ATTACHMENT A

RESPONSE TO COMMENTS
on
REESTABLISHMENT of a BULL TROUT FISHERY on LAKE KOOCANUSA
Draft EA

Response to comments from Friends of the Wild Swan:

Since the major bull trout spawning stream and migratory corridor in this drainage are listed as impaired for beneficial uses these important waterbodies must be restored so they are fully supporting beneficial uses before more "take" can be allowed.

Both Tobacco River and Grave Creek are listed as 303(d). Tobacco River is a migratory corridor and as there are no identified barriers, either physical or chemical, to bull trout migration, that part of the drainage does not negatively affect bull trout numbers used for this assessment. Grave Creek is the major spawning tributary for this run of bull trout.

Following is information not included in the draft EA that provide ample evidence for watershed improvement:

Land management and roads management since 1993:

We have been informed by USFS Fortine Ranger District of the following activities:

- 1096 ac of intermediate harvest (1998)
- 9 ac of regeneration harvest (1996)
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18 miles of BMP upgrades to roads in the drainage since 2002

The closed roads in Williams, Clarence, Stahl, Blue Sky, and Foundation Creeks watersheds have all been restricted since before 1990.

3 stream crossings removed from SF Stahl Creek in 2000
several other culverts removed in Clarence Creek watershed in 2000
6 perennial stream crossings removed in Williams Creek watershed in 2001

The TMDL for Grave Creek is currently under development and will guide future activities, including restoration efforts, in the drainage.

Mainstem Grave Creek projects:

In 1998 Glen Lake Irrigation District (GLID), MFWP, USFWS, and the USFS worked collaboratively to evaluate alternatives to modify the structure to meet fish passage and water

usage needs. USFS hydrologists identified that the existing diversion dam had elevated the base level of the stream approximately 7 feet, which caused a large amount of aggradation in the streambed and allowed the deposition of nearly 2,000 cubic yards of bed material behind the dam. The channel became unstable, which promoted scour on a large mass wasting bank and increased the sediment supply within the stream. The old log diversion dam was showing signs of deterioration and potential for failure. This was a major concern because failure of the dam would cause the massive amount of bed load deposited behind the dam to flush into Grave Creek, likely causing additional hydrologic problems downstream.

MFWP, GLID, USFWS and USFS formulated a proposal that would alleviate the problems and meet all of the project goals. This proposal consisted of four steps: removal of the existing log dam; construction of a properly functioning stream channel to maintain its natural channel dimension and effectively transport sediment; development of an efficient water diversion that would facilitate upstream fish migration; and installation of an efficient, self-maintaining fish screen in the ditch. Project implementation began in the fall of 2000 and was completed during spring of 2001. Stream reconstruction required the removal of approximately 2,000 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.

Additionally, MFWP entered into a cooperative agreement that was coordinated through the Kootenai River Network to retain a consultant to develop and implement a restoration plan for the restoration of lower Grave Creek. Additional contributors included U.S. Fish and Wildlife Service (Partners for Wildlife Program), the U.S. Forest Service, the Natural Resource Conservation Service, the Kootenai River Network, Water Consulting Incorporated, Kirby Excavating, and local landowners, Pat and Blanch Flanagan. The first part of this project was completed during November 2001 and was termed the Grave Creek Demonstration Project because, in addition to returning a relatively short reach of lower Grave Creek into a properly functioning stream, it was intended to serve in a working example of the practical solutions possible with natural stream restoration techniques.

The Grave Creek Demonstration Project reconstructed approximately 840 feet of stream channel, with approximately half the length of the project consisting of a 20-foot-high eroding bank. This bank contributed substantial amounts of sediment annually to Grave Creek, and was treated by contouring the eroding bank and constructing a 15-foot-wide armored bank terrace to prevent the stream from regaining access to the toe of the slope (Figure 14). The project also planted the bank with grass and installed 2 J-hook vanes and a rock vane that were designed to center flow toward the channel thalweg. Throughout the remainder of the project area, we installed an additional cross vane, 4 rootwad complexes, and transplanted approximately 6,300 square feet of sod mats and numerous shrub clumps to center stream flow, increase fisheries habitat pool habitat and complexity, and stabilize stream banks. The project also accommodated an existing

water right within the project area by installing a flashboard headgate at the point of diversion and a McKay flat panel fish screen to eliminate juvenile fish entrainment in the irrigation ditch.

The project continued in 2002, when Montana FWP entered into a cooperative agreement that was coordinated through the Kootenai River Network to retain a consultant to develop and implement a restoration plan for approximately 4,300 feet of channel within the lower three miles of Grave Creek (WCI 2002). Additional contributors to the project included Montana Department of Environmental Quality, the National Fish and Wildlife Foundation, the Steele-Reese Foundation, the U.S. Fish and Wildlife Service (Partners for Wildlife Program), the Montana Community Foundation, the Montana Trout Foundation, and the Cadeau Foundation.

The project was termed the Grave Creek Phase I Restoration Project and began at the downstream end of the Grave Creek Demonstration Project. Project construction work began during the fall of 2002. The objectives of the project were to: 1) reduce the sediment sources and bank erosion throughout the project area by incorporating stabilization techniques that function naturally with the stream and which decrease the amount of stress on the stream banks; 2) convert the channelized portions of stream into a channel type that is self-maintaining and will accommodate floods without major changes in channel pattern or profile; 3) use natural stream stabilization techniques that will allow the stream to adjust slowly over time and be representative of a natural stream system; 4) improve fish habitat, particularly for bull trout, and improve the function and aesthetics of the river and adjacent riparian ecosystem; and 5) reduce the effects of flooding on adjacent landowners.

Stream restoration work began in September 2002 and proceeded through December 2002. During that period numerous structures were installed to accomplish the above-stated objectives. These structures included 12 rootwad composites, 11 debris jams, 8 log J-hook vanes, 4 cobble patches, 3 log cross vanes, 1 rock cross vane, 1 rock J-hook vane, 1 straight log vane, and 2.4 acres of sod transplants. The majority of the revegetation work was not completed in the late fall of 2002 due to unfavorable weather conditions that prohibited planting. The revegetation work was completed during the spring of 2003 and is expected to serve as the primary stabilization mechanism in the long-term.

Restoration activities are expected to continue on lower Grave Creek during the fall of 2004. Montana FWP expects to continue with many of the cooperators from the previous three restoration projects described above to restore an additional 4,900 feet of Grave Creek to a properly functioning stream segment with higher biological potential than currently exists.

The Canadian logging is a clear threat to bull trout in the Upper Kootenai drainage…

MFWP cannot alter activities that occur in the British Columbia portion of the drainage. We have included in the proposed actions that:

> 1) Bull trout catch per net in Koocanusa Spring gill nets remains above 70% of the long-term (sliding 10-year) average of a stable or increasing trend.
>
> 2) Bull trout redd counts in Koocanusa monitoring tributaries remain above 70% of the long-term (sliding 10-year) average of a stable or increasing trend or 667 redds in Wigwam River drainage and 67 in Grave Creek drainage, whichever is greater.
>
> The fishery will be reassessed if one or more of these criteria are not met.
>
> These criteria are in effect whether recreational angling (in B.C. or Montana) or some other series of events including reservoir operations adversely affect the Koocanusa bull trout population.

…it would be prudent to explore how bull trout may be able to utilize other streams…

Since 1990, all tributaries to Koocanusa have been surveyed for bull trout. Though bull trout occur periodically in most of the streams, successful spawning occurs only in Grave Creek and Therriault Creek. This is quite likely due to the temperature regimes of those streams. Bull trout spawning and rearing is successful throughout a limited temperature range that does not exist in the majority of tributaries to Koocanusa.

… there is no explanation for the dramatic increase in redd counts between 1994 and 2002 so it leaves us wondering whether more area has been surveyed in these past few years making the data inconsistent.

The streams used for redd counts are considered index streams that include index reaches. These index reaches have not increased and, in the case of Grave Creek, have decreased in length from the initial survey (Wigwam 22 miles, Grave Creek 17 miles initially, 17 miles in 1996, 9 miles every other year).

There are actually 28 years of gillnetting information (Table 3, Figures 4 & 6 of draft EA) that show the Lake Koocanusa bull trout population in indeed increasing. Additionally, we have added the information from 2003 redd counts that again showed an increase in redds. The increase in redds the last ten years is likely due to the control of angling for bull trout both in Montana and in British Columbia since 1993 (draft EA, page 25, Tables 4 & 5) and an increase in most of the prey species, especially kokanee (Table A) which leads to very high subadult and adult survival in Lake Koocanusa.

Table A. Average length and weight of kokanee salmon captured in fall floating gillnets (Tenmile and Rexford) in Lake Koocanusa, 1996 through 2002.

YEAR	1996	1997	1998	1999	2000	2001	2002	AVG.
Sample size (n)	132	88	76	200	342	120	357	
Length (mm)	293.7	329.6	333.9	291.6	271.3	261.6	251.3	292.0
Weight (gm)	234.5	363.2	322.0	229.6	185.6	161.6	152.2	239.2
Adult Escapement*	397,697	116,317	147,026	258,817	328,747	351,653	452,740	

*Escapement count from Westover (2002)

Westover, W. 2002. Koocanusa Kokanee Enumeration (2002). Ministry of Water, Land and Air Protection. Cranbrook, British Columbia.

How will the population genetic structure be maintained when there are so few populations of bull trout in the U.S. portion of the Upper Kootenai drainage?

There is no historical or current evidence that bull trout spawning occurred in any streams other than those in which they currently spawn. In October 1992, MFWP and USFS surveyed all tributaries to Koocanusa considered to have potential for spawning; no redds were found. We believe that natural extreme temperatures during summer and winter exclude spawning and rearing possibilities. Therefore we don't expect any adverse impacts to the genetic structure for the Koocanusa population. The reliance on Grave Creek in the U.S. cannot be changed by improving habitat in other streams where spawning does not occur.

Additional monitoring information:

The following report cover sheets include all current monitoring efforts for the Kootenai Drainage and Grave Creek and were used to complete the draft and final EA.

LAKE KOOCANUSA AND KOOTENAI RIVER BASIN BULL TROUT MONITORING REPORT

Prepared by:

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Montana Fish, Wildlife & Parks

DJ Report No
Element
SBAS Project No. 3140

MITIGATION FOR THE CONSTRUCTION AND OPERATION OF LIBBY DAM

ANNUAL REPORT
2001-2002

By:

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Funded by:
Bonneville Power Administration
Division of Fish and Wildlife
P.O. Box 3621
Portland, OR 97208
Ron Morinaka, COTR
Project Number 199500400
Agreement DE-AI79-83-BP12660

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Response to questions from British Columbia Ministry of Water, Land, and Air Protection:

…Using 70% sliding 10-year average equates to approximately 592 redds. Are you prepared to see the Wigwam River redd numbers drop by over 1300 redds…before you close the proposed fishery…using a sliding 5-year average may make more sense in this case in order to eliminate the early years when bull trout numbers were depressed because of over fishing.

Response: We are confident that the proposed criteria will effectively protect the bull trout population in Lake Koocanusa. We also reserve the right with consultation with USFWS to adjust the regulations if monitoring results show either positive or adverse effects on the population at a rate that substantially exceeds expectations.

…There is, however, a developing fishery for bull trout at the mouth of the Elk River during late May and June when bull trout are staging to enter the Elk River.

Response: As was stated earlier, we have included in the proposed actions that:

> 1) Bull trout catch per net in Koocanusa Spring gill nets remains above 70% of the long-term (sliding 10-year) average of a stable or increasing trend.
>
> 2) Bull trout redd counts in Koocanusa monitoring tributaries remain above 70% of the long-term (sliding 10-year) average of a stable or increasing trend or 667 redds in Wigwam River drainage and 67 in Grave Creek drainage, whichever is greater.
>
> The fishery will be reassessed if one or more of these criteria are not met.
>
> If the fishery is closed because it fails to meet these criteria, it will not be reopened until both criteria are met for two successive years.
>
> These criteria are in effect whether recreational angling (in B.C. or Montana) or some other series of events including reservoir operations adversely affect the Koocanusa bull trout population.

…Do you have a number of bull trout in mind that would be acceptable to harvest?…

Response: As recommended in the draft EA, the restrictions to harvest, in possession (1) and yearly take (2) and timing of allowed angling (June 1 through February 28), will control harvest at Lake Koocanusa. Additionally, the USFWS sub-permit TE-077533 allows for and authorized angler take of 1,140 bull trout.