Draft
North Fork of the Coeur d'Alene River Agricultural TMDL Implementation Plan

Submitted by the Idaho Soil Conservation Commission in Cooperation with the Kootenai-Shoshone Soil and Water Conservation District

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I. INTRODUCTION

As stated in Idaho Code 39-3601, the Idaho Soil Conservation Commission (ISCC) is the designated lead agency in Idaho, for Total Maximum Daily Load (TMDL) implementation planning on private agricultural land. The purpose of this sub-plan is to fulfill that mandate for the North Fork of the Coeur d'Alene River. This sub-plan is directed at traditional agricultural use only (pasture and hayland), with the intent to incorporate it with a larger forest use plan, when available.

Generally, the agricultural sub-plan outlines an approach to meeting the requirements for pollution reduction as set forth in the TMDL. After field inventories of the remaining few agricultural areas in this predominately forested watershed, it became evident that agriculture does not significantly contribute to the sediment problems in the North Fork of the Coeur d'Alene River. The primary goal of this document is to present a solid rationale for why this conclusion has been made, and attempt to illustrate how agriculture is not exceeding its allowable sediment load allocation.

A further objective will be to lay out the potential programs that private landowners can voluntarily solicit for funding or engineering assistance, if they would like to further improve their land and implement agricultural type Best Management Practices (BMPs). The success of voluntary water quality improvement efforts, depends heavily on a good outreach program to provide watershed information, and encourage private landowner participation.

II. BACKGROUND

To date, there has been no Watershed Advisory Group (WAG) actively working on TMDL and Implementation Plan development for the North Fork of the CdA River. The Sub-Basin Assessment (SBA) and TMDL of the North Fork of the Coeur d'Alene River was finalized by the Idaho Department of Environmental Quality (IDEQ) in November, 2001, and subsequently approved by the United States Environmental Protection Agency (EPA). As illustrated in Table 1, sediment TMDLs were established by IDEQ for eight stream segments within the North Fork of the Coeur d'Alene River watershed (Hydrologic Unit Code 17010301).

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Table 1: Sediment TMDLs Written by Stream Segment

Water Quality Limited Segment Number	Streams	1998 303(d) Boundaries	Pollutant(s)
3481	Lower North Fork CdA River	Yellowdog Creek to South Fork CdA River	Sediment, Flow, Habitat Alteration
3482	Upper/Middle North Fork CdA River	Teepee Creek to Yellowdog Creek	Sediment, Flow, Habitat Alteration
3485	Little North Fork CdA River	Headwaters to Laverne Creek	Sediment, Flow, Habitat Alteration
3499	Beaver Creek	Headwaters to North Fork CdA River	Sediment
3500	Prichard Creek	Barton Gulch to North Fork CdA River	Sediment, Bacteria, Dissolved Oxygen, Habitat Alteration, Oil/Grease, Nutrients
3504	Shoshone Creek	Sentinel Creek to North Fork CdA River	Unknown
3508	Teepee Creek	Headwaters to Big Elk Creek	Sediment, Habitat Alteration
5643	Lost Creek	Headwaters to North Fork CdA River	Sediment

The North Fork of the CdA River TMDL sub-watersheds are vastly made up of forest lands. According to TMDL data, roughly 95% of the entire watershed is managed as public lands by the federal government. In addition, forestry makes up for more than 99% of the land use. See Figures 1 and 2, Location and Land Management Maps. Within the private land, residential subdivision and recreational vehicle parking continues to grow as people move into rural areas, while the percent of true agriculture continues to decline.

The SBA identified agricultural lands by the use of GIS mapping within the Lower North Fork and Little North Fork. According to ISCC field inventories, agricultural lands were located only in the Lower North Fork (specifically downstream from Prichard), and the actual agricultural acres observed were significantly fewer than the SBA estimates.

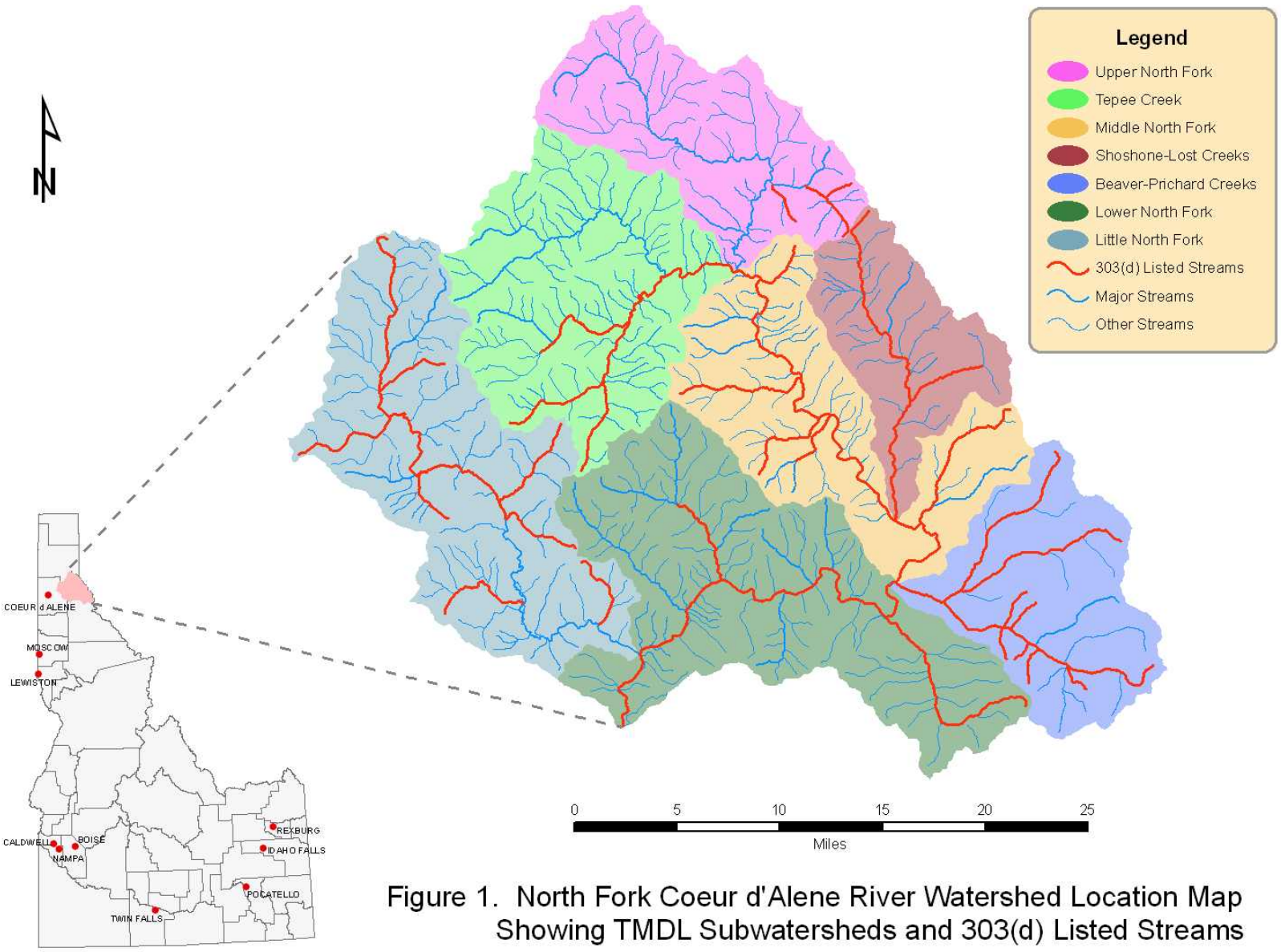
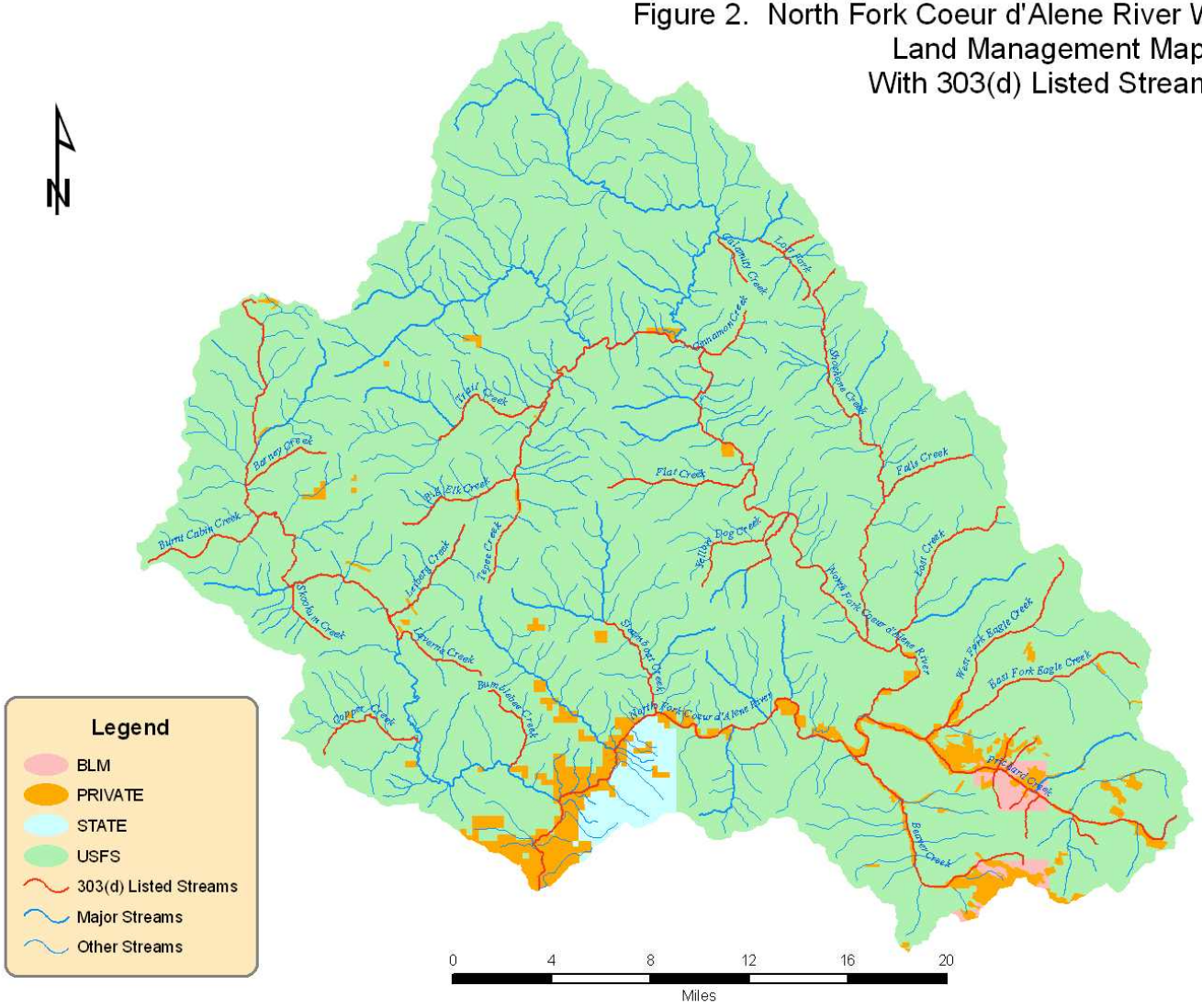


Figure 1. North Fork Coeur d'Alene River Watershed Location Map Showing TMDL Subwatersheds and 303(d) Listed Streams

Figure 2. North Fork Coeur d'Alene River Watershed
Land Management Map
With 303(d) Listed Streams



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The Kootenai-Shoshone Soil and Water Conservation District (KSSWCD), has been active in soil conservation and water quality issues since about 1950. Historically, local conservation districts team up with the Natural Resources Conservation Service (NRCS) and the ISCC, to form a working relationship referred to as the conservation partnership. Each agency within the partnership has its own responsibilities, and recognizes the need to coordinate efforts to successfully implement conservation projects. Table 2, highlights accomplishments made over the last 10 years within the North Fork of the CdA River watershed. This information was obtained from NRCS personnel at the Coeur d'Alene Field Office.

Table 2: Accomplishments

The following Emergency Watershed Protection (EWP) project work was a direct result of the historic flood of 1996. These projects were mainly implemented in the fall 1997.

North Fork of the CdA River

- 8 barbs
- 1100 feet of rock riprap
- 5 acres of debris removal
- 300 acres of critical area seedings

Mouth of Smith Creek

- 4 log drop structures
- 1 sediment pond

Eagle Creek

- 200 feet tree revetment
- rock riprap to stabilize bridge

Beaver Creek

- 125 feet of rock riprap
- 30 feet tree revetment
- 1 culvert

One Environmental Quality Incentive Program (EQIP) project is currently on-going, with the following practices implemented in 2003.

North Fork of the CdA River (Brown Creek Area)

- 800 feet of channel re-vegetation
- 4 barbs protecting 2500 feet of river bank

III. PROBLEM (or NOT?)

Agricultural Inventory Discussion

The ISCC conducted field inventories during the spring, summer, and fall of 2005. These surveys were conducted on private lands within the Little North Fork and the Lower North Fork of the CdA River sub-watersheds. Field visits focused on locating actual pasture and hayland areas, determining the condition (excellent, good, fair, or poor) of these pastures and haylands, estimating livestock numbers and whether the livestock could directly access the river, and photo documentation of agriculture uses.

The lower private section of the Little North Fork was surveyed only once, due to the fact that no agricultural use was observed. Agricultural land was observed in the Lower North Fork, specifically between Prichard and Enaville. The following agricultural acres were observed by land use: pasture (cattle/horse grazing) = 207 acres; hayland = 327 acres (some harvested, some not); and irrigated pasture/hayland = 42 acres. In summary, a total of 576 acres of agricultural land were inventoried by ISCC within the entire North Fork of the CdA River watershed. See Figure 3, Lower North Fork of the CdA River Agricultural Land Uses. This amount represents about 15% of what was GIS mapped by IDEQ, and entered into the SBA for agricultural land. The GIS mapping procedure used by IDEQ, was to include any private non-forested land as agriculture. Thus, this discrepancy could logically be due to traditional agricultural land being converted to residential sub-division and recreational vehicle lots along the river.

Livestock numbers and access to the stream was inventoried in the first week of August. Approximately 100 head of cattle and 40 horses were observed on pasture, with no animals seen directly accessing the Lower North Fork. Agricultural areas near the river are well buffered by abundant natural vegetation (cottonwood groves, shrubs, and grasses), and also separated by highways with barrow pits. No bare, eroding drains from agricultural land to the river were detected.

Pasture and hayland condition was estimated on 497 acres during the end of September, which constitutes the end of the growing season. Nearly 90% of these acres were found to be in good condition. Photo documentation of representative agricultural land uses and condition, were also taken at the end of September. Average slope on agricultural land was obtained from the NRCS Shoshone County Soil Survey. Approximately 75% of these lands are essentially flat, with a slope of 0-1 %. See Figure 4, Lower North Fork of the CdA River Agricultural Land Condition and Slope Map.

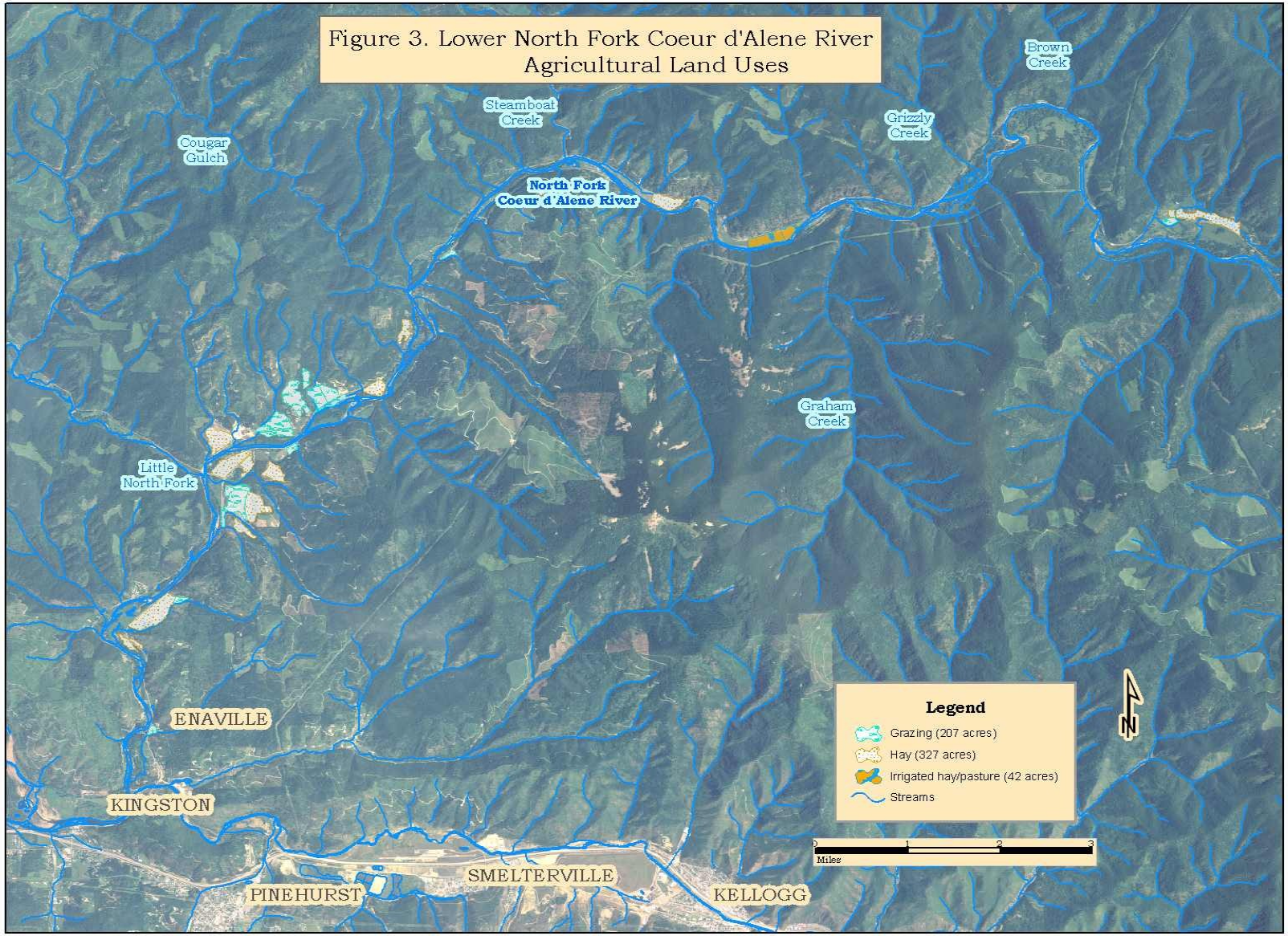
Figure 3. Lower North Fork Coeur d'Alene River
Agricultural Land Uses
Brown Creek
Steamboat Creek
Grizzly Creek
Cougar Gulch
North Fork Coeur d'Alene River
Graham Creek
Little North Fork
ENAVILLE
KINGSTON
PINEHURST
SMELTERVILLE
KELLOGG
Legend
Grazing (207 acres)
Hay (327 acres)
Irrigated hay/pasture (42 acres)
Streams
0 1 2 3
Miles
N

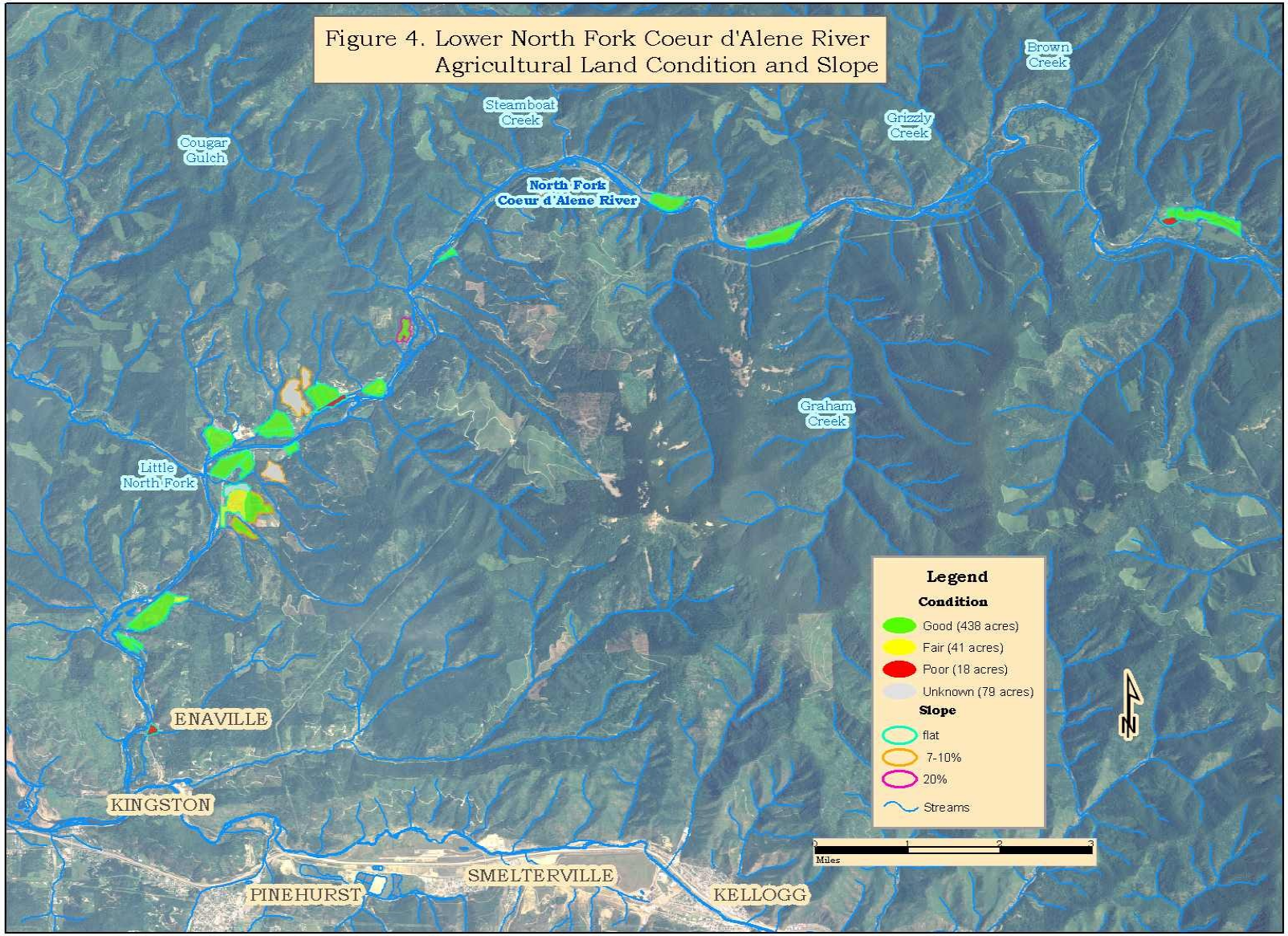
Figure 4. Lower North Fork Coeur d'Alene River
Agricultural Land Condition and Slope
Brown Creek
Steamboat Creek
Grizzly Creek
Cougar Gulch
North Fork Coeur d'Alene River
Graham Creek
Little North Fork
ENAVILLE
KINGSTON
PINEHURST
SMELTERVILLE
KELLOGG
Legend
Condition
Good (438 acres)
Fair (41 acres)
Poor (18 acres)
Unknown (79 acres)
Slope
flat
7-10%
20%
Streams
Miles

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Rationale for Why Agricultural Lands are <u>Not</u> a Significant Sediment Contributor to the North Fork of the Coeur d'Alene River

- **Reduction in Agricultural Acres That Were ISCC Field Inventoried Versus Sub-basin Assessment GIS Acres**

<u>DEQ Sub-Basin Assessment (SBA)- 1999</u>	**<u>ISCC Field Inventory- 2005</u>**
GIS Agricultural Acres	Observed Agricultural Acres
A. Lower North Fork: Uranus/ Creaky Creek= 1096 acres Browns Gulch= 1023 acres Lower North Fork= 1472 acres B. Little North Fork: Lower Little North Fork= 344 acres	A. Lower North Fork: Uranus/ Creaky Creek= 0 acres Browns Gulch= 0 acres Lower North Fork= 576 acres B. Little North Fork: Lower Little North Fork= 0 acres
Total GIS Ag Acres= 3935 acres	Total Observed Ag Acres= 576 acres
Estimated Sediment Export from Ag (RUSLE= 0.03 tons/acre/yr from SBA)	Estimated Sediment Export from Ag (RUSLE= 0.03 tons/acre/yr from SBA)
A. Lower North Fork: Uranus/ Creaky Creek= 33 tons/yr Browns Gulch= 31 tons/yr Lower North Fork= 44 tons/yr B. Little North Fork: Lower Little North Fork= 10 tons/yr	A. Lower North Fork: Uranus/ Creaky Creek= 0 tons/yr Browns Gulch= 0 tons/yr Lower North Fork= 17 tons/yr B. Little North Fork: Lower Little North Fork= 0 tons/yr
Total Ag Sediment Yield= 118 tons/yr	Total Ag Sediment Yield= 17 tons/yr
Estimated Sediment Export from Ag (100% delivery assumed) = 118 tons/yr	**Estimated Sediment Export from Ag (25% delivery estimated) = 4 tons/yr**

Approximately 75% of the agricultural acres are essentially flat with a slope of 0-1%. Sheet and rill erosion, gully erosion, and actual sediment delivery is basically zero, and thus insignificant for potential TMDL reductions. This is good justification for reducing sediment delivery from 100% (as used in the Sub-basin Assessment) to 25% that was used in the observed agricultural lands sediment export calculation above.

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- **Observed Pasture/ Hayland Condition of Agricultural Lands**

A total of 497 acres were accessible from the main roads and were visually inventoried for condition. The final inventory was conducted at the end of the grazing/haying season in end of September, 2005. Approximately 100 cows and 40 horses were seen grazing on agricultural lands during field inventories. No grazing or farming was observed on the banks of the Lower North Fork, further substantiating that agriculture has no impact on bank erosion. The following calculations and representative photos, depicts that the large majority of agricultural lands were found to be in good condition.

% Agricultural Land in Good Condition = 438 acres/ 497 acres x 100 = 88%
% Agricultural Land in Fair Condition = 41 acres/ 497 acres x 100 = 8%
% Agricultural Land in Poor Condition = 18 acres/ 497 acres x 100 = 4%

See the Following Representative Photos in Appendix A:

Photo 1- Pasture in Good Condition
Photo 2- Pasture in Fair Condition
Photo 3- Pasture in Poor Condition
Photo 4- Hayland in Good Condition
Photo 5- Irrigated Hayland/ Pasture in Good Condition

- **Adjusted Load Allocation on Agricultural Lands in Reference to the North Fork of the Coeur d'Alene River TMDL**

As taken directly from the North Fork of the CdA River TMDL, the total sediment load allocation for the Lower North Fork is 4,063 tons/year. During the 2005 field visits, 576 acres of agricultural land was observed within the watershed, specifically the Lower North Fork. The SBA estimates the entire watershed area above the South Fork confluence to be approximately 895 square miles. Using the above information, the % agricultural land observed in the watershed would equal:
% agriculture = [576 acres/ (895 square miles)(640 acres/ square mile)] x 100 = 0.1%.

In addition, the adjusted agricultural sediment load allocation would compute as follows:
agricultural sediment load allocation = 4,063 tons/year x 0.001 = 4 tons/year.

Conclusion: ISCC's estimated sediment export from agricultural lands (from section on reduction of agricultural acres above) is equal to the adjusted agricultural sediment load allocation. Thus, no reduction from agricultural lands required.

IV. TREATMENT

The recommended voluntary treatment process for private agricultural landowners within the North Fork of the CdA River watershed, begins with contacting the local conservation district, the Kootenai-Shoshone Soil and Water Conservation District. Contact information for the KSSWCD is:

7830 Meadowlark Way, Suite C-1
Coeur d'Alene, Idaho 83815
Phone 208-762-4939 Ext.101
www.icehouse.net/ksswcd

The KSSWCD works in partnership with the Natural Resources Conservation Service and the Idaho Soil Conservation Commission, to provide free technical assistance to landowners wanting to improve their agricultural lands. The process begins with a thorough NRCS resources inventory of the farm or ranch (soil, water, air, plants, and animals), and ultimately the development of a good conservation plan (for more insight on planning, go to www.oneplan.org). Once the planning process is complete, the KSSWCD can assist the landowner in seeking grants or cost-sharing type programs, to help pay for needed BMP installation. A list of funding opportunities for private landowners, has been included in following section.

V. FUNDING POTENTIALS

Much of the funding that can be used to implement BMP's 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 Non-Point Source Management Plan also contains a listing of programs that could potentially be used for implementation funding (IDEQ, 1999).

§319 (h)...Non-Point Source Grants, U.S. Environmental Protection Agency/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 non-point source pollution (NPS). The IDEQ manages the NPS program. All projects must demonstrate the applicant's ability to abate NPS pollution through the implementation of BMP's.

Conservation Improvement Grants, ISCC
http://www.scc.state.id.us/PDF/Conservation%20Improvement%20Grant%20Policy-Revised%20_2_.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 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 non-point source control since its aim is highly erodible lands.

Conservation Technical Assistance (CTA), NRCS
http://www.id.nrcs.usda.gov/programs/financial.html
Technical assistance for the application of BMP's 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 BMP's. The CTA program also provides financial assistance in implementing BMP's described in the conservation plan.

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.

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.

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.

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.

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 non-point source pollution.

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.

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.

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
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.

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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APPENDIX A

- Photo 1- Pasture in Good Condition
- Photo 2- Pasture in Fair Condition
- Photo 3- Pasture in Poor Condition
- Photo 4- Hayland in Good Condition
- Photo 5- Irrigated Hayland/ Pasture in Good Condition

Photo #1
Typical Pasture- Good Condition
Lower North Fork of the CdA River

Photo #2
Typical Pasture- Fair Condition
Lower North Fork of the CdA River

Photo #3
Typical Pasture- Poor Condition
Lower North Fork of the CdA River

Photo #4
Typical Hayland- Good Condition
Lower North Fork of the CdA River

Photo #5
Irrigated Hayland/ Pasture- Good Condition
Lower North Fork of the CdA River