenai River TMDL addresses the water bodies in the Kootenai River Subbasin that have been placed on Idaho's current §303(d) list.

The subbasin assessment (SBA) and TMDL analysis were developed to comply with Idaho's TMDL schedule. The assessment described the physical, biological, and cultural setting; water quality status; pollutant sources; and recent pollution control actions in the Kootenai River Subbasin, located in north Idaho.

The SBA is an important first step in leading to the TMDL. The starting point for the assessment was Idaho's current §303(d) list of water quality limited water bodies. Seven segments of the Kootenai and Moyie River Subbasin were included on this list. The SBA examined the current status of §303(d) listed waters and defines the extent of impairment and causes of water quality limitation throughout the subbasin. The TMDL analysis quantified pollutant sources and allocated responsibility for load reductions needed to return listed waters to a condition of meeting water quality standards.

The Kootenai and Moyie Subbasin Assessment and TMDL were developed for streams listed on the 1998 303(d) list. At the time of the development of the SBA and TMDL the 2002 303(d) list had not been accepted by the EPA.

2.2.1 Key Findings of the TMDL

The Kootenai and Moyie watersheds remained in a relatively natural condition until the early twentieth century when miners, loggers, and ranchers began to settle in the area. The watershed has a history of timber harvest and some grazing, which, in recent years, has been restricted to the floodplain of the lower river. Seven streams of the subbasin are 1998 §303(d) listed for sediment, temperature, metals, and pH. Two of the seven listed segments are listed for temperature, six segments are listed for sediment, one segment is listed for metals and pH. The sediment in the subbasin is primarily from road crossings and encroachment. Temperature is most affected by stream shading. Impairment of cold water use was commonly assessed using composite scores of fish, macroinvertebrate, and habitat indices. These scores generally indicate full support of beneficial uses in most streams assessed in the subbasin, but they also indicate use impairment in some tributaries to the river. Monitoring stations on Blue Joe Creek, Boulder Creek, Caribou Creek, Cow Creek, and Deep Creek had index scores below the threshold of full support during the 1998 assessment. Boundary Creek and Deep Creek had temperatures exceeding Idaho's Water Quality Criteria. The Kootenai River itself was not §303(d) listed nor was it found to be impaired in this assessment.

Water temperatures were found to be an issue in the Kootenai/Moyie Subbasins. A separate SBA and TMDL for water temperatures was developed in 2005. Before the temperature SBA and TMDL was completed the advisory group decided to incorporate it into the TMDL. Additionally, an assessment of temperature data in 2002 indicates that all monitored streams in the Kootenai/Moyie subbasins exceed Idaho temperature criteria. In a situation where all streams, including un-disrupted streams, exceed numeric criteria, a special look at natural conditions must be taken into account. The Kootenai/Moyie watersheds are located in the northern most portion of Idaho at relatively low elevations. Throughout the state it has been demonstrated that water temperatures are most strongly affected by air temperatures which directly relate to elevation. The Kootenai/Moyie subbasins are the lowest-elevation forested subbasins in the state. Future SBAs and TMDLs will need to address watershed-wide natural conditions, temperature targets and acceptable temperature loading.

Metals and pH are identified as pollutants for Blue Joe Creek. At the time of the 1998 assessment Blue Joe Creek was void of aquatic insect life and was impaired. The source of metals and associated pH issues is the now abandoned Continental Mine. Both Idaho Department of Environmental Quality Remediation Section and USDA Forest Service have been actively reducing metals and pH loading over the last three years. All reasonable TMDL implementation activities for metals and pH loading are complete, and Blue Joe Creek is in a state of recovery. Aquatic insects have started to re-occupy Blue Joe Creek, and it is reasonable to assume that through the combination of remediation activities that have occurred and future sediment reduction efforts that Blue Joe Creek will be fully supporting all beneficial uses within the decade.

The 1998 §303(d) list included the Moyie River, from the Moyie River Dam to its confluence with the Kootenai River. Excess sediment was the listed pollutant, and based on the 1998 determination, a TMDL would be required. IDEQ did not have Beneficial Use Reconnaissance monitoring data on this section of Moyie River, and believes the sediment listing decision was based on anecdotal understandings and information. IDEQ is convinced that the listing resulted from a single fine sediment deposition event, and that the stream has recovered since that event

Three of the listed streams; Blue Joe Creek, Boulder Creek and Caribou Creek were removed as candidates for TMDL development. Draft TMDLs demonstrated that current sediment generating conditions were better than those that assured full support of the beneficial uses. Additionally, the listings were based on 1995 Beneficial Use Reconnaissance Project data that is contrary to data collected more recently, and Stressor Identification Analysis (EPA 2000) performed by IDEQ supported removal of these three streams as TMDL candidates.

Based on the findings in the SBA and the Stressor Identification Analysis IDEQ determined that 3 streams, consisting of 9 unique waterbody ID' needed to have a TMDL developed for them (Table 2-1).

The bottom line of the TMDL process is eventually to observe and document restoration of the impaired beneficial use(s). In the Kootenai subbasin the impaired beneficial use is cold water aquatic life and salmonid spawning. TMDLs were focused on accounting for reduction levels of the listed pollutant of concern from current loading level toward the estimated Load Capacity. While the Kootenai River TMDL-IP will identify projects and policies for sediment load reduction, the process may also consider other contributing factors to the observed biological impairment including hydrologic modifications, elevation of water temperature, in-stream fish habitat degradation, and the lingering effects of legacy land use practices.

There is no certainty in the Kootenai and Moyie subbasins that current sediment load or temperature conditions are the primary contributing factors to the observed biological impairment. While it is clear that current land uses are contributing elevated sediment load, and in some cases increased stream temperature dealing with these pollutants may not result in beneficial use attainment. For this reason the industry specific TMDL-IP may also identify projects and policies aimed at areas such as fisheries management, and in-stream habitat improvement.

Table 2-1. Streams and pollutants for which TMDLs were developed.

Stream	Waterbody ID	Description	Pollutant(s)
Boundary Creek	ID17010104PN002_02	First and second order portions of Boundary Creek from Idaho/Canadian border back to Canadian border, including main stem Boundary Creek to Fan Creek	Temperature ²
	ID17010104PN002_03	Third Order portion of Boundary Creek main stem from Fan Creek to Canadian Border near Kootenai River	
Cow Creek	ID17010104PN006_02	First and second order portions of Cow Creek and Beaver Creek from headwaters to Cow Creek's confluence with Beaver Creek	Sediment ¹
	ID17010104PN006_03	Third order portion of Cow Creek downstream from confluence with Beaver Creek to Smith Creek	
Deep Creek	ID17010104PN025_02	First and second order portions of Deep Creek upstream of McArthur Lake	Sediment ¹ , Temperature ²
	ID17010104PN022_03	Third order portion of Deep Creek from McArthur Lake to Trail Creek	
	ID17010104PN019_04	Fourth order portion of Deep Creek from Trail Creek to Twentymile Creek	
	ID17010104PN018_04	Fourth order portion of Deep Creek from Twentymile Creek to Snow Creek	
	ID17010104PN015_04	Fourth order portion of Deep Creek from Snow Creek to Kootenai River	

1 – 1998 303(d) List (IDEQ 1998)

2 - EPA's Additions to the 1998 Idaho 303(d) List

Finally, the TMDL-IP will be considered a “living document,” subject to annual review and modification. This concept will be put into place by a “feedback loop,” consisting of: continuing the roles and involvement of a Watershed Advisory Group, tracking TMDL-IP project completion, conducting BMP effectiveness monitoring, and conducting in-stream biological monitoring.

2.3 Summary of Kootenai and Moyie Subbasin TMDLs

The TMDL developed the loadings for the watersheds for sediment. The following tables are pulled from the TMDL.

Table 2-2. Sediment load allocations and load reductions required for land owners along Cow Creek.

Owner/Manager	Load allocation (tons/year)	Load reduction required (tons/year)	Time frame for meeting allocations
U.S. Forest Service	688,634	10,062.5	30 years
Private	2	negligible	30 years
State	2,340	44	30 years
Total	713,674	10,466.5	-

Table 2-3. Sediment load allocations and load reductions required for land owners along Deep Creek.

Owner/Manager	Load allocation (tons/year)	Load reduction required (tons/year)	Time frame for meeting allocations
Bureau of Land Management	42,152	447	30 years
U.S. Forest Service	1,7412,888	209,898.5	30 years
Private	3,2193,801	5,341,182	30 years
State of Idaho	1,051,684	126,213	30 years
State of Idaho Fish and Game	5,376	924	30 years
National Wildlife Refuge	16	3	30 years
Total	6,122,601	8,852,364.5	-

2.4 TMDL Implementation Plans as Referenced in Idaho Code and IDEQ Guidance, and Responsibilities for Plan Development

Under Section 303(d)(1) of the CWA, states are required to prepare a list of waters not meeting state water quality standards. For waters on this “303(d) list,” states must prepare pollution control plans that allocate acceptable pollutant loads or load reductions to point and nonpoint sources contributing to the water quality violation, referred to as TMDLs. The requirement of IDEQ to prepare TMDLs is established in Idaho Code 39-3611.

Idaho Code 39-3611 cites the development of “pollution control strategies for both point sources and nonpoint sources” (i.e., an implementation plan) as part of the TMDL process. Most TMDL documents prepared by IDEQ and submitted to EPA since 1999 have not incorporated an implementation plan. IDEQ has taken the track of developing an implementation plan as a separate document, guided by an approved TMDL. A target goal established in IDEQ guidance is to develop an implementation plan within 18 months of TMDL approval (IDEQ 1999a).

Development of implementation plans rely on existing local, state, and federal authorities, and in no way creates new enforcement authorities or results in more enforceable TMDLs (Idaho code, 39.3611).

Generally, implementation plans are to be developed in partnership with the IDEQ, the local Watershed Advisory Group (WAG), if one has been established, and other state “designated agencies” (Idaho Code 29.3615). The WAG (or other individuals responsible for developing the implementation plan) will recommend specific control actions and will then, with the Basin Advisory Group (BAG), review the implementation plan before submitting it to IDEQ for approval. Implementation plans are approved by the IDEQ State Office, Surface Water Program and submitted to EPA for their information and record keeping. Implementation plans are not submitted to EPA for approval as part of the TMDL. Once approved by IDEQ, TMDL implementation plans become incorporated as part of the State Water Quality Management Plan.

The designated state agencies are responsible for assisting with the preparation of individual source plans and in many cases, the implementation plan, particularly for those sources for which they have regulatory authority or programmatic responsibilities. Idaho's designated state management agencies are specified in Idaho Code §39-3601 *et seq.*, and are:

Idaho Department of Lands (IDL) for timber harvests and mining activities,
Idaho Soil Conservation Commission (ISCC) for grazing and agriculture activities,
Idaho Transportation Department (ITD) for design and construction of public roads,
Idaho Department of Agriculture for aquaculture,
IDEQ for all other activities.

Implementation plans should be developed with the participation of federal partners, fisheries management agencies, county and city governments, service districts, tribal councils, and private landowners in the watershed. The integration of these groups for the Kootenai/Moyie watershed is described in Section 2.5 below, where a designated WAG has been formed. In Idaho, the designated state agencies, along with other state partners and federal agencies, are charged by the CWA to lend available technical assistance and other appropriate support to local efforts/projects for water quality improvements. Some of the important roles provided include federal consistency with State program objectives, and making select funding sources available for implementation activities.

The Kootenai/Moyie TMDL Implementation Plan was developed in conjunction with state and federal agencies but the principle entity coordinating the development of the plan was the Kootenai Tribe of Idaho. The KTOI and IDEQ provided funding to develop the plan. The KTOI hosted the TMDL sub-committee meetings, provided the updates to the KVRI throughout the development process. The KTOI performed many of the administrative tasks typically done by the IDEQ so that the Implementation Plan could be completed as soon as possible.

The public, through the WAG process, should be provided with opportunities to be involved in implementation plan development to the maximum extent practical. Public participation will significantly affect public acceptance of the document and the proposed control actions. The public, landowners, local governing authorities, taxpayers, industries, and land managers, are the ones who know the pollutant sources best and will be responsible for implementing the control actions identified in the plan. Experience has shown that the best and most effective implementation plans are those that are developed with substantial public cooperation and involvement (IDEQ 2003b). Local ownership is a prerequisite for a successful TMDL implementation plan.

Finally, useful guidance on the purpose of an implementation plan is stated in the Idaho Nonpoint Source Management Plan (IDEQ 1999), with similar language echoed in Idaho Code 39-3611. This guidance states: "The primary purpose of any implementation plan under the TMDL process is to identify and describe the specific pollution controls or management measures to be undertaken; the mechanisms by which the selected pollution control and management measures will be put into action; and, the authorities, regulations, permits, contracts, commitments, or other evidence sufficient to ensure that implementation will take place. The plan also describes when implementation will take place, identifies when various tasks or action items will begin and end, when mid-term and final objectives will be met, and established dates for meeting water quality targets."

2.5 Formation and Work History of Kootenai Valley Resource Initiative and the TMDL sub-committee

The Kootenai Valley Resource Initiative (KVRI) has been formed under a Joint Powers Agreement (JPA) between the Kootenai Tribe of Idaho, the City of Bonners Ferry, and Boundary County --- dated October 2001.

The Tribe, City, and County are working together to address resource issues affecting those of us in the Lower Kootenai subbasin. The KVRI is a diverse, community-wide group appointed to facilitate this process. Our intent is that this historic and new approach will guide how we, as a community, respond to opportunities such as TMDL planning, development of a wetland conservation strategy, recovery of lower Kootenai River burbot, the Corps of Engineers EIS related to operation of Libby Dam, and other issues as they may become timely or appropriate.

Under the Joint Powers Agreement, KVRI is empowered to restore and enhance the resources of the Kootenai Valley and foster community involvement and development. The mission of KVRI is to act as a locally based effort to improve coordination, integration and implementation of existing local, state and federal programs that can effectively maintain, enhance and restore the social, cultural, economic, and natural resource bases in the community. The Initiative membership and partners comprises the Tribe, local government (city & county), private citizens and landowners, federal and state agencies, environmental advocacy groups, and representatives of business and industry within the area. The members are appointed jointly by the partners to the JPA. A coordinator and note-taker are provided by the Kootenai Tribe of Idaho. The KVRI is the primary forum for several issues and utilizes a number of subcommittees to work with the group as appropriate to accomplish the tasks at hand.

Development of a Total Maximum Daily Load (TMDL) Plan – Section 303 (d) of the Clean Water Act requires states to prepare a list of waters not meeting state water quality standards. This list includes a priority ranking, with the prescribed remedy for water quality limited waters being the development of a TMDL – pollutant budget. A plan must be written for the lower Kootenai and Moyie Rivers (including listed tributaries) by 2004/2005.

The Tribe has a Memorandum of Agreement with Idaho Department of Environmental Quality and U.S. Environmental Protection Agency – Region 10, to facilitate the TMDL process. The Tribe utilizes the KVRI to bring diverse local agency perspectives together to work toward the development and implementation of a TMDL Plan to restore water quality. The KVRI has been recognized by Idaho Department of Environmental Quality as the Watershed Advisory Group (WAG) for the lower Kootenai River TMDL.

2.6 Public Involvement in the Process

The KVRI TMDL Sub-committee has been involved in the development of the TMDL and the Implementation Plan. The TMDL Sub-committee typically met bi-monthly to discuss progress on the TMDL development. The KVRI received updates at their meetings to insure that they were aware of the progress of the TMDL. Since the start of the concerted effort to develop the

Implementation Plan there have been three TMDL Sub-committee meetings to discuss the Implementation plan as well as several industry specific meetings. The KVRI has been kept informed of progress. The efforts of the TMDL Sub-committee in regards to the TMDL Implementation plan development has been lead by the Kootenai Tribe of Idaho.

Table 2-4. Agencies and Private Landowners of the Kootenai Valley Resource Initiative

Members:	Partners:
Landowner (industrial)	Idaho Dept. of Environmental Quality
Business/Industry	U. S. Environmental Protection Agency
Conservationist	NRCS – Natural Resources Cons. Service
Soil Conservation District/Ag landowner	U of I - Boundary Co. Ext. Service
Corp. Agriculture/landowner	Idaho Office of Species Conservation
Local County Gov't	Idaho Dept. of Lands
Local Municipality	Idaho Soil Conservation Comm./Dept. of Ag
Kootenai Tribe of Idaho	Idaho Dept. of Fish & Game
U.S. Forest Service – Bonners Ferry	U. S. Fish & Wildlife Service
Idaho Fish & Game Commission	Idaho Dept. of Transportation
Social/cultural/historical	U.S. Bureau of Land Management
	U. S. Army Corps of Engineers
	U. S. Geological Survey
	Idaho Water Resources Dept
	Kootenai River Network
	The Nature Conservancy
	Panhandle Lakes RC&D

2.7 Structure of the Kootenai River Subbasin TMDL-IP

Section 3 of this document is structured as 5 separate implementation plan Sections based on categories of land use, ownership/management jurisdictions, and/or regulatory jurisdictions. Each implementation plan section will contain proposed improvement projects, along with narrative of Best Management Practices (BMP) choices and approaches to land use management policies. The implementation plan Sections are:

- 3.1 Forest Practices Implementation Plan
- 3.2 Agricultural Implementation Plan
- 3.3 County and State Road Implementation Plan
- 3.4 Data Needs, Future Studies, and Resource Requirements
- 3.5 Environmental Regulation and Oversight Implementation Plan

2.8 Priorities and Goals of Implementation

2.8.1 Net Reductions in Sediment and Water Yields, and Loss of Shade

There will be new and continuing land use activities in the Kootenai River subbasin, both identified within the TMDL-IP and outside of the TMDL-IP that will result in sediment yield to streams, canopy openings, loss of riparian vegetation, and stream bank damage. As the TMDL-IP is initiated and moves forward, these activities need to be accounted for in the balance sheet of the TMDL that has a goal of a downward trend of net sediment yield, and a net improvement of shade.

For example, improvement projects by the United States Forest Service (USFS) are often financed from the proceeds of timber sales. There will be features of a timber sale that will result in at least a short-term gain in sediment yield. An estimate of the sediment yield gain needs to be identified and entered in the TMDL accounting as a realistic offset to the net decrease afforded by mitigation improvements.

Another issue that may need to be considered in the implementation plan and the effect that it will have on the goal of sediment and temperature reduction is development. The rate of new rural homestead development within the Kootenai River subbasin is increasing. This includes lot clearing, and building of access roads and driveways, some with stream crossings. These activities are likely increasing the sediment yield within the subbasin and methods for addressing these increases should be considered.

2.8.2 Evaluation and Tracking of Effort Over Time

In many cases, the problems leading to water quality impairments have accumulated over decades, and will likely require significant time to remedy. It is important for the stakeholders to demonstrate an ongoing commitment to long-range implementation. For the TMDL implementation plan to work, there must be maintenance of effort over time by all stakeholders including local citizens, tribes, state, federal, and county agencies. Idaho Code §39-3601 *et seq.* specifies the State lead agencies responsible for TMDL implementation and requires an ongoing commitment from the lead agencies to devote the necessary resources to help restore beneficial uses.

Maintenance of effort over time is not solely focused on physical restoration work, but will attempt to look at land use planning issues, revisions to agency standard operating procedures, conservation easements, and various other methods through which long-term benefits can be obtained.

It is important to develop a tracking system for projects identified in the TMDL-IP, and completed. This will entail good documentation of:

-) location (by Global Positioning Service [GPS]),
-) completion dates,
-) actual costs,
-) previously discussed pre-project and post-project sediment load estimates, or
-) values assigned for improvements in stream shade and fish habitat, and
-) Geological Information Service (GIS) mapping of completed projects.

Tracking is also needed for land use activities identified in the TMDL that result in net sediment gain and loss of shade. This will be particularly difficult, and likely incomplete, for land use activities that will occur outside of the TMDL-IP effort.

2.8.3 Integrated Schedule Milestones, and Responsible Parties

The activity specific plans in Section 3 as well as the action tables in Appendix A provides a detailed accounting of the responsible parties. The Tables in Appendix A indicate the proposed start or completion date of the currently identified projects. Annual coordination meetings of the KVRI-TMDL Sub-committee will help insure integration of these activities, addition of new projects and updates of changes in personnel in the designated management agencies.

2.8.4 Identification of Funding Sources and Technical Assistance

Funding for TMDL implementation projects may come from a variety of sources. Funding should first come from within the designated State agencies and their partner agencies. Where appropriate and possible, IDEQ will assist lead agencies in obtaining sources of funding and ensure collaboration between agencies for funding of related projects.

Identification of potential sources of funding for TMDL implementation projects are listed in the *Idaho Nonpoint Source Management Plan* (IDEQ 1999), and *Technical Guidance and Policy Recommendation for Preparing an Idaho TMDL Implementation Plan* (IDEQ 2005). An updated list of these funding sources is presented in Appendix B of this implementation plan report. Several of these funding sources require public participation in the way of committed match funds, and the IDEQ will be available to assist any parties that wish to seek funding for water quality projects within these watersheds.

Besides project funding, there is often the need for technical assistance. Examples include IDL assistance to non-industrial timber operators for proper application of forest practice BMPs, and Natural Resources Conservation Service (NRCS) guidance to ranchers for application of grazing BMPs.

2.8.5 BMP Effectiveness Monitoring and In-stream Monitoring to Assess Support Status of Beneficial Uses

Opportunities will exist for reasonable and practical BMP effectiveness monitoring. A suggested expansion of action tables in Appendix A would be inclusion of a BMP effectiveness monitoring scheme for selected projects. It is not necessary that every project have a monitoring program but we should have two or three BMP effectiveness monitoring plans for each type of BMP being applied when possible. When this cannot be accomplished one may be able to use literature values or model runs to estimate effectiveness. One aspect of a BMP effectiveness monitoring plan is visual inspection on a regular basis to insure that the BMP is still in place and is being properly maintained. This auditing of BMPs should occur at least once every 2 years and should be addressed in the industry specific implementation plans.

In-stream monitoring of cold water biota and salmonid spawning beneficial use status following implementation of sediment abatement projects, and other projects such as structural habitat

improvements, is key to establish the final sediment load reduction required by the TMDL. The bottom line for the Kootenai River TMDL-IP is eventual restoration of the impaired beneficial uses. A condition of Full Support of these beneficial uses will be detected through periodic stream surveys using the IDEQ Beneficial Use Reconnaissance Project (BURP) protocol, or BURP equivalent methods. BURP data are assessed through IDEQ's Waterbody WAG procedures to determine support status (Grafe *et al.* 2002).

In-stream biological monitoring should be completed a minimum of every five years at randomly selected upper to lower sites within Kootenai River subbasin. Monitoring should assess a stream reach length that is at least 40 times bankfull width, and include sampling for macroinvertebrates, and electro-fishing. IDEQ is planning on conducting Solar Pathfinder surveys every 3 years to determine progress toward reaching the shade targets for the streams impaired by temperature. Surrogate targets, such as percent fines, residual pool volume, or Total Suspended Solids (TSS), may also be monitored in a manner determined in the plan.

2.8.6 Feedback Loop

A feedback loop provides the needed information on how the TMDL-IP is working through time, and what modifications need to be made for improving the performance and goals of the TMDL-IP. The feedback loop, and ultimate success of watershed restoration, will include the following features:

- active long-term commitment and participation of the WAG,
The Kootenai Valley Resource Initiative (KVRI) and the TMDL sub-committee are committed to holding annual planning meetings and in assisting IDEQ in developing 5 year progress reports. The TMDL sub-committee will meet more frequently if special circumstances arise.
- long-term commitment of identified responsible agencies to carry out actions listed in the TMDL-IP,
See Industry Specific Implementation plans.
- a good tracking system of TMDL-IP projects completed, and an accounting method of new land use activities occurring outside the purview of the TMDL-IP,
The KVRI TMDL sub-committee will meet on an annual basis to discuss projects completed in the previous year. At this meeting the organizations that completed projects will provide the group with a list of the projects completed and their associated costs, and estimated sediment reduction if applicable. This information will be maintained in a file in the Coeur d'Alene Office of IDEQ.
- a commitment to BMP effectiveness monitoring and in-stream monitoring, including good documentation of results and analysis,
See the industry specific implementation plans and the Tables in Appendix A.

SECTION 3.0 TMDL IMPLEMENTATION PLANS

3.1 Forest Practices Implementation Plan

3.1.1 Legal Authorities

The authority and mandate of State Board of Land Commissioners was established under Article 9 of the Constitution of the State of Idaho. The Idaho Department of Lands (IDL) is authorized under Title 58, Chapter 1 Idaho Code for purposes of exercising the constitutional functions of the Board. The greatest share of assets managed by the Board and Department are land grant public school endowment trust parcels that were deeded by the federal government at statehood. The Constitution requires the management of endowment lands to focus upon generating maximum revenue for the trust beneficiaries. In addition to managing these assets in the context of Idaho law, the IDL has regulatory powers in certain areas of resource protection and can enter into cooperative agreements.

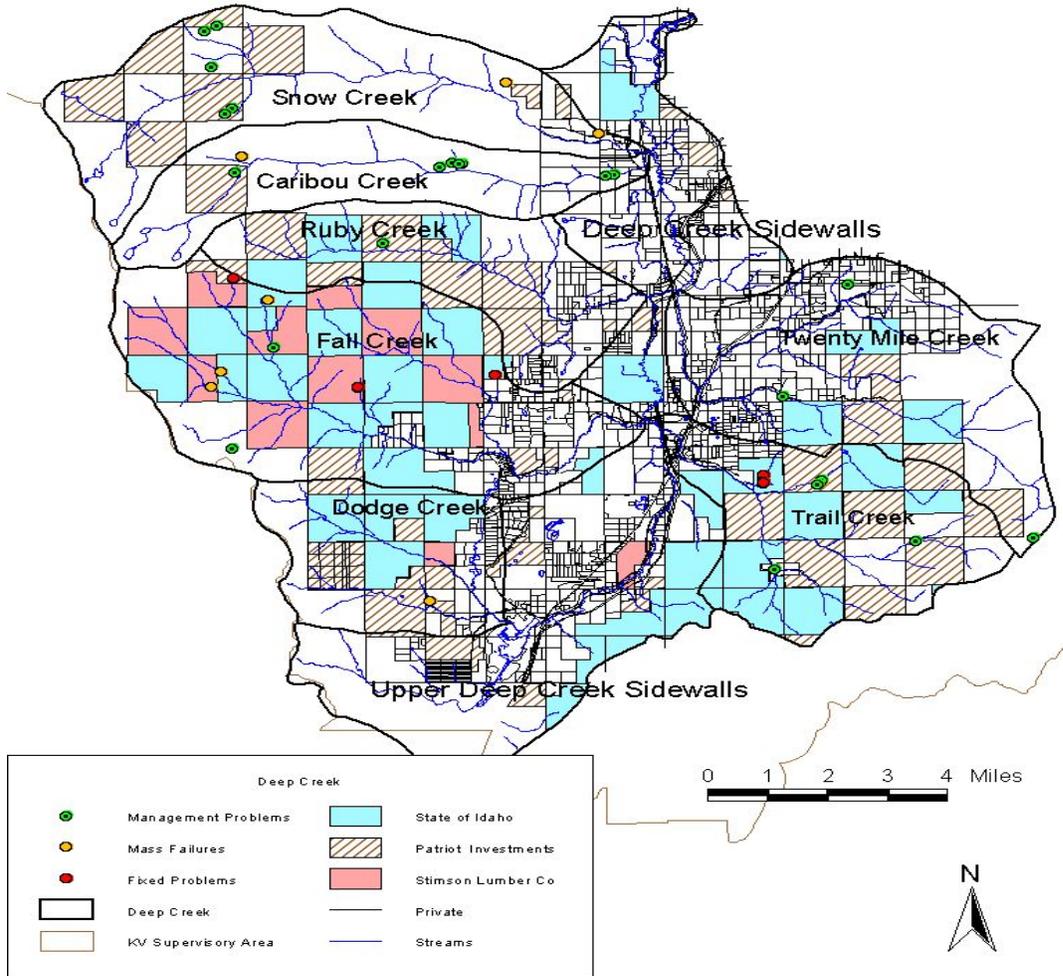
The IDEQ is responsible for development and enforcement of Idaho's water pollution administrative rules. Those administrative rules governing non-point source activities (IDAPA 58.01.02.001.350) recognize BMPs as the most appropriate method to handle these types of sources, and section .03.a. recognizes the Idaho Forest Practices Act (FPA) as administered by the IDL as an approved BMP for silviculture and forestry.

The Idaho Forest Practices Act (FPA) is state policy and is legislatively mandated under Title 38, Chapter 13 Idaho Code. The Board of Land Commissioners is charged with establishing minimum standards for conducting practices on forest lands and the IDL is charged with both development and enforcement of appropriate administrative rules. A Forest Practices Advisory Committee has been established pursuant to the law with the specific responsibility to review and improve forestry BMPs such that practices will be conducted using the latest economically and scientifically sound information. This committee conducts research into forest practice questions and gathers information from various sources, effectively providing a feedback loop for continuous improvement.

3.1.2 Past Actions

Many of the activities implemented in the subbasin to improve water quality are the direct result of improved practices put in place by the FPA. The FPA was codified during the mid-1970s to comply with Section 208 of the 1972 Federal CWA. Subsequent administrative rules established BMPs to be used to protect water quality. Interagency audits were conducted in 1978, 1984, 1988, 1992, 1996, 2000, and 2004. BMPs have been continually revised to promote better protection. The State of Idaho implemented the Cumulative Watershed Effects (CWE) process in 1991. The goal of the CWE process is to systematically examine forested watersheds and identify situations where management actions may be contributing to water quality problems. Assessments were completed on significant portions of the Kootenai River Subbasin during 2002-2003 field seasons (including 80% of the Deep Creek drainage). These reports located mass failures and management problems requiring corrective actions (see Table A-1 & Figure 3-1).

Figure 3-1. Deep Creek
Deep Creek



3.1.3 Current Practices

The IDL performs a variety of pollution control efforts in the Kootenai River drainage. These efforts include enforcement of FPA rules, FPA education, Stewardship Forestry Assistance, Stewardship Cost-Share Programs, general forestry education, State endowment land management, and Minerals Act administration and enforcement. The State Forest Practices Act (SFPA) requires forest landowner compliance with forestry BMP. Approximately 500 logging compliances are issued annually out of the Kootenai Valley Area office in Bonners Ferry, Idaho (2004), and approximately 200 inspections of logging operations are performed each year to ensure compliance with the FPA. These on-site inspections include review of road construction and maintenance, stream crossing construction, stream protection zone (SPZ) encroachment by equipment, and road/skidtrail locations. Stewardship Forestry Assistance includes on site visits with landowners providing education, information and technical transfer of forestry best management practices, as well as assistance to landowners through cost sharing forestry, riparian, and agroforestry practices. The department also supports the Logger Education and Professionalism (LEAP) Program and Pro-Logger Program by providing workshops and training in the areas of logging BMPs and Forest Practices rules. Topics presented in 2003 included “Installing Culverts to Meet Fish Passage Guidelines”. In 2004 presentations to logger groups covered Forest Practices rules regarding skid trail location and maintenance.

The IDL administers approximately 24,500 acres of endowment land within the Deep Creek (HUC5) watershed. Administration of activities on this land meets and exceeds FPA rules. In August of 2004 the local supervisory area voluntarily implemented the terms of the Idaho Forestry Program (IFP), Snake River Basin Adjudication on state endowment lands. These terms include: increased operational restrictions within riparian protection zones (RPZs); establishment of permanent 25 foot no-harvest buffers adjacent to class 1 fisheries streams; and stringent road construction, reconstruction, design and maintenance requirements which exceed current FPA requirements. The intent of adopting these additional voluntary management practices is to provide increased protection for fisheries. Utilizing itemized voluntary management practices will allow IDL personnel to become more aware of potential impacts on water quality. Many of these practices were already standard procedure, but this action makes implementation more uniform throughout the local unit. Stimson Lumber Company has been certified as operating under voluntary standards of the Sustainable Forestry Initiative (SFI) for several years, and Patriot Investments LLC plans to enroll locally managed lands in this program in early 2006. Under SFI guidelines, the landowner must meet stringent compliance measures for land stewardship that exceed the Idaho FPA. Independent audits for water quality, stream protection and erosion control are a requirement for SFI certification. These independent audits are conducted by a third party entity that initiates a very thorough and exhaustive review of past management activities, planning processes and internal documentation procedures. Auditors are specialist in water quality, silviculture, soils, harvest systems and forest planning. Field inspections of current and past activities are a mandatory component of assessing compliance to SFI objectives. In addition, all operators utilized by these companies must complete logger education training while land managers receive annual training certification.

3.1.4 Completed and Proposed Projects

Meetings were conducted during the fall of 2005 between representatives of the IDL, USDA Forest Service, and large industrial forest landowners in the Deep Creek drainage. Discussions

involved itemizing recently completed actions, listing planned projects, identifying responsibilities and funding sources and the need for site specific BMPs. Since none of the individual CWE reports completed in this drainage identified the need to develop special Cumulative Watershed Effects Management Practices (CWEMPs) for sediment, the IDL does not intend to pursue that option. Instead, the IDL intends to continue working with individual entities to encourage voluntary mitigation of sediment and temperature issues. Implementation of SFI practices by industrial owners and the IFP by the IDL should lead to accomplishment of temperature and sediment goals over time, therefore proposed and future individual projects meeting these standards are not listed. Two specific riparian restoration projects have been identified by the IDL (one has been completed), but they are related to agricultural and grazing uses, not forestry.

Since the time of the initial 303(d) listing (1998) the IDL and large industrial forest landowners have undertaken a number of cooperative capitol improvement projects expressly to reduce potential sediment generation from existing roads. The IDL, Stimson Lumber Company, and Patriot Investments LLC have also independently initiated projects. Inactive low standard haul roads are often gated or otherwise closed to public access on IDL and industrial forest lands in order to reduce maintenance costs and improve effectiveness of erosion control. Stimson Lumber Company adopted a policy of complete exclusion of vehicle use by the public on their company lands in 2003 in response to water quality and liability issues. Completed projects are shown in A-2.

For several reasons, this plan does not focus on non-industrial private forest landowners (NIPF). First, the sheer number of parcels and individual landowners located in the lower reaches of Deep Creek would make it virtually impossible to convene a meaningful committee to explore CWEMP development. Second, any CWEMPs developed would be voluntary. Third, IDL private forestry assistance programs already target these owners for education programs and stewardship incentives and will continue to do so. Fourth, and finally, many of the problems associated with these parcels are due to development for residential uses and are outside the scope of the FPA and IDL regulatory authority. Although often forested and sometimes involved in commercial logging operations, these parcels are identified separately in the TMDL as low/high density developments and need to be addressed through other means such as the local planning and zoning department.

3.1.5 Funding or Program Assurances

The IDL uses dedicated monies collected from timber sale purchasers to fund contract and/or State-crew deferred road maintenance projects in order to keep drainage structures operational on endowment-owned properties during periods when no sale operations are being conducted in the vicinity. Capitol improvement projects and road maintenance are also funded through development credits given to timber sale purchasers in exchange for work completed under the terms of sale contracts, and are often cost-shared with large industrial landowners under cooperative road agreements. These activities may occur on lands not owned by the State in situations where easements or rights-of-way exist which provide management access to endowment properties. In all cases, continued funding for water quality measures is closely tied to the ability of the Department to generate income from the management of the assets of the trust.

Under the FPA, the party responsible for conducting the forest practice must meet rules and BMPs. The IDL has responsibility to administer and enforce the FPA. The cost of complying with the FPA during the operation is borne by the operator, landowner, or third parties, depending

upon whatever contractual agreements are made. At present, private landowners are assessed \$0.10 per acre for all forest lands and \$0.12 per thousand board feet harvested to provide funds to the IDL for administration of the Act. Idaho endowments fund FPA administration out of dedicated funds appropriated for timber sale contract administration. In addition, the general fund of the State of Idaho provides funds for FPA enforcement and educational programs on private land (subject to legislative approval), and federal grants are also used as available. Current and future funding levels may not be adequate for the IDL to oversee administration of practices in this drainage. At present, only about 15% of total Notifications received on the Kootenai Valley Supervisory Area are viewed by IDL enforcement personnel, with emphasis given to those operations with the greatest potential to impact streams and those with complaints. These operations often require multiple visits to adequately assess compliance. Options for increased funding include additional landowner assessments, increased general fund allocations, income tax credits, grants, and increased federal cost shares. These options are all outside of the control of the IDL as they require action by the state legislature to allocate monies and/or authorize spending authority to the agency.

Projects related to water quality improvement on forested environs in the Deep Creek drainage have (to date) been funded with proprietary monies from the party(s) initiating the improvements. Discussions held in the fall of 2005 between IDL and representatives from large industrial forest landowners have not identified any viable proposals for grant restoration monies (319), but this avenue may be explored at a future date.

3.1.6 Revisions and Update Process

Updates and revisions to this plan will be completed as determined necessary by the local WAG, the IDL or IDEQ based on knowledge acquired by monitoring or new science.

3.1.7 Tracking of Projects

In 2004 the IDL created a GIS-based tracking system with associated database to track management problems identified in CWE reports on a statewide basis. This computer system resides on a server at the IDL private forestry bureau in Coeur d' Alene and is available for generating reports at any supervisory area office. Data collected includes the location and type of problem, digital image, date observed and repairs initiated. Local supervisory area personnel complete updates to this system. Information on this data base is not restricted to just endowment properties, although updates to non-state problems requires voluntary reporting and coordination through the local IDL forest practices act advisor.

Each IDL supervisory area also maintains a GIS-based road inventory layer with specific information on engineering standards, drainage structures and closures on those roads maintained by the IDL and/or cooperators. Voluntary IFP terms adopted by the local IDL unit include completing a detailed inventory of drainage structures, stream crossing conditions and management problems prior to fall of 2009. Large industrial private road cooperators plan to combine inventory information with IDL and produce one data set.

The vast majority of projects undertaken by large industrial landowners and the IDL are completed by independent contractors and sale purchasers. All parties routinely inspect operations for compliance with contract terms before accepting results for payment or releasing performance bonds. Internal audits verify compliance.

3.1.8 Monitoring

In addition to the regular FPA inspection program conducted by the IDL, the Forest Practices Water Quality Management Plan calls for statewide audits of the application effectiveness of forest practices rules. The Department conducts internal audits on an annual basis and interagency audits in conjunction with IDEQ, USFS and other agencies on a periodic (every 4th year) basis. The audit process is a key component of the feedback loop mechanism used by the Forest Practices Act Advisory Committee, IDL, and State Board of Land Commissioners to evaluate the effectiveness of forestry BMPs.

The CWE process was added to the IDL tool chest in 1991. Most of the Deep Creek drainage and much of the Lower Kootenai River sub-basin was assessed in 2002-3. This process includes assessments of erosion hazards, canopy closure, stream temperature, hydrology, sediment delivery, channel stability, beneficial uses and nutrients. The CWE process provides a broad scale watershed assessment that determines if water quality problems exist and what should be done to mitigate those problems. This process can be initiated by the IDL, or by the WAG, or by IDEQ at any time that it appears beneficial and monies are available. It is anticipated that sub-drainages with CWE reports done in 2002-3 will be re-evaluated in five years in order to make direct comparisons and re-assess conditions.

Idaho's water pollution rules specify that in-stream monitoring is the responsibility of IDEQ, therefore the IDL has no plans to duplicate that effort.

3.2 Agricultural Implementation Plan

3.2.1 Legal Authority

The ISCC is the designated management agency in Idaho for managing agricultural nonpoint source pollution and is therefore the lead in TMDL implementation activities on agricultural land. Although the ISCC does not have regulatory or licensing authority over water quality or pollution control, the mission of the ISCC is to provide support to Idaho's Soil and Water Conservation Districts for wise use and improvement of natural resources (RPU 2003). The ISCC offers technical assistance to landowners and operators and administers the Water Quality Program for Agriculture (WQPA), the

Conservation Improvement Grants program, and the Resource Conservation and Rangeland Development Program (RCRDP) in cooperation with Soil and Water Conservation Districts.

The ISCC works with the Boundary Soil Conservation District (BSCD), the Idaho Association of Soil Conservation Districts (IASCD), and the Natural Resource Conservation Service (NRCS) in a conservation partnership to reach common goals and successfully deliver conservation programs in Boundary County.

Local soil and water conservation districts, the ISCC, and NRCS have partnered up, recognizing common conservation goals. Each agency has its own responsibilities and recognizes the need to coordinate efforts to successfully implement conservation programs. This working relationship is referred to as the *conservation partnership*. In Boundary County, the BSCD/NRCS Field Office consists of the Boundary SCD, NRCS, and IASCD/ISCC staff.

- Boundary Soil Conservation District – Conservation districts are units of local government led by an elected board of supervisors. Utilizing input from other agencies and the public, conservation districts set the priorities that focus conservation efforts locally. They promote clean water and productive soil by assisting agricultural landowners and operators with effective management of natural resources.
- Idaho Association of Soil Conservation Districts – IASCD is a nonprofit association of Idaho's 51 soil and water conservation districts cooperating in the management of Idaho's natural resources. The IASCD was organized to provide a unified voice for conservation at the state level. Its members work closely with the ISCC on problems of policy and resource concerns. IASCD participates in the conservation partnership in this capacity and provides staff support to conservation districts throughout the state under ISCC supervision.
- USDA – Natural Resource Conservation Service – NRCS is a non-regulatory federal agency that works with private landowners on a request basis. NRCS assists the ISCC, conservation districts, landowners and operators, and others in conserving natural resources. Guided by local district priorities, NRCS delivers technical and financial assistance to landowners and operators through voluntary programs to achieve conservation goals. NRCS offers leadership and technical assistance to the ISCC, IASCD, conservation district staff, and other agencies, as requested. NRCS administers a number of Farm Bill programs that provide cost share to eligible participants to facilitate the implementation of BMPs.

The effects of agricultural practices on water quality vary depending on the management practices and location of particular operations in relation to surface and ground water. The conservation partnership assists landowners in implementing BMPs that minimize negative impacts to water quality. The partnership is committed to targeting watersheds listed as water quality limited, and program delivery efforts prioritize projects occurring in degraded watersheds. The BSCD's Five Year Plan lists water quality as one of its top priorities, including TMDL Implementation.

3.2.2 Agriculture Extent in the Sub-Basin

The Kootenai-Moyie River Subbasin is located in Boundary County in north Idaho (Figure 3-2). The Kootenai River flows west-northwest into Idaho from Montana, turns north near Bonners Ferry, Idaho, and flows into Canada. The Moyie River flows into the Kootenai River upstream of Bonners Ferry near the community of Moyie Springs.

Land ownership in the Idaho portion of the Kootenai-Moyie watershed consists of federal, state, and private land. Land ownership, in acres, is summarized in Table 3-1. Approximately two thirds of the privately-owned land is in the form of dryland agriculture along the main stem Kootenai River, and roughly one-third is forested. Smaller areas of private land are used for hay and pasture throughout the watershed (IDEQ 2005). Land ownership is shown in Figure 3-3.

**Table 3-1. Land Ownership in the Idaho Portion of the Kootenai-Moyie Subbasin
(estimates based on GIS coverage from IDEQ Boise office).**

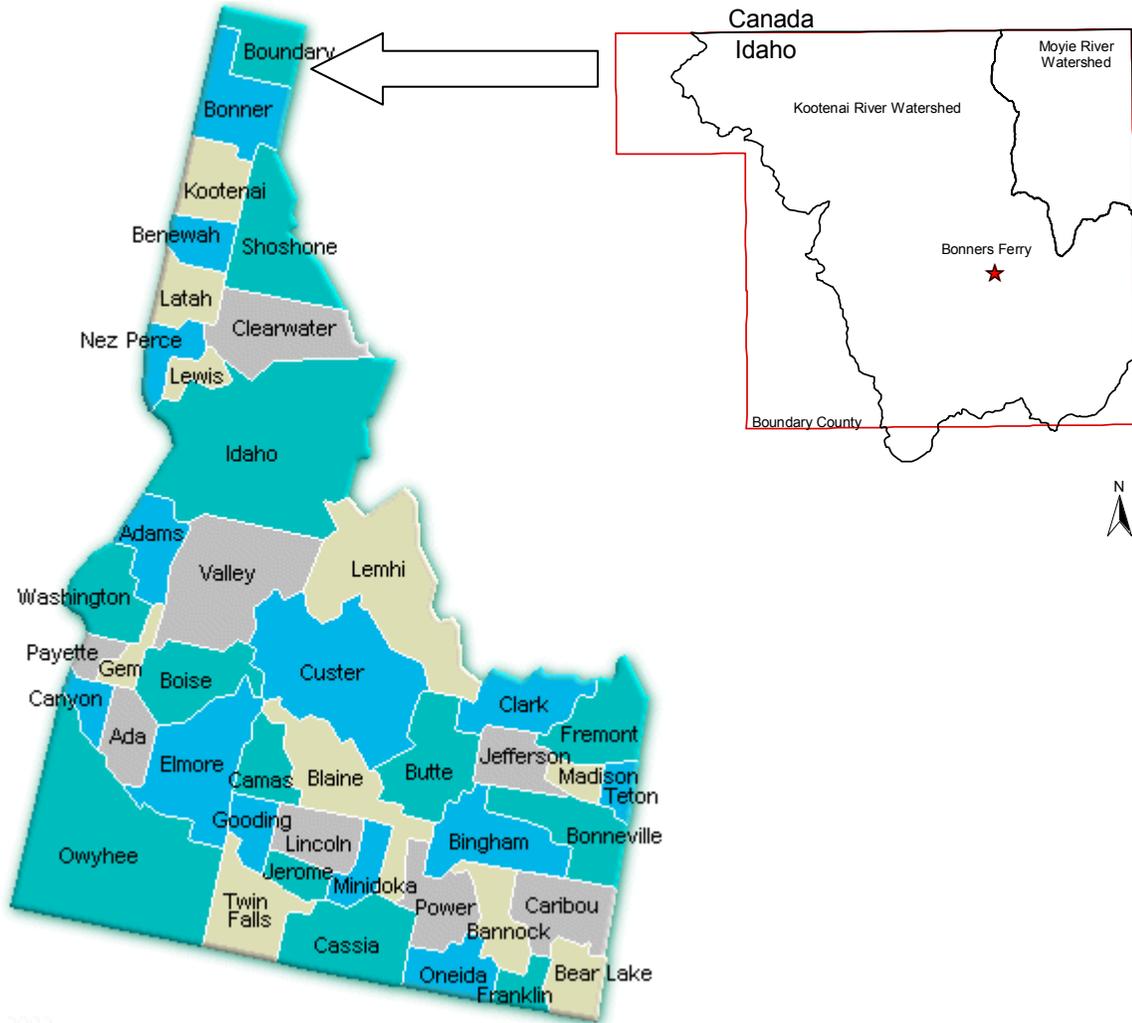
Landowner	Acres
Bureau of Land Management	4,973
National Wildlife Refuge	2,813
Private	215,507
State of Idaho (Department of Lands)	24,367
Idaho Department of Fish and Game	1,621
U.S. Forest Service	393,854
Kootenai Tribe of Idaho	2,200
Total Acres	645,335

The conservation partnership has been active in soil and water conservation and water quality issues since 1947. The partnership has developed individual conservation plans for local agricultural producers and has pursued funding sources to assist in implementing BMPs. The partnership has restored wetland and riparian areas, stabilized streambanks, coordinated with other agencies and individuals in educational activities, and made educational materials available to the public.

Funding sources utilized by the conservation partnership in Boundary County have included Farm Service Agency's Conservation Reserve Program (CRP) and Continuous Sign-up CRP (CCRP); NRCS's Environmental Quality Incentives Program (EQIP), Conservation Security Program (CSP), and Wetland Reserve Program (WRP); and CWA Section 319 Grant Program. Accomplishments in the Kootenai-Moyie Subbasin since the IDEQ's assessments of the subbasin in 1998 are summarized in Table A-3 in Appendix A.

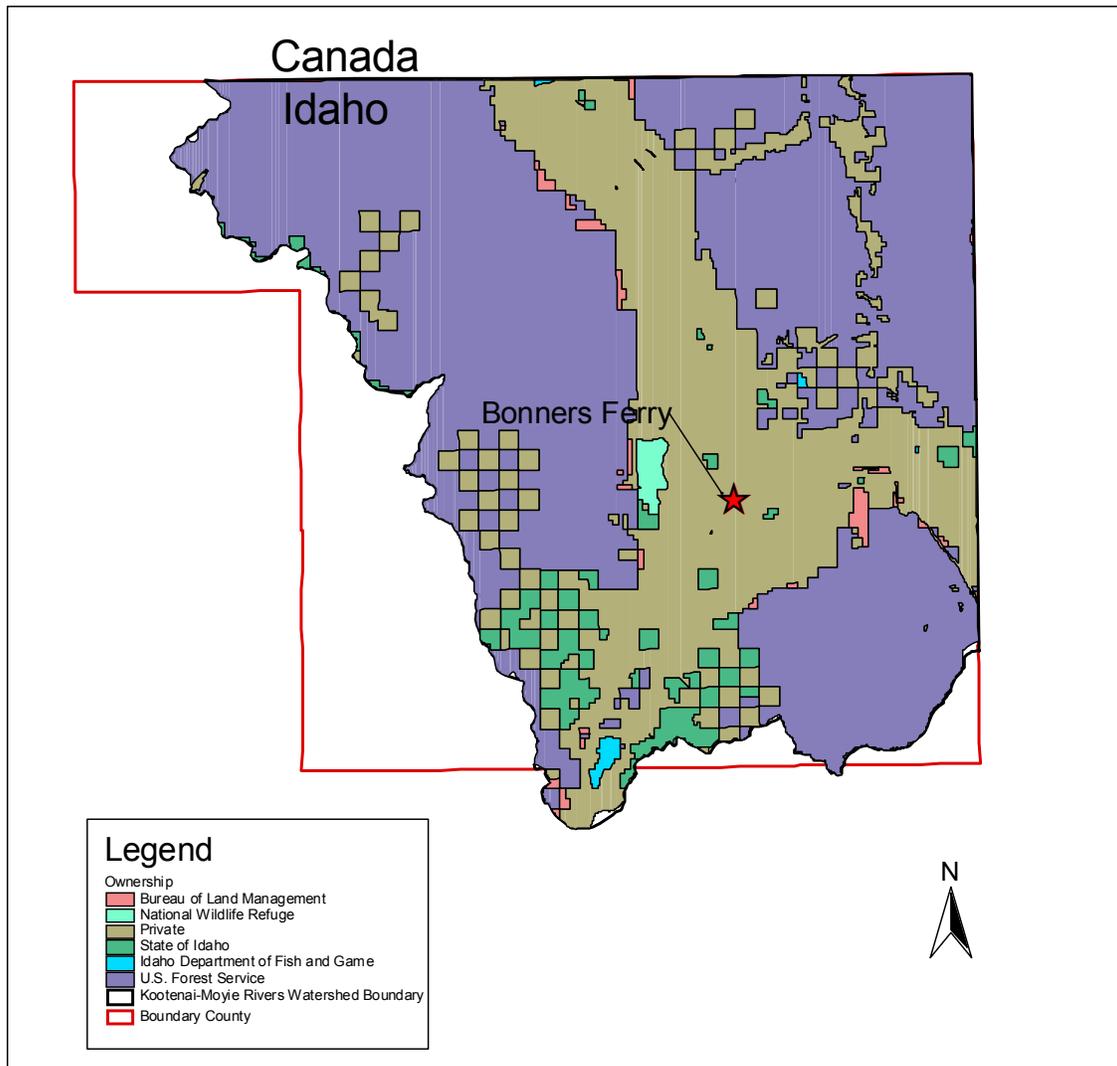
Note that there are two Cow Creeks in the Kootenai-Moyie subbasin. The Cow Creek listed in Table 2-1 is a forested watershed in the northwestern area of the watershed. The other Cow Creek flows into the Kootenai River upstream from Bonners Ferry from the south. This watershed has mixed forest and agricultural land, and is the watershed referred to in Table A-3.

Figure 3-2. Location of Kootenai-Moyie Subbasin in Idaho (Idaho map from NRCS Idaho home page, September 2005).



GIP 2002

Figure 3-3. Land Ownership in the Kootenai-Moyie Subbasin.



3.2.3 Agricultural Practices in the Sub-Basin

Agricultural activities in the Kootenai-Moyie watershed occur in two general areas, referred to as *bench* and *valley*. These areas, as well as the location of Deep Creek, are shown in Figure 3-4. The term *bench agriculture* applies to operations occurring on benches and terraces above the old Kootenai River floodplain. Pasture, hay in rotation with cereal grains, and livestock operations occur in the bench areas. Soils in the bench areas are highly erodible, although the majority of operations in the bench area are bordered by forestland and other vegetative buffers (Gondek 2005). Deep Creek is primarily in the bench area, with the exception of the land area near the mouth, across Deep Creek from the Kootenai National Wildlife Refuge.

Valley agriculture refers to operations occurring in the fertile soil of the old Kootenai River floodplain and consists primarily of nonirrigated cropland. Common crops include hops, cereal grains, canola, legumes, and small seed crops. Soils in the valley areas have a high seasonal water table and have been historically drained with ditches. Dikes have been built to protect agricultural land in the valley from flooding associated with water level management of the Kootenai River at Libby Dam upstream

in Montana. Ditches and streams traveling through valley agricultural areas drain into the Kootenai River through a system of pumps and drainage gates.

Grazed forests are not delineated in this plan due to difficulty in assessing this land use. The United States Forest Service (USFS) and the Idaho Department of Lands (IDL) develop management plans for forested lands in their jurisdiction. IDL is the designated management agency for private forestland. In the event that these agencies desire support in developing grazing plans in grazed forest areas, the conservation partnership is available to provide assistance. Grazing in privately-owned forested areas where jurisdiction is unclear or overlapping will be addressed cooperatively between the conservation partnership and IDL.

3.2.4 Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (ESA) requires federal agencies to determine how to use their authorities to further the purpose of the ESA to aid in recovering listed species and address existing and potential conservation issues. Section 7 (a)(2) further states that agencies shall consult with the U.S. Fish and Wildlife Service or NOAA Fisheries to ensure that any action they authorize, fund, or carry out “is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of (designated critical habitat).” As a federal agency, the NRCS is required to follow this mandate for all projects implemented with federal funding. NRCS policy, as outlined in their General Manual, also includes provisions to consider State species of concern in their conservation activities (190-GM, Amend. 8, December 2003).

Impacts to T&E species and species of concern in the Kootenai-Moyie River watershed will be taken into account in TMDL project implementation. If a proposed action is determined to be within close proximity to habitat used by a Threatened or Endangered (T&E) species or the known location of a T&E species, consultation will be initiated with the appropriate agency. Consultation involves describing the proposed project, assessing potential impacts, describing mitigation efforts for the project, and determining the effect of the project on the species of concern. The consultation process results in development of reasonable alternatives, and helps to minimize impacts of conservation practices to critical habitat.

The Idaho Department of Fish and Game Conservation Data Center, 2002 Threatened and Endangered Species GIS database is available as a tool in conservation planning. The database contains documented locations for terrestrial species. This can help identify known locations of T&E species and identify critical habitat types that may harbor T&E species. Conservation planners can reference habitat requirements to help landusers determine the potential benefits and impacts of their project implementation. These discussions remain confidential between the landuser and planners.

Species listed as Threatened or Endangered under the ESA for Boundary County are summarized in Table 3-2.

Figure 3-4. Bench and Valley Agricultural Areas in the Kootenai-Moyie Subbasin.

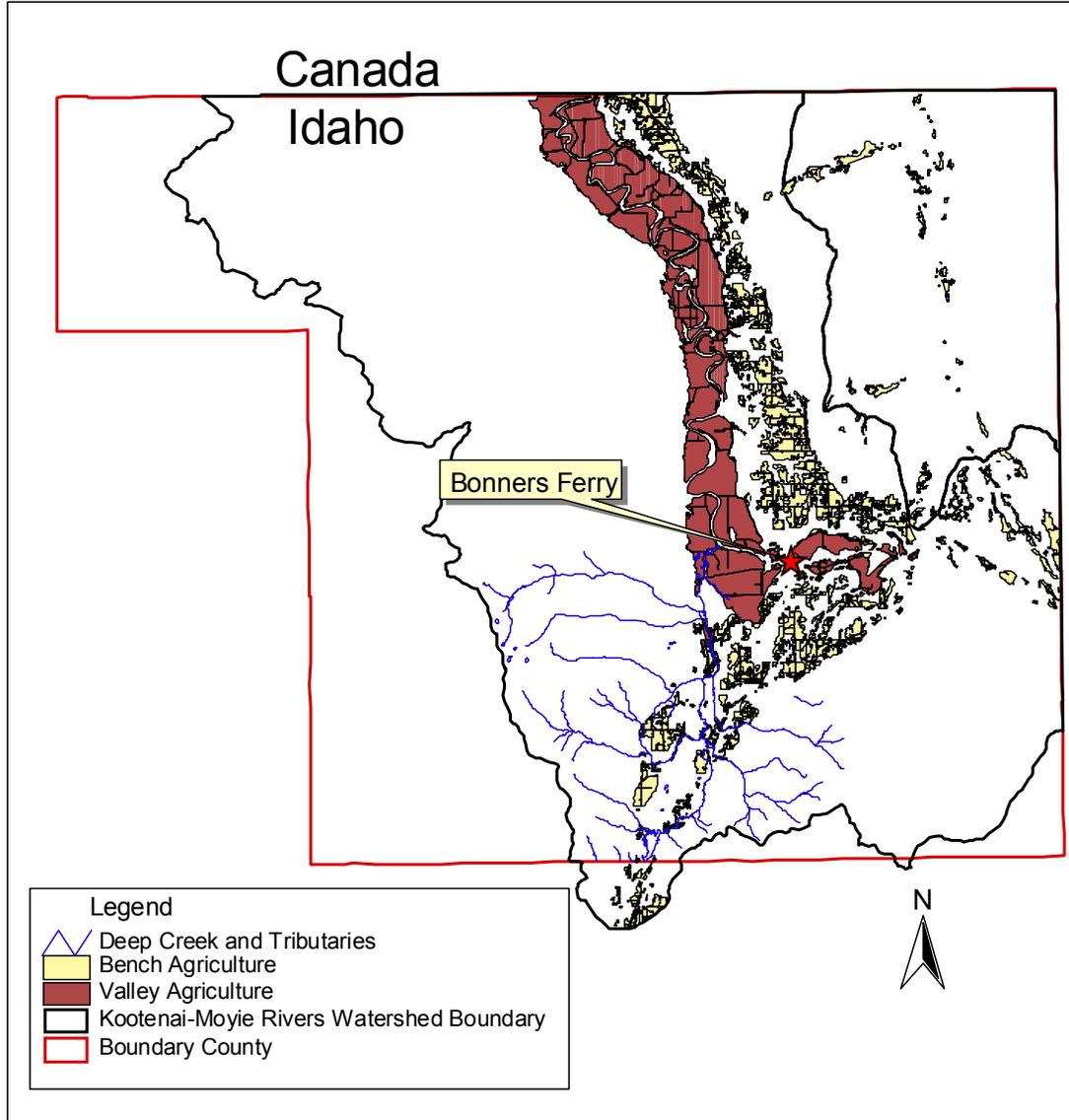


Table 3-2. Federally-listed Threatened and Endangered Species Occurring in Boundary County, Idaho (<http://www.fishandgame.idaho.gov/cms/tech/cdc/t&e.cfm> accessed September 1, 2005)

Species	Listing*
Mammals	
Canada lynx (<i>Lynx canadensis</i>)	LT
Grizzly bear (<i>Ursus arctos horribilis</i>)	LT
Gray wolf (<i>Canis lupus</i>)	LT
Woodland caribou (<i>Rangifer tarandus caribou</i>)	LE
Birds	
Bald eagle (<i>Haliaeetus leucocephalus</i>)	LT
Fish**	
Bull trout (<i>Salvelinus confluentus</i>)	LT
Kootenai River White Sturgeon (<i>Acipenser transmontanus</i>)	LE
Plants	
Water howellia (<i>Howellia Aquatius</i>)	LT
Spalding's catchfly (<i>Silene spaldingii</i>)	LT

*LT – Listed as Threatened, LE – Listed as Endangered

** Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*) and Inland Columbia Basin Redband Trout (*Oncorhynchus mykiss gairdneri*) are also Idaho Species of Concern. Idaho Species of Concern are species native to Idaho that are “either low in numbers, limited in distribution, or have suffered significant habitat losses” (IDFG).

Implementation activities related to fishery resources will follow general recommendations from the NRCS Area Biologist. These recommendations include off site water or limited stream access for livestock, riparian fencing, prescribed grazing, whole tree revetments to help stabilize eroding banks, recruitment of more large woody debris to encourage the development of log jams. Based on observations from July 2005, existing revetments in the watershed have produced deep scour holes, creating vertical diversity, encouraging velocity gradients, and providing feeding lanes, cover, and habitat structure in the creek. More of this type treatment is expected to provide increased fish habitat (Yetter 2005).

3.2.5 Completed and Proposed Projects

The agricultural portion of the Kootenai River TMDL Implementation Plan outlines an adaptive management approach for implementation of Resource Management Systems (RMS) and BMPs to meet the requirements of the Kootenai River TMDL. The goal of this plan is to complement other

efforts in restoring and protecting beneficial uses for 1998 303(d) listed stream segments for which TMDLs have been developed. These segments are identified in Table 3-3. The watershed locations for the listed segments are shown in Figure 3-6.

Table 3-3. 1998 303(d) listed Stream Segments

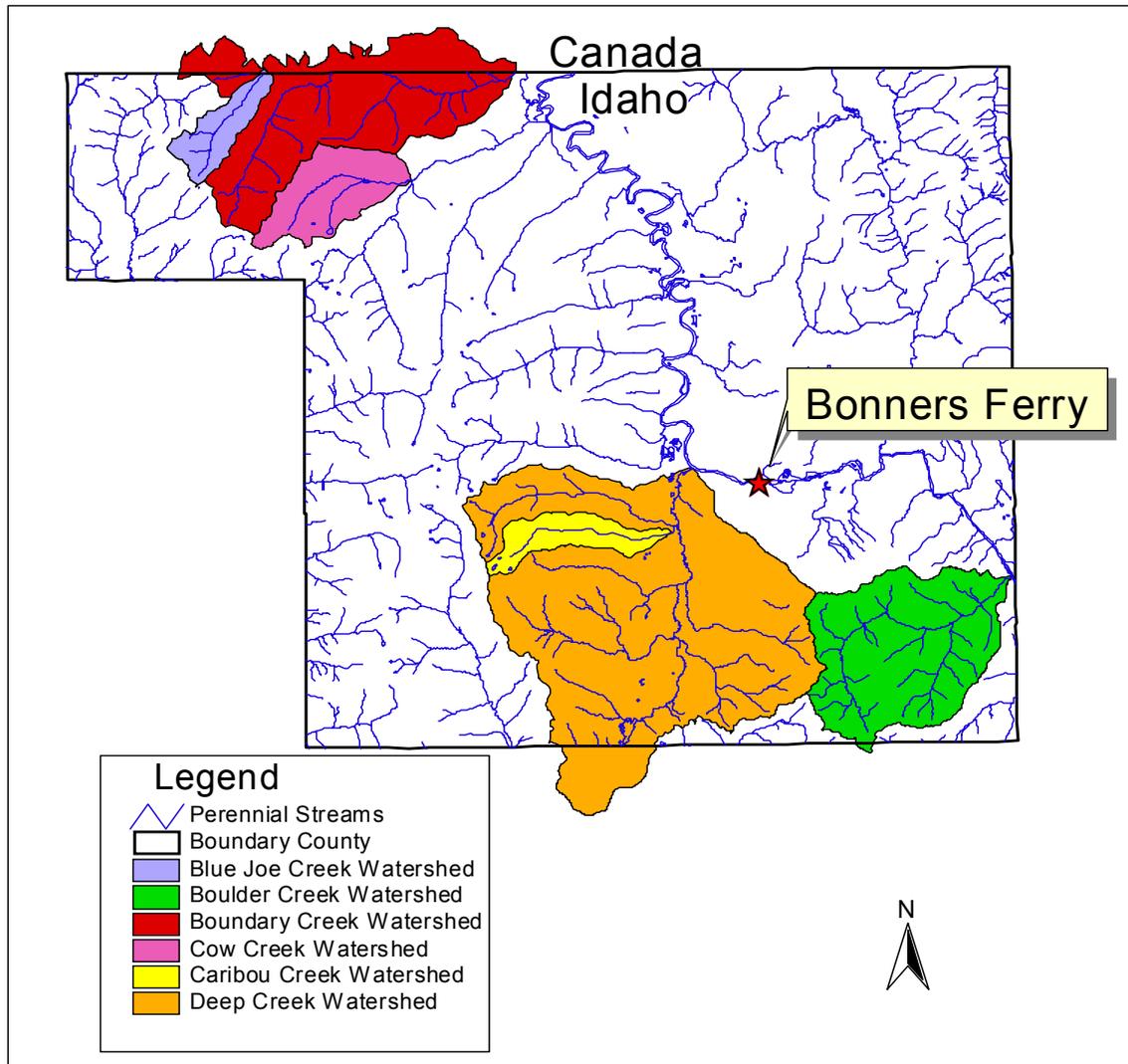
Stream	Description	Pollutant(s)
*Blue Joe Creek	First and second order portions of Blue Joe Creek from headwaters to Idaho/Canada border	Sediment
*Boulder Creek	First, second, and third order portions of Boulder Creek from headwaters to East Fork Boulder Creek; third order portion of Boulder Creek from East Fork Boulder Creek to mouth	Sediment
Boundary Creek	First and second order portions of Boundary Creek from Idaho/Canada border back to Canadian border, including main stem Boundary Creek to Fan Creek; third order portion of Boundary Creek main stem from Fan Creek to Canadian border near Kootenai River	Temperature
*Caribou Creek	First and second order portions of Caribou Creek from Roman Nose Lakes to confluence with Deep Creek	Sediment
*Cow Creek	First and second order portions of Cow and Beaver Creeks from headwaters to Cow Creek's confluence with Beaver Creek and third order portion of Cow Creek downstream from confluence with Beaver Creek to Smith Creek	Sediment
Deep Creek	First and second order portions of Deep Creek upstream of McArthur Lake	Temperature
	Third order portion of Deep Creek from McArthur Lake to Trail Creek and fourth order portion of Deep Creek from Trail Creek to Kootenai River	Sediment, Temperature

*No Private Agricultural Land

The major objective of this plan will be to reduce the amount of sediment entering the watershed from agricultural sources and increase riparian shading where feasible. Agricultural pollutant reductions will be achieved through the application of Resource Management Systems (RMS) and Best Management Practices (BMPs) developed and implemented onsite with individual landowners on a voluntary basis.

In addition, efforts will be made to educate land users in the watershed on the effects of land use on water quality. This will encourage participation in implementation efforts, ensure long-term maintenance of BMPs, and increase awareness of water quality issues. Installed BMPs will be monitored for effectiveness and evaluated in terms of reducing pollutant loading and impacts on designated beneficial uses of the watershed.

Figure 3-5. Watershed Boundaries for 1998 303(d) listed stream segments included in the Kootenai River and Moyie River Total Maximum Daily Loads 2005



3.2.6 Implementation Priority

The agricultural portion of this implementation plan encompasses watersheds with agricultural land uses that have TMDLs developed. Boundary and Deep Creeks have temperature TMDLs developed, and Deep Creek has a sediment TMDL developed (IDEQ 2005).

Stream Visual Assessment Protocol (SVAP), an NRCS protocol for assessing the condition of a stream segment, was performed on private lands along stream segments in the Deep Creek watershed in July 2005. The stream reaches assessed are shown in Figure 6. The assessment areas were selected based on TMDL results, land ownership, and access permission. Assessments were completed by interdisciplinary teams consisting of representatives from NRCS, ISCC, IASCD, Idaho Department of Fish and Game, and Free Run Aquatic Research. Assessments included observations of channel conditions, hydrologic alterations, riparian zones/canopy cover, streambank stability, water clarity, nutrient enrichment, barriers to fish movement, instream fish and invertebrate habitat, pools, and manure presence. Overall stream

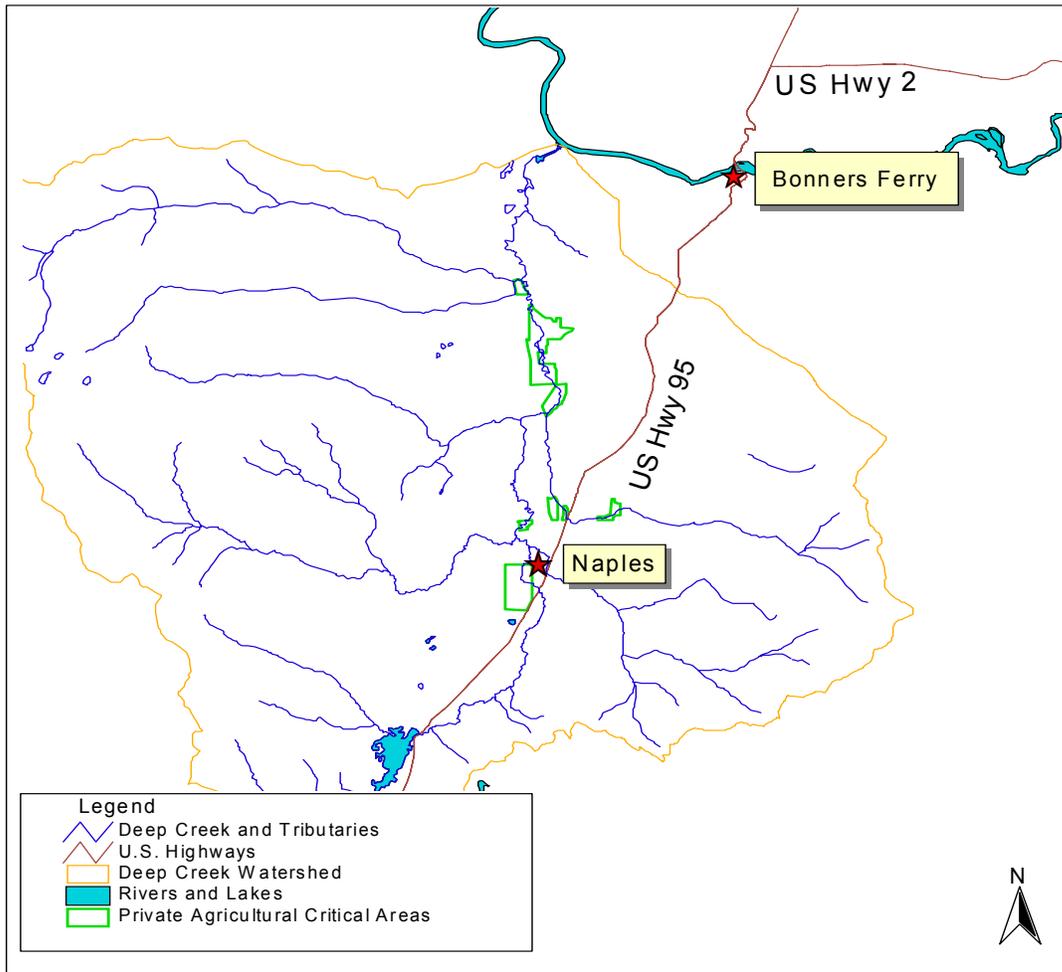
condition ratings were obtained by combining scores from these categories. Stream segments are assigned a rating of excellent, good, fair, or poor, based on the overall score. Channel measurements, photo points, eroding banks, and riparian species are also recorded. The teams noted any observed problems and develop recommendations to address these, where feasible. Recommendations for agricultural reaches from these assessments were utilized to develop this plan.

3.2.6.1 Critical Areas

Agricultural areas that potentially contribute excess pollutants to waterways are defined as “critical areas.” Critical areas prioritized for this plan were identified during field observations in July 2005. Agricultural critical areas for this implementation plan are shown in Figure 3-5. Agricultural critical areas are prioritized for treatment based on their location relative to Deep Creek and the potential for pollutant transport and delivery to its water. Primary operations of concern are livestock operations with either unrestricted access to riparian areas and/or contributing direct runoff from feedlots, overgrazed pastures, and pasture and hayland that encroaches upon riparian areas.

Based on field observations, approximately 1,000 acres of riparian and hay/pasture critical areas have been identified in the Deep Creek watershed. In addition, two livestock winter feeding areas were identified with direct access to streams.

Figure 3-6. Agricultural Critical Areas in the Deep Creek Watershed.



A total of 27 reaches were assessed, totaling approximately 9.6 miles of stream length. The ratings for all reaches are summarized in Table 5.

Table 3-4. 2005 Stream Assessment Summary.

Rating	Length of Stream
Excellent	1,682 feet
Good	17,490 feet
Fair	15,823 feet
Poor	15,643 feet

Many observed problems were associated with disturbance or removal of riparian vegetation, insufficient riparian buffer width, lack of woody vegetation in the riparian area, and water level management associated with the operation of Libby Dam in Montana (in some lower reaches). Unrestricted livestock access to the riparian area, recreational mowing, and other direct vegetative removal was commonly observed during stream assessments.

Among the reaches assessed, many of the surrounding land uses were non-agricultural. A summary of the land uses observed, along with reach summaries and recommendations for the non-agricultural reaches will be provided to the Idaho Department of Environmental Quality (IDEQ) upon completion. The assessed reaches with adjacent agricultural land uses were utilized to prioritize areas for treatment and develop potential BMPs for implementation.

3.2.6.2 Treatment and Costs

Agricultural critical areas of the Deep Creek watershed have been divided into Treatment Units (TUs). The TUs describe critical areas with similar land use areas, soils, productivity, resource concerns, and treatment needs. The TUs are based on observations from the SVAP assessment mentioned previously and are used to formulate alternatives for solving identified problems. Treatment Units for the Deep Creek watershed include Riparian Areas and Pasture/Hayland. These TUs are described below. Two livestock feeding operations (operations that involve providing livestock with supplemental feed in addition to grazed vegetation) were identified during stream assessment activities. Recommended BMPs included in Treatment Units 1 and 2 would apply to concerns in these areas.

Agricultural BMPs are voluntary in nature and, therefore, rely on operator participation. A goal of 75% participation has been set for the BMPs needed to address the resource concerns. Implementation in the form of education, outreach, inventory, planning, and BMP installation is ongoing. Resources will continue to be directed at the Deep Creek watershed with added emphasis.

Treatment Unit #1 - Riparian Areas

The riparian resources of the Deep Creek watershed vary from pasture and hayland vegetation to mixed woody and herbaceous riparian zones extending down from adjacent agricultural, residential, and forested areas. There are approximately 30 acres within this treatment unit, which consists of riparian zones impacted by agricultural areas (This acreage estimate includes approximately 3.7 acres of riparian area that was not inventoried, as access to the property was denied). The acreage was calculated from estimated impacted stream length with a 70 to 100-foot wide buffer (measured from the center of the channel extending out each side).

Riparian areas in the Deep Creek watershed are unstable from lack of woody vegetation and perennial grasses. Riparian area degradation has occurred as a result of livestock overgrazing, direct vegetative removal for facilitation of farming and ranching operations, and, in some cases, water level fluctuations associated with water level management of the Kootenai River at Libby Dam in Montana (on the mainstem of Deep Creek). Bare, exposed soil and unstable banks resulting from the lack of vegetation can contribute sediment to waterways through erosion and sediment delivery to water. Lack of vegetation also inhibits a stream's ability to filter excess pollutants flowing into the water body from surface runoff and reduces effective shade on the

stream. Poorly functioning riparian zones can additionally result in degraded habitat and increased water temperatures.

Varying levels of treatment are recommended for riparian areas, based on the level of impact observed during stream assessments. Combinations of riparian exclusion fence; riparian vegetation; livestock water gaps, hardened crossings, or offsite watering facilities will help restore

the functioning condition of riparian areas. In locations where more severe riparian degradation and streambank erosion is occurring, streambank shaping, stabilization, and bioengineering can be applied to restore the condition of the streambanks and riparian vegetation. Table 6 below summarizes potential BMPs and associated costs for improvement projects in the Deep Creek watershed.

Table 3-5. Best Management Practices for Treatment Unit #1.

Amount	Best Management Practice (NRCS BMP Practice Code)	Unit Cost	Estimated Cost
21,200 feet	Fence (382)	\$2/foot	\$42,400
12 each	Hardened Crossings (561)	\$2,500/each	\$30,000
10 each	Troughs (614)	\$1,500/each	\$15,000
3,500 feet	Pipeline (516)	\$2/foot	\$7,000
9 acres	Riparian Forest Buffer (391)	\$2,000/acre	\$18,000
14 acres	Use Exclusion (472)	\$50/acre	\$700
1200 feet	Streambank Protection /Bank Shaping (580)	\$3/foot	\$3,600
2,700 feet	Streambank Protection/Bioengineering (580)	\$20/foot	\$54,000
	Total		\$170,700

Treatment Unit #2 – Pasture/Hayland

There are approximately 970 acres of pasture and hayland in this treatment unit (this acreage estimate includes approximately 80 acres of Pasture and Hayland that was not inventoried, as access to the property was denied). The majority of the hay and pasture soils in this treatment unit are silt loam and somewhat poorly to poorly drained. These soils are susceptible to water erosion (NRCS 2001). Cropping systems consist primarily of alfalfa hay (5-8 years) rotated with small grain as hay or silage for 1 to 3 years (Gondek 2005).

In cases where overgrazing occurs, soil compaction can increase surface runoff versus infiltration. In addition, overgrazing can leave inadequate vegetative cover on the land surface, reducing the ability of the land to hold soil in place. Surface runoff not only has the potential to carry sediment into stream channels, but increased runoff, as opposed to infiltration, can also increase peak flows and associated streambank erosion. These issues are especially significant where pastures are adjacent to riparian areas. Riparian area treatment was summarized in Treatment Unit #1 above.

The BMPs for Treatment Unit # 2 are in addition to riparian treatment where pastures are adjacent to surface water. Table 7 summarizes potential BMPs and associated costs for Treatment Unit #2.

Table 3-6. Best Management Practices for Treatment Unit #2.

Best Management Practice (NRCS BMP Practice Code)	Amount	Unit Cost	Estimated Cost
Prescribed Grazing (528A)	650 acres	\$1/acre	\$650
Pasture and Hayland Planting (512)	125 acres	\$100/acre	\$12,500
Forage Harvest Management	885 acres	\$0	\$0
Total			\$13,150

3.2.6.3 Outreach

Efforts to educate land users about the effects of management practices on water quality will be emphasized in the Deep Creek watershed. Because the Deep Creek watershed has impaired beneficial uses, the conservation partnership will put added emphasis on explaining technical and financial assistance available to landowners in the watershed through one-on-one assistance with landowners, and in conjunction with other agencies. Periodic news releases and community activities, such as the Boundary County Fair, will be utilized to disseminate information on the status of the Deep Creek watershed as well as the Kootenai-Moyie Subbasin as a whole.

Applications for technical and financial assistance will be solicited with emphasis in the Deep Creek watershed, through cooperation of all conservation partners. As assistance is requested from this area, high priority will be given to these and other applicants in areas critical to TMDL implementation. Assistance requests resulting in field visits allow direct contact with land managers and observation of the land. One-on-one time will be utilized to dispense information on water quality, BMPs, and available resources. Treatments applicable to the needs of the Deep Creek watershed will be the focus of discussions with landowners in the vicinity.

3.2.7 Funding or Program Assurances

Funding for installation of BMPs is necessary to ensure the success of implementation. Much of the funding that can be used to implement this plan is available annually on a first-come first-serve basis or through a competitive review and ranking process. The Boise State University Environmental Finance Center is a valuable resource for researching funding for projects (<http://ssrc.boisestate.edu>). Chapter Four of the Idaho Nonpoint Source Management Plan also contains a listing of programs that could potentially be used for implementation funding (IDEQ, 1999b). The Boundary Conservation Partnership will pursue one or more of the funding sources found in Appendix B for implementation of this plan:

3.2.8 Monitoring

Component practice BMP evaluation is done in conjunction with conservation plan and program contract implementation. The objective of an individual conservation plan evaluation is to verify that BMPs are properly installed, maintained, and working as designed. An October 2003 publication by ISCC and IDEQ entitled *Idaho Agricultural Best Management Practices: "A Field Guide for Evaluating BMP Effectiveness"* provides the specifications and protocol for BMP evaluation to be used by field staff.

Monitoring for pollutant reductions from individual projects consists of spot checks, annual reviews, and evaluation of advancement toward reduction goals. Annual status reviews are typically done within program contracts to ensure compliance with contract rules. These reviews are significant to ensure sound decision-making and adaptation of implementation priorities and focus. The results of these evaluations are used to recommend any necessary adjustments to continue meeting resource objectives. Where riparian improvement projects are implemented in the Deep Creek watershed, effective shade will be monitored in conjunction with annual reviews.

Where conservation plans are developed in cooperation with the BSCD, progress is tracked during the life of a program contract. Local tracking is assisted by NRCS and ISCC agency program specialists, where cost-share programs/projects are active. Where cost-share programs are not used, tracking is up to the local field office.

3.3 County Roads Implementation Plan

3.3.1 Past Actions

During the spring thaw high runoffs in 1995-1996 a lot of damage was done to Boundary County infrastructure as cut banks sloughed away, ditches and roads washed out and culverts were overtopped or filled with sediment. Increased timber harvesting at lower elevations combined with rapid spring thaws led to several catastrophic failures, most notably on Highland Flats Hill, County Road 6 and near the Golf Course on US 95 and County Road 2. Slides also occurred near the refuge on County road 18, and culverts were overwhelmed along the Moyie River and near Mac Arthur Lake.

3.3.2 Current Practices

As evidenced by Boundary County's Capital Improvement Plan and Budget, the County has been on a campaign to upsize culverts, surface roads, stabilize cut and fill slopes and ditches since 1998 both with local jurisdiction funding and Federal Highway funding via programs such as the Surface Transportation Rural (STPR), Congestion Mitigation Air Quality (CMAQ), Forest Highways, and various bridge replacement programs.

A lot of this work has been done and is ongoing in the area of Deep Creek and its tributaries. Some of these projects are therefore reflected in the table, chiefly because they should already be having a positive influence in the reduction of sediment loads to the Deep Creek watershed.

3.3.3 Revision

The county reevaluates road maintenance and road improvement projects on an ongoing basis. Based on these reevaluations the county will prioritize projects based on a number of factors including sediment reduction to the streams in this watershed.

3.3.4 Tracking

The Boundary County Road Department keeps detailed records of all projects completed. These records include type of activity, date of completion, location, and costs. The records can be found in the Boundary County Road Department Office.

3.3.5 Monitoring

When funding sources are available the county is committed to monitoring the effectiveness of our road improvement activities for sediment reduction. Boundary county will look to the IDEQ for assistance in obtaining the necessary funding and guidance in developing a defensible monitoring plan.

3.4 Data Needs, Future Studies and Resource Requirements

During the development of the Kootenai/Moyie Sub-basin TMDL and Implementation Plan there were several areas that it was determined needed more information or resources in order to refine the loading allocations and the implementation activities. Table 3-7 lists the items identified in this process that should be addressed prior to review of the TMDL and Implementation Plan in 2011.

Table 3-7. Data Needs, Future Studies, and Resource Requirements Identified in the Implementation Plan Development Process.

Type	Project
Monitoring	Solar load measurement program on Deep Creek to follow up on TMDL Progress. Once every 2 to 3 years measure compliance points with a solar pathfinder.
Study	Need to measure stream temperatures basin wide, also generate aerial interpretations and solar pathfinder verification
Monitoring	Large Stream Monitoring, ASAP, Kootenai River Support Status and Moyie River
Monitoring/Study	A monitoring program that addresses disturbed landscapes to determine how much sediment loading is being delivered to streams from these activities. This program would determine the spatial extent, offer solutions and identify educational opportunities
Information and Education	Assist the county in developing an information packet to be distributed to developers and landowners installing roads to improve use of BMPs
Resource Needs	Work to obtain funding to help defray the cost of private road improvement and development.

3.5 Companion Plans and Programs

The TMDL Implementation Plan is not intended to be the sole source of activities and actions that will improve water quality and beneficial use status in the basin. Additional processes exist that will supplement the Implementation Plan. These additional plans include:

- Kootenai and Idaho Panhandle National Forest Management Plan
 - The current plan was adopted in 1987. The USFS is in the process of revising this forest plan and plan to deal with issues such as fish passage, endangered species, and impact of roads on water quality.

- Kootenai River Sub-basin Plan
 - The Northwest Power Act of 1980 directs the Northwest Power and Conservation Council to develop a program to protect, mitigate and enhance fish and wildlife of the Columbia River Basin that have been impacted by

hydropower dams, and make annual funding recommendations to the Bonneville Power Administration for projects to implement the program. The Council developed a comprehensive Sub-basin Plan to provide a technical assessment, an inventory of past and current efforts, and a management plan of objectives and strategies.

- Idaho Comprehensive Wildlife Conservation Strategy (CWCS)
 - Developed by the Idaho Department of Fish and Game to identify the measures that will be used, the results achieved, and the threats and needs that remain with regard to wildlife and wildlife habitat. It is also developed to address broader issues and programs, including environmental and wildlife-related education, outdoor recreation, and wildlife-related law enforcement.

3.6 Environmental Regulation and Oversight Implementation Plan (ERIP)

IDEQ has the role of assuring Idaho's compliance with the Clean Water Act Section 303(d), and Idaho Administrative Code, IDAPA 58.01.02 – Water Quality Standards and Wastewater Treatment Requirements. For Kootenai/Moyie Sub-basin, IDEQ's regulatory actions in relation to these laws are dictated by the following facts:

1. The Idaho segments of Kootenai/Moyie Sub-basin stem remains on the federal Clean Water Act 303(d) list as Not Full Support of the beneficial uses cold water aquatic life and salmonid spawning (i.e., "water quality impaired"), as determined by IDEQ and documented in the *Kootenai River and Moyie River Subbasin Assessment and TMDL* (Steed 2005).
2. In accordance to IDAPA 58.01.02.054.02, IDEQ prepared a sediment TMDL for the Boundary, Cow and Deep Creek watersheds (DEQ 2005b). The TMDL includes allocations of the sediment and temperature Load Capacity, and allocations of sediment and temperature reduction goals.
3. Thus, there is a mandate for restoration to Full Support of the beneficial uses. The attempt toward restoration as specified in this TMDL-IP will include long-term reduction in sediment yield to watershed streams, improved stream bank stabilization and stream shade, and improved in-stream fish habitat.

The environmental regulatory role of IDEQ will work for compliance of IDAPA 58.01.02.054.04 as follows:

Waters with EPA approved TMDLs Prior to Development of an Implementation Plan

- .04 *High Priority Provisions. Until a TMDL or equivalent process is completed for a high priority water quality limited water body, new or increased discharge of pollutants which have caused the water quality limited listing may be allowed if interim changes, such as pollutant trading; or some other approach for the pollutant(s) of concern are implemented and the total load remains constant or decreases within the watershed. Interim changes shall maximize the use of cost effective measures to cap or decrease controllable human-caused discharges from point and nonpoint sources. **Once the TMDL or equivalent process is completed, any new or increased discharge of causative pollutants will be allowed only if consistent with the approved TMDL.** Nothing in this section shall be interpreted as*

requiring best management practices for agricultural operations which are not adopted on a voluntary basis.

SECTION 4.0 REFERENCES

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APPENDIX A: COMPLETED AND PROPOSED PROJECTS

Forest Practices

Table A-1. CWE Management Problems & Mass Failures

DRAINAGE	PARTICIPATING PARTNERS (LANDOWNER)	PRACTICE BEING APPLIED	TARGETED BENEFIT	DATE IDENTIFIED	COMPLETION DATE	REDUCTION	
						ONE TIME	T/Y
Fall Creek	IDL (PI)	Culvert removal	Sediment	2003	2003	15	0
Fall Creek	IDL (IDL)	Fixed mass failure	Sediment	2003	2003	15	0
Trail Creek	IDL (PI)	Removal of battery	Pollutant	2003	2003	0	0
Fall Creek	IDL, SL (SL)	Clean ditch line	Sediment	2003	2004	10	0
Trail Creek	IDL (IDL)	Culvert replacement	Sediment	2003	2006	10	0.5
Trail Creek	IDL (IDL)	Culvert replacement	Sediment	2003	2006	10	0.5
Trail Creek	IDL	Culvert replacement	Sediment	2003	2006	10	0.5
Caribou Creek	(FS)	Culvert problem	Sediment	2002		0	0
Caribou Creek	(FS)	Culvert problem	Sediment	2002		0	0
Caribou Creek	(NIPF)	Logging in Class 1 SPZ	Sediment	2002		0	0
Caribou Creek	(NIPF)	Fill Slope problem	Sediment	2002		0	0
Caribou Creek	(PI)	Culvert problem	Sediment	2002		0	0
Caribou Creek	(FS)	Washout	Sediment	2002		0	0
Caribou Creek	(FS)	Culvert problem w/ washout	Sediment	2002		0	0
Caribou Creek	(FS)	Mass failure	Sediment	2002		0	0
Dodge Creek	(PI)	Mass failure	Sediment	2003		0	0
Fall Creek	(IDL)	Mass failure	Sediment	2003		0	0
Fall Creek	(IDL)	Mass failure	Sediment	2003		0	0
Fall Creek	(SL)	Mass failure	Sediment	2003		0	0
Fall Creek	(SL)	Fill slope	Sediment	2003		0	0
Fall Creek	(FS)	Culvert problem	Sediment	2003		0	0
Ruby Creek	(PI)	Ditch drainage gully	Sediment	2003		0	0
Snow Creek	(FS)	Mass failure	Sediment	2003		0	0
Snow Creek	(FS)	Mass failure	Sediment	2003		0	0
Snow Creek	(PI)	Washout	Sediment	2003		0	0

DRAINAGE	PARTICIPATING PARTNERS (LANDOWNER)	PRACTICE BEING APPLIED	TARGETED BENEFIT	DATE IDENTIFIED	COMPLETION DATE	REDUCTION	
						ONE TIME	T/Y
Snow Creek	(PI)	Culvert problem	Sediment	2003		0	0
Snow Creek	(FS)	Washout	Sediment	2003		0	0
Snow Creek	(FS)	Impending mass failure	Sediment	2003		0	0
Snow Creek	(PI)	Ineffective road closure	Sediment	2003		0	0
Trail Creek	(PI)	Impending mass failure	Sediment	2003		0	0
Trail Creek	(PI)	Culvert problem	Sediment	2003		0	0
Trail Creek	(PI)	Washout	Sediment	2003		0	0
Trail Creek	(NIPF)	Washed out crossing	Sediment	2003		0	0
Twenty Mile Creek	(NIPF)	Fill slope	Sediment	2003		0	0
Twenty Mile Creek	(FS)	Culvert problem	Sediment	2003		0	0
Twenty Mile Creek	(NIPF)	Culvert problem	Sediment	2003			
TOTAL:						70	1.5

Table A-2. Completed Projects

DRAINAGE	PARTICIPATING PARTNERS	PRACTICE BEING APPLIED	TARGETED BENEFIT	DATE IDENTIFIED	COMPLETION DATE	REDUCTION T/Y
Trail Creek	IDL,PI	Surfacing 3.62 miles	Sediment	1998	1999	19.9
Dodge Creek	IDL,PI	Surfacing 4.27 miles	Sediment	1998	1999	23.5
Dodge Creek	IDL,PI,SL	Surfacing 2.6 miles	Sediment	1999	2000	14.3
Trail Creek	IDL	Surfacing 1.07 miles	Sediment	2000	2001	5.9
Trail Creek	IDL,PI	Surfacing 1.01 miles	Sediment	2000	2001	5.6
Trail Creek	IDL	Abandonment 0.2 miles	Sediment	2000	2001	1.4
Deep Creek	IDL	Riparian planting	Sediment/Temp	2002	2002	0.4
Trail Creek	IDL,PI	Surfacing 0.36 miles	Sediment	2001	2002	2
Deep Creek	IDL	Surfacing 1.5 miles	Sediment	2002	2003	8.3
Dodge Creek	IDL,PI,SL	Surfacing 6.14 miles	Sediment	2003	2003	33.8
Fall Creek	SL	Close 26 miles of road	Sediment	2003	2003	52
Trail Creek	IDL,PI	Surfacing 1.2 miles	Sediment	2003	2004	7.7
Trail Creek	IDL	Road abandonment 1.2 miles	Sediment	2003	2004	8.4
Trail Creek	IDL,PI	Surfacing 2.5 miles	Sediment	2003	2004	13.8
Fall Creek	PI	Close 2.2 miles of road	Sediment	2004	2004	4.4
Fall Creek	IDL,SL	Surfacing 1.25 miles	Sediment	2003	2005	6.9
Ruby Creek	PI	Surfacing 2.5 miles	Sediment	2004	2005	13.8
Deep Creek	IDL	Abandon 0.5 miles	Sediment	2005	2006	3.5
Deep Creek	IDL	Surface 1.13 miles	Sediment	2005	2006	6.2
Dodge Creek	IDL	Abandon .21 miles	Sediment	2005	2006	1.5
Dodge Creek	IDL	Surfacing 0.6 miles	Sediment	2005	2006	3.3
Trail Creek	IDL	Rock stream xings	Sediment	2005	2006	1.5
Ruby Creek	PI	Close 11 miles of road	Sediment	2005	2006	22.0
TOTAL:						260.1

Agriculture

Table A-3. Conservation Partnership Accomplishments in the Kootenai-Moyie Subbasin since 1998

Hydrologic Unit Code	Project Description	Date Implemented	Effectiveness
17010104-030	Tree and Shrub Plantings within Cow Creek Watershed	2002-2003	Improve hydrology and shading, reduce sheet and rill erosion
17010104-040	North Hill Hydro Seeding Project with Idaho Transportation Department along Highway 95	2000	Improve shading, reduce sheet and rill erosion
17010104-060	Boundary Creek WRP* - Restore Kootenai River Floodplain, Wetlands, and Hydrology	2000	Improve hydrology and riparian zone
17010104-060	Smith Creek WRP* - Restore Kootenai River Floodplain, Wetlands, and Hydrology	2003	Improve hydrology and riparian zone
17010104-060	Smith Creek Dike Road Repair-Rock Rip Rap, Bio-engineering, and Rock Barbs	2002	Reduced bank erosion and sedimentation
17010105-015	Curley Creek WRP* - Restore Curley Creek Riparian Zone, Semi Wet Meadows, and Floodplain Hydrology	2002	Improve hydrology and riparian zone / shading
17010104-040	Ball Creek WRP* - Restore Kootenai River Floodplain, Wetlands, and Hydrology	2003	Improve hydrology and riparian zone
17010104-050	3 Animal Waste Systems: Kootenai River	1998 and 2003-2004	Reduce animal waste runoff
17010104-025	Round Prairie Creek WRP* - Restore Wetland Hydrology	1998	Improve hydrology and riparian zone
17010104-040	Deep Creek Bank Stabilization	1998	Reduced bank erosion and sedimentation
17010104-015	Curley Creek Tree and Shrub Planting and Forest Road Seeding	2002-2004	Improve hydrology and riparian zone, reduce sheet and rill erosion
17010104-040	Deep Creek Bank Barbs, Rip Rap, Log Revetment and Riparian Fencing	1999 and 2000	Reduced bank erosion and sedimentation
17010101-040	Deep Creek Log Revetment Structures along outside bend and pole plantings	2000	Reduced bank erosion and sedimentation, improve riparian zone/shading
17010104-040	Trail Creek Streambank and Shoreline protection	2004	Reduce bank erosion and sedimentation, improve riparian zone/shading
17010104-020-050	Kootenai River/Cow Creek CRP* - Planting permanent cover on approx. 1200 acres	1985 and ongoing	Reduce sheet and rill erosion, improve hydrology
17010104-040 & 050	CCRP* Filter Strip - Permanent cover along Kootenai River Drain Ditch and Creeks	2002 and on going	Improve hydrology and riparian zone/shading
17010104-040 & 050	Conservation Tillage Systems - Reduced tillage and direct seeding systems	1985 ongoing	Reduce sheet/rill erosion, improve hydrology
17010101-030-060	Conservation Cover - Grass and Legumes in Rotation; Hay crops planted approx. 5000 ac/year	On going	Reduced sheet/rill erosion, improve hydrology
17010104-040	Tree and Shrub Plantings - Approximately 3000 Trees and Shrubs planted per year in logged areas within Bane Creek watershed.	2000-2004	Improve hydrology and shading
17010104-040	Deep Creek Bank Barbs, Rip Rap, Brush Revetment, Riparian Fencing, and Tree and Shrub Plantings on bank- 300 linear feet	2005	Reduce bank erosion and sedimentation, improve Riparian zone / shading

Hydrologic Unit Code	Project Description	Date Implemented	Effectiveness
171010101-040	Deep Creek (2) Shallow Wildlife ponds and willow plantings	2005	Improve hydrology, reduce sheet and rill erosion
17010104-060	Long Canyon Creek Streambank and Shoreline protection – 600 linear feet	2006	Reduce bank erosion and sedimentation, improve riparian zone/shading, enhance fish habitat
17010104-050	Unnamed trib (locally named Trow Cr) - Kootenai River (2) wildlife ponds	2005	Improve hydrology
17010104-030	Cow Creek – prescribed grazing (30 acres), pasture and hayland planting (30 acres), forest management (60 acres), wildlife ponds	2006-2010	Reduce sheet and rill erosion, improve hydrology
17010104-040	Ruby Creek/road - Bank barbs, tree and shrub planting, riprap	2000	Reduce bank erosion, increase shading

*WRP – NRCS Wetland Reserve Program, CRP – Farm Service Agency Conservation Reserve Program, CCRP – Continuous sign-up CRP

Boundary County Roads

Table A-4. Projects to Reduce Loading of Sediment to Deep Creek and it's tributaries

Road Name	Waterbody to be treated	Pollutant	Project Description	Project Year	Proposed Funding	Load Reductions
CR21 Browns Creek Road	Browns Creek trib. To Deep Creek	Sediment	Replace culverts, Re-construct, Surface with BST/asphalt, Check dams	2007-2008	Local Rural Highway Investment Program (LRHIP) paving	
CR9 Twentymile Road	Twenty Mile creek trib. To Deep Creek	Sediment	Replace large culvert with Bridge, in stream structures	2005-2006	319 Grant	
CR2 Naples-Deep Creek Old Highway	Deep Creek	Sediment	Increased Stream passage through flood plain by replacing 2 bridges	2005-2006	Off-System Bridge Program (FHWA \$) and LRHIP for match	
CR3A Guard Station Road	Deep Creek	Sediment	Check dams and ditch armoring.	2006	Local jurisdiction	
CR3 Shiloh Road	Deep Creek	Sediment	Re-construct, Replace culverts possible BST Road surfacing,	2008-2009	Local + LRHIP	
CR4 McArthur Road	McArthur Lake	Sediment	2.5 miles paved, rock line ditch and armor slope near Wymans	2002 completed	Local	
CR4A	Dodge Creek	Sediment	Upsized culverts that were washing out annually	2002 completed		
CR4B	Fall Creek trib.to Deep Creek	Sediment	Doubled stream passage by adding a 6' culvert to existing 6' culvert eliminating annual washout.	1999	Local	
CR8A Haddock Hill	Trail Creek	Sediment	Reconstruction and BST surfacing, re-establish ditch on hill and rock line with check dams	2007-2008	Local	
County Wide Dust Abatement program	Deep Creek and Tributaries	Sediment	Stabilize fugitive dust emissions on most gravel roadways especially near waterways	2000-2010 ongoing	CMAQ and Local	

**APPENDIX B: PROSPECTIVE FUNDING PROGRAMS FOR WATERSHED
RESTORATION**

Appendix B, with some modification and update, has been taken *from Idaho Nonpoint Source Management Plan* (IDEQ 1999b).

The following is a brief summary of some of the ongoing programs currently used to abate nonpoint source pollution and is not meant to minimize or undermine the importance of those state, federal, local or tribal programs which have not been included in this chapter. Many of these programs have been integrated, such as joint PL566 projects to ensure adequate implementation coverage, and ensure all landowners are able to participate and implement BMPs at some level. Designated agencies and their partners using a mix of regulatory, voluntary, and incentive-based programs, target a given watershed, and in conjunction with the BAG/WAG process as outlined in Idaho's Water Quality Law, provides for the abatement and prevention of nonpoint source pollution in a complementary holistic fashion.

§104(b)(3)... Tribal and State Wetland Protection Grant, EPA

This program provides financial assistance to state, tribal, and local government agencies to develop new wetland protection programs or refine and improve existing programs. All projects must clearly demonstrate a direct link to improving an applicant's ability to protect, restore or manage its wetland resources.

§303 (d)... Water Quality Planning and Management, DEQ/EPA

Water quality standards and implementation plans including review and revision of standards, water quality limited segments, total maximum daily loads, the continuing planning process, and thermal limits. §303 (d) requires states to prepare a prioritized list of water quality limited segments not meeting state water quality standards.

§319 (h)... Nonpoint Source Grants, EPA/DEQ

http://www.deq.state.id.us/water/water1.htm#ww_nonpoint This program provides financial assistance for the implementation of best management practices to abate nonpoint source pollution. The DEQ manages the NPS program. All projects must demonstrate the applicant's ability to abate NPS pollution through the implementation of BMPs.

Aquatic Ecosystem Restoration, CoE

Section 206 of the Water Resources Development Act of 1996, provides financial assistance for aquatic and associated riparian and wetland ecosystem restoration and protection projects that will improve the quality of the environment. There is no requirement for an aquatic ecosystem project to be linked to a Corp of Engineers project. The program does require that a non-federal interest provide 35% of construction costs, including all lands, easements, right-of-ways and necessary relocations. The program also requires that 100% of the operation, maintenance, replacement, and rehabilitation be borne by the non-federal interest. The program limits the amount of federal assistance to \$5 million for any single project.

Challenge Cost-share Program, BLM

This program provides 50% cost-share monies on fish, wildlife, and riparian enhancement projects to non-federal entities.

Conservation Improvement Grants, ISCC

http://www.scc.state.id.us/PDF/Conservation%20Improvement%20Grant%20Policy-Revised%202_.pdf

The Conservation Improvement Grant program is administered by ISCC, in cooperation with Idaho's 51 soil and water conservation districts. This program provides financial assistance to eligible applicants for the implementation of natural resource conservation projects. The program is aimed primarily at water quality and riparian area improvement projects. A 1:1 match, cash or in-kind, is required. The match cannot originate from another cost-share program or units of government.

Conservation Operations Program (CO-01), NRCS

The CO-01 program provides technical assistance to individuals and groups of landowners for the purpose of establishing a link between water quality and the implementation of conservation practices. The NRCS technical assistance provides farmers and ranchers with information and detailed plans necessary to conserve their natural resources and improve water quality.

Conservation Research and Education, NRCS

The Conservation Research and Education program was created through the 1996 Farm Bill and is administered by the National Natural Resources Conservation Foundation. The purpose of the program is to fund research and educational activities related to conservation on private lands through public-private partnerships.

Conservation Reserve Program (CRP), NRCS

The CRP program provides a financial incentive to landowners for the protection of highly erodible and environmentally sensitive lands with grass, trees, and other long-term cover. This program is designed to remove those lands from agricultural tillage and return them to a more stable cover. This program holds promise for nonpoint source control since its aim is highly erodible lands.

Conservation Technical Assistance (CTA), NRCS

Conservation Technical Assistance (CTA), NRCS

<http://www.id.nrcs.usda.gov/programs/financial.html>

Technical assistance for the application of BMPs is provided to cooperators of soil conservation districts by the NRCS. Preparation and application of conservation plans is the main form of technical assistance. Assistance can include the interpretation of soil, plant, water, and other physical conditions needed to determine the proper BMPs. The CTA program also provides financial assistance in implementing BMPs described in the conservation plan.

Technical assistance for the application of BMPs is provided to cooperators of soil conservation districts by the NRCS. Preparation and application of conservation plans is the main form of technical assistance. Assistance can include the interpretation of soil, plant, water, and other physical conditions needed to determine the proper BMPs. The CTA program also provides financial assistance in implementing BMPs described in the conservation plan.

Cooperative Studies Program, USGS

The Cooperative Studies Program provides for up to 50% cost-share on water quality and water quantities studies.

Ducks Unlimited Marsh Projects, Ducks Unlimited

Ducks Unlimited is committed to wetland habitat development through their funding and implementation efforts. The Ducks Unlimited Marsh Project has been active in Idaho and cost shares on the development and/or enhancement of wildlife habitat or wetlands.

Environmental Quality Incentives Program (EQIP), NRCS

Environmental Quality Incentives Program (EQIP), NRCS

<http://www.id.nrcs.usda.gov/programs/financial.html>

EQIP is a program based on the 1996 Farm Bill legislation and was reauthorized in the 2002 Farm Bill. This program combines the functions of the Agricultural Conservation Program, Water Quality Incentives Programs, Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program. EQIP offers technical assistance, and cost share monies to landowners for the establishment of a five to ten year conservation agreement activities such as manure management, pest management, and erosion control. This program gives special consideration to contracts in those areas where agricultural improvements will help meet water quality objectives. EQIP is a program based on the 1996 Farm Bill legislation and combines the functions of the Agricultural Conservation Program, Water Quality Incentives Programs, Great Plains Conservation Program, and the Colorado River Basin Salinity Control Program. EQIP offers technical assistance, and cost share monies to landowners for the establishment of a five to ten year conservation agreement activities such as manure management, pest management, and erosion control. This program gives special consideration to contracts in those areas where agricultural improvements will help meet water quality objectives.

Environmental Restoration, CoE

Section 1135 of the Water Resources Development Act of 1986 provides for modifying the structure, operation, or connected influences or impacts from a Corp of Engineer project to restore fish and wildlife habitat. The project must result in the implementation or change from existing conditions, and the project benefits must be associated primarily with restoring historic fish and wildlife resources. Though recreation cannot be the primary reason for the modification, an increase in recreation may be one measure of value in the improvement to fish and wildlife resources. The program requires a non-federal sponsor which can include public agencies, private interest groups, and large national nonprofit organizations such as Ducks Unlimited or the Nature Conservancy. Operation and maintenance associated with the project modifications are the responsibility of the non-federal sponsor. Planning studies, detailed design, and construction are cost shared at a 75% federal and 25% non-federal rate. No more than \$5 million in federal funds may be spent at a single location.

Farm Services Agency Direct Loan Program, FSA

Farm Services Agency Direct Loan Program, FSA

<http://www.fsa.usda.gov/pas/default.asp>

This program provides loans to farmers and ranchers who are unable to obtain financing from commercial credit sources. Loans from this program can be used to purchase or improve pollution abatement structures.

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Flood Plain Management Services, CoE

Section 206 of the Flood Control Act of 1960 authorizes the Corp of Engineers to provide information, technical assistance and guidance upon request to states and local communities to reduce flood damages by informing people who live and work in the flood plain of its hazards, and what actions they can take to reduce property damage and prevent the loss of life.

Flood Risk Reduction, FEMA

The Flood Risk Reduction program authorizes FEMA to develop voluntary contracts that provide a lump sum payment to producers who farm land with a high flood potential. In return for the lump sum payments, the producer agrees to comply with applicable wetlands and high erodible land requirements.

Forest Incentives Program (FIP), NRCS

The FIP program is designed to help small private landowners increase timber production on private-owned, nonindustrial, forest lands. Cost-share funds can be used for a variety of purposes including tree plantings, improving a stand of trees, and site preparation for natural regeneration of trees.

Forest Service Challenge Cost-share Program, USFS

This program focuses on fish and wildlife habitat improvements with funds being cost-shared to any non-federal entity.

Forest Service Soil and Water Improvement Program, USFS

This program includes funds to complete improvement projects designed primarily to reduce erosion and sedimentation, and meet targets identified in National Forest System Land Management Plans.

Ground Water Program, DEQ

The ground water program provides the statewide leadership role for ground water protection through the implementation of the Ground Water Quality Rule, regional and local monitoring, wellhead protection program, and through technical and educational assistance to local, city, county, and state governments.

In 1989, the Idaho Legislature enacted the Ground Water Quality Protection Act creating a Ground Water Quality Council that developed the state Ground Water Quality Plan. The plan includes six key policy areas and a section on development of a ground water quality-monitoring program for the State. The six key ground water policies of the State of Idaho are:

-) Maintain and protect the existing high quality of the State ground water;
-) Prevent contamination of ground water from all regulated and nonregulated sources of contamination to the maximum extent practical;
-) Provide educational programs on ground water protection, prevention of ground water contamination, and ground water restoration;
-) Provide information and encourage public participation in applicable activities related to ground water quality protection;
-) implement and maintain an ongoing statewide ground water quality monitoring network; and
-) Conduct remediation when feasible and appropriate where contamination resulting from human activities produces a significant potential for the impairment of an existing or protected beneficial use of ground water.

IDEQ developed the Ground Water Quality Rule in 1996 using a negotiated rule making procedure. This rule establishes minimum requirements for the protection of ground water through ground water quality standards and an aquifer categorization system. The rule contains numerical

and narrative standards which apply to all ground water in the state, with the numerical standards being based on the maximum contaminant levels established under the federal Safe Drinking Water Act. The plan, act, and rule provide the underlying guidance for protection of the State's ground water from nonpoint source contamination.

Hydrologic Unit Areas (HUAs), NRCS

The NRCS is responsible for the HUA water quality projects. The purpose of these projects is to accelerate technical and cost-share assistance to farmers and ranchers in addressing agricultural nonpoint source pollution.

Idaho Riparian Tax Credit (RTC) (Idaho Code §63-3024B), Interagency State Tax Commission

The purpose of RTC program is to provide a public and private partnership for the improvement, repair, and rehabilitation of forest, range, and farm lands. Through tax incentives, landowners are encouraged to fence, set aside, or otherwise improve lands to enhance riparian health.

Idaho Water Resources Board Financial Programs, IDWR

The Idaho Water Resources Board Financial Program assists local governments, water and homeowner associations, non-profit water companies, and canal and irrigation companies with funding for water system infrastructure projects. The various types of projects that can be funded include: public drinking water systems, irrigation systems, drainage or flood control, ground water recharge, and water project engineering, planning and design. Funds are made available through loans, grants, bonds, and a revolving development account.

National Conservation Buffer Initiative, NRCS

The National Conservation Buffer Initiative program provides cost-share funds in an effort to use grasses and trees as conservation buffers to protect and enhance riparian resources on farms. This program will be an integral part of TMDL/WRAS implementation planning to ensure land management practices are moved away from streams and riparian areas.

National Fish and Wildlife Foundation (NFWF) Grants in Partnership with NRCS

<http://www.nfwf.org/programs/nrcsnacd.cfm>

This program is implemented by the NFWF and is designed to support natural resource conservation projects on private land. The program is aimed primarily at farmers and ranchers. Eligible applicants include state and local governments, education institutions, and nonprofit organizations. Special consideration is given to grants in partnership with NRCS, Resource Conservation and Development Areas, and conservation districts. The program requires a 1:1 match of non-federal dollars or goods and services of equal value, although a 2:1 match is encouraged.

Planning Assistance, CoE

Section 22 of the Water Resources Development Act of 1974 authorizes the Corp of Engineers to assist local governments and agencies, including Indian Tribes, in preparing comprehensive plans for the development, utilization and conservation of water and related resources. Total costs for projects cannot exceed \$1 million in a single year and are cost-shared at a 50% federal and 50% non-federal rate.

Range Improvement Fund - 8100, BLM

This program focuses on improving rangeland management conditions, including the

implementation of best management practices. A portion of the money to operate the program comes from the grazing fees paid by permittees.

Small Watersheds (PL-566), NRCS

The Small Watersheds program authorizes the NRCS to cooperate in planning and implementing efforts to improve soil and water conservation. The program provides for technical and financial assistance for water quality improvement projects, upstream flood control projects, and water conservation projects.

Partners for Wildlife (Partners), USFWS

Partners for Wildlife (Partners), U.S. Fish and Wildlife Service

<http://partners.fws.gov>

The Partners for Wildlife program is implemented by the U.S. Fish and Wildlife Service and designed to restore and enhance fish and wildlife habitat on private lands through public/private partnerships. Emphasis is on restoration of riparian areas, wetlands, and native plant communities. The Partners for Wildlife program is implemented by the U.S. Fish and Wildlife Service and designed to restore and enhance fish and wildlife habitat on private lands through public/private partnerships. Emphasis is on restoration of riparian areas, wetlands, and native plant communities.

Pheasants Forever

Pheasants Forever can provide up to 100 percent cost-share for pheasant and other upland game projects which establish, maintain, or enhance wildlife habitat.

Resource Conservation and Development (RC&D), NRCS

Resource Conservation and Development (RC&D), NRCS

<http://www.id.nrcs.usda.gov/programs/financial.html>

Through locally sponsored areas, the RC&D program assists communities with economic opportunities through the wise use and development of natural resources by providing technical and financial assistance. Program assistance is available to address problems including water management for conservation, utilization and quality, and water quality through the control of nonpoint source pollution.

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Resource Conservation and Rangeland Development Program (RCRDP), SCC

Resource Conservation and Rangeland Development Program (RCRDP), ISCC

<http://www.scc.state.id.us/loans.htm>

The RCRDP program provides grants for the improvement of rangeland and riparian areas, and loans for the development and implementation of conservation improvements.

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Small Watersheds (PL-566), NRCS

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The Small Watersheds program authorizes the NRCS to cooperate in planning and implementing

efforts to improve soil and water conservation. The program provides for technical and financial assistance for water quality improvement projects, upstream flood control projects, and water conservation projects.

State Agricultural Water Quality Program (SAWQP), (1980-1999); Water Quality Cost-Share Program for Agriculture, SCC/ISDA

SAWQP was the primary state planning and implementation program from 1980 through 1999. The state replaced SAWQP in 1999 with a new agricultural water quality incentive program, under the direction of the SCC as the designated agency for agriculture and grazing, which focuses more directly on implementation of agricultural TMDL plans. Where appropriate, state and federal incentive programs are integrated through the scoping process in the planning phase to maximize nonpoint source water quality protection for agricultural activities (see Introduction-Historical and Chapter 2).

State Revolving Fund (SRF), DEQ

The DEQ Grant and Loan Program administers the State Revolving Fund. The purpose of the program is to provide a perpetually revolving source of low interest loans to municipalities for design and construction of sewage collection and treatment facilities to correct public health hazards or abate pollution. Loans can also be made available for all sectors of nonpoint source pollution. The Grant and Loan Program uses a priority rating form to rank all projects primarily on the basis of public health, compliance, and affordability.

Stewardship Incentives Program (SIP), IDL

SIP provides technical and financial assistance to encourage non-industrial private landowners to keep their lands and natural resources productive and healthy. Qualifying land includes rural lands with existing tree cover or land suitable for growing trees. Eligible landowners must have an approved Forest Stewardship Plan and own less than 1,000 acres.

Swampbuster, NRCS

The Swampbuster program is designed to discourage the conversion of wetlands for agricultural crop production. Under this provision, anyone planting crops on wetlands converted after December 23, 1985, is ineligible for most USDA farm program benefits.

Water Quality Program for Agriculture (WQPA), ISCC

<http://www.scc.state.id.us/docs/wqpafs.doc>

Provides financial incentives to owners and operators of agricultural lands to apply conservation practices to protect and enhance water quality and fish and wildlife habitat.

Wetlands Reserve Program (WRP), NRCS

Wetlands Reserve Program (WRP), NRCS <http://www.id.nrcs.usda.gov/programs/financial.html>

WRP was established to help landowners work toward the goal of "no net loss" of wetlands. This program provides landowners the opportunity to establish 30-year or permanent conservation easements, and cost-share agreements for landowners willing to provide wetlands restoration. WRP was established to help landowners work toward the goal of "no net loss" of wetlands. This program provides landowners the opportunity to establish 30-year or permanent conservation easements, and cost-share agreements for landowners willing to provide wetlands restoration.

Wildlife Habitat Incentive Program (WHIP), NRCS

Wildlife Habitat Incentive Program (WHIP), NRCS

<http://www.id.nrcs.usda.gov/programs/financial.html>

WHIP was established to help landowners improve habitat on private lands by providing cost-share monies for upland wildlife, wetland wildlife, endangered species, fisheries, and other wildlife. Additionally, cost share agreements developed under WHIP require a minimum 10-year contract.

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