

Kootenai River Focus Watershed Coordination

**Annual Report
2002 - 2003**



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KOOTENAI RIVER FOCUS WATERSHED COORDINATION

ANNUAL REPORT
2002 – 2003

For the Period:
June 1, 2002 – May 30, 2003

By:
Kootenai River Network
P.O. Box 491
Libby, MT 59923

For:
BPA PROJECT NO. 96087200
FOCUS WATERSHED COORDINATION

CONTRACT NO. 00009996

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June 2003

Table of Contents

Executive Summary	1
List of Figures	2
List of Tables.....	2
List of Appendices.....	2
Introduction	3
Description of Study Area – Kootenai River Watershed	4
Focus Watershed Program Objectives and Accomplishments	14
Appendices	21

List of Figures

Figure 1: Kootenai River Basin (Montana, Idaho and British Columbia, Canada),
page 7

List of Tables

Table 1: Fish species present in the Kootenai River, page 13

Table 2: Morphometric data for Libby (Kooacanusa) reservoir, page 15

List of Appendices

Appendix 1: KRN Vision, Mission, and Goals Statement (Revised 2003)

Appendix 2: KRN Statement of Expenses for BPA SOW 2002-2003

Appendix 3: Periodic Reports

Appendix 4: Membership 2002 and 2003

Appendix 5: Contractors Workshop Report

Appendix 6: The Canadian Side

Appendix 7: Electric Fence Workshop

EXECUTIVE SUMMARY

The Kootenai River Network Inc. (KRN) was incorporated in Montana in early 1995 with a mission “to involve stakeholders in the protection and restoration of the chemical, physical and biological integrity of the Kootenai River Basin waters.” The KRN operates with funding from donations, membership dues, private, state and federal grants, and with funding through the Bonneville Power Administration (BPA) for a Focus Watershed Coordinator Program. The Focus Watershed Program is administered to KRN as of October 2001, through a Memorandum of Understanding.

Katie Randall resigned her position as Watershed Coordinator in late January 2003 and Munson Consulting was contracted to fill that position through the BPA contract period ending May 30, 2003. To improve communications with in the Kootenai River watershed, the board and staff engaged watershed stakeholders in a full day KRN watershed conference on May 15 and 16 in Bonners Ferry, Idaho. This Annual General Meeting was a tremendous success with over 75 participants representing over 40 citizen groups, tribes and state/provincial/federal agencies from throughout northern Montana and Idaho as well as British Columbia and Alberta. Membership in the KRN increased during the course of the BPA 02/03 grant period.

The board of directors grew in numbers during this same time frame and an Advisory Council was formed to assist in transboundary efforts while developing two reorganized KRN committees (Habitat/Restoration/Monitoring (HRM) and Communication/Education/Outreach (CEO). These committees will serve pivotal roles in communications, outreach, and education about watershed issues, as well as habitat restoration work being accomplished throughout the entire watershed.

During this BPA grant period, the KRN has capitalized on the transboundary interest in the Kootenai River watershed. Jim and Laura Duncan of Kimberley, British Columbia, have been instrumental volunteers who have acted as Canadian liaisons to the KRN. As a result, restoration work is in the planning stages for Canadian tributaries that flow into the Moyie River in northern Idaho and the Yaak River in northwest Montana.

INTRODUCTION

Resource uses in the Kootenai River Basin included hydroelectric power generation, mining and mineral processing, logging, lumber and pulp production, recreation, agriculture, urban development and transportation (KRN 2000). Human induced effects related to these resource uses are well documented (Marotz et al. 1998; KRN 2000, KRSS 2000). Libby Dam, constructed in 1972, has had a profound impact on the entire Kootenai River Basin. The dam provides the outlet for Libby (Koocanusa) Reservoir and although there are beneficial impacts of the dam (i.e. flood regulation, silt reduction and power generation) there are also a significant number of known negative impacts on fish and wildlife (KRN 2000). These include nutrient stripping, fish habitat alteration and loss, altered downstream temperatures and dissolved gas levels, decreased flushing and dilution of contaminants and erosion due to power peaking.

Presently, basin-wide efforts are being made to reduce, eliminate or mitigate the negative impacts of these effects on fish and wildlife. For example, the Boundary County Resource Advisory Council, also referred to as RAC groups, has been formed in Boundary County, Idaho to deal directly with local issues surrounding losses to fish and wildlife resources. A similar group has also formed in Lincoln County, Montana, and they have approved funding assistance for the KRN sponsored Grave Creek restoration project (Phase II). Throughout the basin and potential mitigation projects to enhance native populations have been compiled and restoration efforts are being implemented. The Focus Watershed Coordination Program directly addresses the Northwest Power Planning Council's mandate to enhance hydropower-affected fish stocks in the Kootenai Basin through on-the-ground habitat improvement efforts that alleviate factors limiting native species restoration. Several mitigation projects reclaim critical spawning, rearing, and over-wintering habitats have been completed and will continue mitigation projects. These projects are being completed using grassroots watershed workgroups comprised of landowners, agency, sportsmen's groups and local, state and federal government coalitions.

The KRN is a non-profit organization created to foster communication and implement collaborative processes among private and public interests in the Kootenai River Watershed throughout Montana, Idaho and British Columbia. These cooperative programs lead to improved resource management practices and the restoration of water quality and aquatic resources in the Kootenai Basin. The KRN enhances the effectiveness and efficiency of mitigation and habitat restoration efforts by providing resources for education and outreach related to watershed management, conservation and restoration. The focus watershed coordinator facilitates cooperation and coordination among partnering agencies and groups. The KRN operates with donations, membership dues, private, state and federal grants, and through the Focus Watershed Coordinator position, Bonneville Power Administration (BPA) funding.

Upon the recommendation of Bonneville Power Administration (BPA) and the Columbia Basin Fish and Wildlife Authority (CBFWA), the Northwest Power Planning Council (NPPC) agreed to direct funding for this position through the KRN in order to better

foster similar efforts in the Idaho and British Columbia portions of the basin. KRN has enabled stakeholders to become involved with conservation and watershed health in a more cooperative and self-sustaining manner. KRN creates a neutral arena for stakeholders, organizations and agencies.

This report provides information about the Kootenai Watershed and its physical characteristics, and reviews what the Focus Watershed Program accomplished during the contract period June 1, 2002 through May 30, 2003. The report also provides a Statement of Expenses detailing KRN's expenditures under the 2002 – 03 Contract #00009996, Appendix 2 – BPA Statement of Expenditures.

DESCRIPTION OF STUDY AREA

1. Subbasin Location

The Kootenai River Subbasin is an international watershed that encompasses parts of British Columbia (B.C.), Montana, and Idaho (KRSS 2000; Figure 1). The headwaters of the Kootenai River originate in Kootenay National Park, B.C. The river flows south within the Rocky Mountain Trench into the reservoir created by Libby Dam, which is located near Libby, Montana. From the reservoir, the river turns west, passes through a gap between the Purcell and Cabinet Mountains, enters Idaho, and then loops north where it flows into Kootenay Lake, B.C (Kootenai River Network 2000). The waters leave the lake's West Arm and flow south to join the Columbia River at Castlegar, B.C. In terms of runoff volume, the Kootenai is the second largest Columbia River tributary. In terms of watershed area (36,000 km² or 8.96 million acres), it ranks third (Knudson 1994).

2. Drainage Area

Nearly two-thirds of the river's 485-mile-long channel, and almost three-fourths of its watershed area, is located within the province of British Columbia (KRSS 2000). Roughly twenty-one percent of the watershed lies within the state of Montana, and six percent falls within Idaho (Knudson 1994). The Continental Divide forms much of the eastern boundary, the Selkirk Mountains the western boundary, and the Cabinet Range the southern. The Purcell Mountains fill the center of the river's J-shaped course to Kootenay Lake. Throughout, the subbasin is mountainous and heavily forested.

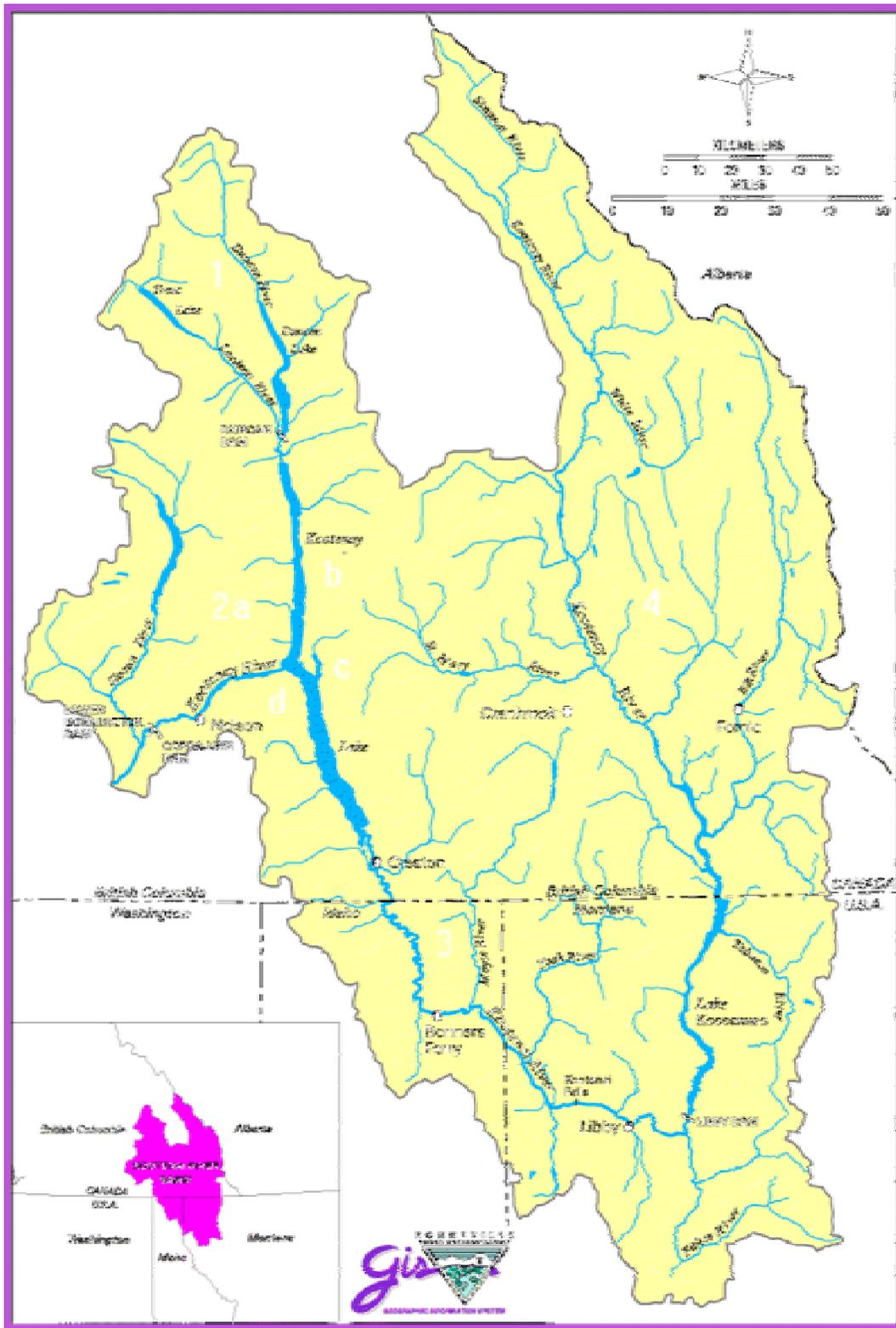


Figure 1. Kootenai River Basin map (Montana, Idaho and British Columbia, Canada)

3. Climate

The subbasin has a relatively moist climate, with annual precipitation even at low elevations generally exceeding 20 inches (KRSS 2000). Warm, wet air masses from the Pacific bring abundant rain and 1,000 to 7,500 mm (40 to 300 inches) of snowfall each year. In winter, Pacific air masses dominate and produce inland mountain climates that are not extremely cold, although subzero continental-polar air occasionally settles over the mountains of northern Idaho and vicinity.

The Continental Divide Range, with crest elevations of 10,000 to 11,500 feet along nearly 250 km (155 miles) of ridgeline, is a major water source for the river. The range receives 2,000 to 3,000 mm (80 to 120 inches) of precipitation annually (Bonde 1987). Some of the high elevation country in the Purcell Range around Mt. Findlay receives 2,000 mm (80 inches) of precipitation a year; but most of the range, and most of the Selkirk and Cabinets, get only 1,000 to 1,500 mm (40 to 60 inches) annually (Daley et al. 1981). In the inhabited valley bottoms, annual precipitation varies from just under 500 mm (20 inches) at Rexford, Montana (USACE 1974) and Creston, British Columbia (Daley et al. 1981) to just over 1,000 mm (40 inches) at Fernie, British Columbia (Oliver 1979).

4. Topography

The drainage basin is located within the Northern Rocky Mountain physiographic province, which is characterized by north to northwest trending mountain ranges separated by straight valleys that run parallel to the ranges (KRSS 2000).

The topography in the upper portion of the Kootenai River subbasin is dominated by steep, heavily forested mountain canyons and valleys. Consequently, nearly all of the major tributaries to the upper reaches of the river, including the Elk, Bull, White, Lussier, and Vermillion Rivers have a very high channel gradient, particularly in their headwaters (KRSS 2000). In contrast to its upper tributaries, the main stem of the Kootenai has a fairly low channel gradient after entering the Rocky Mountain Trench near Canal Flats. The river drops less than 1,000 feet (305 meters) in elevation from Canal Flats to Kootenay Lake, a distance of over 300 miles (480 km). However, even along the river's slow meandering course, valley-bottom widths are generally less than two miles and are characterized by tree-covered rolling hills with few grassland openings. The only exceptions to this topography are the slightly wider valley bottoms in the Bonners Ferry-to-Creston area and the Tobacco Plains, located between Eureka, Montana and Grasmere, British Columbia.

Synder and Minshall (1996) identified three different geomorphic reaches of the Kootenai River between Libby Dam and Kootenay Lake. The first reach (Canyon) extends from Libby Dam to the Moyie River (92 km). It flows through a canyon in places, but otherwise has a limited flood plain due to the closeness of the mountains. The substrate consists of large cobble and gravel. The second reach (Braided) extends from the Moyie River to the town of Bonners Ferry (7.5 km). It is extensively braided

with depths that are typically less than 9 m, and substrates that consist mostly of gravels. The river has an average gradient of 0.6 m/km, and velocities higher than 0.8 m/s. The third reach (Meander) extends from just below the town of Bonners Ferry to the confluence of the Kootenay Lake (82.5 km). Here, the river slows to an average gradient of 0.02 m/km, deepens, and meanders through the Kootenai Valley back into British Columbia and into the southern arm of Kootenay Lake. The meandering section through the Kootenai Valley is characterized by water depths of up to 12 meters in runs and up to 30 meters in pools (Snyder and Minshall 1994). This reach has been extensively diked and channelized, which has had profound effects on ecosystem processes.

5. Geology

Mountains in the subbasin are composed of folded, faulted, and metamorphosed blocks of Precambrian sedimentary rocks of the Belt Series and minor basaltic intrusions (Ferreira et al. 1992). Primary rock types are meta-sedimentary argillites, siltites, and quartzites, which are hard and resistant to erosion. Where exposed, they form steep canyon walls and confined stream reaches. The porous nature of the rock and glaciation have profoundly influenced basin and channel morphology (Hauer et al. 1997).

The river character changes dramatically from a bedrock-controlled regime in Montana to a silt/clay regime near the town of Bonners Ferry, Idaho (KRSS 2000). During the Pleistocene, continental glaciation overrode most of the Purcell Range north of the river, leaving a mosaic of glacially scoured mountainsides, glacial till, and lake deposits. Late in the glacial period, an ice dam blocked the outlet at West Arm of Kootenay Lake. The dam formed glacial Kootenay Lake, the waters of which backed all the way to present-day Libby, Montana. Glacial Kootenay Lake filled the valley with lacustrine sediments, which included fine silts and glacial gravels and boulders. The Kootenai River and lower tributary reaches in Idaho are actively reworking these lacustrine sediments today. A terrace of lacustrine sediments on the east side of the valley is approximately 150 feet above the current floodplain and is a remnant of the ancestral valley floor. Tributary streams working through remnant deposits to meet the present base level of the main stem and from the main stem reworking existing floodplain and stream bank deposits continue to be a source of fine sediments. An extensive network of marshes, tributary side channels, and sloughs were formed by lowering of the lake level, flooding, and the river reworking its floodplain. Some of these wetlands continued to be supported by groundwater recharge, springtime flooding, and channel meandering. Much of this riverine topography however, has been eliminated by diking and agricultural development, especially in the reach downstream of Bonners Ferry, Idaho.

6. Hydrology

The headwaters of the Kootenay River in British Columbia consist primarily of the main fork of the Kootenay River and Elk River. High channel gradients are present throughout headwater reaches and tributaries (KRSS 2000).

Libby Reservoir (Lake Kooconusa) and its tributaries receive runoff from 47 percent of the Kootenai River drainage basin. The reservoir has an annual average inflow of 10,615 cfs. Three Canadian rivers, the Kootenay, Elk, and Bull, supply 87 percent of the inflow (Chisholm et al. 1989). The Tobacco River and numerous small tributaries flow into the reservoir south of the International Border.

Major tributaries to the Kootenai River below Libby Dam include the Fisher River (838 sq. mi.; 485 average cfs), the Yaak River (766 sq. mi. and 888 average cfs) and the Moyie River (755 sq. mi.; 698 average cfs). Kootenai River tributaries are characteristically high-gradient mountain streams with bed material consisting of various mixtures of sand, gravel, rubble, boulders, and drifting amounts of clay and silt, predominantly of glacio-lacustrine origin. Fine materials, due to their instability during periods of high stream discharge, are continually abraded and redeposited as gravel bars, forming braided channels with alternating riffles and pools. Stream flow in unregulated tributaries generally peaks in May and June after the onset of snow melt, then declines to low flows from November through March. Flows also peak with rain-on-snow events. Kootenai Falls, a 200-foot-high waterfall and a natural fish-migration barrier, is located eleven miles downstream of Libby, Montana.

The river drops in elevation from 3618 m at the headwaters to 532 m at the confluence of Kootenay Lake. It leaves the Kootenay Lake through the western arm to a confluence with the Columbia River at Castlegar. A natural barrier at Bonnington Falls, and now a series of four dams isolate fish from other populations in the Columbia River basin. The natural barrier has isolated sturgeon for approximately 10,000 years (Northcote 1973). At its mouth, the Kootenai River has an average annual discharge of 868 m³/s (30,650 cfs).

7. Soils

Soils formed from residual and colluvial materials eroded from Belt rocks or in materials deposited by glaciers, lakes, streams, and wind. Wind deposits include volcanic ash from Cascade Range volcanoes in Washington and Oregon. In many areas, soils formed in glacial till and are generally loamy and with moderate to high quantities of boulders, cobbles, and gravels. Although soils within the mountainous regions vary widely in character, most mountain and foothill soils are on steep slopes and well drained, with large amounts of broken rock. Rock outcrops are common.

Soils deposited by glaciers or flowing water are, for the most part, deep, well-drained, and productive soils. Most of forest soils in the subbasin are somewhat resistant to

erosion by water. In most of the valleys, soils are deep, relatively productive, and gently sloping.

Ustolls, Ochrepts, and Ustalfs are the dominant soils in valleys and on lower mountain slopes. Ochrepts, Borolls, and Orthents are dominant on upper mountain slopes and crests. Orthents and areas of rock outcrop are extensive on steep mountain slopes, and Fluvents and Aquolls are in valleys (NRCS 2000).

8. Land Use

The Kootenay Basin remains relatively remote and sparsely populated. Fewer than 100,000 people live within the basin upstream from Kootenay Lake. The largest municipal center is Cranbrook/Kimberley, which has a population of about 25,000. Only a handful of other communities have populations larger than 2,000, including Libby, Montana, Bonners Ferry, Idaho, and Fernie, Sparwood, Elkford, and Creston, British Columbia.

The forest products industry remains the most dominant employment and most extensive development activity in the subbasin. Roughly 90 percent of the drainage is forested. Logging and associated road building has occurred in nearly all of the lower elevation valleys and on many higher elevation ridges. Roadless areas larger than 5,000 acres are uncommon. Nine roadless areas totaling 139,600 acres exist in the Idaho portion of the subbasin (IPNF 1991). In the Montana portion, nine roadless areas totaling 241,500 acres are present, including approximately 60,000 acres of upper Libby and Lake creeks within the Cabinet Mountains Wilderness Area (USDA 1987). The largest contiguous block of land without logging roads in the British Columbia portion of the Kootenay Basin is the 390,000-acre Kootenay/Mt. Assiniboine National and Provincial Parks (Rocchini 1981). Approximately 150,000 acres of the headwaters of the St. Mary River and Findlay Creek northwest of Cranbrook/Kimberley are within the Purcell Wilderness Conservancy. The total surface area of undeveloped areas amounts to about 10 percent of the Kootenai Subbasin above Kootenay Lake. Facilities for processing forestry products also exist in the basin. These include Crestbrook Forest Industries which is located at the confluence of the Kootenai River and Skookumchuck Creek, and numerous sawmills located throughout the basin (KRN 2000).

Historically, the two largest industrial operations and point-source discharges to the Kootenay River have been the Crestbrook Forest Industries' pulp mill in Skookumchuck, B.C. and the Cominco mining, milling, and fertilizer plant in Kimberley, B.C. (Daley et al. 1981). Coal and hard rock mining are prominent activities in the subbasin, particularly along the Elk and St. Mary rivers and in the northern Cabinet Mountains. Large-scale, open-pit coal mining began in the Elk River watershed in the early 1970s. Since the late 1930s, the Sullivan Mine at Kimberley, B.C. has been the largest metal producer in the basin. In 1981 it was one of the two largest lead-zinc mines in the world (Daley et al. 1981). Since 1981, a large copper and silver mine and chemical floatation mill has operated in the Lake Creek watershed south of Troy, MT. Another industrial operation in the basin was the mining and processing of vermiculite

by the W.R. Grace Company northeast of Libby, Montana on Rainy Creek. This area is now the location of a federal superfund site managed by the Environmental Protection Agency (EPA).

Historically, about two percent of the subbasin is agricultural land, much of it used for pasture and forage production (Bonde and Bush 1982). Agricultural development is confined primarily to narrow valley bottoms. Though it utilizes a relatively small area, it has had a large impact on habitats of the main stem river and tributary mouths because most of the activity occurs in the floodplain. The largest contiguous block of agricultural land is within the Purcell Trench, which extends roughly from Bonners Ferry, Idaho to the river's entry into Kootenay Lake. Production of oats, wheat and barley account for 62 percent of the agricultural output in the Bonners Ferry/Creston area, with livestock production accounting for 20 percent. Hay and grass seed production and livestock grazing are the most common agricultural activities in the rest of the subbasin (KRSS 2000).

9. Fish Species

Eighteen species of game fish and eight species of nongame fish are present in Kooconusa Reservoir and the Kootenai River including several sensitive species (Table 1). Kooconusa Reservoir currently supports an important fishery for kokanee (*Oncorhynchus nerka*) and rainbow trout (*Oncorhynchus mykiss*), with a history of a heavy annual fishing pressure over 500,000 hours (Chisholm and Hamlin 1987). Burbot (*Lota lota*) are also important game fish, providing a popular fishery during winter and spring. The Kootenai River below Libby Dam is a "blue ribbon" rainbow trout fishery, and the state record fish was harvested there in 1997 (over 38 pounds). Bull trout (*Salvelinus confluentus*) are captured "incidentally", and provide a unique seasonal fishery. Downriver of the Montana state line, populations of kokanee, burbot, white sturgeon, redband rainbow, cutthroat and bull trout persist at questionable status, with sturgeon having been listed as an endangered species and bull trout a threatened species. Redband trout (*Oncorhynchus mykiss*) and burbot are listed as a species of special concern.

Table 1. Fish species present in the Kootenai River¹.

Common name	Scientific name	Abundance trend	Native (Yes/No)
<u>Game fish species</u>			
Westslope cutthroat trout	<i>Oncorhynchus clarki lewisi</i>	D	Y
Redband Rainbow trout	<i>Oncorhynchus mykiss</i>		Y
Rainbow trout	<i>Oncorhynchus mykiss</i>	Y	N
Bull trout	<i>Salvelinus confluentus</i>	Y	Y
Brook trout	<i>Salvelinus fontinalis</i>	N	N
Lake trout	<i>Salvelinus namaycush</i>	N	N
Kokanee salmon	<i>Oncorhynchus nerka</i>	N	N
Mountain whitefish	<i>Prosopium williamsoni</i>	Y	Y
Burbot	<i>Lota lota</i>	D	Y
Largemouth bass	<i>Micropterus salmoides</i>	N	N
White sturgeon	<i>Acipenser transmontanus</i>	D	Y
Northern pike	<i>Esox lucius</i>	U	N
<u>Nongame fish species</u>			
Pumpkinseed	<i>Lepomis gibbosus</i>	U	N
Yellow perch	<i>Perca flavescens</i>	I	N
Redside shiner	<i>Richardsonius balteatus</i>	D	Y
Peamouth	<i>Mylocheilus caurinus</i>	I	Y
Northern pikeminnow	<i>Ptychocheilus oregonensis</i>	I	Y
Largescale sucker	<i>Catostomus macrocheilus</i>	S	Y
Longnose sucker	<i>Catostomus catostomus</i>	D	Y

10. Reservoir Operation

Libby Dam is a 113-m (370-ft) high concrete gravity structure with three types of outlets: sluiceways (3), operational penstock intakes (5, 8 possible), and a gated spillway. The dam crest is 931 m long (3,055 ft), and the widths at the crest and base are 16 m (54 ft) and 94 m (310 ft), respectively. A selective withdrawal system was installed at Libby Dam to allow for withdrawal of water from the reservoir's upper stratum.

Completion of Libby Dam in 1972 created the 109-mile Libby Reservoir. Specific morphometric data for Libby Reservoir are presented in Table 2, following page. Filling Libby Reservoir inundated and eliminated 109 miles of the main stem Kootenai River and 40 miles of critical, low-gradient tributary habitat. This conversion of a large

¹ Hoffman, Greg, Brian Marotz, Jay DeShazer, Larry Garrow, Tom Ostrowski, James Dunnigan - Montana Fish, Wildlife and Parks, 2002, Mitigation For The Construction And Operation Of Libby Dam, Annual Report 2000, Report to Bonneville Power Administration, Contract No. 00006294, Project No. 199500400, 163 electronic pages (BPA Report DOE/BP- 00006294 -1)

segment of the Kootenai River from a lotic to lentic environment changed the aquatic community (Paragamian 1994). Replacement of the inundated habitat and the community of life it supported are not possible. However, mitigation efforts are underway to protect, reopen, or reconstruct the remaining tributary habitat to offset the loss. Fortunately, in the highlands of the Kootenai Basin, tributary habitat quality is high. The headwaters are relatively undeveloped and retain a high percentage of their original wild attributes and native species complexes. Protection of these remaining pristine areas and reconnection of fragmented habitats are high priorities.

Between 1977 and 2000, reservoir drawdowns averaged 111 feet, but were as extreme as 154 feet. Drawdown affects all biological trophic levels and influences the probability of subsequent refill during spring runoff. Refill failures are especially harmful to biological production during warm months. Annual drawdowns impede revegetation of the reservoir varial zone and result in a littoral zone of nondescript cobble/mud/sand bottom with limited habitat structure.

Similar impacts have been observed in the tailwater below Libby Dam. A barren varial zone has been created by daily changes in water-flow and stage. Power operations cause rapid fluctuations in dam discharges (as great as 400 percent change in daily discharge), which are inconsistent with the normative river concept. Flow fluctuations widen the riverine varial zone, which becomes biologically unproductive. Daily and weekly differences in discharge from Libby Dam have an enormous impact on the stability of the riverbanks. Water logged banks are heavy and unstable; when the flow drops in magnitude, banks slough off, causing serious erosional impacts and destabilizing the riparian zone. These impacts are common during winter but go unnoticed until spring. In addition, widely fluctuating flows can give false migration cues spawning to burbot and white sturgeon (Paragamian 2000, Paragamian and Kruse 2001).

Also, barriers have been deposited in critical spawning tributaries to the Kootenai River through the annual deposition of bedload materials (sand, gravel, and boulders) at their confluence with the river. During critical times of the year, when redband and cutthroat trout are out-migrating from nursery streams, the streams may flow subterranean because of the deltas (Paragamian V., IDFG, pers. com. 2000). As a result, many potential recruits are stranded. Prior to impoundment, the Kootenai River contained sufficient hydraulic energy to annually remove these deltas, but since the dam was installed, peak flows have been limited to maximum turbine capacity (roughly 28 kcfs). Hydraulic energy is now insufficient to remove deltaic deposits. During periods of low stream flow, the enlarged deltas and excessive deposition of bedload substrate in the low gradient reaches of tributaries impedes or blocks fall-spawning migrations. Changing and regulating the Kootenai River annual hydrograph for power and flood control and altering the annual temperature regime have caused impacts typical of dam tailwaters.

Table 2. Morphometric data for Libby Reservoir.²

Surface elevation	
maximum pool	749.5 m (2,459 ft)
minimum operational pool	697.1 m (2,287 ft)
minimum pool (dead storage)	671.2 m (2,222 ft)
Area	
maximum pool	188 sq. km (46,500 acres)
minimum operational pool	58.6 sq. km (14,487 acres)
Volume	
maximum pool	7.17 cu km (5,809,000 acre-ft)
minimum operational pool	1.10 km ³ (890,000 acre-ft)
Maximum length	145 km (90 mi)
Maximum depth	113 m (370ft)
Mean depth	38 m (126 ft)
Shoreline length	360 km (224 mi)
Shoreline development	7.4 km (4.6 mi)
Storage ratio	0.68 yr
Drainage area	23,271 sq. km (8,985 sq. mi)
Drainage area: surface area	124:1
Average daily discharge	
pre-dam (1911-1972)	11,774 cfs
post-dam (1974-2000)	10,991 cfs

² Hoffman, Greg, Brian Marotz, Jay DeShazer, Larry Garrow, Tom Ostrowski, James Dunnigan - Montana Fish, Wildlife and Parks, 2002, Mitigation For The Construction And Operation Of Libby Dam, Annual Report 2000, Report to Bonneville Power Administration, Contract No. 00006294, Project No. 199500400, 163 electronic pages (BPA Report DOE/BP- 00006294 -1)

FOCUS WATERSHED PROGRAM OBJECTIVES AND ACCOMPLISHMENTS

The Focus Watershed Coordinator of the Kootenai River Network is a full-time professional position responsible for coordination of watershed mitigation activities within the Kootenai River watershed.. The primary goal of this program is facilitation, education, outreach and communication for various activities throughout the Kootenai River Basin. The following excerpt from BPA Project No. 96087200, Contract 00009996, Statement of Work outlines the objectives of the Focus Watershed Program and summarizes how objectives were met during the contract period of June 1, 2002 through May 30th, 2003.

Objective/Task

1. *Act as the Montana representative in the Kootenai during the CBFWA sub-basin planning process.*

1.a. *Work closely with Idaho representatives, facilitator, professional writer, and sub-basin coordinator to analyze and compile existing information into the subbasin plan. Work with CBFWA personnel and staff.*

Kathy Ann (Katie)Randall attended the Kootenai River (MT Portion) Planning Team Meeting on December 10, 2002. She remained on the Education working group until her resignation in January of 2003. She reported the following:

Montana Kootenai River Subbasin Planning: The inaugural MT Kootenai River Subbasin Planning and Technical Team meetings took place December 10, 2002 in Libby. The subbasin group is divided into three teams: Planning, Technical and Working Group. Katie Randall sat in on the first planning group meeting. Because her area of expertise in environmental education and communications, she volunteered to facilitate the Working Group, which includes a process for public involvement providing for discussions on fish and wildlife mitigation issues of public concern. The Working Group is composed of individuals representing key interests. This group will follow up on concepts identified during the public involvement sessions. Katie also volunteered to assist with the Idaho Working Group, hosted by the Kootenai Valley Resource Initiative, as the KRN representative to the Idaho portion of the Kootenai River Subbasin Planning project. The Montana Working Group's first meeting takes place February 4 in Libby, MT.³

Bob and Vicki Munson, who replaced Katie Randall as watershed coordinator/executive director on February 1, 2003, informed Brian Marotz, Montana Subbasin Coordinator, the KRN was available to do anything necessary to

³ Randall, Kathy Ann, Kootenai River Network Quarterly Report, November 2002 – January 2003

assist with Subbasin public input meetings. Brian Marotz advised the KRN that a facilitated public meeting would occur later in the Fall of 2003.

David Rockwell, the professional writer, was invited to the KRN Annual General Meeting (AGM) on May 16, 2003. However, scheduling conflicts prevented him from attending. Both the Montana Subbasin Coordinator Brian Marotz, and the Idaho Subbasin Coordinator, Susan Ireland, attended the AGM.

2. *Coordinate the activities of interest groups in the Kootenai River drainage related to watershed improvement and education and outreach, and maintain a communication network among private and public groups in the Columbia River basin. The primary goals of this position are to provide information dissemination, coordination, education and outreach for watershed activities. These opportunities will be available to those entities who wish to use the KRN's resources to accomplish their missions.*

2.a. *Network with existing local conservation districts, county governments, local, state, and federal agencies, and private landowners involved with resource management groups affected by mitigation and watershed planning to assist with watershed-based outreach and education, and habitat rehabilitation, when these entities choose to employ KRN to do so.*

Throughout the 2002-03 contract year, the executive directors (Greg Hoffman – June and July; Katie Randall October – January) and contractors (Bob and Vicki Munson – November – May) attended various meetings of local stakeholder groups to garner their input as well as provide assistance in communication, education, and outreach for their organizations. For the watershed coordinators the focus was on outreach and education, while some board members who work for federal or state agencies assisted with habitat restoration planning and implementation. The KRN serves as a nonprofit agency that coalesces various partners, each having an interest in habitat improvement, especially for T&E species and impaired streams, by leveraging funds to make projects “greater than the sum of their parts.” Examples include Grave Creek, Therriault Creek, and Pipe Creek restoration projects.

2.b. *Attend, or organize as needed, citizen/technical advisory committee meetings open to all interested parties to help develop goals and objectives for improved watershed health.*

Technical advisory committee meetings have reviewed Grave Creek Phase I projects, as well as Therriault Creek planning, and Pipe Creek implementation meetings. This technical oversight helps answer landowner questions, ensures the agencies are all working with the same objectives, and increases the chances of success for the overall project.

2.c. *Compile and analyze human and fiscal resources that are available for protection and improvement of the watershed. Include federal, tribal,*

state, local government, and other public sources as well as private sources such as local businesses and conservation groups that rely on natural resources within the Kootenai watershed.

Through the BPA contract watershed coordinator/executive director position, in May of 2003, the KRN was successful in securing a grant from the USFS Rural Communities Assistance Program to conduct an Asset Inventory as well as assist with a county-wide trails planning strategy and interpretive signage. This compilation of natural resources, social capital, and fiscal resources will provide a database for community planning as well as watershed resources that can provide a basis for enhanced economic opportunity throughout the watershed.

Other funding proposals were submitted. These are as follows:

FUNDER	TYPE OF GRANT	REQUEST AMOUNT	DATE	STATUS
1. National Forest Foundation	Capacity Building	\$15,000	Nov/Dec 2002	Not Awarded
2. USFS Rural Community Assistance	Asset Inventory and Trails/Interpretive Signage	\$20,000	March 14, 2003	\$20,000 award
3. Recreational Boating and Fishing Foundation	Asset Inventory and recreational uses of watershed	\$34,000	April 11, 2003	Not Awarded
4. Sonoran Institute	Capacity Building	\$5,000	April 11, 2003	Not Awarded
5. Cinnabar Foundation	Interpretive Signage	\$10,000	March 31, 2003	\$5,000 award
6. Stewardship Partnerships 2003	Presenter at national partnership	Presentation Slot	March/April 2003	Not Awarded
7. National Park Service Rivers, Trails, and Conservation Assistance Program	Technical Assistance and Recreational Uses/ Trails Systems	Technical Assistance	July 1, 2003	Potentially Awarded, pending letters of support
8. Red Lodge Clearing House	Capacity Building	\$15,000 plus Technical Assistance	July 21, 2003	Pending

- 2.d.** *Encourage involvement of private landowners, volunteers, and educational institutions and interest groups in the coordination of watershed improvement projects.*

During the project year, the KRN broadened its focus to more directly include the public in its programs and projects. Educational planning occurred in which educational institutions were included in planning. At the AGM, there were presentations for both a British Columbia high school teacher and a college student who had been instrumental in carrying forward watershed conservation and water quality messages.

- 2.e.** *Facilitate cooperative funding arrangements between agencies, tribes, and conservation groups for habitat improvement projects, and outreach and education opportunities.*

The following table details the cooperative funding arrangements that have resulted in three projects, completed or in process, on Grave Creek. This watershed wide project of Montana Partners for Fish and Wildlife/FWS has resulted in a model that can be used in other similar watersheds.

Funder	Grant	Restoration Project	Amount Awarded
USFS Lincoln Cnty RAC	Watershed Restoration	Grave Creek Phase II	\$50,000
Lincoln Cnty Title III	Contractor's Workshop		\$7,500
EPA Section 319 Funds	Water Quality Improvement	Grave Creek TMDL planning	\$136,000
USFWS/Private Stewardship Grant	Grave Creek Restoration	Grave Creek Phase II	\$100,000
USFS/Rural Communities Assistance	Asset Inventory		\$20,000
Cinnabar Foundation	Operating Expenses		\$5,000
USFWS/Fisheries Restoration and Irrigation and Mitigation Act	Irrigation and Fisheries	Grave Creek Phase II	\$70,000 pending
EPA Section 319 funds	TMDL Planning	Tobacco Watershed TMDL	\$250,000 pending
Montana FWP	Grave Creek Phase II	Grave Creek Phase II/ Therriault Creek	\$245,000

- 2.f.** *Coordinate procurement of funding for specific watershed or research needs. Assist with proposal writing for projects deemed to be most beneficial to the watershed. As part of this, databases will be established for funding sources, including the criteria needed for proposals and project selection.*

Through the USFWS/Montana Partners for Fish and Wildlife Cooperative Agreement grants were written and administered by KRN which serves as a fiscal agent for Grave Creek and Therriault Creek projects.

Through the watershed coordinator/executive director position, several grants were submitted for capacity-building for the organization as a whole. The grants that were received included \$20,000 from the USFS Rural Community Assistance (See Appendix 3 – USFS RCA Grant, Overview and Workplan) and Cinnabar Foundation for \$5,000. Work on these grants will occur during September 2003 through September 2004.

- 2.g.** *Compile the results of field monitoring and public input to produce monthly and annual reports and periodic newsletters. Inform concerned parties of activities and progress towards goals.*

See KRN Quarterly Reports for summary all field monitoring. See Appendix 4 – Periodic Reports.

- 2.h.** *Assist local watershed groups with resources as needed. Work with agency staff to coordinate habitat enhancement projects for native fish species.*

See KRN Quarterly Reports for summary of habitat enhancement projects. See Appendix 4 – Periodic Reports.

- 2.i.** *Provide monthly reports and newsletters to inform concerned parties of activities and progress of watershed activities.*

Greg Hoffman, Watershed Coordinator during June and July 2002, prepared two monthly reports. Gretchen Kruse reported on the period June - October 2002. Bob and Vicki Munson completed quarterly reports for November – February, and March - May. Rox Rogers, KRN, Vice President, gathered stakeholders from the Grave Creek community and surrounding area to review the goal and purpose of the KRN and how it relates to cooperative, on-the-ground work in Grave Creek. See Appendix 4 – Periodic Reports.

- 2.j.** *Prepare annual progress report.*

This report serves as the annual progress report.

- 2.k.** *Assist with preparation of BPA Fish and Wildlife Program and CBFWA funding proposals.*

This was not done as part of the Focus Watershed Coordination Project.

- 2.l.** *Provide stream dynamics/native species recovery demonstrations to middle and high school classrooms and local interest groups using portable model stream table. Provide educational opportunities to youth and adults to enhance their knowledge about fish and wildlife resources.*

The Stream Table was delivered to the KRN office in March from the manufacturer in Colorado. After securing insurance and licensing, during May, it was used for fifth grade field trips to the Historic Raven Natural Resource Learning Center. The Department of Natural Resources and Conservation (DNRC), and Montana Fish Wildlife and Parks assisted with these presentations. At the AGM in Bonners Ferry, Idaho, the Stream Table was demonstrated to both professionals who were interested in using it to do educational presentations, and to showcase it to the membership. Ellen Gruber, USFS hydrologist, used the Stream Table in the Bonners Ferry, Idaho schools the last week in May. As a part of the AGM, a tour of the Kootenai Tribe of Idaho's White Sturgeon Hatchery was conducted by the hatchery staff.

- 2.m.** *Provide educational and informational resources for the KRN web site and other means of outreach.*

A Stream Table Demonstration Guide was produced by Greg Hoffman, Fisheries Biologist at USACE Libby Dam, to enhance the outreach efforts of the Stream Table. See Appendix 5 – Stream Table Demo Guide

- 2.n.** *Coordinate and facilitate activities of KRN technical committees: Monitoring, Outreach and Education, Communication, and Habitat Rehabilitation.*

The KRN Technical committees were changed to the Habitat, Restoration, Monitoring committee to encourage better involvement of those people interested in technical aspects of habitat restoration and monitoring. The technical committee met to review restoration projects for Grave Creek, Therriault Creek, Total Maximum Daily Load (TMDL) work, and Pipe Creek.

The other committees were changed and modified into a Communications, Education, Outreach committee that did not meet during the contract year.

An Advisory Council was initiated, in order to allow individuals who could not serve on the board or the working committees, to provide input to KRN. The first meeting of this group occurred in April.

- 2.o. Develop strategies to raise the profile of KRN and encourage involvement of stakeholders. Develop publicity/press releases.*

The KRN developed strategies to involve a wider group of stakeholders which resulted in the Annual General Meeting and the US-Canadian Field Tours. Membership increased to more than fifty members, up from ten the previous year. See Appendix 6 – Membership 2002 and Membership 2003.

In addition, a Contractors Workshop provided opportunity for area contractors to learn about Rosgen-Type Restoration Techniques. See Appendix 7 – Contractors Workshop Report by Jim Dunnigan. An Electric Fence Workshop also helped raise awareness of the KRN. See Appendix 9 –Electric Fence Workshop. Additional discussions occurred about developing membership, including reasons for members of the general public to become involved in the KRN. A report created by Jim and Laura Duncan, focusing on the watershed issues in the Kootenai Watershed in Canada, entitled “The Canadian Side” is attached. See Appendix 8 – The Canadian Side by Jim and Laura Duncan.

- 2.p. Update and maintain the Kootenai River Information System (the KRN’s literature database).*

Additional work was completed by Kier and Associates relative to the KRIS Kootenai database. Bill Kier and Patrick Higgins presented the final design of the database at the annual general meeting.

- 2.q. Refine criteria for involvement of other watershed groups wishing to use the umbrella of the KRN to accomplish watershed restoration, conservation and educational goals*

The board continues to work on a transboundary plan to involve major community stakeholders such as the Kootenai Valley Resource Initiative (Idaho), the Columbia Kootenay Fisheries Renewal Program (BC) and smaller watershed groups such as the Yaak Valley Forest Council, the Hawkins Creek Watershed Stewardship Council, the Friends of Grave Creek, stakeholders of lower Pipe Creek and others.

- 2.r. Participate in the development of TMDL planning.*

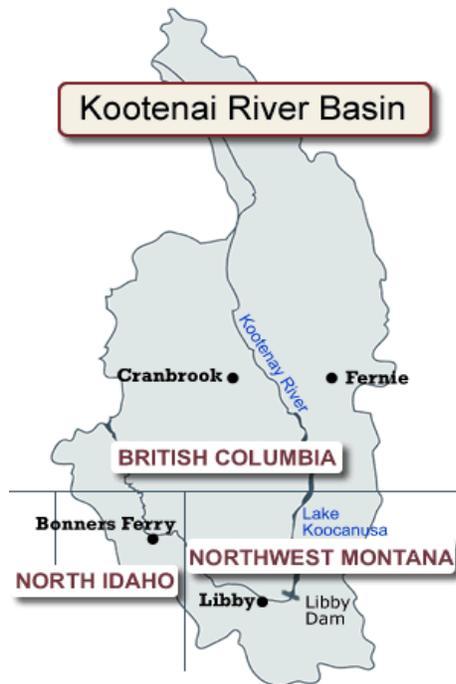
Rox Rogers, KRN, Vice President and Carolyn Stamy, Fiscal Coordinator, attended a public input meeting regarding TMDL work being started by the USFS Kootenai National Forest in the Yaak area of Montana. KRN is the lead organization for current projects (Grave Creek and Pipe Creek).

2.s. *Attend training and continuing education programs that will enhance the abilities of the coordinator to achieve the goals of the program.*

Training sessions were limited to attending the Northwest Power Planning and Conservation Council and BPA meetings. Future plans include the Montana Watershed Coordination Council Watershed Symposium where Grave Creek representatives will be part of the Capacity discussion panel, *Keys to a Successful Watershed Group*. KRN initiatives and cooperation will be discussed and KRN will participate with a display as well.

APPENDIX 1

KOOTENAI /AY RIVER NETWORK



The Kootenai River Network (KRN) is a cooperative international partnership of individuals, diverse citizen groups, and agencies dedicated to the utilization, restoration, promotion and protection of water resources in the Kootenai River watershed.

KRN Goals

1. Involve individuals and their communities in sharing the value of the Kootenai River watershed.
2. Improve communication among agencies and diverse citizen groups throughout the Kootenai River watershed.
3. Facilitate habitat enhancement and rehabilitation.
4. Fully use best available science practices to facilitate proactive water resources management.
5. Pursue coordination of efforts regarding Water Resources models and measurement techniques.:

Vision: Capture the Value of the Kootenai River

205 California Avenue

P. O. Box 491

Libby, Montana 59923

406.293.7610 406.293.7612 FAX krn@libby.org

www.kootenairivernetwork.org

APPENDIX 2

Kootenai River Network

BPA Contract 02 - 03 Profit & Loss Budget vs. Actual by Job

June 2002 through May 2003

Kootenai River Network
Statement of Expenses Budget vs. Actual
BPA Contract 00009996 - 2002 - 2003

	Jun '02 - May 03	Budget	\$ Over Budget	% of Budget
Ordinary Income/Expense				
Income				
BPA Contract Reimbursement	100,659.80	101,001.00	-341.20	99.66%
Total Income	<u>100,659.80</u>	<u>101,001.00</u>	<u>-341.20</u>	<u>99.66%</u>
Gross Profit	100,659.80	101,001.00	-341.20	99.66%
Expense				
Communications Expense	2,877.86	1,050.00	1,827.86	274.08%
Education Expense	45,339.13	40,000.00	5,339.13	113.35%
KRN BPA Overhead	6,230.22	6,536.00	-305.78	95.32%
Payroll Expenses	41,287.99	44,915.00	-3,627.01	91.93%
Supplies and materials	945.75	1,000.00	-54.25	94.58%
Travel and Transp. Expense	4,174.31	7,500.00	-3,325.69	55.66%
Total Expense	<u>100,855.26</u>	<u>101,001.00</u>	<u>-145.74</u>	<u>99.86%</u>
Net Ordinary Income	<u>-195.46</u>	<u>0.00</u>	<u>-195.46</u>	<u>100.0%</u>
Net Income	<u><u>-195.46</u></u>	<u><u>0.00</u></u>	<u><u>-195.46</u></u>	<u><u>100.0%</u></u>

APPENDIX 3

Kootenai River Network

4th Quarter Report to Bonneville Power Administration

Prepared for:

*Ron Morinaka, Project Manager
U. S. Department of Energy
Bonneville Power Administration
Division of Fish and Wildlife
Portland, Oregon*

*BPA Project Number 96087200
Contract Number: 00009996*

May 31, 2003

4th Quarter Report

Kootenai River Network

The Kootenai River Network (KRN) has been contracted with the Bonneville Power Administration (BPA) Project Number 96087200, Contract Number 00009996, dated 6/01/02 through 5/31/03) to:

- I. Act as the Montana representative in the Kootenai during the CBFWA sub-basin planning process.
- II. Coordinate the activities of interest groups in the Kootenai River drainage related to watershed improvement and education and outreach, and maintain a communication network among private and public groups in the Columbia River basin. The primary goals of this position are to provide information dissemination, coordination, education and outreach for watershed activities. These opportunities will be available to those entities who wish to use the KRN's resources to accomplish their missions. (See Attachment 1, BPA Statement of Work)

The Contract extends an original contract with BPA through Montana Fish, Wildlife, and Parks, which was transferred to the KRN through a Memorandum of in November 2001. The reason cited for this transfer was "to keep the projects (Focus Watershed Coordination and Libby Mitigation Project # 199500400) separate as directed by BPA and to utilize non-government sponsorship to encourage public support."¹ The dates of the contract amendment are June 1, 2001 through May 31, 2002. The Focus Watershed Coordination objectives delineated above are to be performed by a Focus Watershed Coordinator/Executive Director (See Attachment 2, Job Description). When the incumbent, Kathy Ann Randall, terminated her employment in January 2003, this position/function was contracted with Bob and Vicki Munson of Munson Consulting, in February 2003.

The following report details the activities of the Focus Watershed Coordination Program during the final quarter of the contract amendment period - March, April, and May 2002.

Focus Watershed Coordination Overview

During December 2002, and January and February 2003, the Kootenai River Network reviewed its mission, goals, and organizational structure in response to growing needs throughout the watershed and its role in Focus Watershed Coordination as outlined in the BPA contract. Realizing that in order to receive more public input into projects and processes throughout the watershed, the KRN mission was expanded to include "utilization and promotion" in addition to restoration and protection of the Kootenai River watershed. The goals were combined and re-prioritized. (See Attachment 3, KRN Mission and Goals) Committee structure was reviewed and combined into two working committees, the Habitat, Restoration, and Monitoring Committee, and the Communications, Education and Outreach Committee. These committees provide input and review all work of KRN, not just work plans related to the BPA contract. For instance, monitoring and restoration work is carried on outside of the BPA contract, but not within it. In addition, an Advisory Council concept was adopted. Because the board consisted of five members, and changes unrelated to the KRN were occurring in their professional positions and family circumstances, discussion also occurred about enlarging the board. With the addition of Directors and Officers Liability coverage for board members, the KRN was again able to recruit former board members who for corporate and/or professional reasons were unable to serve without this insurance in place. Wayne Maahs, Plum Creek Timber Company, rejoined the board in May, effective at the May 15th board meeting. Juliet Barenti, USFWS, resigned from the board effective May 15, 2003, due to job changes

¹Kruse, Gretchen, and Hoffman, Greg, "Kootenai River Drainage Watershed Coordination Proposed Work Plan and Budget for the period July 1, 2002 to June 30, 2003," Kootenai River Network, page 19.

Workshop, update on invitations sent for the AGM, a report by Jim and Laura Duncan regarding contacting Canadian invitees for the AGM and the importance of watershed groups in Canada related to restoration work. Grant submissions, interpretive signs and the process involving Montana Dept. of Transportation, Stream Table training sessions and possible events at which the Stream Table might be demonstrated were reviewed.

May 15 Annual Board Meeting – The annual board meeting was held the day prior to the Annual General Meeting (annual members meeting). Officers elected were:

(See Attachment 5, May 15th Board of Directors Meeting Agenda

In the evening, by a presentation from Bill Kier and Associates reviewed the KRIS Kootenai Website. This final demonstration completed their current contract with KRN. Final decision on further work depends upon future board action and funding opportunities.

May 16-17 Annual General Meeting – The KRN departed from traditional quarterly meetings by hosting the Annual General (members) Meeting as a full day symposium detailing activities occurring in the watershed. This included updates by federal and state agencies, entrepreneurs using the watershed for commercial guiding and houseboat rental businesses, as well as projects funded through KRN and partners. The event was followed by a banquet and awards ceremony where watershed groups were acknowledged for their important work in “capturing the value of the Kootenai River.” On Saturday, May 17th, the Kootenai Tribe of Idaho hosted a tour of the white sturgeon hatchery in Bonners Ferry, an important part of their sturgeon recovery project. (See Attachment 6, Annual Meeting Agenda with presenter bios)

Habitat, Restoration, and Monitoring Committee

Project Updates:

Grave Creek Phase I,

One of KRN's partnership restoration projects with Montana Partners for Fish and Wildlife/USFWS was completed during this quarter. This contract with the Montana Department of Environmental Quality enhanced fisheries habitat, specifically for bull trout and westslope cutthroat, in 5,300 feet of Grave Creek (listed on DEQ 303d List), a tributary of the Tobacco River, near Eureka, Montana. All work on the project had been completed last fall, with the exception that weather conditions did not allow for plantings. These were accomplished during April of 2003.

Pipe Creek – Montana

Therriault Creek –

Meetings

TMDL Meeting

Others??

Communication, Education, Outreach Committee

Meetings attended:

- March 11 Mountain Columbia Meeting, NPPC – Meeting to update BPA contractors about new developments in contracting, reporting, and funding projects in the Mountain Columbia province.
- March 20 KVTC Meeting, Libby – Reviewed the work and role of the KRN in the Kootenai River watershed, including the revised mission statement which provides for more input and impact for anglers and recreationists who utilize and promote the vast resources of the Kootenai River. Rox Rogers presented a Power Point presentation on the Grave Creek project.
- April 22 USFS Meeting regarding Trails, Libby – Meeting hosted at the KNF SO meeting room to discuss trail systems, user groups, and community input for improving trails between Troy and Libby. KRN and Lincoln County Recreational Association were charged with the lead in identifying and working with the Forest Service and interested users to develop “next step” opportunities. KRN’s USFS RCA grant provides funding to assist with this project.

Newsletter:

- March – April The KRN Newsletter is planned as a Quarterly publication, with monthly email updates. Currently, tests with E-Mail distribution of newsletter reveal that lack of uniformity of computers receiving the test emails and the limited bandwidth capabilities in Libby, Montana, makes the most viable distribution through text message only, or via an email that points to the website for the formatted version.

- Stream Table: During the Annual General Meeting, the Stream Table was demonstrated to attendees, and training was provided for interested people. The Stream Table was used in Bonners Ferry schools by Ellen Huber, USFS hydrologist, during the last week of May. At Raven Ranger Station, the DNRC/NRCS/FWP staff demonstrated stream dynamics to fifth grade classes from Libby schools. Future dates for demonstration at public events during the summer are planned.

- Canadian Liaison: Laura and Jim Duncan, Sego Consulting, of Kimberley, BC, assisted with outreach in the Kootenay River watershed in Canada by inviting and encouraging Canadian participation and attendance at the Annual General Meeting (AGM). Through their more than thirty years experience working with many people in the Kootenay River basin in BC on watershed issues, their combined experience, expertise in watershed issues, and depth of contacts, proved to be a very effective method of re-igniting interest in KRN and transboundary watershed issues. Jim and Laura provide credibility and perspectives on Canadian issues as they relate to the watershed. Their interviews with many professionals, as well as community members, provides insight into Canadian viewpoints about the watershed. (See Attachment 7, “The Canadian Side”)

As KRN moves forward with transboundary watershed issues and project planning, the Duncans will provide a necessary link to partners in the Kootenay watershed in Canada.

Published Articles:

May 2003 (check date) Upper Columbia Update – Community Input Article (See Attachment 10 >>>>)

“The Canadian Side” by Jim and Laura Duncan – Interviews with watershed groups, and leaders – (Referenced above as Attachment 7, “The Canadian Side”)

AGM Proceedings To be posted on KRN website.

Workshops

April 29-30 Contractors Workshop – Eureka, Montana

The Kootenai River Network sponsored an informative workshop on April 29th – 30th in Eureka, for operators who wanted to learn more about construction techniques employed specifically for river restoration, streambank stabilization, and natural channel design projects. The two day workshop included both classroom and field components. Agencies and organizations assisting with the development of this workshop included the US FWS/Montana Partners for Fish and Wildlife, Water Consulting, Inc., Lincoln County RAC (provided Title III funding for the workshop), and Montana Fish Wildlife and Parks.

Water Consulting, Inc. of Whitefish and Hamilton, MT gave instructional presentations as well as field demonstrations. Topics covered included:

- ◆ Basic fluvial morphology (river form and function)
- ◆ Stream types
- ◆ Stream restoration overview- steps, studies, evaluation and considerations
- ◆ Stream restoration techniques
- ◆ Structures (grade control, bank stabilization, other)
- ◆ Revegetation
- ◆ Bridges, culverts, crossings
- ◆ Setback levees
- ◆ Heavy Equipment Specifications and Recommendations
- ◆ Erosion Control and Water Quality Mitigation
- ◆ Regulatory Permitting (State, Federal, Local)
- ◆ Example Projects and “Lessons Learned”

The field tour included visiting several project sites in the Eureka area. Workshop attendees learned how to identify channel and floodplain features and the importance of collecting and using channel elevation data for building stream restoration projects. Also reviewed were review fish habitat, bank stabilization, grade control, and irrigation structures on Grave Creek. This workshop was geared to serious contractors with the interest and capacity to become involved in stream restoration. (See Attachment 8, Contractors Workshop Summary)

May 3 Electric Fence Workshop, Kalispell, Montana

KRN provided partnership funding for an Electric Fence Workshop in Kalispell. (See Attachment 9, Electric Fence Workshop Press Release)

Funding

During the quarter, the contract renewal for the BPA was submitted. Although the current contract balance was mostly expended by May 31st, a no-cost extension was submitted for any remaining funds that would not be spent during the contract year. KRN was advised that next year's budget allocation is \$100,000, down from \$101,500 projected for this year. The KRN is awaiting contracts for signature.

Grants Status: During the quarter, the following grant proposals were submitted:

USFS RCA Grant	Natural Resources Asset Inventory/Trails/Interpretive Signage	\$20,000	Yes
Cinnabar Foundation	Assistance with Trails and Interpretive Signage Planning	\$5,000	Yes
Sonoran Institute	Assistance with Trails Planning	\$5,000	No
Rural Boating and Fishing Foundation	User Group Assistance on Kootenai River	34,000	No
Rocky Mountain Elk Foundation	Wildlife Interpretation Signage – Kootenai River	\$2,500	Pending
BPA Project 96087200	Focus Watershed Coordination	\$100,000	Pending Contract

Table of Attachments:

Attachment 1	BPA Statement of Work – Contract 00009996
Attachment 2	Watershed Coordinator/Executive Director Job Description
Attachment 3	KRN Mission and Goals (revised)
Attachment 4	March 5 th Board of Directors Meeting Agenda and Minutes
Attachment 5	May 15 th Board of Directors Meeting Agenda
Attachment 6	Annual General Meeting Agenda with Presenter Bios
Attachment 7	“The Canadian Side”
Attachment 8	Contractors Workshop Summary
Attachment 9	Electric Fence Workshop Press Release

APPENDIX 4

**KOOTENAI RIVER NETWORK
MEMBERSHIP LIST
June 1, 2002 – May 31, 2003**

Individuals

Bob Jamieson
Bioquest International Consulting, Ltd.
Box 73
Ta Ta Creek, B.C., Canada VOB 2HO

Ed Levert
5220 Kootenai River Road
Libby, MT 59923

Rox Rogers
USFWS/MT Partners for Fish
and Wildlife
780 Creston Hatchery Road
Kalispell, MT 59901

Gretchen Kruse
Free Run Aquatic Research
214 E. Hayden Ave.
Hayden ID 83835

Agencies

Kootenai Valley Trout Club
Mike Rooney, Secretary
P.O. Box 1043
Libby, MT 59923

USDA Kootenai National Forest
1101 U.S. Highway 2 West
Libby, MT 59923

Kootenai Tribe of Idaho
P.O. Box 1269
Bonners Ferry, ID 83805

Plum Creek Timber Company
126 Pipe Creek Road
Libby, MT 59923

MT DEQ
P.O. Box 200901
Helena, MT 59620-0901

MT Fish, Wildlife & Parks
475 Hatchery Road
Libby, MT 59923

APPENDIX 5



Watershed Restoration Contractor's Workshop:

A Synopsis

April 29-30, 2003

Eureka, Montana

Sponsored by:

The Kootenai River Network

Overview

The Kootenai River Network (KRN), through the financial assistance of the Lincoln County Resource Advisory Council (RAC; Title III) organized and sponsored a 2-day workshop in Eureka, Montana that was intended for heavy equipment operators and contractors. A total of approximately 40 people participated in the conference (see Appendix for a workshop roster). The KRN contracted with Water Consulting Incorporated to instruct the workshop. The overall objective of the workshop was to provide participants with a brief exposure to watershed processes, commonly used hydrologic terms, stream channel classification, stream channel restoration design, stream structures, required permits, and common issues associated with culvert and bridge stream crossings. The first day of the workshop consisted of classroom instruction and during the second day participants several sites within the local Eureka area.

April 29, 2003 - Class Room Summary

Watershed restoration activities have generally undergone a paradigm shift over the past several years that has involved treating the causes of watershed impairment rather than simply addressing the symptoms. From a legal perspective, the state and federal impetus for watershed restoration stems from the 303d list of impaired stream and the Clean Water Act of 1972, respectively.

Stream corridors exist in four dimensions that consist of the longitudinal, lateral, vertical and temporal. An understanding of how stream corridor varies across these four dimensions and at different scales is critical prior to restoration activities and design. The lateral dimension consists of the headwaters (typically highest gradient and confinement), the transition zone, and the depositional or valley zone. The stream corridor's lateral dimension consists of the stream thread, the floodplain, and the upland fringe. Stream channel dimensions are influenced by four factors. These factors are sediment discharge, sediment size particle distribution, stream flow and channel slope. Stream channel habitats can be classified as riffles, runs, pools and glides. These habitats are critical to aquatic life and must be incorporated into stream restoration design.

Gradient control is also an important factor that must be considered during project design and implementation. Natural substrate particle sorting that occurs during normal flow events provides natural gradient control within an properly functioning stream. However, construction activities during restoration activities have the potential to disrupt or upset this pavement and sub-pavement, therefore, we must provide temporary gradient control within the stream until natural sorting can occur that will armor the stream channel.

There are several common terms frequently used to describe stream patterns and stream restoration design criteria. Several of the more common terms were defined, including the following.

Sinuosity: The ratio of stream length to valley length

Belt width: The flood plain width

Meander length: The distance between meanders

Radius of curvature: The length of the radius on meander bends

Entrenchment ratio: The vertical containment of the stream

Bankfull discharge: The average discharge within the active stream channel with the interval of approximately 1.5 years.

Hydrograph: The measure of stream flow over time.

Several factors influence a stream's hydrograph including climate, geology, and watershed alterations. Disturbances within the watershed have the potential to alter the shape, duration, timing and volumes of discharge within a given watershed. The bankfull discharge within a watershed is typically the channel maintenance flow, and typically occurs every 2 out of 3 years (1.5 year interval). The bankfull discharge flow is one of the key design flows for restoration projects. With regards to stream channel restoration design, there are 2 important stages for consideration. The bankfull stage or the bankfull elevation, is the stream discharge that exceeds the stream channel capacity. The flood plain stage is beyond the bankfull stage, and is accessed at flows that exceed the average stream channel capacity. Identification of the bankfull stage is critical for stream channel design, and there are several useful indicators for identification including; topographic breaks in slope, vegetative indicators, and point bar indicators.

Streams are constantly in a dynamic state striving to achieve dynamic equilibrium with regards to slope and sediment delivery and supply. In an attempt to achieve this dynamic equilibrium, streams that have undergone disturbance go through channel succession. During the succession process, stream channels go through several channel types until ultimately they evolve into the final stable type. Stream channel classification (type) is useful because it allows for efficient communication and is a predictable process based on existing stream channel morphology. Stream channels are classified into different types based on several key characteristics that include the following. 1. Entrenchment ratio: the floodplain width to bankfull width ratio, 2. Width/depth ratio: the bankfull width to mean bankfull depth ratio, 3. Sinuosity, 4. Channel slope, and 5. Median Particle size in the active stream channel. Stream channel succession is a predictable process, and the principals can be applied in restoration techniques to prevent excessive damage within the stream. Stream restoration can be a useful tool to aid in the acceleration of the process of stream succession.

Traditional stream stabilization/restoration work has relied heavily upon riprap for bank protection. However, riprap provides limited gradient control, fish habitat, and downstream stream erosion potential. Traditional gradient control has included boulders/cobbles and gabion baskets. These structures can provide limited fish passage and habitat enhancement, however they are typically expensive due to the large volumes of materials required for construction and excavation work. A proper stream restoration design should: create a stable stream pattern given the constraints, be based on stream reference conditions, use large woody debris, vegetation, and rock to emulate those reference type conditions, be developed by an interdisciplinary team, restore the channel dimension, pattern and profile to a state of dynamic equilibrium, and reduce sediment to the stream. Project implementation timing is critical in any restoration plan, and should take into account the local discharge and the life history requirements of fish present within that particular stream.

The typical stream restoration design approach should follow these basic steps.

1. Identify the problems at a watershed scale
2. Identify the most probable state of the watershed (end point of succession)
3. Treat the source of the problem
4. Develop restoration objectives and alternatives
5. Develop stream channel dimensions based on models, reference reach conditions, and regional or local relationships
6. Evaluate sediment transport potential based on depth, width, discharge, etc.
7. Develop the meander geometry (plan view)
8. Layout the meander geometry
9. Develop the longitudinal profile within the restoration reach including the maximum and mean depths, scour depths, and riffle/pool spacing.
10. Identify and develop bank stabilization, gradient control, and fish habitat needs
11. Develop and implement a revegetation plan
12. Develop and implement an as-built and post-runoff monitoring plan

Workshop presenters showed photographs of several examples of different stream structures that could be used to stabilize stream banks, provide gradient control, and provide fish habitat. These structure types included rock and log weirs, rootwad and large woody debris revetments, log-spur bank features, log check structures, cobble gradient control patches, and random rock placement.

The workshop also discussed several of the common issues associated with some bridges and culvert crossing on streams. These problems centered around the inability of these structures to pass large volumes of water during period of high runoff. The group discussion also included potential methods to retro-fit existing structures and design considerations for new structures.

Discussion during the first day of the workshop concluded with a brief discussion of permit requirements within the state of Montana including, the 310 permit (Natural Streambed

and Land Preservation Act) from the local conservation district, the Stream Protection Act (SP 124) for government agencies and contractors only, the Floodplain development permit obtained from the county floodplain administrator, the Section 404/Section 10 Permits obtained from the U.S. Army Corps of Engineers, the 318 authorization for short-term turbidity exemption obtained from the MT Department of Environmental Quality and the Navigable Rivers Land Use License/Easement obtained from the MT Department of Natural Resources and Conservation. A copy of the joint applications for these permits was given to the workshop participants, and a very brief discussion of application procedures occurred.

April 30, 2003 – Site Tours Summary

During the second day of the workshop, participants were taken to three locations within the vicinity to demonstrate the fundamental principals discussed the previous day. The first stop was on Therriault Creek, a tributary to the Tobacco River (Figure 1). The Therriault Creek Project is a proposed restoration project, that is a cooperative project facilitated by the KRN, that when implemented will re-establish the natural meander pattern and improve fisheries habitat of a channelized portion of Therriault Creek. At this site, the group discussed the current state of Therriault Creek and the proposed work that would approximately double the stream length through an increased meander pattern. The current stream channel type at this site is a gully type, typified by a high entrenchment ratio and low fish habitat diversity.



Figure 1. The workshop group visiting the proposed Therriault Creek Restoration Project site.

The group also stopped at two sites on Grave Creek, another tributary to the Tobacco River. The first site visited on Grave Creek was the Glen Lake Irrigation District's diversion point (Figure 2). Stream reconstruction required the removal of approximately 2000 cubic yards of bedload that had been deposited behind the dam and construction of approximately 300 feet of stable Rosgen type "B" channel with a 50 foot bankfull width through the project site. Four rock cross-vanes were installed in the new channel to allow for effective water delivery to the ditch system, and help maintain the proper stream dimension, pattern and profile required for appropriate sediment transport. New channel construction greatly enhanced upstream fish migration, by replacing the 7 foot high jump with four; 1-1.5 foot, low grade steps with a 4 to 7 foot deep plunge pool below each step.



Figure 2. The workshop group visiting the Glen Lake Irrigation District's diversion site on Grave Creek.

The site tours during the second day of the workshop concluded with a visit to the Demonstration and Phase I Restoration Projects on lower Grave Creek. Prior to the implementation of these two restoration projects, a substantial proportion of the lower Grave Creek stream channel consisted of a multiple thread channel, and limited pool habitat for fish. However, since the completion of the project, the restoration work has been exposed to 2 spring runoff events, and the channel has continued to maintain itself as a single thread channel. The workshop group discussed several of the instream structures that were installed, with special reference to equipment needs and installation techniques. Representatives from the KRN also described the ongoing monitoring activities associated with restoration activities on lower Grave Creek, and whether or not the project was achieving the intended objectives.



Figure 3. The workshop group visiting the Grave Creek Demonstration Project site located on the Flanagan Ranch on lower Grave Creek.

Appendix Table. Roster for participants of the Watershed Restoration Contractor's Workshop.			
First Name	Last Name	Company	Home Town
Gary L.	Fisher		Wilsall, MT
David S.	Boney	On-Site Excavating	Libby, MT
Tracy	Welch		
Robert J.	Kay		
Thomas	Cuddy		Plains, MT
Jim	Daenzer	J.R.D.Enterprises	Condon, MT
Dan	Lipscomb	CSK&T Shoreline Protection	Pablo, MT
Paul	Harvey	P&A Harvey	Plains, MT
Kathy	Stephens	MT Naturescapes	Belgrade, MT
Robert	Fulbright	MT Naturescapes	Belgrade, MT
Paul	Winslow		Troy, MT
Gary	Mocko		Eureka, MT
David	Kyriss		Troy, MT
Dennis	Riedlinger	Riedlinger Excavation	Troy, MT
Gordon	Burns	Natural Solutions	Helena, MT
Leonard	Peterson		Eureka, MT
Keith	Hammer		Kalispell, MT
Jack	Jay		Columbia Falls
Wayne	Hirst		Libby, MT
Jack & Annora	Nelson		Eureka, MT
Larry	Bowman	B-K Land Development & Construction	Troy, MT
Dale	Byrer	Lincoln Cnty Road Dept	Libby, MT
Ron	Dawney	Lincoln Cnty Road Dept	Troy, MT
Kurt	West	Quality excavation	Fortine, MT
Todd	Butts	Uncle Bud's	Trego, MT
Roger	Rountree		Libby, MT
Randy	Stewart	Remp Sand&Gravel	Libby, MT
Ron	Cummings	Ron Cummings hauling	Libby, MT
Fred	Sichting JR.	Development Construction	Libby, MT
Tim	Ryan	Riding High Excavation,Inc.	Eureka, MT
Dave	Mills	Riding High Excavation,Inc.	Eureka, MT
Marc	McCully	Lincoln County Road Dept.	Libby, MT
Dexter	Schermerhorn		Eureka, MT
Jon	Moe	Lincoln County Road Dept	Libby, MT
Will	Vincent	Lightning Excavation	Libby, MT
Kyner	Jardy	Rocky Mountain Excavation	Whitefish, MT
Sabin	Reid	Reid Sabin LLC	Whitefish, MT
Doug	McDonald	U.S. Army Corps	Helena, MT
Jeff	Ryan	MT DEQ	Helena, MT

APPENDIX 6



“The Canadian Side”

by

Jim and Laura Duncan
Sego Consulting

The Canadian Side

Interviews with...

First Nations/Government Agencies

Non-Governmental Organizations

Private Land Owners/Consultants

By Laura and Jim Duncan

For the Kootenay River Network

April and May 2003

Table of Contents

Name	Organization	Page
Bill Green and Kenton Andreashuk	Canadian Columbia River Inter-Tribal fisheries Commission and Columbia Kootenay Fisheries Renewal Partnership	3 - 5
urtis Wullum	Natural Resource Coordinator - Lower Kootenay Band	6 - 8
Kris Payne	Natural Resource Coordinator – Tobacco Plains Band	8
Mike Gall	Ecosystem Specialist - British Columbia Ministry of Parks	8
Bill Westover and Herb Tepper	Fisheries Biologists Ministry of Water, Lands and Air Protection	9 - 10
Joanne Williams	Fisheries Officer - Kootenay National Park	11
Brian Conrad	Mt. Baker School, Cranbrook – Joseph Creek Education	12
Craig Hillman	East Kootenay Environmental Society – Administrator	1
Tanna Patterson	East Kootenay Environmental Society – Creston Branch	14
Anne Levesque	East Kootenay Environmental Society – Administrator	14
Helen Sanders	Mark Creek Recovery Project – Kimberley, BC	14
Kindy Gosal	Columbia Basin Trust – Water Initiatives	15
Jean Terlesky	Columbia Basin Trust	15
Brian Stushnoff	Manager – Creston Valley Wildlife Management Centre	16 – 17
Bob Jameison	Consultant	18 – 19
Jean Terlesky	Lussier River Community – Forestry Involvement	20
Gordon Edwards	Sand Creek Restoration Project	21
Barry Rogers	Wild Rose Guest Ranch – Wolf Creek Restoration Project	22 – 23
Contacts	Interview participants	24 – 25

FIRST NATIONS/GOVERNMENT...

Bill Green – Canadian Columbia River Inter-Tribal fisheries Commission, Columbia

Kootenay Fisheries Renewal Partnership

Kenton Andreashuk – Columbia Kootenay Fisheries Renewal Partnership

Past members KRN	<ul style="list-style-type: none"> • Bill was involved with KRN a few years ago • Kenton has had past involvement
Bill's misgivings	<ul style="list-style-type: none"> • Low Canadian participation • US Agencies dominated KRN • Getting money was too complicated and time consuming • In order to be effective, the KRN cannot be split into two identities – Canadian versus American
Bill – benefits	<ul style="list-style-type: none"> • Facilitating trans-boundary projects • Access to US monies • A KRN Canadian Advisory is vital to making cooperative projects work
Sub-Basin Planning	<ul style="list-style-type: none"> • Sub-basin planning is governed by US law and this dominates all decisions • Inter-Tribal Fisheries Commission and Fisheries Renewal not participating, because we feel that in the end decisions are made by BPA, regardless of Canadian input • Planning has to be done in a coordinated, integrated way • Canadians cannot be relegated to stragglers dominated by US decisions
Better Canadian Coordination?	<ul style="list-style-type: none"> • We need a coordinated consensus on the Canadian side • Modifications to the Libby outflow has benefited the lower Kootenay • We need some way for Canadians to communicate more effectively among various projects and with the public
South end Kootenay Lake	<ul style="list-style-type: none"> • The South end of Kootenay Lake is a collapsed ecosystem • This crisis situation needs coordinated efforts both sides of border • We cannot afford to work at cross-purposes with the Americans, or visa versa • Canadian efforts will probably be community-based, rather than agency-based • (Laura) the KRN may be the vehicle for coordinating efforts • (Bill) Up until this time, there never has been a vehicle for Canadian cooperative efforts
Kootenay Valley Resource Network	<ul style="list-style-type: none"> • Sue Ireland started this from Bonner's Ferry, Idaho • It brings all interested parties South of the border together • Sue has gained support from the agriculture community • She has been instrumental in getting increased flow through the Libby Dam for Sturgeon • Colin Spence involved for WLAP

FIRST NATIONS/GOVERNMENT ...

Bill Green – Kenton Andreashuk – continued

Transboundary watershed restoration/conservation and planning initiatives

- May 14 – 10:00 a.m.- 4:00 p.m. Delta St. Eugene Mission Resort
- Sponsored by CBT and Can Columbia River Intertribal Fisheries
- Specific focus on the Kootenay River in an attempt to respond to things like sub-basin planning
- Laura/Jim invited to represent the KRN

Kenton Andreashuk

- Works in stewardship, restoration, educational programs, and schools, -- is on the Mark Creek Restoration Project Advisory and has coordinated the Sand Creek Restoration project
- Also works with groups wanting to do habitat restoration/assessments

Goat River

- River gravel has aggraded in spots
- Flooding/erosion issues
- Fisheries have depleted badly
- Conducting fisheries population data
- Establishing restoration plans relating to South Arm of Kootenay Lake fisheries depletion
- How to restore the Kokanee fisheries in the South Arm
- Lower Kootenay Band involved (Curtis Wullum – contact)

Kootenay Lake

- Goat River gone from up to 100,000 Kokanee to 2 spawners
- North Arm is struggling to overcome nutrient deficiencies caused by the closure of the fertilizer plant in Kimberley and the Libby Dam
- (Bill) We need to devise a way to get more nutrients from the Kookanusa poundage to the South Arm of Kootenay Lake
- Restoring the overbank flooding in the Kootenay would be a positive step (it would establish a gain in nutrients)
- Natives stated that Sturgeon used to spawn in the Creston wetlands
- (Bill) scientific evidence indicates that the murky water can make up for the fast flowing water Sturgeon usually prefer (in terms of hiding their eggs from predators)
- Burbot spawning numbers severely low (less than 20 identified in 2002)

Yahk/Kingsgate

- Hawkins Creek Stewardship Group
- Hawkins Creek restoration
- Changing agricultural land use practices
- Water quality is a big issue (residential)
- Cattle pollution has been a problem
- Low flow in this major contributor to the Moyie a problem
- Habitat alteration a severe problem to fish populations

Bull Trout

- Native oral history -- traditional harvests from Irishman Creek
- Down to 50/60 spawners in Hawkins Creek – almost expurgated
- Hawkins was a major spawning creek for Bull Trout
- Main runs of Bull Trout now found in Irishman Creek

FIRST NATIONS/GOVERNMENT ...

Bill Green – Kenton Andreashuk - continued

Sturgeon technician	<ul style="list-style-type: none"> • Bill is in the process of hiring a Sturgeon technician • This person will spend some time collecting oral historic data
Natural Resource Coordinator St. Mary's River Aquatic contaminants	<ul style="list-style-type: none"> • St. Mary's Band has hired a Natural Resource Coordinator • This person will collect historic oral data on fisheries • When necessary, special consultants will be contracted to complete complex bio-chemical assays
Wolf Creek	<ul style="list-style-type: none"> • Barry Rogers (Wild Rose Ranch) Restoring the wetlands habitat • Former owner moved Wolf Creek stream channel • Sediment was filling in creek • Assessment showed 50% native/50% introduced stock in creek • Barry got approval to dredge sediment • Constructed weirs and introduced large woody debris • Moved fences back from creek edge • Barry is currently working with 4 other ranchers with mixed success
Lewis Creek	<ul style="list-style-type: none"> • A farmer broke the lock and altered the diversion, which caused the creek to go dry and caused a lot of spawning fish to die • The farmer was charged and fined – this will send a signal to other ranchers that creeks cannot be tampered with
Ha Ha Creek	<ul style="list-style-type: none"> • Making progress (Kenton advising community group) • Key issue: water quantity and distribution
Joseph Creek	<ul style="list-style-type: none"> • Minimum flow is required for healthy fisheries • Some want to increase flow by diverting water from Gold Creek • (Bill) this is not a good strategy, since Gold Creek has its own fishery • Low flow of Joseph Creek the major problem to overcome • Conservation of water a major issue in Cranbrook (e.g. lawn watering) • Working with Cranbrook Mayor Priest on a stewardship program • School participation is great, but causes difficulty in maintaining consistency over time • Educators work to the “teachable moment” – rather than from empirical scientific approach • The school program is increasing the knowledge-base in Cranbrook – a good thing! • Major problems: (1) Flow (2) Sediment loading from storm sewers (3) Restoration of the stream banks
KRN – AGM	<ul style="list-style-type: none"> • Bill will bring a display showing parallels of his work to the KRN • Bill will give a talk at the KRN - AGM • Kenton will be taking training all of May – not available for AGM

FIRST NATIONS/GOVERNMENT ...

Curtis Wullum – Natural Resource Coordinator Lower Kootenay Band – April 28, 2003

Lower Kootenay Lake Consultation Forum

- Participants include J.H. Huscroft, MOF, MSRM, KKTC, LKB, Tembec, CVFC, WBL
- Name will change (consultation out)
- Meet every three months - mainly discuss forestry issues
- Generally all participants feel good about the meetings
- Began by focusing on the Goat River, which was so successful that we expanded our focus to include the whole East Shore of Kootenay Lake
- It encourages us to be proactive, rather than reactive

Goat River

- Prescriptions have been completed by Kenton Andreashuk (Columbia-Kootenay Fisheries Renewal Partnership)
- Prescriptions 1 and 2 will be completed this year - need more money to do prescriptions 3 and 4 (funding from CBT has been approved).
- The Kokanee population is virtually defunct (lack of nutrients, due to Libby Dam), lack of good spawning habitat.
- Two channels on lower Goat – South Channel contained most of the rearing activity in the past
- Curtis has not seen significant flows in the South Channel during summer and fall for ten years
- Ethno history indicates that the South Channel was a major spawning area for Kokanee
- The Lower Kootenay Band owns the land at the confluence of the Goat and the Kootenay
- Flooding problems – (historic extraction of gravel by industry)
- Once the southern channel is restored, will begin to re-stock Kokanee
- Gerrard Rainbow, Burbot, and Sturgeon all feed on Kokanee
- At a recent meeting about VARQ in Creston, it was apparent that the US Army Corps of Engineers knew very little about the Goat River
- Westslope Fisheries did all the work on the Goat – they were able to apply what they learned doing the Sand Creek project
- Major residential developments have been established in the Goat River bottoms (contact - Jean Hoover – Assistant Administrator Lower Kootenay Band)
- The Creston sewage treatment facility is 1 Km. away from the Goat
- Goat River used to flow into Duck Lake – it was channeled to straighten its flow into the Kootenay River

Lower Kootenay

- The lower Kootenay flows through approx. 6,000 acres of prime farming land (reserve lands), plus much more private agricultural land
- Flooding (high groundwater levels in spring due to VARQ) of these lands is a major concern of land owners
- Sturgeon benefit from flooding
- All dykes in Creston Valley on Kootenay are threatened by flooding (saturation/collapse)

FIRST NATIONS/GOVERNMENT ...

Curtis Wullum – continued	
Lower Kootenay Continued...	<ul style="list-style-type: none"> • Flooding in June-July best for Surgeon • Larry Hildebrand of Rivers Lakes and Lands (Castlegar) is a world expert on Surgeon • Creston City and the Regional District have major concerns about flooding • Have applied to Columbia Basin Trust for funding to complete an cultural plant inventory (ethno-botany) plant survey of the Lower Kootenay • Lower Kootenay Band has plans for an agroforestry business along small streams on reserve land, some of their ideas include: <ul style="list-style-type: none"> ○ Grow trees on the banks ○ Grow berry crops on the banks ○ Clean up sloughs ○ Replant the entire riparian area (filter agriculture by-products)
VARQ	<ul style="list-style-type: none"> • Variable flow discharge (Libby Dam) – entire Columbia River system • What is the relationship of Bonneville Power Authority and the US Army Corps of Engineers? • Kootenay Lake may see its lowest levels in winter (may effect the wells along the Lake shore) • Moyie River and Hawkins Creek - flow alteration is a big concern • Residents have set up Hawkins Creek Stewardship Committee (Les Halverson 250-424-5524 – contact) – objectives: (1) clean up the Moyie (2) get the cows out of Hawkins • http://www.saveruralbc.com (for additional information) • Idaho spent millions in Moyie River on restoration following gas pipeline installation and stocked with Rainbow Trout – (Gord Matheson 424-5597) contact for saveruralBC website
LKB Wetlands	<ul style="list-style-type: none"> • Wetlands on reserve land right on border dried out (Yaqan Nuki Wetlands Friendship Society - contact is Art Tremblay • Formed Wetlands Friendship Society – links to Columbia Basin Trust and Ducks Unlimited • Plans to install pumps and gates to secure water levels • Was natural wetlands until the construction of the Libby Dam • Has a \$65,000.00 budget for 2003-2004 and requires more in kind donations
US Corps of Army Engineers	<ul style="list-style-type: none"> • Recent meeting in Creston • Objectives (1) Flood control (2) Fish (3) Power generation • Will raise the level of Kootenay Lake (at high levels, a major storm could cause problems) • Will possibly have major effects on (1) levies (2) agriculture (3) Goat River during freshet (4) flooding the Goat River bottoms (5) siltation of the Goat
Summit Creek	<ul style="list-style-type: none"> • Was straightened out to accommodate highway construction

FIRST NATIONS/GOVERNMENT ...

Curtis Wullum – continued	
Corn Creek	<ul style="list-style-type: none"> • Logging has taken place on the upper Corn by JHH to remove timber affected by Spruce Bark Beetle.
VARQ meeting	<ul style="list-style-type: none"> • Tom Manns (RDCK Area A Representative) • John Kettle (RDCK Area B Representative) • Joe Snopek (Mayor of Creston) • Michael Keefer (Ethno-Botonanist – St. Mary’s Band) • Bill Suffridene • Garry Merkel (KKTC Negotiator) • Joe Pierre (LKB Administrator) • Jim Abbott • Bill Green • Colin Spence • Two representatives from Federal Department of Fisheries • One representative from Environment Canada
Kris Payne – Natural Resources – Tobacco Plains – May 7, 2003	
Kookanusa	<ul style="list-style-type: none"> • Becoming a major recreation area • People are coming through the reserve to access the lakeshore • The band wants tenure over the former Forest Service camping sites so they can monitor and control usage • The banks are suffering erosion problems • People are leaving garbage on site • People are disturbing/looting archeological sites at low water
Rangeland	<ul style="list-style-type: none"> • Major damage is occurring to the native grasslands because of off road vehicle usage • The Band would like to conduct controlled burns • The Band would like to thin trees encroaching the grasslands
Community Forest	<ul style="list-style-type: none"> • The Band has applied for a Community Forest license, which will have them take over some of the Dominion Coal license • The BC Government re-structuring of the forest tenure system will allow this to happen (there will be an 8% claw-back of existing tenure licenses – which will be assigned to First Nations in BC)
Mike Gall – Ministry of British Columbia Parks - – May 5, 2003	
Expanding horizons	<ul style="list-style-type: none"> • Restructuring in government now places Mike in Ecosystem section of WLAP – headed by Doug Martin in Cranbrook • The new government structure puts Wildlife Management Areas (WMA’s) and conservation areas and the covenant of lands under the jurisdiction of the Ecosystems Section • Because of these changes, Mike can look beyond the Park boundaries in his work and connect with groups such as the Kootenay River Network

FIRST NATIONS/GOVERNMENT ...

Bill Westover and Herb Tepper (Ministry of Water, Lands and Air Protection)- Apr 10, 2003

Staff cut backs	<ul style="list-style-type: none"> • The Ministry lost four people at the Nelson WLAP office • We must pick up those jobs/office functions with no extra staff • We can handle giving advice and reviewing project
Partnership with Montana Fish and Wildlife	<ul style="list-style-type: none"> • \$60,000 from Montana Fish and Wildlife Program <ul style="list-style-type: none"> a. Committed to Bull Trout b. Focus on 5 systems... (1) Wigwam, (2) Blackfoot, (3) Verdant, (4) Skookumchuck, (5) Middle Fork of the White
WLAP projects	<ul style="list-style-type: none"> • Monitoring gravel in the 5 systems above • Radio telemetry on Bull Trout (project nearing completion) • Identifying more spawning areas in Kootenay National Park • Tagged Bull Trout in the Skookumchuck • Four year project fencing/trapping in Wigwam (ended 1999) • Three year project fencing/trapping in Skookumchuck (ended 2002) • Beginning fencing/trapping Middle Fork of the White River (2003) • Applied the Rosgen Habitat Inventory to the Skookumchuck for three years <ul style="list-style-type: none"> a. Documented morphological changes over time b. Documented effect of man's activities c. Monitored fry densities
Sub-Basin Planning	<ul style="list-style-type: none"> • BPA funding – work closely with Montana Fish and Wildlife • Sub-Basin Planning – will direct the BPA funding in future • Meeting in Whitefish will review plans and chart future funding • Planning will take one year to complete • WLAP focus will be on Bull Trout, Cut Throat, White Fish (East Kootenay) – Burbot and Sturgeon (West Kootenay)
Sue Ireland (Idaho)	<ul style="list-style-type: none"> • Focuses on the lower Kootenay – she contracts Brian Mericks (Idaho) to carry out much of the work • An extension of Sue's work will be assessing stream reach (Hucks) for impacts on species and designing prescriptions to restore the habitat. • Need to get these projects in the Sub-Basin Planning process or they will not get funding
Herb Tepper – Restoration Specialist WLAP	<ul style="list-style-type: none"> • Gives advice, but doesn't approve (no authority) • Canadian Federal Fisheries is now active in the area • Any projects should require notification of Joe Chambers (DFO Rep.) and Doug Martin (BC office) • Provincial requirements are unclear at the present time • Background information is required in any project proposal • Herb has a whole list of areas that require restoration at... http://wlapwww.gov.bc.ca/kor/rmp/Appendix_4d_table3a.xls

FIRST NATIONS/GOVERNMENT ...

Bill Westover and Herb Tepper – continued	
Middle Fork of the White River	<ul style="list-style-type: none">• Middle Fork of the White –<ul style="list-style-type: none">a. Prescriptions have been completedb. Currently no major impacts on the upper portion of the Middle fork of the White River because of the Height of the Rockies Parkc. Unique, because good chunk of headwater in good shaped. Bank erosion caused by clear-cuts up to the banke. Preventative measures required now, before further erosion occurs in the middle section of the mainstream
Elk River System	<ul style="list-style-type: none">• Lizard Creek<ul style="list-style-type: none">a. Very important Westslope Cutthroat Trout Spawning & Rearing stream for the Elk Riverb. Eroding Banks in Mt. Fernie Provincial Parkc. Herb did prescriptiond. Parks getting funding – haven't heard yet• Michel Creek<ul style="list-style-type: none">a. Eroding bank downstream from highway bridgeb. Eroding bank is cutting into past coal mine "spoil" materialc. Sparwood Fish and Game club trying to get fundingd. Much work is required on Michel Creek in future
Flathead System	<ul style="list-style-type: none">• Sage Creek<ul style="list-style-type: none">a. Watershed assessment has been completed for this systemb. Problems in the Flathead System are compounded by US Fisheries introducing other species through Flat Head Lake
Wigwam System	<ul style="list-style-type: none">• Upper Big Horn<ul style="list-style-type: none">a. Logged extensively to chase beetlesb. Roads are/were falling apart (an attempt has been made to rehabilitate the majority of the high risk sites)• Big Horn<ul style="list-style-type: none">a. Dry area problem (goes underground for 5 Km. during late summer through to the spring of each year)b. Lower reaches – prior to in-stream rehabilitation had very few poolsc. Fish spawn on tail-out glides, where there is associated cover (such as large woody debris)

FIRST NATIONS/GOVERNMENT ...

Joanne Williams – Kootenay National Park – May 1, 2003	
Friends of Kootenay Park	<ul style="list-style-type: none"> Contact – Joanne will contact Kathleen Wilkinson, who has recently taken over leadership of the Friends of Kootenay National Park
WLAP/EC support	<ul style="list-style-type: none"> WLAP and Environment Canada have monitored water quality in the Kootenay since the 1980's Water quality trends can be found in <u>Select BC Waterbodies</u>, by Environment Canada (http://www.pyr.oc.gc.ca) or call Environment Canada at 604-664-9100)
Monitoring program	<ul style="list-style-type: none"> Monitoring Cutthroat and Rainbow Trout – Simpson Rainbow and Westslope Cutthroat may be pure stock, most watersheds are Cutthroat/Rainbow hybrids Monitoring amphibians (need more long-term work to establish trends) The Upper Kootenay River shows excellent water quality
Stocking program	<ul style="list-style-type: none"> At the turn of the Century, stocked non-native fish including: Rainbow, Eastern Brook Trout, Cutthroat Trout, Brook Trout Fish prey on salamanders Kokanee were inadvertently introduced via the Bull River hatchery – one effect of this introduction was to attract Eagles, Bears, Wolves to the spawning Kokanee
Nation Parks Mandate	<ul style="list-style-type: none"> To maintain natural ecosystems To restore creeks as close to their natural states as possible
Radium – Sinclair Creek	<ul style="list-style-type: none"> Restoration taking place Introduced weirs to establish pools Placed large boulders to establish pools and riffles Some channeling has taken place Some culverts are fish impediments Consultant: Gerry Naito from the Okanagan (250-558-9842)
Greenways Organization	<ul style="list-style-type: none"> Supporting restoration work in Sinclair Creek
Festival	<ul style="list-style-type: none"> Living With Wildlife Festival in Radium 2nd week in September (interested in possibly using the KRN Stream Table)
KRN?	<ul style="list-style-type: none"> Joanne is interested in the KRN, but her work schedule prevents her from attending this meeting

FIRST NATIONS/GOVERNMENT ...

Brian Conrad – Mount Baker School (Cranbrook) – Joseph Creek Education – May 5, 2003

Moyie River	<ul style="list-style-type: none">• Input to resource use plan• Forest issues in the watershed• Domestic visual water quality a concern• Rapid development around the Lake causing concern for fisheries and water quality• The local resource group (LRAP) – got motorized closure on Moyie below the Lake
Joseph Creek Mentoring program	<ul style="list-style-type: none">• Program focus: (1) above the reservoir – Joseph Creek in a relatively ‘natural’ state (2) Joseph Creek as an urban stream• Mentoring in 3 steps:<ol style="list-style-type: none">(1) Fish biologist presents to – Grade 11 students(2) Grade 11’s mentor Grade 4/5’s(3) Grade 4/5’s talk to their parents• A typical mentoring day with the Grade 4/5’s would include a whole-day field trip to Joseph Creek, which would focus on:<ol style="list-style-type: none">(1) Morning on the upper reaches of Joseph Creek(2) Lunch at a near-by Park(3) Afternoon on the urban section of Joseph Creek
Monitoring program	<ul style="list-style-type: none">• Stream dynamics, temperature, shade, rip rap, culverts• This forms the basis of the information that the Grade 11’s present to the Grade 4/5’s
Communications-Connections	<ul style="list-style-type: none">• Website www.josephcreek.bc.ca• Film students in a different class have made a film about the program• The program features public speaking• Students in the program helped to organize a recent Conference on Water• Graduates of the program (in Grade 12) traveled to New Denver, to teach the Grade 4/5’s there about local West Kootenay Creeks. – These Grade 4/5’s in turn, mentored the Grade 1’s in their school
Financial Support	<ul style="list-style-type: none">• Support for the program has come from<ol style="list-style-type: none">(1) Columbia Basin Trust(2) Tembec Forest Industries(3) BC Ministry of Education

NON-GOVERNMENTAL ORGANIZATIONS ...

Craig Hillman – East Kootenay Environmental Society – April 14, 2003

Craig's position	Craig is the Administrative Director of EKES. He reports directly to the Regional Board of EKES, which governs five independent branches in... (1) Golden, (2) Invermere, (3) Kimberley/Cranbrook, (4) Elk Valley and (5) Creston.
Craig	<ul style="list-style-type: none"> • The past KRN initiatives with EKES were well done • The Stream Keeping program worked well, but it has faded away • The Mark Creek Recovery project continues to work well
Bigger picture focus	<ul style="list-style-type: none"> • The EKES Regional Board tends to focus on regional and global issues, whereas individual Branches tend to focus more on local issues • The KRN seems to be more focused on global issues
Trans-Boundary	<ul style="list-style-type: none"> • A trans-boundary focus on the Kootenay River makes a whole lot of sense • (Laura) the KRN is also interested in issues related to fish, wildlife and restoration • (Craig) some linkage with the Living Lakes Conference (Columbia Wet Lands) seems to make a lot of sense. • Craig will invite Laura and Jim to the next campaigners (EKES paid advocates) meeting to discuss the KRN link with the Columbia River campaigns
EKES in transition	<ul style="list-style-type: none"> • EKES is gearing up to focus more on global and international issues and to seek international funding • Are conducting a series of workshops to re-define the image of EKES and to clarify its mission
KRN can be both Global and Community-focused	<ul style="list-style-type: none"> • KRN projects could be either globally-focused or specific on-the-ground efforts involving neighbourhoods and communities • Some branches, such as the Elk Valley and Creston, tend to be much more interested in local issues • The Magic Basin School Bus project is an EKES initiative that works with schools in the East and West Kootenay and is an example of an educational program. EKES sees a potential for developing watershed educational programming in partnership with the KRN and the Columbia Wetlands.
KRN – AGM	<ul style="list-style-type: none"> • Craig has tentatively agreed to attend the KRN-AGM • We hope that Craig will be able to speak briefly about the 2004 Living Lakes Conference.
Columbia Basin Trust	<ul style="list-style-type: none"> • Kindy (CBT staffer in Golden) has been hired to raise the profile of water in the Columbia Basin • Kindy could play a vital role in linking The Kootenay River Network, East Kootenay Environmental Society and the Columbia Basin Trust

NON-GOVERNMENTAL ORGANIZATIONS ...

Tanna Patterson – East Kootenay Environmental Society - Creston – Apr 15, 2003

East Kootenay Environmental Society – Creston Branch	<ul style="list-style-type: none"> • This EKES Branch is not presently involved in water/wetland issues • Except for the drinking water issue in the Arrow Watershed where EKES is joined in a partnership running a community forest operation • Not enough active persons to participate in KRN at this time • They are aware of the Yaqa Nuki Wetlands Friendship Society who are working to restore the wetlands on Tribal Lands • Art Tremblay is spearheading that effort • The K'tunaxa Lower Kootenay Band are on side with this effort
Contact information Yaqa	<ul style="list-style-type: none"> • Hwy 21 – 428-8911 428-6130 • ptrembla@kootenay.com

Anne Levesque – Corporate/Foundation Relations Director – East Kootenay Environmental Society – May 5, 2003

Anne's position	<ul style="list-style-type: none"> • Anne has been the chief fund-raiser for EKES • She has taken a leave of absence from that role to organize and coordinate the 2004 Living Lakes Conference that will take place in Invermere, BC
Anne's advice	<ul style="list-style-type: none"> • The Kootenay River Network has the potential to contribute much to the conservation/environmental movement in British Columbia • BC and US environmentalists, agencies and organizations have much to gain from trans-boundary partnerships • Many Canadian and First Nations agencies, non-governmental and private interests are accomplishing much good work with water systems • In order to be effective, the KRN should find a niche to concentrate its activities • The KRN should avoid duplicating any existing programs and services

Helen Sanders – Mark Creek Recovery Project – May 7, 2003

Committed citizens	<ul style="list-style-type: none"> • Mark Creek Recovery focuses on the reaches of Mark Creek below the dam – while not ignoring the logging issue in the upper watershed • The project has included: <ul style="list-style-type: none"> ○ A community mapping project ○ Stream assessment ○ Streamside planting ○ Construction of in-stream Newbury Weirs ○ Outreach to schools, Guides, etc. • A different group - Friends of Mark Creek – originally began to protest logging in the Mark Creek watershed • Upper Mark Creek watershed – big issue is access (Powder Hounds snowmobile touring company have applied for license to conduct tours in the watershed)
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NON-GOVERNMENTAL ORGANIZATIONS ...

Kindy Gosal – Columbia Basin Trust Water Initiatives – April 29, 2003	
Objectives of his position	<ul style="list-style-type: none"> • Getting water on the radar for people • Water issues key to his job • Kindy gets directly involved in water projects, or has a contact to keep him informed of developments
Trans-Boundary Issues Conference	<ul style="list-style-type: none"> • Co-organizer with Bill Green (May 14, 2003) • Doesn't have major expectations for outcomes of first meeting • Establish a forum to share information among key players • Hope to meet regularly, in future
Wonder of Water Conservation, Education, Celebration	<ul style="list-style-type: none"> • United Nations sponsored activities • Celebration of stewardship, education about water issues, community involvement in water projects • Fernie, Golden and Revelstoke have groups started
Living by Water	<ul style="list-style-type: none"> • Begun in Radium and Wasa (connected in one initiative) • Chris Prosser contact • Stewardship – human – riparian – urban interface the focus
KRN – AGM	<ul style="list-style-type: none"> • Kindy may be able to attend on the Friday (May 16th)

Jean Terlesky – Columbia Basin Trust	
Joseph Creek	<ul style="list-style-type: none"> • Brian teaches Biology at Mount Baker School (Cranbrook) • Involved in Joseph Creek through student Outdoor Club/Class • Involved in the Moyie River as well • Rod Osowi (Communications/Drama teacher) has documented the projects through student video and slide productions • Grade 11/12 students conduct field trips on Joseph Creek for elementary school students • Betty Mosher (College of the Rockies Ecology/Biology Instructor) has tailored her Ecology course so the students can monitor Joseph Creek. Her students also create a presentation which is presented to elementary students in the Cranbrook area
Youth Water Forum	<ul style="list-style-type: none"> • Brian Conrad's students and College students organized a successful Youth Water Forum at the College of the Rockies • Anne Rice (Biology Instructor/Department Head) helped with the organizing
First Nations support	<ul style="list-style-type: none"> • Bill Green administers the money for the CBT – Columbia Basin Fish and Wildlife Compensation Program • Kindy is connecting with all water plans for the Columbia and sits on all the committees related to this
Wonder of Water United Nations	<ul style="list-style-type: none"> • The United Nations, through CBT, is offering \$5000 for each East Kootenay community to develop projects celebrating water in 2003

NON-GOVERNMENTAL ORGANIZATIONS ...

Brian Stushnoff – Manager – Creston Valley Wildlife Management Area – April 30, 2003

<p>Funding</p>	<ul style="list-style-type: none"> • Originally funded by both Provincial and Federal Government • The Provincial government specifically passed the CWC Act specifically for the Centre • All of the original funding has dried up • Funding is now a major focus at the Centre • BC Hydro funds \$300,000/year (if BC Hydro gets split up, that funding may disappear) The CVWMC needs \$500,000 funding to continue with current programs
<p>CVWMC area</p>	<ul style="list-style-type: none"> • 7,000 hectares includes: Corn Creek Marsh, Leach Lake, Six Mile Slough and Duck Lake • They manage 30 Km. of dykes (traditionally, water levels fluctuated 15 – 25 feet – the Libby Dam reduced the fluctuations to about 10 feet) • The reduced fluctuation allows CVWMC to build dykes and to stabilize water levels • Stabilizing water levels costs the CVWMC money (since their funding is threatened – this is a major problem) • CVWMC can keep the water levels in tune with the needs of various nesting birds (this fact helped to sell governments on supporting wildlife, rather than designating agriculture as the prime use of the CVWMC land) • A study showed that 30 kinds of birds benefit from this water control Buttler et al, 1986
<p>Libby Dam</p>	<ul style="list-style-type: none"> • In April 2003, the US Army Corps of Engineers announced a new water release schedule. • They said it will not result in water over the dykes • CVWMA feels releases in August will benefit the marsh water levels • If the water gets too shallow – cat tails move in and take over
<p>CVWMC maintenance</p>	<ul style="list-style-type: none"> • Do not do any dredging of marshes • Culverts, pumps and gates are 30 years old – the Centre needs \$300,000 to replace them (Ducks Unlimited installed the original equipment) • Rule of thumb – 50% of marshes covered with cat tails good • Don't like masses of cat tails, but like clumps (creates more edge) • Try to create the most productive conditions which are characterized by diversity • Diversity is created by draining marshes every 5 – 7 years (that allows them to get in with equipment to manage the vegetation) • Draining allows them to mow cat tails and speed up decomposition of accumulated organic material • The shallows are best for many waterfowl – they are also the most productive areas for cat tails • Duck Lake pumps can move water at 25,000 gallons/minute – this ability is critical to nesting areas, because it allows them to prevent flooding and to protect nearby farms

NON-GOVERNMENTAL ORGANIZATIONS ...

Brian Stushnoff – continued	
CVWMC maintenance Continued...	<ul style="list-style-type: none"> • There is no contingency fund from Bonneville Power Authority or the Army Corps of Engineers in the event operation of the Libby Dam causes flooding • The nesting area comprises 425 hectares • Duck Lake is 1,500 hectares
Duck Lake	<ul style="list-style-type: none"> • Governed by an International Joint Commission for 50 years • Was originally conceived as a reservoir for power generation • The Commission was able to prevent local squabbles • Has been effective in supporting a Large Mouth Bass fishery • Anglers would like to improve this fishery even more • Fish are not necessarily compatible with water fowl (they compete for some of the same kind of food) • Western Grebes are red listed – floating mats are the exclusive location of their nests – a fairly large population of Grebes nests in Duck Lake
Pelicans	<ul style="list-style-type: none"> • In 1991 CVWMC tried installing bale islands (large rolls of hay, placed in the water) • Bale islands are successful, but only last for about 3 years • Dirt islands are quickly overgrown • Pelicans prefer barren – rock islands for nesting (not available in Creston) • In 2002 – 80 Pelicans • In 2001 – 100 Pelicans • Juvenile Pelicans are non-productive • Pelicans consume a lot of fish • One year, CVWMC did a study on Pelicans
Wetlands	<ul style="list-style-type: none"> • CVWMC was originally created to protect Creston Valley wetlands and managed for waterfowl in particular • Species diversity is now an important evaluation criteria for the project
Ramsar Site	<ul style="list-style-type: none"> • CVWMC has been designated a Ramsar Site (designates it as being of world importance) • The Ramsar organization is considering the CVWMC for a high definition satellite monitoring program. Only four sites will be chosen in Canada.

PRIVATE LANDOWNERS/CONSULTANTS ...

Bob Jameison – Consultant – April 13, 2003	
Sub-Basin Planning	<ul style="list-style-type: none"> • Bonneville Power Authority allocates millions of dollars to the Kootenay River each year, \$367 M for the Basin. • Bonneville is interested in rationalizing their funding decisions, based on sub-basin plans • They are focusing on the Col. Basin - Flathead and Kootenai Rivers are among the first watersheds being planned • Bonneville is requiring a ten year prioritized plan for their funding, so they can simplify the process • After the sub-basin plan is complete, projects must be listed in the plan to obtain funding
Kindy Gosal	<ul style="list-style-type: none"> • Kindy is organizing a meeting to establish Canadian priorities
KRN – funding conduit	<ul style="list-style-type: none"> • The KRN is the best vehicle for moving money from the US to international/Canadian projects
Creston – lower Kootenay	<ul style="list-style-type: none"> • Some discussion is taking place re: the feasibility of opening the dykes in the Lower Kootenay River (Bonners Ferry and Creston) to allow the river to flood each year • Maintenance and pumping are increasing in costs and they have diminishing funding for these activities at CVWMA • Opening the dykes will impact the Creston Wildlife Management area - presently considering developing a revised management plan for the area • Option – preserve habitat on Upper Kootenay (EK) by buying up-river bottom land (estimate \$2 million) – either instead of, or in addition to restoring flooding in Creston Valley, lower cost alternative, if we ignore the 49th parallel
Extend photo telemetry project into Canada	<ul style="list-style-type: none"> • An expensive and extensive photo telemetry project is about to take place on the lower Kootenay from Bonner's Ferry to the border • It would be wise to extend the project to Kootenay Lake • KRN may be the perfect vehicle to bring about this extension
Bill Green Kent Andrushack	<ul style="list-style-type: none"> • Columbia Kootenay Fisheries Renewal Partnership (which Bill administers) can be a parallel organization to the KRN • They could be partners, rather than just members of KRN
Doug Erickson Mayook	<ul style="list-style-type: none"> • Doug Erickson helped to sort out a water use conflict between neighbours and ranchers in Ha Ha Creek
Roxanne Rogers	<ul style="list-style-type: none"> • Grave Creek project involving the community • Bob trying to bring Roxanne up to meet with the Lussier River group and the Sand Creek group • People need to understand what is going on both sides of the border
International profiling of issues	<ul style="list-style-type: none"> • KRN a good vehicle for profiling issues as the Okanagan did with their desert ecosystem. The campaign funneled millions of dollars in funding to their projects

PRIVATE LANDOWNERS/CONSULTANTS ...

Bob Jameison – continued	
Jack Stanford (with Flathead Aquatic Research Institute	<ul style="list-style-type: none"> • Working in Flathead system and on Kamchatka River in Russia • Has a slide show on why natural rivers are so productive, related to the critical role of floodplains in water, temperature, sediment and nutrient flux in rivers • Set up a program where people fish in Kamchatka to provide funding for research there
Thomas Munson	<ul style="list-style-type: none"> • Natural Resources specialist –K'tunaxa Nation
Garry Merkel	<ul style="list-style-type: none"> • Registered Forester • CBT Vice-Chair • 1st Nations contact- consultant to K'tunaxa
Brian Stushnoff	<ul style="list-style-type: none"> • Manages the Creston Wildlife Management Centre
Joe Pierre	<ul style="list-style-type: none"> • Band Administrator – Creston Lower Kootenay Band
Ted Antifeau Colin Spence	<ul style="list-style-type: none"> • Ted - Wildlife Spaces – endangered species • Colin – fisheries and wildlife consultant
Curtis Wullum	<ul style="list-style-type: none"> • Natural Resource Coordinator – Creston Band
Harold Manson Maureen deHogg	<ul style="list-style-type: none"> • Fish and Wildlife Compensation Program head of fisheries program
Casey Brennan	<ul style="list-style-type: none"> • EKES – Elk Valley Branch
Elk River Angling Guides	<ul style="list-style-type: none"> • The Elk River is one of the most compromised rivers in the East Kootenay, other than the Kootenay • Barry Rogers- President of EK Angling Guides Association
Federal Eco Fund – Eco Action	<ul style="list-style-type: none"> • Community-driven projects funded by the Federal Government

PRIVATE LANDOWNERS/CONSULTANTS ...

Jean Terlesky - Lussier River Community Involvement – April 10, 2003

Project history

- A neighbour of Jean's (Katie Kirkconnell) has set up a display about this project in the lobby
- A group of residents of the Sheep Creek Community, which lies along the Lussier (sometimes called Sheep Creek)
- The upper reaches of the Lussier have been subjected to massive logging
- When Tembec began to plan still more clear-cuts in the Lussier drainage, the residents formed a group to educate themselves and to lobby with Tembec for a different kind of logging practice in their watershed
- The project was successful and Tembec, with the citizens, designed a much less destructive logging operation

Follow-up

- At a follow-up meeting with Tembec and a group of hydrologists, botanists and forest professionals a number of recommendations were made – including planting in three different areas
 - The scientific approach was driven by hydrologists
 - The community people have become complacent and have run out of gas, so have not followed up on the planting
 - They need funding for a coordinator to see that the planting is done (Tembec will donate the trees)
-

Gordon Edwards – Sand Creek Restoration Project – April 16, 2003

History of project

Gordon Edwards is the owner of the Three-Bar Ranch. The Little Sand and the Big Sand join about 5 Km North of his property. By the time Sand Creek reaches and bisects Gordon's ranch it is a substantial force.

In 1998, high-water caused severe erosion and loss of land at the ranch. Gordon's concern for his loss of land and the destructive forces of Sand Creek motivated him to explore restorative actions.

In the beginning, Gordon funded the work himself, but later was able to secure funding for the activities.

The projects have been very successful and the story deserves a wide audience, because of its positive outcome.

Initial in-stream work in 1999 was designed by Don Pence (USA) and caused significant improvement to stream channel structure and to reducing erosion.

Kenton Andreashuk, in his role with Fisheries Renewal BC and now with the Columbia-Kootenay Fisheries Program, has been instrumental in finding funding for and coordinating the project.

Westslope Fisheries (Cranbrook) was responsible for designing and for on-the-ground work of the later projects. They installed in-stream structures and carried out planting in 2001 and 2002.

Funding was a combined effort by Columbia Basin Trust, Agriculture Initiative through BC Cattlemen and the Shell Fund.

Initial stream restoration took place on Edward's property only, but has since expanded to include all landowners along the creek, including Galloway Lumber – who donated machinery and manpower to complete the work on their portion of the creek.

These landowners are now an informal group called the Sand Creek Restoration Group and are pursuing additional funding for future restoration projects.

Laura/Jim invited Gordon to do a presentation about his project to the KRN-AGM. Gordon was not able to make it, so we have arranged a display about the project by Westslope Fisheries (the firm that completed the work on Sand Creek)

The Sand Creek display is in the display area.

PRIVATE LANDOWNERS/CONSULTANTS ...

Barry Rogers – Wild Rose Guest Ranch, Wolf Creek – April 29, 2003	
Weirs	<ul style="list-style-type: none"> • Are not intended control the flow of Wolf Creek • They create artificial riffles to “naturalize” a channelized stream • They increase the gradient from 1-foot to 3-feet over approximately 1-mile of stream • They provide stream diversity • They increase the velocity in some reaches • They enhance the aeration of the water • They provide structures and water velocity and direction to get the stream into a more natural functioning condition such as scouring and sediment deposition • Newbury Weirs are built on a angle (60° front end/ on the bank and 20° on the back end / projected in the stream) • The back end causes the water to scour a pool
Fish species	<ul style="list-style-type: none"> • Jennings created a pond (downstream) and used it, in part, to rear fish • Escapees from Jennings’s pond include Rainbow and Eastern Brook Trout • Habitat and water conditions favour Eastern Brook Trout • Eastern Brook Trout may also have migrated up from the Kootenay River or may have been stocked by the BC Government in the 1960/70’s • Ducks Unlimited installed a fish ladder to the upper pond, but it does not work. Thus Rainbow are not able to go upstream from here (Barry says this is positive) • As part of the planning process, Barry had to commission a fish study • They assessed every reach and identified the resident fish in each
Dykes	<ul style="list-style-type: none"> • The old dykes were much higher because they were created from spoil from the stream channelization project • This created a wood and surface drainage problem (e.g. mosquito rearing pools) as melt water became trapped behind the high dykes (on the field side) • Barry removed some of the dyke and feathered its contour toward the creek • He also leveled, blended and seeded the stream channel
Streambed	<ul style="list-style-type: none"> • Wolf Creek on Wild Rose property is almost entirely clay and peat moss • Trout Unlimited from Kimberley funded two high school kids in the summer of 2002 – they raked debris from the creek bottom – this cleaned it up and made it better for spawning

PRIVATE LANDOWNERS/CONSULTANTS ...

Barry Rogers – continued	
Stream Banks	<ul style="list-style-type: none"> • Water temperature rises too high in the summer because of the lack of canopy cover • The previous owner channelized Wolf Creek to create more pasture • Only in a few places are there steppes (intermediate flood plains – lower than the stream bank) • If these are done right the riparian vegetation establishes faster • Barry did plant what turned out to be an inappropriate species on the banks. They were adversely affected by the alkalinity of the clay soils, even though he watered them twice per week. Barry feels that they may have needed more water, given last year’s drought conditions. Of the 36 he planted, 11 remain alive • Alder, Willow and Cottonwood have been planted on one-third of the stream banks • Barry plans to move his fences back fifteen feet on both sides of the creek so that a riparian area can develop • The riparian width will vary on the South side from a minimum of 15-feet to 100-feet, as the fence line will follow a tangent, rather than hugging the curves of the creek
Animal drinking ramps	<ul style="list-style-type: none"> • Bottom layer is geotechnical cloth • Anchored half-way across the creek • They are fifteen feet wide • Covered with gravel, part of which has drifted into the creek and formed a spawning bed • Access will be via fenced chutes at various strategic places
Mildred’s Pond	<ul style="list-style-type: none"> • Ducks Unlimited did major excavation of cat tails (cleared about half the pond – approximately one and a half acres of cat tails) • They deepened some of the pond, but took care not to puncture the bottom clay seal • The depth of the original work was five feet – some areas are now eight feet deep • New thinking is to create more edge – rather than islands – this seems to work better for nesting waterfowl • The intent is to eventually establish a transition from heavy marsh habitat (heavily overgrown with cat tails) to open water
Objectives	<ul style="list-style-type: none"> • Enhance habitat for water fowl and other birds • Enhance habitat for fish • Increase opportunities for wild and domestic animals to drink • Create water storage • Enhance the aesthetics of Wolf Creek • Create a vibrant and functioning wetland

Contact	Title	Contact Information
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Green, Bill	Director: Canadian Columbia River Inter-Tribal Fisheries Commission Coordinator: Columbia Kootenay Fisheries Renewal Partnership	Ph. (250) 417-3474 Fx. (250) 489-5760 # 7468 Mission Road, Cranbrook, BC. V1C 7E5 ccrffc@cyberlink.bc.ca
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Contact	Title	Contact Information
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Westover, Bill	Fisheries Biologist: Ministry of Water Lands and Air Protection	Ph. (250) 489-8540 205 Industrial Road G, Cranbrook, BC V1C 6H3
Williams, Joanne	Fisheries Officer: Kootenay National Park	Ph. (250) 347-6159 7510 Redstreak Campground Road, Radium, BC. V0A 1M0 joanne.williams@pc.gc.ca
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APPENDIX 7



ELECTRIC FENCING WORKSHOP

May 3, 2003

The Kootenai River Network, U.S. Fish and Wildlife Service/Montana Partners for Fish and Wildlife, Montana Fish, Wildlife and Parks, and Gallagher Fencing, sponsored a Gallagher electric fence workshop on May 3, 2003. The workshop was free to the public and agency personnel with attendees from Flathead and Lincoln counties and B.C. Canada.

Larry Feight and Morgan Renner, Gallagher Power Fencing, presented an informational presentation and hands-on (off!) session at the Flathead County Fairgrounds. The presenters have worked with private landowners, and agency personnel, in the installation of electric fences to prevent wildlife from gaining access to attractants, contain domestic and captive animals, and prevent loss due to depredation.

The purpose of the workshop was to demonstrate how to prevent wildlife (deer and elk) access to gardens and haystacks; how to keep dogs, coyotes and wolves away from livestock; and how to secure attractants such as beehives, chicken coops, fruit orchards, and garbage from bears. Ranchers, hobby farmers, orchard owners and backcountry horsemen were encouraged to attend to expand their knowledge of the use of electric fencing for their specific needs.

Several electric fencing displays, permanent and temporary, were set up for people to inspect and understand the advantages of different types of wires, posts and chargers for certain types of applications. Other presented information included joule ratings, proper grounding, fence maintenance and how to power electric fences around the ranch or in the backcountry.

Due to the demonstrated public interest in the workshop the Kootenai River Network will be developing similar workshops in Idaho and B.C. Canada to be scheduled in spring 2004.
