

Bissel Creek TMDL Implementation Plan



**Idaho Association of Soil Conservation Districts
Idaho Soil Conservation Commission
April 2006**

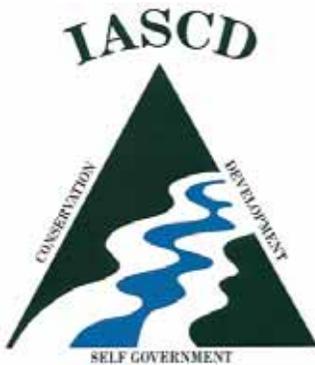


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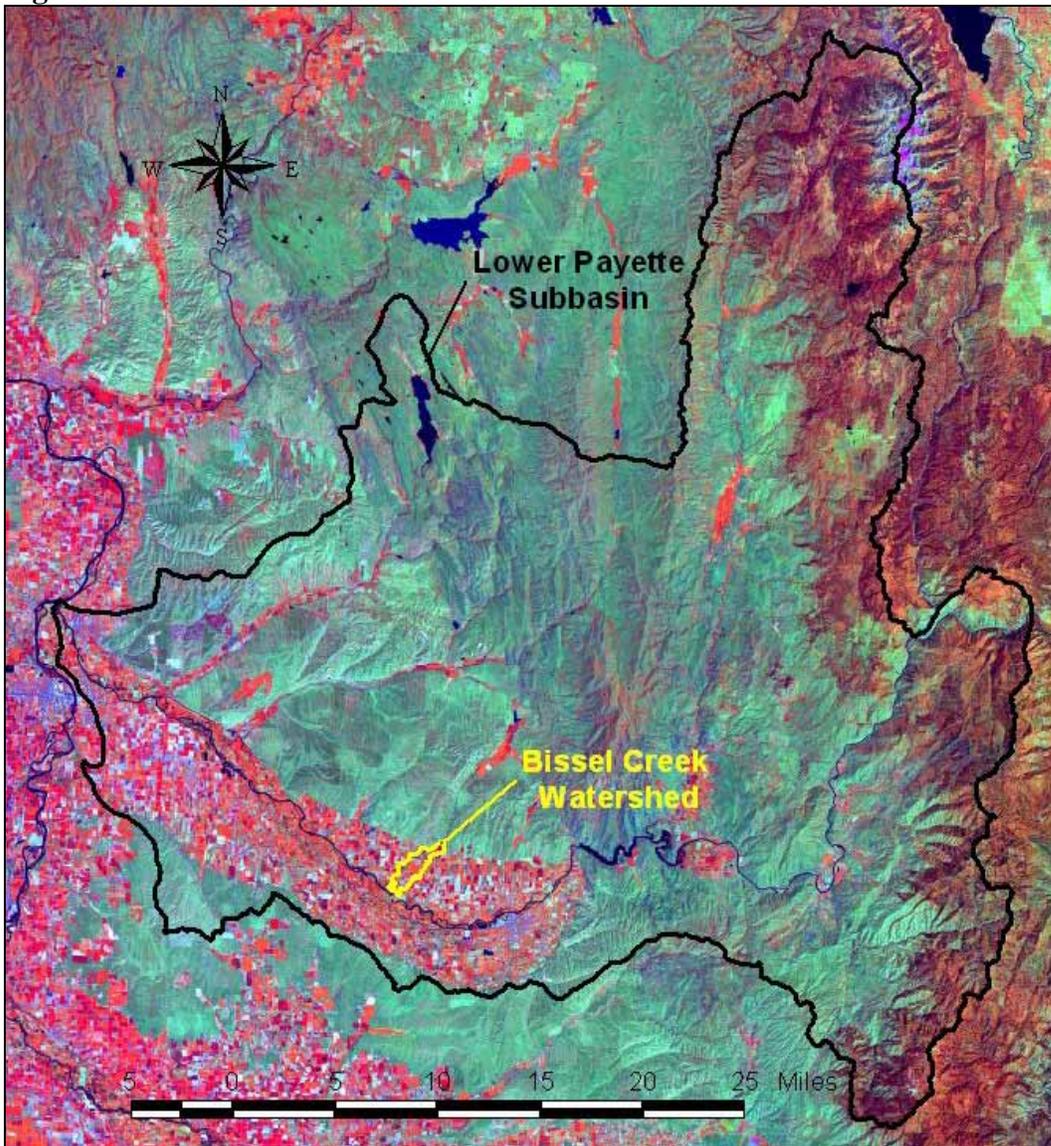
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1.0 Background

Agricultural land uses account for 1067.7 acres of the approximately 1325 total acres within the Bissel Creek watershed. County roads, farm roads, vacant land, homesteads, wetlands, and riparian areas make up the remaining acreage.

For the purpose of this Total Maximum Daily Load (TMDL) implementation plan, the watershed includes the lower portion of Bissel Creek from the North Side Canal to its confluence with the Payette River. Bissel Creek flows in a southwesterly direction from the foothills at North Side Canal until it reaches the river near Letha, Idaho (eleven miles downstream from Emmett) in Gem County. This 4.06 mile segment of Bissel Creek is charged with irrigation return flows from April through October and recharged with groundwater from adjacent lands for the remainder of the year.

Figure 1. Bissel Creek Watershed Location



A Subbasin Assessment and TMDL for sediment and bacteria in Bissel Creek was completed by the Idaho Department of Environmental Quality (IDEQ) and approved by the Environmental Protection Agency (EPA) in October 2003. As a result of the TMDL, a 19-34% reduction target (depending on stream location) was established for total daily sediment average (TSS) during the irrigation season. The targeted reduction of the geometric mean for bacteria (E. Coli colonies) was 81-87%.

This implementation plan will address the non-point, agricultural sources of sediment and bacteria that impact Bissel Creek from the North Side Canal to the Payette River. The purpose of this plan is to recommend Best Management Practices (BMPs) that will reduce pollutant loading and help restore the physical, chemical and biological functions of Bissel Creek. Priority areas for treatment have been identified to help facilitate allocation of resources and implementation within the watershed.

The costs to install BMPs on agricultural lands are estimated in this plan to provide the local community, government agencies, and watershed stakeholders some perspective on the economic demands of meeting the TMDL goals. Availability of cost-share funds to agricultural producers within the Bissel Creek watershed will expedite the successful implementation of this plan and the final reduction of pollutants necessary to meet the TMDL requirements in Bissel Creek. Proposed BMPs include, but are not limited to: sprinkler irrigation systems, surge irrigation systems, drip irrigation systems, sediment basins, filter strips, polyacrylamide (PAM) application, fencing, offsite watering facilities, use exclusion, prescribed grazing, irrigation water management, pest management, nutrient management, and conservation tillage.

It is recommended that landowners within the Bissel Creek watershed contact the Gem Soil & Water Conservation District (Gem SWCD) or the Natural Resources Conservation Service (NRCS) to help determine the need to address water quality and other natural resource concerns on their land. This plan is not intended to identify which specific BMPs are appropriate for specific properties, but rather provides a watershed approach for addressing water quality problems attributed to runoff from agricultural lands and from encroachment on the stream corridor.

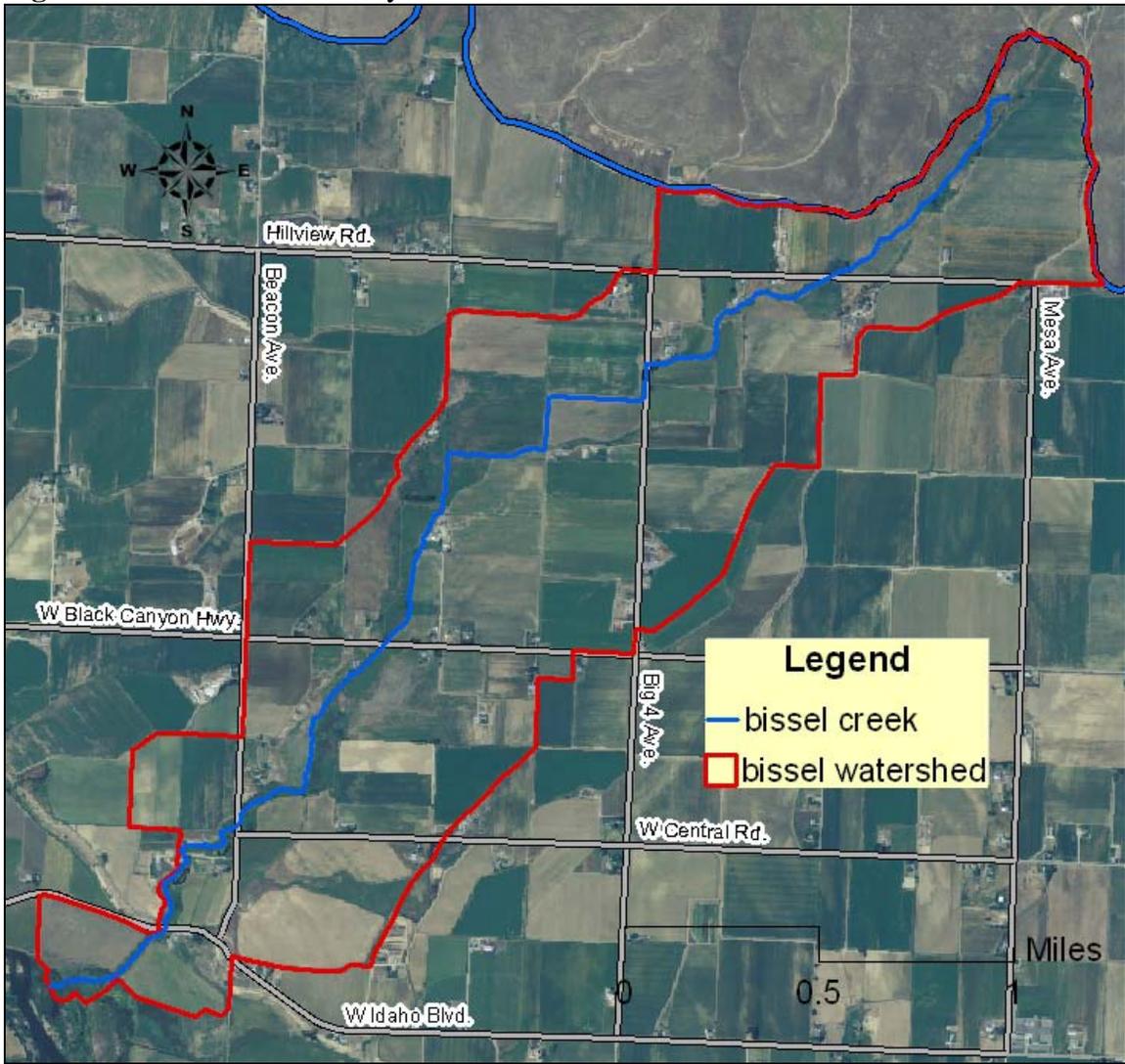
2.0 Identification of Critical Acreage

Two separate in-field evaluation methods were used to identify critical acreage for treatment within the Bissel Creek watershed: 1) upland inventory of watershed hydrology and land use, and 2) riparian assessment of the stream corridor.

2.1 Upland Inventory

Aerial photos, topographic maps, farm field digitization, and on-site field investigations were used to determine actual hydrologic patterns. During this process it was determined that the 6th Field Hydrologic Unit Code (HUC) boundary originally identified during the TMDL process did not reflect actual hydrologic patterns. In order to accurately identify the fields impacting Bissel Creek, a new watershed boundary was delineated (Figure 2).

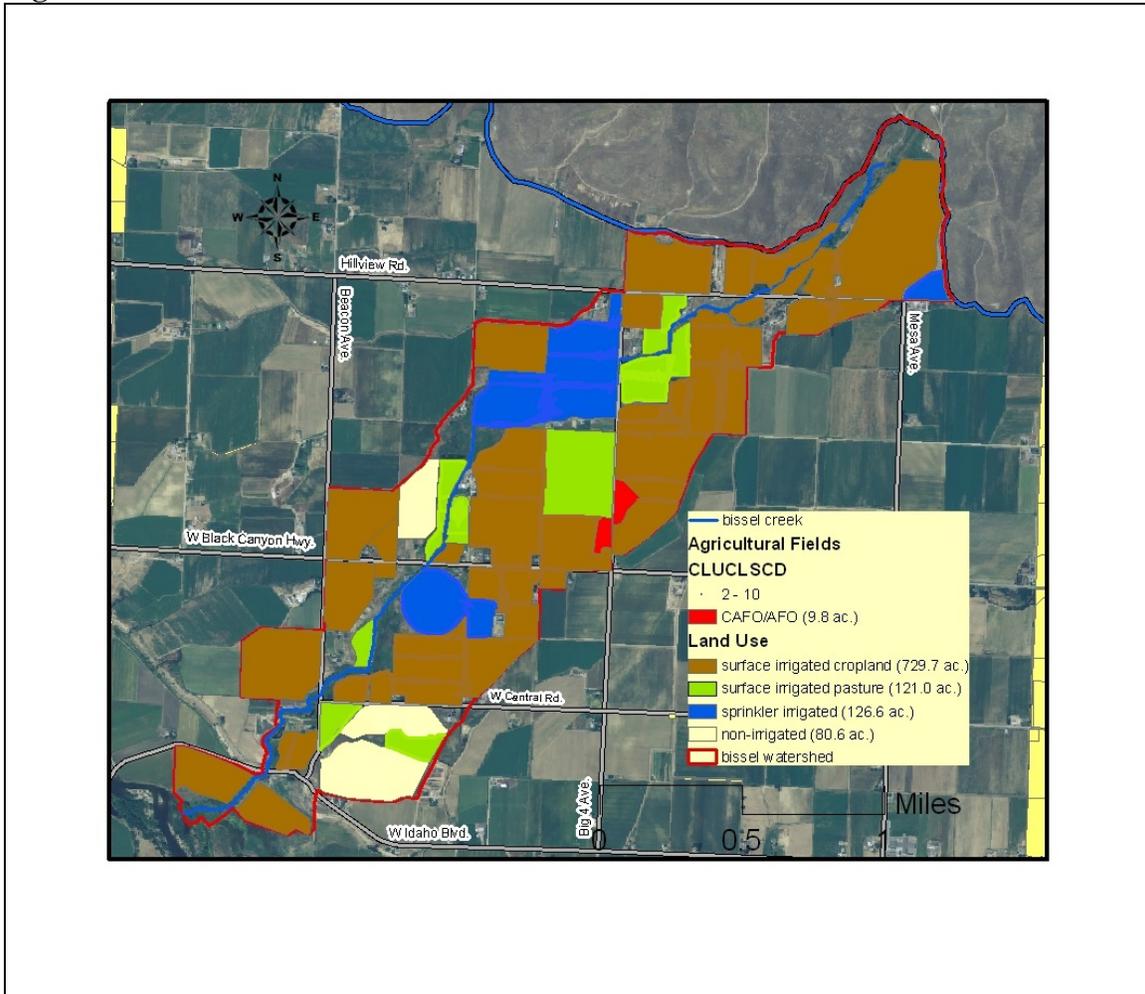
Figure 2. Watershed Boundary



Once the watershed boundary was determined, on-site field investigations were used to identify agricultural land uses, method of irrigation, and direction of irrigation on a field by field basis within the watershed. This information was then incorporated into a GIS layer on the aerial photography (Figure 3).

In the Bissel Creek watershed, one farmer's wastewater often becomes another farmer's irrigation water. The accuracy in determining exactly where particular pollutants originate is compromised as distance from Bissel Creek increases. Accordingly, critical areas adjacent to Bissel Creek itself are considered highest priority for treatment due to the increased potential to directly impact surface water quality.

Figure 3. Land Use



In order to achieve the goals set forth in the TMDL Subbasin Assessment, land treatment through BMP installation will be pursued in three tiers. Agricultural land that drains directly into Bissel Creek is included in Tier 1. Tier 1 fields have the most immediate impact on water quality due to their proximity to the creek. Tier 2 fields are *not* directly adjacent to Bissel Creek, and the wastewater from Tier 2 acreage has the potential to be reused by Tier 1 acreage before entering the creek. Tier 3 fields are located in the uplands where wastewater has the potential to be used multiple times by Tier 2 and Tier 1 acreage before entering Bissel Creek. In terms of BMP implementation Tier 1 is high priority, Tier 2 is medium priority, and Tier 3 is low priority (Figure 4).

Tier 1: Fields directly adjacent to Bissel Creek; or fields having a direct and substantial influence on the stream segment of concern

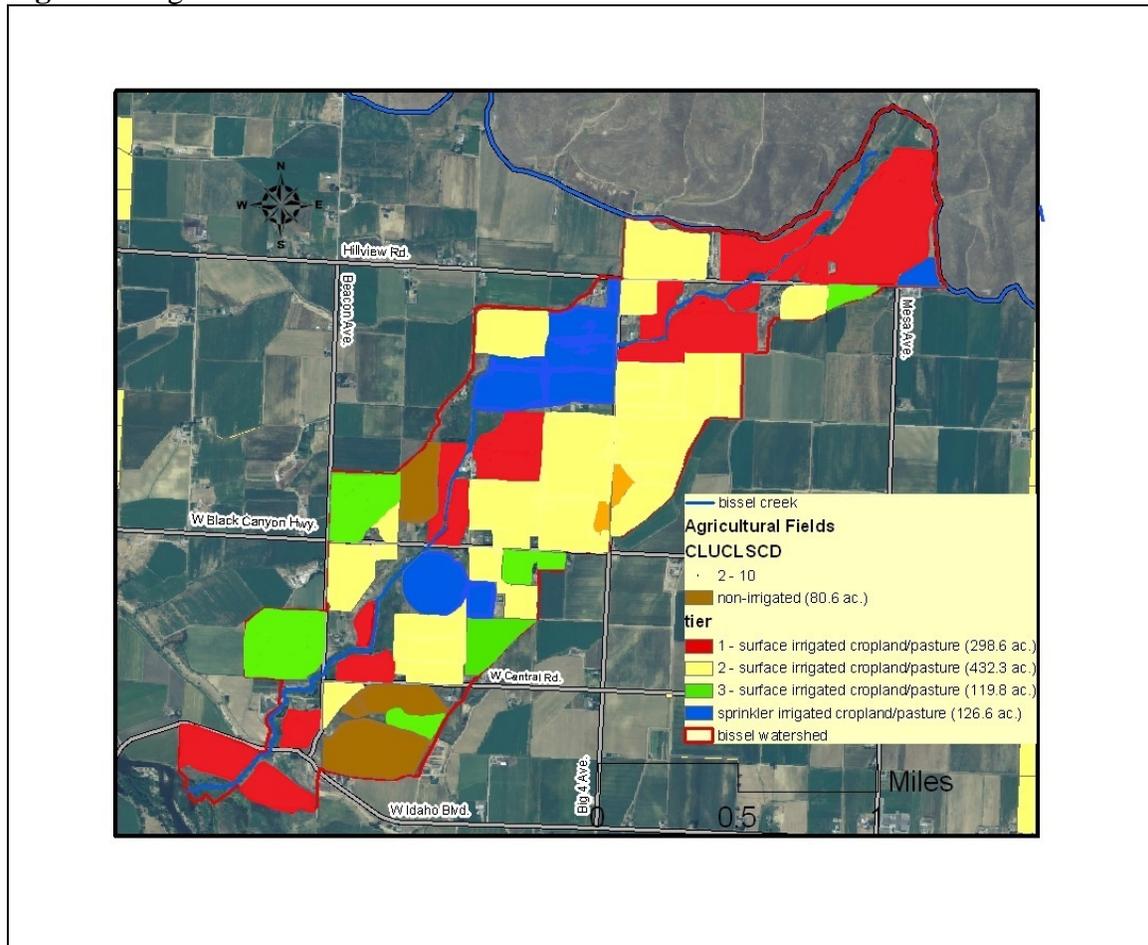
Tier 2: Fields with an indirect, yet substantial influence on Bissel Creek; or fields with wastewater that has potential re-use before entering the creek

Tier 3: Fields upland in the watershed that indirectly influence Bissel Creek; or fields with wastewater that has multiple re-use potential before entering the creek

Table 1. Bissel Creek Watershed Agricultural Acreage

Treatment Unit	Fields	Acres	Percentage of total agricultural acres
Tier 1: surface irrigated cropland/pasture	28	298.6	28.0%
Tier 2: surface irrigated cropland/pasture	28	432.3	40.5%
Tier 3: surface irrigated cropland/pasture	7	119.8	11.2%
Sprinkler irrigated cropland/pasture	9	126.6	11.9%
Non-irrigated	4	80.6	7.5%
CAFO/AFO	2	9.8	0.9%
TOTAL	78	1067.7 acres	100%

Figure 4. Agricultural Tiers

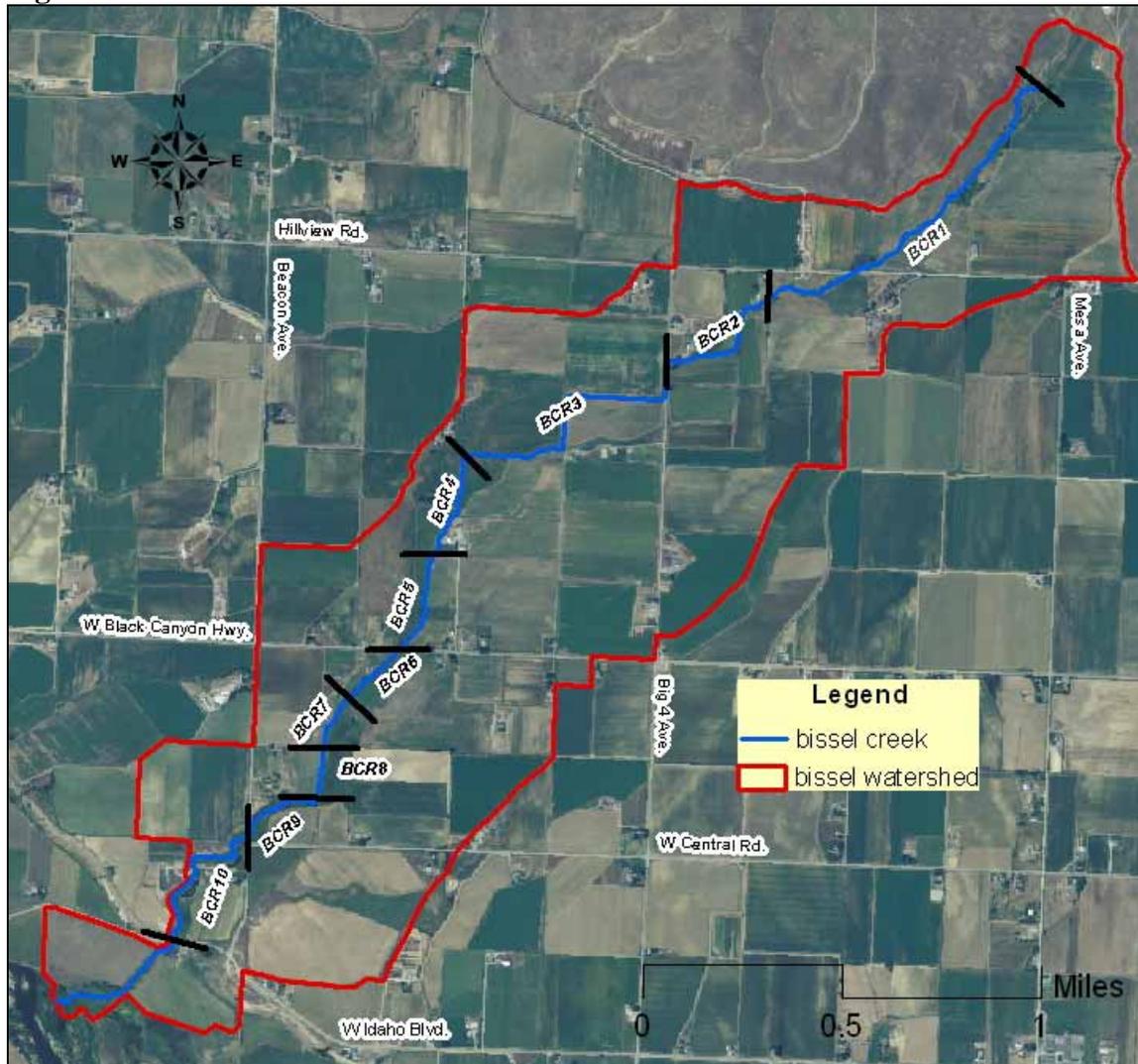


*CAFO/AFO in orange (9.8 ac.)

2.2 Riparian Assessment

All land adjacent to the Bissel Creek stream corridor is privately owned. The Gem SWCD requested and received permission from landowners to conduct the assessment on Bissel Creek from North Side Canal to West Idaho Boulevard. The assessment was completed by a team that included the Idaho Soil Conservation Commission (ISCC), Idaho Association of Soil Conservation Districts (IASCD), Idaho State Department of Agriculture (ISDA), and Gem SWCD on May 3-4, 2005. The evaluated reach covers 3.8 miles of the 4.06 total miles of Bissel Creek. Stream reaches were delineated based on land ownership and assessed independently by reach. Ten reaches were identified (Figure 5). In-field evaluations were conducted by the team and field sheets were completed at the end of each reach. Field sheets included the Stream Visual Assessment Protocol (SVAP) and Streambank Erosion Condition Inventory (SECI). Digital photos were taken throughout each reach to facilitate documentation of existing conditions during the assessment and to help identify potential BMPs for treatment.

Figure 5. Stream Reaches

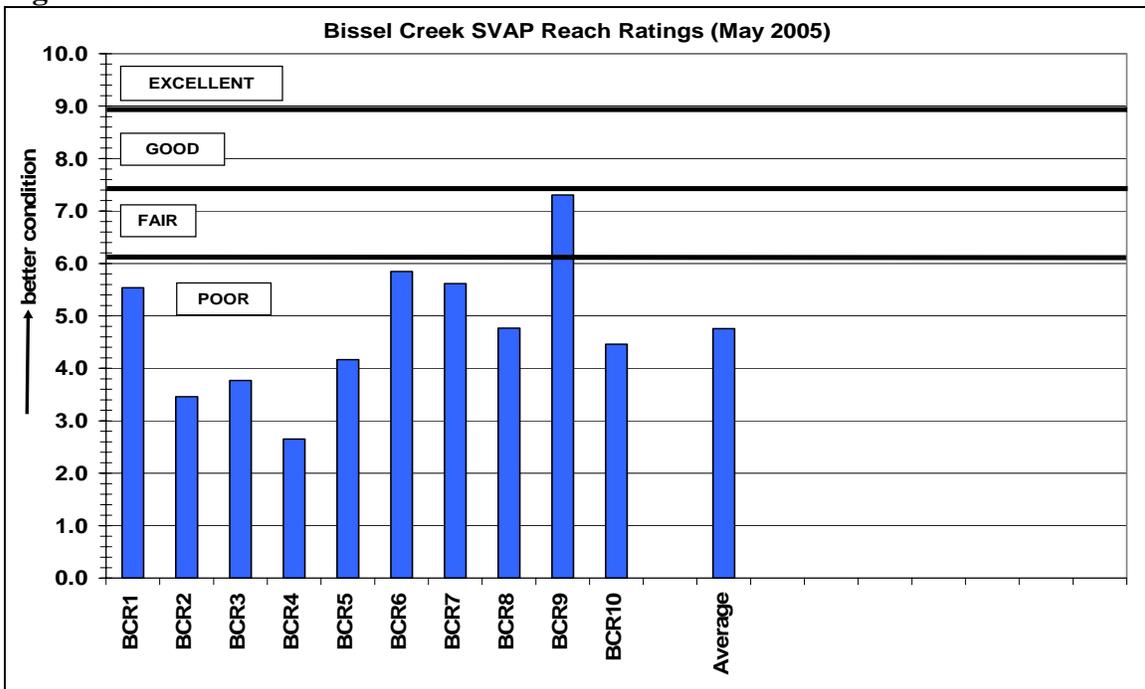


Conducting a riparian assessment of the Bissel Creek corridor in addition to the upland inventory allowed for an additional level of prioritization for implementation. As with the three tiers established for the upland acreage, three categories were developed for the ten stream reaches. Each of the reaches assessed was placed in a high, medium, or low implementation priority group based on the in-field evaluations conducted by the assessment team. Three reaches (BCR4, BCR8, and BCR10) were placed in the high priority group along with a short portion (< 0.1 stream miles) of BCR3 that includes a small CAFO operation. The medium priority group included an additional three reaches (BCR2, BCR6, and BCR7). Included in the low priority group are BCR1, BCR3, BCR5, and BCR9. Implementation of BMPs in the riparian corridor should initially focus on the high priority reaches while water quality and BMP effectiveness monitoring are conducted to determine progress toward TMDL targets.

2.2.1 Aquatic Habitat Suitability

The Stream Visual Assessment Protocol (SVAP) provides a simple procedure to evaluate the condition of a stream based on visual characteristics. The protocol assesses the condition of stream and riparian ecosystems; identifies opportunities to enhance biological value; conveys information on stream function; and stresses the need to protect or to restore riparian areas (NRCS, 1998). SVAP includes 15 qualitative factors and corresponding numeric values, which are then averaged to rate the reach's condition. Currently, NRCS requires the use of SVAP when assessing aquatic habitat and recommends that a "fair" condition be achieved as a minimum goal for conservation planning (NRCS, 2004). During the assessment on Bissel Creek only one 0.3 mile stream reach achieved a "fair" condition; all of the other reaches (3.5 miles) received a "poor" rating (Figure 6).

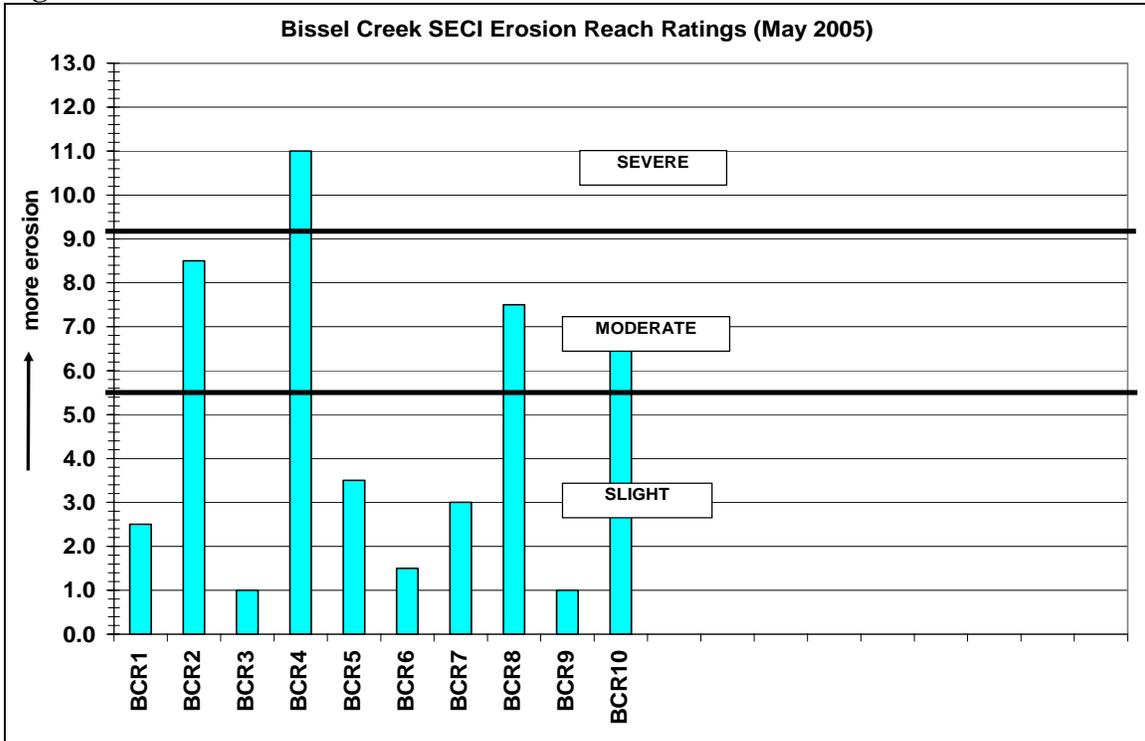
Figure 6. SVAP Results



2.2.2 Estimating Streambank Erosion

Streambank Erosion Condition Inventory (SECI) is used to estimate long-term stream erosion rates. This method produces an index by ranking six factors: bank stability, bank condition, bank cover, channel shape, channel bottom, and deposition. SECI is based on the direct volume method outlined in the Channel Evaluation Workshop (SCS, 1983). The teams used SECI to estimate erosion on the entire reach. Stream erosion rates are estimated by applying Lateral Recession Rates to bank heights and lengths. SECI should be used for comparison rather than absolute rates in a sediment budget (NRCS, 2000). During the assessment on Bissel Creek six stream reaches totaling 2.7 miles displayed evidence of “slight erosion”. Three stream reaches totaling 0.8 miles were categorized in the “moderate erosion” category, while one 0.3 mile stream reach achieved a “severe erosion” categorization (Figure 7).

Figure 7. SECI Results

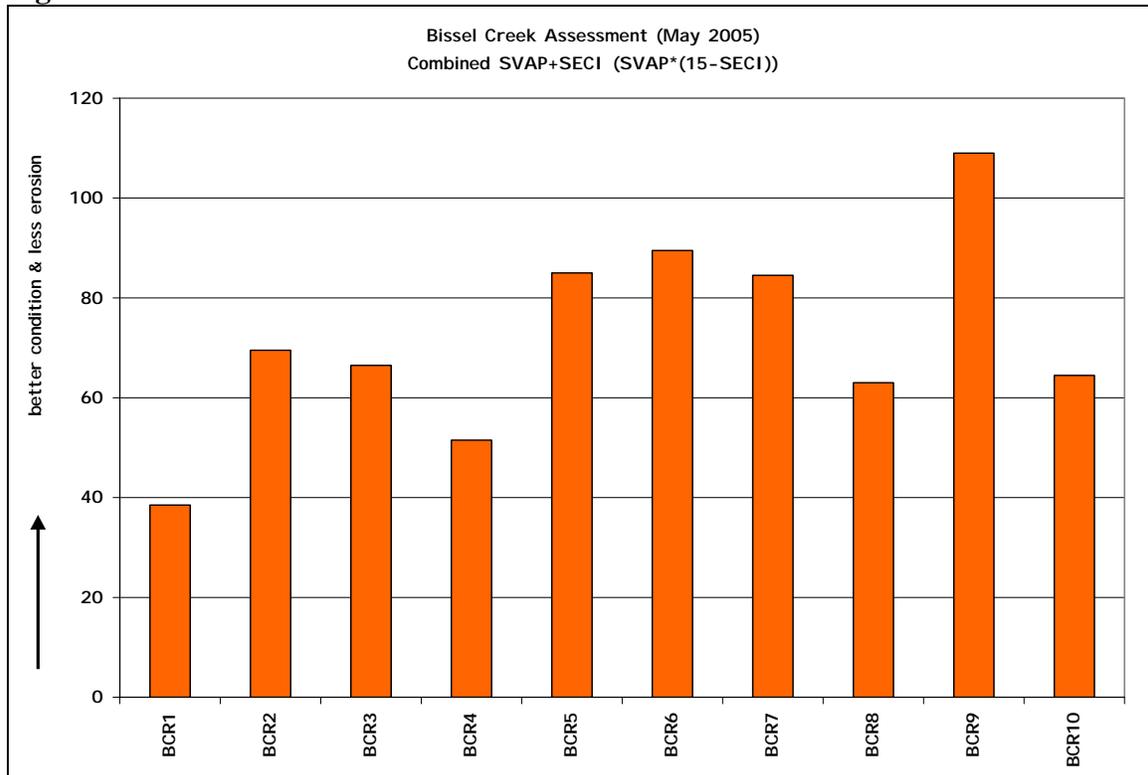


2.2.3 Riparian Assessment Summary

Table 2. Combined SVAP and SECI results with erosion estimates

Reach	Length (ft)	Length (miles)	SVAP Category	SECI Condition	Tons/Year	Tons/Mile /Year
BCR1	5770	1.1	Poor	Slight	28	26
BCR2	1865	.3	Poor	Moderate	83	235
BCR3	3800	.7	Poor	Slight	7	10
BCR4	1680	.3	Poor	Severe	120	377
BCR5	1100	.2	Poor	Slight	10	48
BCR6	775	.2	Poor	Slight	1	7
BCR7	900	.2	Poor	Slight	6	35
BCR8	675	.1	Poor	Moderate	24	188
BCR9	1400	.3	Fair	Slight	1	4
BCR10	2100	.4	Poor	Moderate	58	146
Total		3.8			338	

Figure 8. Combined SVAP and SECI results



3.0 TMDL Objectives

The overall objective of the TMDL is to achieve water quality that will support appropriate designated uses for Bissel Creek as well as the Lower Payette River. The TMDL recognizes that the targets and load reductions may be revised as additional data is collected, as understanding of water quality in Bissel Creek improves, and as state water quality standards adapt to reflect new developments.

Agricultural sources of sediment, bacteria and nutrients include erosion from surface irrigated cropland and pastures, runoff from animal feedlots, livestock grazing on or near waterways, and erosion in drainage ditches resulting from continual maintenance. BMPs can be implemented to address irrigation induced erosion, inadequate vegetative cover adjacent to Bissel Creek, and transport and delivery of sediment, nutrients, and bacteria to Bissel Creek from irrigated cropland and grazing operations.

4.0 Best Management Practices for Bissel Creek

Agricultural conservation and soil erosion practices are referred to as Best Management Practices (BMPs). These practices are nationally derived systems to control, reduce, or prevent soil erosion and sedimentation on agricultural land uses (APAP, 2003). BMPs are selected to reduce irrigation-induced and streambank erosion, contain and filter sediment, nutrients, and bacteria from irrigation wastewater, contain and properly dispose of animal wastes, and reduce leaching of nutrients and pesticides. Proper implementation of BMPs on agricultural fields within the Bissel Creek watershed will improve the quality of surface water in the project area and reduce pollutant loading to the Lower Payette River from Bissel Creek.

The site specific BMP Alternative is chosen based on a variety of factors, but typically reflect the landowner’s objectives in conjunction with the resource concerns identified by the assisting agency. BMPs identified for use on the three agricultural tiers include, but are not limited to, the practices identified in Table 3. The BMPs in the table, particularly those for surface irrigated pasture, also apply to the Bissel Creek riparian corridor.

Table 3. Potential BMPs for Treatment

<i>Surface Irrigated Cropland</i>		<i>Surface Irrigated Pasture</i>	
Conservation Tillage	Straw Mulching	Fencing	Water Gap
Conservation Cropping Sequence	Irrigation Water Conveyance	Use Exclusion	Stream channel stabilization
Cover and Green Manure Crop	Filter Strips	Prescribed Grazing	Tailwater Recovery System
Chiseling and Subsoiling	Grassed Waterway	Critical Area Planting	Waste Utilization
Surge Irrigation System	Tailwater Recovery System	Tree & Shrub Establishment	Waste Storage System
Sprinkler Irrigation System	Underground Outlet	Heavy use area protection	Nutrient Management
Drip Irrigation System	Sediment Basin	Pasture and Hayland Planting	Pest Management
Nutrient Management	Anionic Polyacrylamide (PAM)	Pasture & Hayland Management	Irrigation Water Management
Pest Management	Waste Utilization	Livestock Watering Facility	Irrigation Water Conveyance
Irrigation Water Management	Channel Vegetation	Spring water development	Planned Grazing System
Irrigation Land Leveling	Structure for Water Control		

4.1 Examples of BMP Alternatives and Costs

This section includes cost estimates for common BMPs implemented in Southwestern Idaho to treat soil erosion and pollutant transport from irrigated agricultural land to receiving water bodies. Site specific BMP alternatives will be developed during the conservation planning process.

4.1.1 Surface Irrigated Cropland

<i>SITE SPECIFIC BMPs Alternative #1 (\$800/acre)</i>	<i>SITE SPECIFIC BMPs Alternative #2 (\$500/acre)</i>	<i>SITE SPECIFIC BMPs Alternative #3 (\$250/acre)</i>
Sprinkler Irrigation System	Irrigation Land Leveling	Irrigation Water Conveyance
Nutrient Management	Irrigation Water Conveyance	Anionic Polyacrylamide (PAM)
Pest Management	Conservation Tillage	Filter Strips
Irrigation Water Management	Conservation Cropping Sequence	Sediment Basin
	Underground Outlet	Conservation Tillage
	Nutrient Management	Conservation Cropping Sequence
	Pest Management	Nutrient Management
	Irrigation Water Management	Pest Management
		Irrigation Water Management

4.1.2 Surface Irrigated Pasture (including riparian corridor)

<i>SITE SPECIFIC BMPs Alternative #1 (\$450/acre)</i>	<i>SITE SPECIFIC BMPs Alternative #2 (\$350/acre)</i>	<i>SITE SPECIFIC BMPs Alternative #3 (\$250/acre)</i>
Fencing	Fencing	Fencing
Critical Area Planting	Prescribed Grazing	Water Gap
Tree & Shrub Establishment	Pasture and Hayland Management	Pasture and Hayland Management
Pasture and Hayland Planting	Heavy Use Area Protection	Nutrient Management
Pasture and Hayland Management	Spring Water Development	Pest Management
Spring Water Development	Livestock Watering Facility	Irrigation Water Management
Livestock Watering Facility	Nutrient Management	
Nutrient Management	Pest Management	
Pest Management	Irrigation Water Management	
Irrigation Water Management		

4.2 Feedback Loop

The feedback loop is a process used to evaluate and refine installed BMPs. Implementing the feedback loop to modify BMPs until water quality standards are met results in full voluntary compliance with the standards (APAP, 2003). The feedback loop occurs in four steps:

- 1. The process begins by developing water quality criteria to protect the identified beneficial uses of the water resource.*
- 2. The existing water quality as compared to the water quality criteria established in Step 1 is the basis for developing or modifying BMPs.*
- 3. The BMP is implemented on-site and evaluated for technical adequacy of design and installation.*
- 4. The effectiveness of the BMP in achieving the criteria established in Step 1 is evaluated by comparison to water quality monitoring data. If the established criteria are achieved the BMP is adequate as designed, installed, and maintained. If not, the BMP is modified and the process of the feedback loop continues.*

5.0 Program of Implementation

There are currently three active programs providing sources of funding for cost-share assistance within the Bissel Creek watershed. The current sources of funding include the Environmental Quality Incentives Program (EQIP) administered by NRCS, the Water Quality Program for Agriculture (WQPA) administered by ISCC, and a 319 Grant administered by IDEQ. All sources of funding were applied for and secured by the Gem SWCD to address identified surface water and other resource concerns in the Lower Payette River subbasin, including Bissel Creek watershed.

5.1 Installation and Financing

The USDA Natural Resources Conservation Service (NRCS) is the technical agency that will assist the Gem SWCD in developing farm specific water quality plans and designs. BMPs will be installed according to standards and specifications contained in the NRCS Field Office Technical Guide. Where cost-share incentives are contracted through a state or federal program, NRCS and the Idaho Soil Conservation Commission (ISCC) will assist the Gem SWCD with certification of installed BMPs, filing payment applications, completing annual status reviews on contracts, annual development of an average cost list, and provide any needed follow-up assistance required for contract modification.

Each participant will be responsible for installing the BMPs scheduled within their contract as planned in their Conservation Plan. Any needed land rights, easements, or permits necessary for construction and inspection will be the sole responsibility of the participant. Each participant will also be required to make their own arrangements for financing their share of installation costs.

Table 4. Estimated BMP Cost Summary for Tier 1 Surface Irrigated Cropland: 251 acres

ALTERNATIVE		ACRES	TOTAL COSTS
Alternative 1	\$800/AC	251	\$ 200,800
Alternative 2	\$500/AC	251	\$ 125,500
Alternative 3	\$250/AC	251	\$ 62,750

Table 5. Estimated BMP Cost Summary for Tier 2 Surface Irrigated Cropland: 368 acres

ALTERNATIVE		ACRES	TOTAL COSTS
Alternative 1	\$800/AC	368	\$ 294,400
Alternative 2	\$500/AC	368	\$ 184,000
Alternative 3	\$250/AC	368	\$ 92,000

Table 6. Estimated BMP Cost Summary for Tier 3 Surface Irrigated Cropland: 111 acres

ALTERNATIVE		ACRES	TOTAL COSTS
Alternative 1	\$800/AC	111	\$ 88,800
Alternative 2	\$500/AC	111	\$ 55,500
Alternative 3	\$250/AC	111	\$ 27,750

Table 7. Estimated BMP Cost Summary for Tier 1-3 Surface Irrigated Pasture: 121 acres

ALTERNATIVE		ACRES	TOTAL COSTS
Alternative 1	\$450/AC	121	\$ 54,450
Alternative 2	\$350/AC	121	\$ 42,350
Alternative 3	\$250/AC	121	\$ 30,250

5.2 Operation, Maintenance, and Replacement

Participants who install BMPs in conjunction with a state or federal cost-share incentive program will be responsible for maintaining the installed BMPs for the life of their contract. The contract will outline the responsibility of the participant regarding operation and Maintenance (O&M) for each BMP. Participants who install BMPs on their own or without the benefit of a cost-share incentive program are not under contract to maintain the BMPs. If the BMPs are installed in response to a Conservation Plan completed with them by the assisting agencies, landowners are encouraged to maintain the BMPs and incorporate them into their annual operations.

Inspections of BMPs installed in conjunction with a cost-share incentive program will be made on an annual basis by the Gem SWCD, the local NRCS office, and the participant. The intent is to develop a system of BMPs that will protect water quality and is socially and economically feasible to the participant.

6.0 Implementation Progress

Conservation planning and cost-share contracting has already begun with interested producers within the Bissel Creek watershed using EQIP, WQPA, and 319 funds. Currently there are two existing EQIP contracts, two 319 contracts, and one WQPA/319 contract under development. BMPs installed and under consideration include: sprinkler irrigation system, surge irrigation system, irrigation water conveyance (pipeline), pasture & hayland planting, livestock watering facility, fencing, underground outlet, structure for water control, nutrient management, pest management, irrigation water management, structure for water control, and sediment basin. This TMDL Implementation Plan has been developed to help prioritize future contracting and implementation efforts.

6.1 Five Year TMDL Review

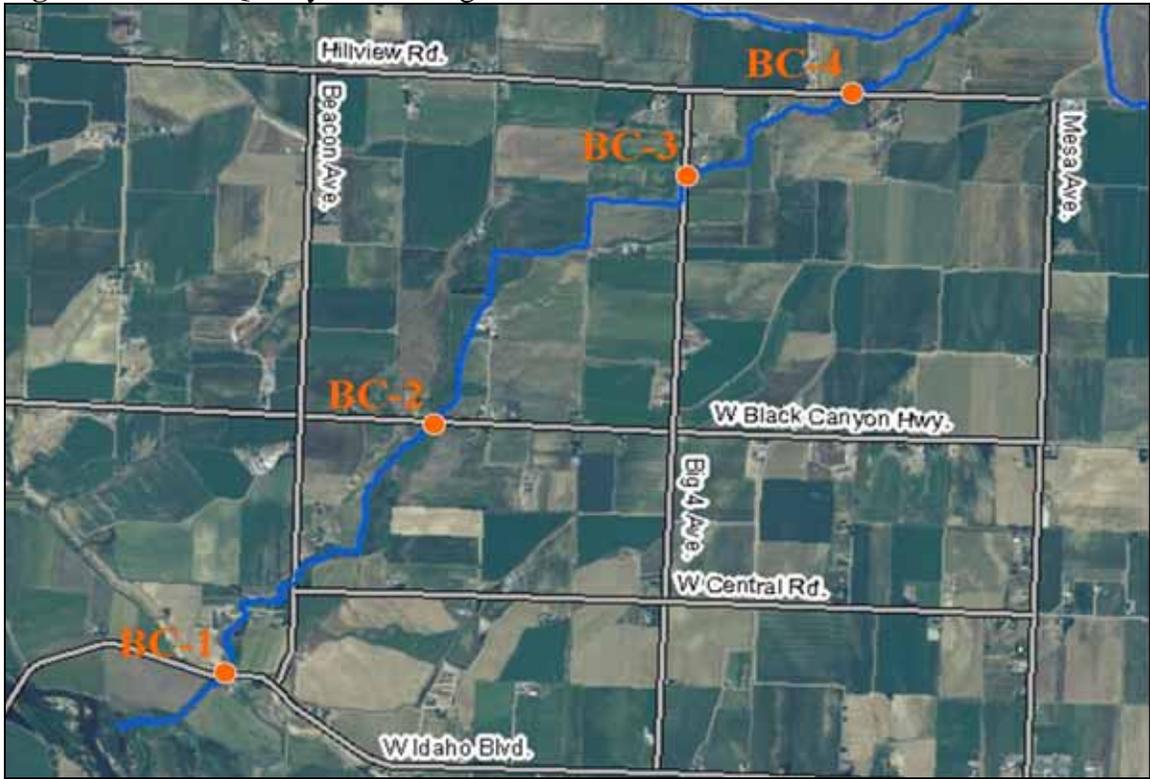
Tracking progress towards achieving water quality standards is essential when dealing with timeframes that stretch over many years. Trends are an important factor in determining whether or not standards are achievable given the level of effort expended. The House Bill 145 of the 2005 legislative session requires IDEQ to revisit TMDLs every five years. Included in the five year reviews for Bissel Creek will be progress reports on implementation efforts and water quality standard achievability.

7.0 Water Quality Monitoring

The Idaho State Department of Agriculture (ISDA) collected water quality samples in Bissel Creek during the 1996, 1997, and 1999 irrigation seasons (April-October) at four different locations (Figure 9). Samples were typically collected twice per month. In 1999 the samples were collected twice per month until September when monitoring ceased for the year. Data parameters measured thus far have included DO (dissolved oxygen), temperature, percent saturation, conductivity, TDS (total dissolved solids) pH, discharge (cfs), TSS (total suspended solids), TVS (total volatile solids), nitrate/nitrite, TP (total phosphorus), OP (dissolved ortho-phosphorus), fecal coliform, and E-coli.

ISDA, IDEQ, Gem SWCD, and the local NRCS office will develop a water quality monitoring plan that will allow trend analysis of water quality and gauge progress toward meeting the TMDL load reductions as implementation of BMPs continues. The proper time to revisit Bissel Creek for evaluation of water quality improvements will be decided through joint agency cooperation, data review, and BMP implementation evaluation.

Figure 9. Water Quality Monitoring Sites



APPENDIX
BMP Funding Programs Available
in Southwest Idaho

**Search for Many Funding Sources Using Boise State University
Environmental Finance Center: <http://ssrc.boisestate.edu>**

Costs estimates relative to each of the designated agency responsibilities need to be estimated as individual water quality plans for private agricultural lands, grazing management plans for state lands, or water quality restoration plans for federal land. As always, funding issues and the availability of funding to implement best management practices is of concern. Much of the available funds that can be used to implement this plan are 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 anyone interested in obtaining funding for projects. Chapter Four of the Idaho Nonpoint Source Management Plan (IDEQ, 1999a) also contains a fairly substantial listing of potentially available funding sources and cooperating agencies for use in the implementation of best management practices and includes several of the programs which could possibly be used as potential implementation funding sources:

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

<http://yosemite.epa.gov/R10/HOMEPAGE.NSF/webpage/Grants>

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.

X *§319 (h)...Nonpoint Source Grants, EPA/IDEQ*

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 IDEQ manages the NPS program. All projects must demonstrate the applicant's ability to abate NPS pollution through the implementation of BMPs.

X *Aquatic Ecosystem Restoration, CoE*

<http://www.nab.usace.army.mil/whatwedo/civwks/CAP/206.pdf>

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.

X *Challenge Cost-share Program, BLM*

<http://www.dfw.state.or.us/ODFWhtml/VolunteerProg/STEP.html>

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

X *Conservation Operations Program (CO-01), NRCS*

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

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.

X *Conservation Research and Education, NRCS*

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

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.

X *Conservation Reserve Program (CRP), NRCS*

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

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.

X *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.

X *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 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.

X *Environmental Restoration, CoE* <http://www.usace.army.mil>

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.

X *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.

X *Hydrologic Unit Areas (HUAs), NRCS*

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

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.

X *Idaho Water Resources Board Financial Programs, IDWR*

<http://www.idwr.state.id.us/waterboard/financial.htm>

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.

X *National Conservation Buffer Initiative, NRCS*

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

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.

X *Planning Assistance, CoE* <http://www.usace.army.mil>
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.

X *Range Improvement Fund - 8100, BLM* <http://www.id.blm.gov>
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.

X *Small Watersheds (PL-566), NRCS*
<http://www.id.nrcs.usda.gov/programs/financial.html>
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.

X *Partners for Wildlife (Partners), USFWS* <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.

X *Pheasants Forever* <http://www.pheasantsforever.org>
Pheasants Forever can provide up to 100 percent cost-share for pheasant and other upland game projects which establish, maintain, or enhance wildlife habitat.

X *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.

X *Resource Conservation and Rangeland Development Program (RCRDP), SCC*
<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.

X *State Revolving Fund (SRF), IDEQ*

<http://www.deq.state.id.us/water/water1.htm#funding>

The IDEQ Grant and Loan Program administers the State Revolving Fund. <http://www.deq.state.id.us/water/water1.htm#funding>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. State Revolving Loan funds are also used to support the Source Water Assessment Program and nonpoint source pollution where municipalities are affected. The Grant and Loan Program uses a priority rating form to rank all projects primarily on the basis of public health, compliance, and affordability. Additional points are awarded to projects that have completed a source water assessment and are maintaining a protection area around their source.

X *Stewardship Incentives Program (SIP), IDL*

<http://www2.state.id.us/lands/Forest%20Legacy/Assessment%20of%20Need%20Breakout%20Files/8-Existing%20Conservation%20Efforts.pdf>

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.

X *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.

X *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.

X *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.