Northwest Power and Conservation Council

January 10, 2006

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Mark Fritsch, Project Implementation Manager

SUBJECT: Funding recommendation for Updated Proposed Action (UPA) habitat proposal - Little Bridge Creek Fence Project

PROPOSED ACTION:

On October 12, 2005 Council staff received five proposals from Bonneville Power Administration addressing the Updated Proposed Action (UPA) for the Federal Columbia River Power System Biological Opinion remand. At your meeting in December the Council staff provided an overview of this submittal and discussed our proposed recommendations for three of these proposals. The Fish and Wildlife Committee approved two of the proposed projects, but raised concerns regarding the costs associated with the Little Bridge Creek Fence Project and requested Bonneville to provide additional detail and justification regarding these costs. On January 5, 2005 information was received from Bonneville addressing the requested information (see attachment).

SIGNIFICANCE:

The staff recommends that the Fish and Wildlife Committee approve Fiscal Year 2006 funds, not to exceed $80,869, for the Updated Proposed Action (UPA) Little Bridge Creek Fence Project as defined in the submittal received from Bonneville on October 12, 2005 and January 5, 2006.

BUDGETARY/ECONOMIC IMPACTS:

Bonneville is requesting $80,869 in Fiscal Year 2006 for this project.[1] It is anticipated that the proposed projects will be completed during Fiscal Year 2006. There likely will be additional projects implemented in Fiscal Year 2006 in order to meet the Action Agencies' metric goals for these three subbasins. In addition, Bonneville expects to integrate the UPA habitat project

[1] As part of the FY 2006 recommended Start-of-Year budgets, the Columbia Cascade UPA habitat measures were budgeted at $2,400,000.

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implementation in Fiscal Year 2007 and beyond with the Council's program as part of a future solicitation process.

BACKGROUND:

Bonneville, Bureau of Reclamation (Reclamation), and the U.S. Army Corps of Engineers developed the UPA for their joint operation of the Federal Columbia River Power System (FCRPS). The UPA includes a program to improve the quality of tributary habitat to help provide "off-sets" to the impacts of hydropower operations on the survival of certain listed anadromous species (Evolutionarily Significant Units, or ESUs). Together, the Action Agencies have agreed to address specific limiting factors on the survival of these ESUs in specified areas of their passage, spawning and rearing habitats. The effects of the November 24, 2004 UPA were evaluated in a revised Biological Opinion regarding the FCRPS issued by NOAA Fisheries on November 30, 2004 pursuant to Section 7 of the Endangered Species Act (ESA).

NOAA Fisheries analyses determined that habitat actions addressing limiting factors have the potential to increase the ESU populations. The updated NOAA Fisheries analyses for the Biological Opinion found that a qualitative estimate of improvement is needed for Upper Columbia River spring Chinook and steelhead. To fill part of that gap, Bonneville agreed to help achieve tributary habitat metric goals to improve overall survival for fish in these ESUs during their spawning and rearing life stages. The proposed action to meet these goals focuses on four limiting factors: fish entrainment, instream flow, channel morphology and riparian protection/enhancement. These proposed projects will assist in achieving milestones set forth and described in the tributary habitat action section of the UPA at three- and six-year intervals.

Reclamation provided funds for the planning and design of these projects. Bonneville's strategic approach in Fiscal Year 2005 was to provide cost-share funds for the habitat projects in the Columbia Cascade Province to enable the Action Agencies to achieve the specific metric goals identified in NOAA Fisheries' 2004 Biological Opinion and UPA.

On February 16, 2005 Bonneville presented to the Council a review of the anticipated implementation of the UPA for the Biological Opinion for the Federal Columbia River Power System by the Action Agencies. Bonneville requested that the proposed projects be reviewed by the ISRP.

On October 12, 2005 Council staff received the five proposals from Bonneville (see attached letter) addressing the UPA for the Federal Columbia River Power System Biological Opinion remand. The submittal included not only the three listed habitat proposals (i.e., the Whitehall Wells, Entiat 4-Mile Wells, and Little Bridge Creek Fence proposals), [2] but also included Project #2005-001-00, Estuary RM&E Pilot Project and Project #2003-114-00, Acoustic Tracking for Studying Ocean Survival.

[2] The Whitehall Wells and Entiat 4-Mile Wells proposals were part of the Council decisions regarding funding recommendations for Updated Proposed Action (UPA) habitat proposals at the April and March 2005 meetings. As you may recall, of the eight proposals six eventually were approved, but the remaining two proposals (i.e., Entiat 4-Wells and Whitehall Wells) were not addressed and were dependent on a future submittal and favorable review and recommendation by the ISRP and the Council.

Based on the initial staff review of the five proposals, Project #2003-114-00, Acoustic Tracking for Studying Ocean Survival, was returned due to Bonneville for additional information prior to scientific review. This project was resubmitted on November 7, 2005 and currently is under review by the ISRP.

On November 30, 2005 the ISRP provided its review (ISRP Document 2005-17) of the four remaining proposals. The ISRP found the two well projects fundable, the fencing project partially fundable, and the Estuary RM&E project not fundable.

On December 14, 2005 the Fish and Wildlife Committee recommended funding for the Updated Proposed Action (UPA) Whitehall Wells and Entiat 4-Mile Wells as defined in the submittal received from Bonneville Power Administration on October 12, 2005.[3] It was also recommended that Bonneville provide additional detail and justification regarding the costs associated with the Little Bridge Creek Fence Project before a recommendation could be made. On January 5, 2005 information was received from Bonneville providing the requested information (see attachment).

ANALYSIS:

The Little Bridge Creek Fence Project will provide Bonneville and Reclamation with a FCRPS BiOp metric credit of 4.8 for the riparian enhancement limiting factor. The Little Bridge Creek Fence project will protect approximately 2.7 miles of steelhead spawning habitat by establishing two enclosure areas. This will exclude cattle from stepping on redds and allow the streambanks and riparian vegetation to recover, thereby decreasing sediment delivery to Little Bridge Creek and the Twisp River.

Though the ISRP recommended the Little Bridge Creek Fence Project as "partially fundable," the panel raised costs issues that should have been identified by the Council staff during the initial review. In addition, the ISRP raised concerns regarding the proposal's link to the adopted subbasin plan, but qualified this concern by noting the project will benefit an important spawning site in Little Bridge Creek.

The information received from Bonneville on January 5, 2006 is through and complete (see attachment). Bonneville not only address the costs associated with the proposal, but also provide extensive detail in response to ISRP comments. This detail strengthens the link of the proposal to the subbasin plan and enhances the credibility of the proposal because it was the only one of 14 riparian enhancement proposals that was able to meet implementation criteria in the Methow Subbasin.

The costs associated with the proposal have been reduced by $44,131 from the original level of $125,000, to $80,869. These savings are principally from the Okanogan Conservation District reducing its overhead and fringe benefits that results in savings of $21,129 and from the US Forest Service providing additional supplies for a savings of $16,210.

[3] January 2006 Council Agenda Item #1.

Based on the information received from Bonneville, the staff believes that the questions raised by the Fish and Wildlife Committee have been addressed. With this understanding and the metric credits that the proposal provides to the FCRPS Biological Opinion, the staff recommends that the Fish and Wildlife Committee approve Fiscal Year 2006 funds, not to exceed $80,869, for the UPA Little Bridge Creek Fence Project as defined in the submittals received from Bonneville on October 12, 2005 and January 5, 2006.

Attachment: Letter received from Bonneville Power Administration, on January 5, 2006, regarding the UPA Little Bridge Creek Fence Project.

Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WIL

January 5, 2006

In reply refer to: KEW-4

Mr. Doug Marker
Director, Fish and Wildlife Division
Northwest Power and Conservation Council
851 S.W. Sixth Avenue, Suite 1100
Portland, OR 97204-1348

Dear Mr. Marker:

On October 12, 2005, Bonneville Power Administration (BPA) submitted a letter to the Northwest Power and Conservation Council (Council) requesting Independent Scientific Review Panel (ISRP) review of the Little Bridge Creek Fence Project. (Please refer to this project at the Columbia Basin Fish and Wildlife Authority link provided below.)

http://www.cbfwa.org/mods/components/forms/DisplayWYOngoing.cfm?ModID=340&action=final

BPA has committed to implementing this project to achieve metric goals in the Updated Proposed Action (UPA) for the Federal Columbia River Power System Biological Opinion Remand, November 2004. On November 30, 2005, the ISRP completed their review and comments for this project. The project sponsors have prepared responses to the ISRP comments. We have reviewed the responses and believe they address the comments of the ISRP.

BPA and Council staffs have coordinated with the project sponsors to obtain additional detail and updates on the budget for the Little Bridge Creek Fence project in preparation for the January meeting of the Council Fish and Wildlife Committee. Thank you for helping arrange a workable process for this project. If you have any questions, please feel free to contact me or Chris Furey at 503-230-3371.

Sincerely,

/s/
William C. Maslen
Director of Fish and Wildlife

Enclosure

cc:

Mark Fritsch, Northwest Power and Conservation Council
Patty O'toole, Northwest Power and Conservation Council
Eric Merrill, Northwest Power and Conservation Council
Brian Lipscomb, Columbia Basin Fish and Wildlife Authority
Tom Iverson, Columbia Basin Fish and Wildlife Authority
Amy Langstrom, Columbia Basin Fish and Wildlife Authority
bcc:
K. Hunt – DKR-7
P. Key – LC-7
L. Grimm – LC-7
R. Austin – KEW-4
G. Dondlinger – KEWB-4
P. Lofy – KEWL-4
C. Furey – KEWR-4
J. Geiselman – KEWR-4
L. Hermeston- KEWL-4
P. Krueger – KEWR-4
M. Shaw – KEWU-4
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Little Bridge Creek: Project Sponsor Responses to ISRP Review

Draft Responses to ISRP Comments (ISRP 2005-17), November 30, 2005

Introduction

This document provides project sponsor responses to comments from the ISRP on the Little Bridge Creek Fence Project. The Little Bridge Creek Fence Project will provide BPA and Reclamation with a FCRPS BiOp metric credit of 4.8 for the riparian enhancement limiting factor. The Little Bridge Creek Fence project will protect approximately 2.7 miles of steelhead spawning habitat by establishing 2 enclosure areas and fencing about five miles of riparian area. This will exclude cattle from stepping on redds and allow the streambanks and riparian vegetation to recover, thereby decreasing sediment delivery to Little Bridge Creek and the Twisp River.

During the December meeting of the Council Fish Committee, the Council members requested additional information and clarification on the project. The following information from the project sponsors responds to comments from the ISRP, and section 7 of these responses helps provide clarification and information on the updated budget. Budget updates by the project sponsors include a decrease in the indirect rate for the construction, some savings in environmental compliance and monitoring costs, and substantial cost-share, as well as additional detail on the labor and material costs involved for this project. Due to the cost savings and increased cost-share, the total cost to BPA for the project is now estimated at $80, 869 (FY06: $75,019 plus FY07-FY09: $5,840), a significant reduction from the original estimated cost exceeding $125,000. Bonneville and Council staff plan to help resolve any remaining budget issues for the Fish and Wildlife Committee during the January meeting of the Fish and Wildlife Committee.

Response to ISRP Comments for Little Bridge Creek Fence project

<u>Little Bridge Creek Fence</u>

1. Provide any additional information on the status of ESA listed stocks in the Twisp River and Little Bridge Creek.

The Twisp Watershed Biological Assessment (Cross 2005) states:

> Twisp River contains habitat for Upper Columbia steelhead (*Oncorhynchus mykiss*) listed as Endangered on October 17, 1997; Upper Columbia River bull trout (*Salvelinus confluentus*) listed as Threatened on June 12, 1998 and Upper Columbia River spring Chinook salmon (*O. tshawytscha*) listed as Endangered on March 16, 1999. Listed

anadromous salmonids (steelhead and Chinook salmon) are managed under the direction of NMFS and listed resident salmonids (bull trout) are managed under the direction of the U.S. Fish and Wildlife Service (USFWS).

Steelhead

The Washington Department of Fish and Wildlife Methow (WDFW) River Basin Steelhead Spawning Ground Surveys in 2005 (28 Nov draft) stated the following about the contribution of the Twisp River watershed to the Methow subbasin steelhead population:

> The sum of marked and expanded redds [**for the Methow subbasin**] was 1,799, with mainstem spawning areas (Twisp, Methow, and Chewuch Rivers) accounting for 71.0% (*N* = 1,278) of the redds within the basin.

The Washington Department of Fish and Wildlife Methow (WDFW) River Basin Steelhead Spawning Ground Surveys in 2005 (28 Nov draft) stated the following about the steelhead population in the **Twisp River watershed**:

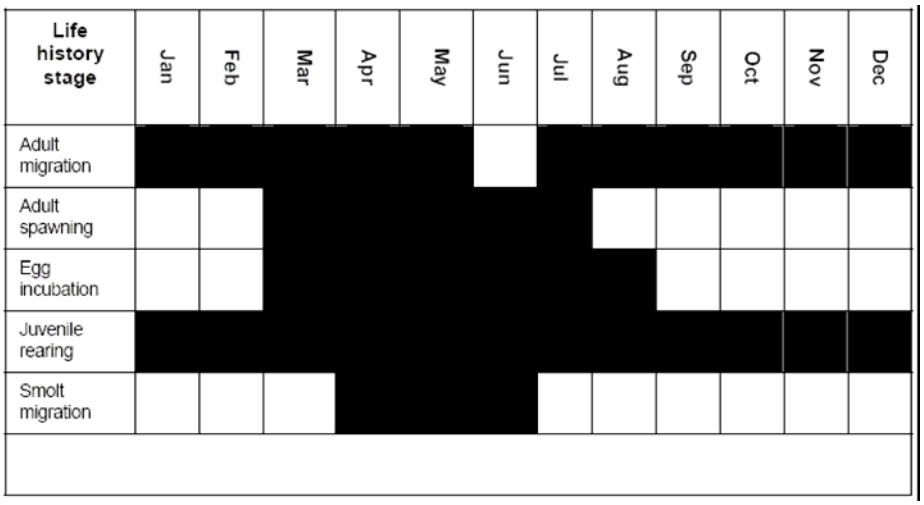
> Redds were located in all surveyed reaches of the Twisp River. The greatest number of redds (*N* = 112) were found between Mystery Campground and War Creek (Appendix 6). Mainstem spawning areas comprised 85.9% (*N* = 415), with tributaries containing 14.1% (*N* = 68) of the sub-basin redds. Most tributary spawning occurred in **Little Bridge Creek (*N* = 27)** and Buttermilk Creek (*N* = 24; Appendix 7).

The Washington Department of Fish and Wildlife Methow River Basin Steelhead Spawning Ground Surveys in 2004 stated the following about steelhead in the Twisp River watershed:

> Steelhead spawning was dispersed throughout the surveyed reaches in the Twisp River, with a total of 243 redds counted in the mainstem in 2004 (94.9%). **The Twisp River was the most heavily utilized mainstem spawning area, containing 37.9% of all redds counted in Methow River basin mainstem spawning areas.** Tributary spawning accounted for an additional 13 redds (5.0%) in the Twisp Basin. The index reach (Buttermilk bridge to Twisp weir) accounted for 38.2% (*N* = 93) of the mainstem redds in 2004. Index area redds were 47.1% and 46.2% of the mainstem totals in 2001 and 2003, respectively. No redds were counted in rotating-panel creeks in 2004, but redds were found in **Little Bridge Creek (*N* = 11)** and the Methow Salmon Recovery Foundation pond outlet channel (*N* = 2).

The WDFW data indicates that the Twisp River provides important spawning habitat for the steelhead population in the Methow subbasin and Little Bridge Creek is a primary spawning tributary of the Twisp watershed.

Table 1. Summer Steelhead Life History in the Methow subbasin (p56 NPCC 2004)



The "Weekly Adult Return Comparison Report" from the Fish Passage Center (http://www.fpc.org/adultsalmon/AdultCumulativeTable.asp) indicated that the 10 Year Average for steelhead over Wells Dam is 6,803 and the returns were higher than the 10 Year Average in 2005 (7163) and 2004 (9317). Steelhead that pass Wells Dam can go to the Methow subbasin, the Okanogan subbasin, or continue upstream in the Columbia River to Chief Joseph Dam. The Wells Hatchery Goals are to plant 130,000 steelhead in the Okanogan subbasin and 320,000 steelhead in the Methow subbasin, for a total of 450,000 steelhead (Charlie Snow, Washington Department of Fish and Wildlife Fish Biologist, personal comm.). Based on these numbers, they assume that roughly 72% of the run over Wells Dam will go to the Methow subbasin (320,000 divided by 450,000). Therefore, approximately 5157 steelhead migrated to the Methow subbasin in 2005 and approximately 6708 in 2004. Of these numbers, 483 steelhead spawned in the Twisp River watershed (~9%), and of those fish 27 (>5%) spawned in the Little Bridge Creek Fence project area.

Spring Chinook

The Methow Limiting Factors report states the following about Methow subbasin spring Chinook redd count surveys:

> Between the years 1987 – 1999, 25.4 % of spring chinook spawning in the Methow watershed occurred in the Twisp River. This compares with 40 % in the upper Methow River (Lost River to Winthrop) and 25.6 % in the Chewuch River for that same period.
>
> The data identifies the importance of the upper Methow River reach as the primary spawning ground for naturally reproducing spring chinook in the Methow watershed. The Chewuch and Twisp rivers are also very important. Combined they have the potential to produce more juveniles than the upper Methow River. The tendency of the upper Methow River reach to dewater during dry years emphasizes the need to maintain the potential production in other fish-producing tributaries of the Methow.

In 2005, dewatered areas in the Methow River were exacerbated by drought-induced low flow conditions. The 30 Mile Fire that occurred in the headwaters of the Chewuch watershed in 2001 has created embeddedness conditions near 100% that persist through 2005. Therefore, the Twisp River is crucial to spring Chinook given the natural occurring conditions that have impacted other spring Chinook spawning habitat in the Methow subbasin.

The Twisp Watershed Biological Assessment (Cross 2005) states:

> Spring Chinook juveniles have been found in lower half mile of Little Bridge Creek. The majority of spring Chinook spawning occurs in the Twisp River upstream of the confluence with Little Bridge Creek. The county road culvert at the confluence with the Twisp River is a juvenile passage barrier.

Table 2. Spring Chinook Life History in the Methow subbasin (p40 NPCC 2004)

Stock Group	Life history stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Spring Chinook	Adult migration					■	■	■	■				

Stock Group	Life history stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	Adult spawning								■	■			
	Egg incubation	■	■	■	■				■	■	■	■	■
	Juvenile rearing Smolt migration	■	■	■	■	■	■	■	■	■	■	■	■

Spring Chinook adults and juveniles should be able to use the Little Bridge Creek Fence site once the Little Bridge Creek culvert near the mouth of the creek is replaced (~2008).

Bull Trout

The Methow Subbasin Plan (p66 NPCC 2004) shows the following life history characteristics for bull trout in the Methow subbasin:

Table 3. Five potential Methow subbasin bull trout spawning aggregates with life history representation.

Aggregate	Resident	Fluvial	Adfluvial
Chewuch River (including Lake Creek)			
		X	X
Upper Methow R. (including West Fork Methow, Early Winters/Cedar creeks, Wolf Creek, Goat Creek)			
	X	X	X
Lower Methow R. (including Blue Buck/Beaver creeks, Crater/Gold creeks)			
		X	
Twisp River (including North Creek, Buttermilk Creek, Reynolds Creek)			
	X	X	
Lost River (including upper Lost River, Monument Creek, Cougar and Hidden lakes)			
	X	X	X

The Twisp Watershed Biological Assessment (Cross 2005) states:

> Spring Chinook salmon, summer steelhead trout, and bull trout access the lower 30 miles of the Twisp River, and short (less than 1 mile) segments of Poorman, Eagle, War, Reynolds, South, and North Creeks. Buttermilk Creek and Little Bridge Creek each have several miles of habitat accessible to Chinook, steelhead, and bull trout.
>
> The Twisp River is a stronghold for spawning bull trout. The highest migratory bull trout redd counts in Methow basin are found in the headwaters of the Twisp River between North Creek and a barrier falls above Crescent Creek, and in North Creek below a barrier falls. Resident and juvenile bull trout occur in South Creek and Buttermilk Creek (mainstem and East and West Forks).
>
> Bull trout use the lower 22 miles of the Twisp River for migration and rearing. The area between Reynolds Creek (RM 22.6) and a 15 foot high waterfall barrier (RM 29.8) is used by bull trout for spawning and rearing.
>
> The fluvial, adult component of the Twisp population is probably less than 500 based on redd counts. The migration corridor between the Twisp and Methow appears to be in poor condition in the lower Twisp. There are two populations of bull trout in the Twisp watershed (Buttermilk and Twisp River). The resident population in Buttermilk Creek is potentially isolated by the low numbers of fluvial fish and may be at risk for extirpation due to a catastrophic event.
>
> There are two separate bull trout observations for Little Bridge Creek. In 1992 two 10-14 inch fish were observed during spot electro-fishing; one at the RM 0.1 and one at RM 2 (near Aspen Meadows diversion). No bull trout were observed during a daytime 1997 snorkel survey of Little Bridge Creek. A juvenile was observed around RM 6 in 2001 PWI (2001). Spawning surveys for bull trout have not been conducted, but habitat above the West Fork confluence may be suitable. It is unlikely that spawning occurs in the lower 5 miles because their strict requirements for cold water, complex habitat and low levels of sediment water are not met in Little Bridge Creek.

> The first 0.5 miles of North Creek is a major spawning area for fluvial bull trout. South Creek has very little potential spawning habitat and no redds were observed in 2000. Fluvial bull trout have been seen in a small stream segment in Reynolds Creek, although spawning habitat is limited. Bull trout were observed in snorkeling the lower 2 miles of War Creek; juveniles and young of the year were seen indicating adfluvial spawners. Brook trout are present in War Creek and the mainstem Twisp River.
>
> Nelson (2004) followed 6 radio-tagged bull trout from Wells Dam on the Columbia River to the Twisp River. The tagged fish, along with the majority of the adult fluvial population, became isolated in the upper Twisp River by a seasonal reach of subsurface flow near Poplar Flats Campground (RM 21.8 to RM23.6). Nelson noted bull trout spawning activity from September 12 to October 4, in the vicinity of North Creek (RM 26). Post-spawning adults migrated 3 km downstream, encountered the de-watered barrier, and utilized pool habitat in the vicinity of South Creek (RM 24.4). There was mortality as bull trout were trapped in the dewatered reach when the river froze. The Twisp River upstream of the dry reach is a critical area of habitats for adult fluvial bull trout migrating from the Columbia River.
>
> The Twisp River upstream of the dry reach to the barrier falls appears to be a critical area of habitats for the adult fluvial bull trout population. The majority of spawning habitat used by this population is upstream of the dry reach, mostly in the vicinity of North Creek. The area from South Creek downstream to the dry reach is where the majority of post-spawning fluvial bull trout hold while waiting for the migration barrier to subside. Although the number and depth of these holding pools may not be optimal, it is all that is available to the isolated bull trout, and it may be desirable to improve the quality and quantity of pool habitat in this area.

Therefore, the Twisp River is an important habitat for Upper Columbia steelhead, spring Chinook and bull trout. Little Bridge Creek is also an important steelhead spawning site.

2. Does the Twisp River host core source populations for the remaining bull trout, west-slope cutthroat trout, and steelhead in the Methow subbasin? Is this project conserving a stronghold or helping rehabilitate degraded habitat with an objective of rebuilding weak stocks?

Yes, the Twisp River hosts core source populations for the remaining bull trout, spring Chinook and steelhead in the Methow subbasin. The Methow Subbasin Plan states:

> Spring Chinook salmon and summer steelhead spawn and rear in the Twisp River for nearly its entire length. Bull trout are found throughout the mainstem and several of its tributaries. Bull trout use the lower mainstem for overwintering and as a migrational corridor. Most of the spawning areas for bull trout are located in the upper watershed. Westslope cutthroat trout are found in these areas as well.
>
> Within the Methow subbasin, the Twisp River basin is the largest producer of bull trout, averaging two to three times more redds than any other spawning area within the Methow Basin.

The Little Bridge Creek Fence project in the Twisp watershed will assist in conserving a core source population of steelhead in the Methow subbasin. With the implementation of the Little Bridge Creek Culvert project (~2008), Little Bridge Creek may also provide spawning and rearing habitat to listed Upper Columbia spring Chinook within the Little Bridge Creek Fence project area. In addition, adult bull trout are found migrating and feeding in the reach.

The Draft Upper Columbia Salmon Recovery Plan (p41 Hillman 2005) states the following regarding steelhead productivity in the Methow subbasin:

> Assuming that hatchery fish are as effective as naturally produced steelhead, the return per spawner ranged from 0.01 to 1.20. The 12-year geometric mean for this scenario ranged from 0.07 to 0.16. The geometric mean the year before listing (1996) was 0.09.
>
> If hatchery fish do not contribute to returning adults, then the return per spawner ranged from 0.08 to 8.65. The 12-year geometric mean for this scenario ranged from 0.82 to 2.28. The geometric mean the year before listing (1996) was 0.84. The "true" productivity of Methow steelhead lies somewhere between this scenario and the scenario that hatchery produced steelhead are as effective as naturally produced steelhead.

The intent of the Little Bridge Creek Fence project is to protect steelhead spawning habitat and redds from impacts or mortality caused by cattle. The impacts from cattle include direct mortality of fertilized eggs or juvenile fish from being stepping on, or indirect impacts such as the loss or degradation of spawning habitat through increased erosion. Although there is not enough information published to develop a return per spawner ratio specific to Little Bridge Creek, we expect the fish population to increase if this fence project is completed. By protecting the available spawning habitat from degradation, this project will preserve a viable steelhead spawning area (27 redds in 2005), and improve the egg-to-smolt survival of those eggs. The origin of the fish spawning in Little Bridge Creek is unknown, but no hatchery steelhead have been planted into the creek. Protecting 27 redds under the return to spawner scenario listed above for wild fish could result in as many as 123 naturally produced adult steelhead returning to the creek (using the highest of the mean range return/spawner value for wild fish: 2.28 x 27 redds x 2 fish per redd) and potentially improve the Twisp River steelhead population.

3. Provide any additional information about the sediment and temperature specific to the reach.

The following baseline information on sediment, temperature, pools and width:depth ratios for Little Bridge Creek is taken directly from the Twisp Watershed Biological Assessment (Cross 2005). The project site extends from approximately River Mile 0.5 to River Mile 3.0 on Little Bridge Creek.

Sediment

> Wolman Pebble Counts (Wolman, 1954) were conducted in 1997 and 1998 at five sites between the mouth of Little Bridge Creek, and the end of Road #4415. In 1997, fine sediment was present at an average of 18%, with a range from 6 to 34%. In 1998, fine sediment was present at an average of 19%, with a range from 10 to 31%. In both years, fines were more prevalent in the lower reaches.

Table 4 Little Bridge Creek Delivered Sediment (TPR Environmental Assessment 1998)

Watershed Name: Little Bridge Creek Acres: 18930	
Sediment Source	Estimated Output in Tons per Year
Background	5170
Existing Roads	590
Total Sediment	5760
% Change in Sediment Production From Background	11
Estimated Stream Crossings by Roads	98
Miles of Existing Roads in Riparian Reserves	18
Acres of Openings in Riparian Reserves	380

Temperature

Little Bridge Creek is an important tributary to the Twisp River because it contains approximately 9 miles of continuous fish habitat. The sub-watershed (6th field HUC) is south-facing and approximately 15,600 acres in size. Aquatic habitat in this perennial stream is fair with some indicators not functioning properly. Water temperatures are relatively warm compared to similar streams on the district because of a south facing aspect, warm low elevation tributaries and lack of mature trees in the riparian area; however it is colder than the Twisp River at the confluence. Sediment in Little Bridge Creek is elevated due to bank erosion, high road density, and past management activity. Large woody debris is lacking because of selective timber harvest in the riparian area. The riparian zone in some areas has a mixture of deciduous shrubs but is generally lacking an overstory. Despite these habitat deficiencies Little Bridge Creek is occupied by steelhead, rainbow trout and bull trout.

Little Bridge Creek temperature data shows that the 7-day average maximum temperature remains above 15C from July through September (Figures 6 & 7).

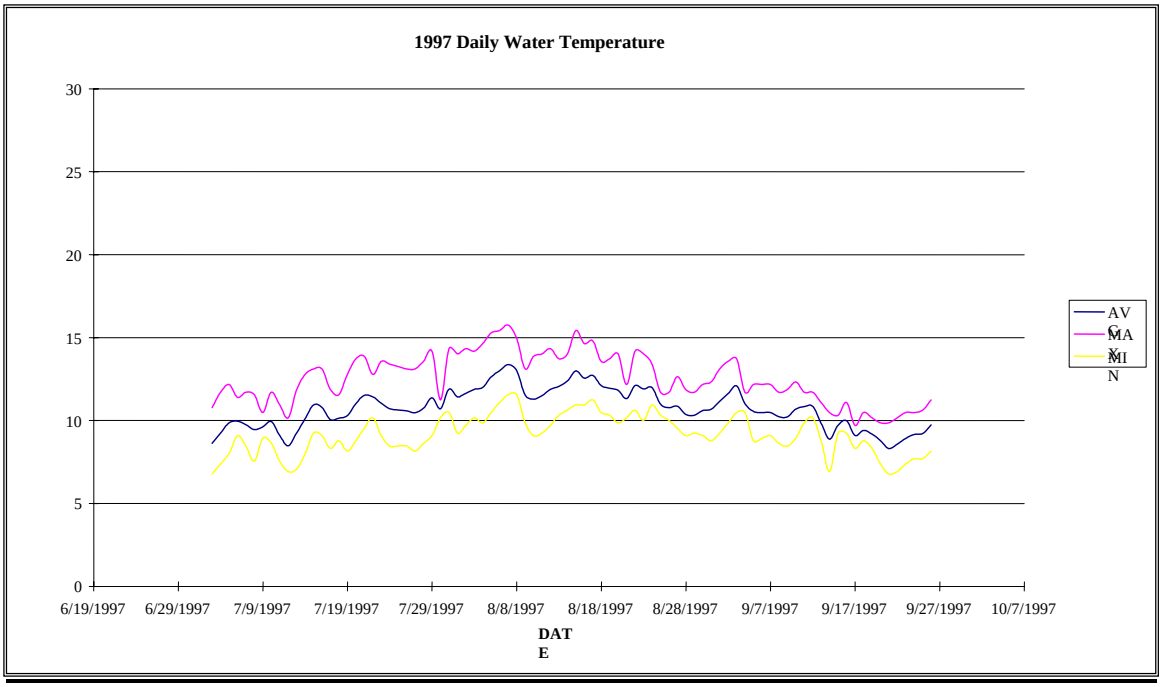


Figure 6 Little Bridge Creek Temperature date (1997)

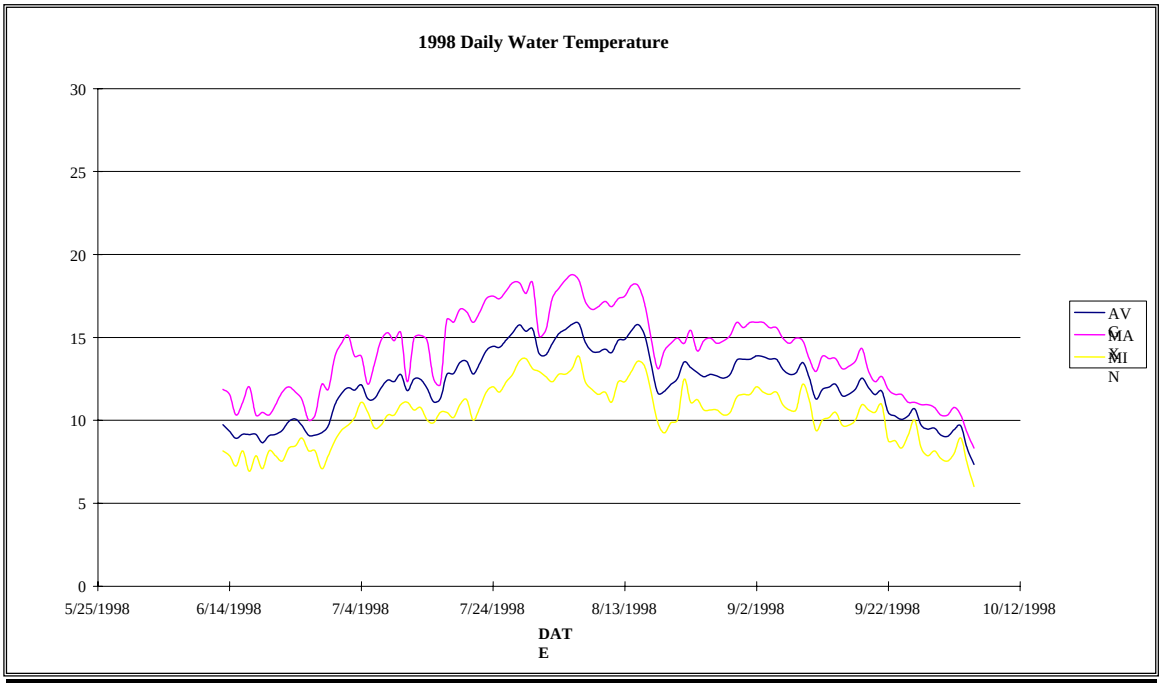


Figure 7 Temperature data for Little Bridge Creek (1998)

Twisp watershed is **functioning appropriately** for water temperature except Little Bridge Creek and the mainstem Twisp River below War Creek, which are **functioning at risk** for water temperature.

Pools

While the number of pools counted during the 1996 survey is close to the average for surveyed streams east of the North Cascades (Table 5), most of these pools are shallow and small. High quality pools were scarce, and the stream falls far below the ecological province average. During the 1996 stream survey, pools in Little Bridge Creek were observed to be shallow and filling with fine sediment.

Pools are generally shallow and filled with sediment in the lower 4 miles of Little Bridge Creek. Only 6 pools in the first 4 miles of Little Bridge Creek were at least 3 feet deep (80% were less than 2 feet deep), with an average residual depth of only 1.25 feet (shallow for a stream this size). Deeper pools were created by large wood in the channel.

Table 5 Pools/mile and quality pools/mile in Little Bridge Creek as compared to all streams surveyed in the eastern North Cascades

River mile	Gradient	Wetted Width	Pools per mile	North Cascade percentile	Quality Pools/ Mile	North Cascade percentile
0.0 – 0.5	4.5%	11’	76	>90%	0	0 - 25%
0.5 – 3.0	3.0%	11’	50	75 - 90%	1.3	25%
3.0 – 4.0	3.5%	9.1	48	50 -75%	1.8	25%

Width/Depth Ratio

Twisp watershed is **functioning appropriately** for width:depth ratio, except Little Bridge Creek, and the Buttermilk alluvial fan which are **functioning at risk**.

4. Explain how cattle exclusion at this site is critical for fish recovery. Was there a convenient and willing landowner?

Cattle exclusion at the Little Bridge Creek Fence site is critical for fish recovery for two main reasons: 1) conservation of the existing steelhead population is essential for recovery, and 2) socio-economic reasons.

Based on the assumption that any increase in fish production is critical for the recovery of the listed species, if the Little Bridge Creek Fence can exclude cattle from stepping on just one steelhead redd (or 27 redds in 2005), the Little Bridge Creek Fence is critical for juvenile steelhead survival and steelhead population recovery.

The current economy has affected land ownership in the Methow Valley. Low interest rates have encouraged individuals to purchase property and build homes. This conversion from rural, agricultural property to housing developments has been dramatic and is expected to have negative impacts on the listed species due to human-caused influences (decreased off-channel habitat, riparian cover, instream flows and water quality; increased sediment delivery and water temperatures).

There are two permittees associated with the Little Bridge Creek Fence project. One owns a significant amount of land along the Twisp River. The other owns a significant amount of land

along the mainstem Methow River. The Methow and Twisp rivers have Upper Columbia steelhead, spring Chinook and bull trout. The permittees derive their income by grazing cattle on their land and on the US Forest Service allotments. Other job opportunities in the Methow Valley are scarce. One of the reasons this project is being proposed is to continue grazing in the Little Bridge Creek watershed. The permittees have consistently been good land managers and have been trying very hard to keep cattle out of Little Bridge Creek for several years. Since 1998, they have been contributing to an upland fence to attempt to keep the cattle out of Little Bridge Creek. Unfortunately, this option was not successful, so two exclosures are being proposed. If the permittees had to build the fence with their own money, they could go out of business. If they went out of business, they would need to sell part or all of their property to compensate for the increased taxes due to a change in land use from agriculture (a low tax bracket) to non-agriculture (a higher tax bracket). It is in the best interest of the listed species for the permittees to stay in business because the alternative is development, which is devastating to the fish and wildlife.

Based on ESA requirements that no cattle can be in the creek when steelhead are present, the fence will have to be built at some point in the near future, either by the permittees or by the taxpayers. The Little Bridge Creek Fence project provides BPA and Reclamation with an opportunity to obtain FCRPS BiOp metric credit for the benefits this fence will have for Upper Columbia River steelhead.

Willing landowners/permittees were a factor in determining which projects to develop, but they were not the only factor driving the decision. The Little Bridge Creek Fence project is the only one out of fourteen proposed riparian enhancement projects in the Methow Valley that were presented to the ISRP for review. We reviewed each of the proposed projects for the following criteria:
a.) The project must be located along a stream where Upper Columbia steelhead and/or spring Chinook are known to be present during any life stage. [1 project was eliminated due because it did not meet these criteria.]
b.) All projects must be designed to have a minimum 35 foot buffer (prefer 100 feet or greater) from the stream for fencing or planting projects. Fencing projects must be designed for 100% livestock exclusion and be willing to implement grazing management strategies set forth in NRCS guidelines. [1 project was eliminated because it did not meet these criteria.]
c.) Willing landowner/permittee. [4 projects were eliminated because they did not meet these criteria.]
d.) Projects that will be replanting an area that has been disturbed to construct a project do not receive metric credit and will be incorporated in the project design rather than as a riparian enhancement project. [3 projects were eliminated because they did not meet these criteria.]
e.) Project must not have been implemented already. BPA does not retroactively fund projects. [4 projects were eliminated because they did not meet these criteria.]
Only the Little Bridge Creek Fence project met all of these criteria.

Numerous planning documents, including the Methow Subbasin Plan, have emphasized conservation of high quality habitat as the highest priority in the Methow subbasin. The Little Bridge Creek Fence project is proposed primarily to protect the functioning stream and riparian processes. The reach has intact riparian cover in most areas, with a few areas of high livestock impact. The riparian cover is so dense in places that the cows get into the creek and then travel

up and down the creek under the riparian cover, rather than getting out of the creek and walking on the floodplain. There are also several wetland areas in the floodplain that are being heavily impacted by the cattle, through grazing and trampling.

The main goals for the fence are: 1) to exclude cattle from getting into the creek and stepping on redds, 2) provide protection to the wetlands for enhanced water storage and supply to Little Bridge Creek and the Twisp River, and 3) to provide recovery of willow as a food base for the re-introduction of beavers. Excluding cattle will accelerate the rate of recovery in the Little Bridge Creek stream channel and wetlands. Re-establishing beavers should: 1) provide water storage, which should improve instream flow, 2) help stabilize degraded channels (thereby decreasing sediment input), and 3) flood potential off-channel areas for fish habitat. Beaver dams would not be a barrier to adult or juvenile steelhead. A similar fence project was implemented in South Fork Beaver Creek in 1991 and beaver were re-introduced in the spring of 2001 (South Fork Meadows Beaver Reintroduction 2001). The report noted that the factors contributing to the success of the project were: 1) exclusion of livestock and 2) an adequate amount of willow growing in the meadow to provide beaver with forage and dam building materials. The Little Bridge Creek Fence project should provide similar results if the fence is constructed.

5. What is the estimated proportion of the fence that would be anchored by live trees?

It is difficult to estimate the number of live trees that will be used in a fence project until you are on-the-ground, building the fence. We estimate that approximately 5% of the fence will be anchored by live trees rather than fence posts.

6. How will riparian or instream data for Little Bridge Creek or the Twisp River below the confluence be archived and made available?

Each year, WDFW and USFS conduct spawning ground surveys on Little Bridge Creek. WDFW spawning ground survey reports can be obtained from WDFW Methow Field Office, 20268 Hwy 20 Suite 7, Twisp WA 98856 Phone: (509) 997-0048 Fax: (509) 997-0072.

USFS Level II stream survey reports will be created for the Monitoring and Evaluation work. These reports and USFS spawning ground survey and snorkel survey reports are available upon request by contacting Jennifer Molesworth, U.S. Forest Service, Methow Valley Ranger District, 24 West Chewuch Road, Winthrop, Washington 98862 Phone: (509) 996-4010 Email: jmolesworth@fs.fed.us

Other monitoring work will be implemented by the USFS Range Department over the next few years, including updating the Allotment Management Plan with an Environmental Assessment as well as Upland Monitoring. These reports and annual information about the fence condition and maintenance can be obtained by contacting Dean McFetridge, U.S. Forest Service, Methow Valley Ranger District, 24 West Chewuch Road, Winthrop, Washington 98862 Phone: (509) 996-4030 Email: lmcfetridge@fs.fed.us.

7. Provide additional clarification and updates for the budget for the project.

Pre-ISRP Review
The Okanogan Conservation District uses cost estimates from the NRCS to develop their project costs. The NRCS annually updates their Cost List based upon actual costs for implementing projects. The East and Central Areas FY2006 Cost List (NRCS October 2005) indicates that Installed Fence (including gates) cost $3/ft on flat, dry ground. Cost estimate is $4/ft on wet, rocky, meandering or steep terrain. The 2006 Cost List and supporting documentation is available. A draft line item budget for FY 2006 and FY 2007-09 has been prepared.

OCD Construction Estimate for 5 miles of fence: $77,616
NRCS Allowable Costs for Steep/Rocky ($4): $105,600
NRCS Allowable Costs for Flat Ground ($3): $79,200
The west side of the Little Bridge Creek watershed is steep and rocky, but the east side is relatively flat where the fence will be built. If $3.50/ft is used to estimate the cost of constructing fence according to the local terrain, the estimated construction cost would be $92,400, which does not include Administrative Costs, Planning and Design, O&M or M&E. In summary, the Okanogan Conservation District fence construction cost estimate of $77,616 is less than the NRCS Cost List indicates it should be.

Based on the NRCS 2006 Cost List, the Okanogan Conservation District is apprehensive about decreasing their cost estimate for constructing the fence, even though the line item budget indicates a lower estimate for the total project cost.

Post-ISRP Review
The project proposal is being modified to decrease the Cost to BPA. Some of the Monitoring and Evaluation will be eliminated or shifted to the USFS to decrease the total project costs. The Okanogan Conservation District has agreed to decrease their Administrative Costs. In addition, the USFS has agreed to increase their cost share on the Little Bridge Creek Fence project for Planning and Design, NEPA, and Monitoring and Evaluation. A detailed discussion of the budget items follows Table 6, which compares the Itemized Estimated Cost to BPA pre- and post- ISRP Review. The 30% USFS Cost Share requirement and 5% Monitoring and Evaluation guidepost will also be discussed.

In summary, BPA will need to pay for:

1. FY06: Administrative Costs paid to the Okanogan Conservation District at 15% of Construction Costs.
2. FY06: Planning and Design to USFS.
3. FY06: Labor (including hourly rates and benefits) to construct 5 miles of fence paid to the Okanogan Conservation District.
4. FY06: Supplies. Approximately 1.1 miles of fence materials will need to be funded by BPA. USFS is providing 3.9 miles of fence materials. It is too much for USFS to donate the entire 5 miles of fence and posts in one year for one project when the USFS has numerous projects that need supplies for construction and O&M.
5. FY06: Travel will be paid to Okanogan Conservation District for mileage to construct the fence.

6. FY06: Other costs will be paid to the USFS as a subcontractor to perform Planning and Design, NEPA, Labor to install some of the supplies (cattle guard, bypass gate, water trough and pipeline), and Monitoring and Evaluation. The USFS will be subcontracted to install the cattle guard, bypass gate, water trough and pipeline because the Okanogan Conservation District does not have the vehicles and equipment necessary to install these supplies, and the USFS charges less to do the work than a contractor.
7. FY07-09: Operation and Maintenance of fence paid to permittees for $5,000.

Table 6. FY06 Itemized Estimated Cost to BPA Pre- and Post-ISRP Review

Budget Categories	Pre- ISRP Review	% of Total Cost to BPA	Post- ISRP Review	% of Total Cost to BPA
Overhead	$21,117	16.78	$12,670	16.89
Personnel	$36,937	29.34	$31,762	42.34
Fringe Benefits	$19,889	15.8	$7,207	9.61
Supplies	$25,940	20.61	$9,730	12.97
Travel	$3,500	2.78	$3,500	4.67
Other	$18,497	14.69	$10,150	13.53
Total FY06 Cost	**$125,880**	**100**	**$75,019**	**100**

Overhead (Okanogan Conservation District)
To assist in cutting the Cost to BPA, the Okanogan Conservation District has agreed to decrease their Administrative Costs from 25% of the Construction Costs to only 15%. This decreases the Cost to BPA by $8,447.

Personnel (Okanogan Conservation District)
Originally, the Personnel and Fringe Benefits costs were derived by: 1) using the NRCS Cost List (NRCS 2005) to determine the cost to construct the fence, 2) subtract the cost of supplies needed to build the fence. This provided the cost of labor. Labor costs were multiplied by 65% to obtain personnel costs. The 65% is what the Okanogan Conservation District Personnel staff person calculated for Bob Anderson's pay rate. Based on a line item budget analysis, the Okanogan Conservation District is willing to decrease their Personnel cost by $5,175.

Fringe Benefits (Okanogan Conservation District)
Originally, the Personnel and Fringe Benefits costs were derived by: 1) using the NRCS Cost List (NRCS 2005) to determine the cost to construct the fence, 2) subtract the cost of supplies needed to build the fence. This provided the cost of labor. Labor costs were multiplied by 35% to obtain fringe benefit costs. The 35% is what the Okanogan Conservation District Personnel staff person calculated for Bob Anderson's benefits. Fringe benefits paid to other employees may be less than 35%. Based on a line item budget analysis, the Okanogan Conservation District is willing to decrease their Fringe Benefits cost by $12,682.

Supplies (US Forest Service)
The Little Bridge Creek Fence proposal listed the Total Cost for Supplies rather than the Cost to BPA for Supplies because we estimated the Total Project Cost and subtracted the Total Cost-

Share to obtain the Cost to BPA. The USFS is now providing $17,060 in cost-share toward the Supplies, including $16,360 for fence and posts plus $600 for the water trough and $100 for the pipeline. BPA will need to pay for the cattle guard ($5,000) and the bypass gate ($300) plus $4,430 (~1.1 miles) in fence and posts.

Travel (Okanogan Conservation District)
Forty trips (40) at 100 miles each multiplied by the Washington Department of Natural Resources Rate (0.75 cents/mile) for a 6-person capacity truck is $3,000. Add $500 for trips to haul equipment and supplies leaves a total estimated cost of $3,500.

Other (US Forest Service)
The USFS will be subcontracted to perform:

1. Planning and Design: $4,230
2. NEPA: $1,495
3. Install cattle guard and bypass gate: = $1,240
4. Install water trough and pipeline: = $532
5. Monitoring and Evaluation: $2,653. This cost is 3.54% of the FY06 Cost to BPA, which is within the 5% suggested cap for M&E expenditures.

Cost Share (US Forest Service): minimum of 30%
The USFS has already contributed a significant amount of time and financial resources to benefit salmon recovery in the Little Bridge Creek watershed. The USFS contributed $75,000 (contract preparation and administration, construction, fencing, revegetation and NEPA) to assist BPA and Reclamation in obtaining metric credit for Aspen Meadows Diversion (1 screen and 2.88 miles of access). In addition, the USFS replaced culverts in 2002 on Little Bridge Creek at the 100 road (cost = ~$120,000) and at the 030 road (cost = ~$120,000). They have a high level of investment for salmon recovery in the Little Bridge Creek watershed.

The USFS also has approximately $50,000 in Respect the River funds and $33,000 in Title 2 funding to implement fencing projects in the Methow subbasin. Of this $83,000, approximately $20, 000 will be spent in the Twisp River watershed to implement the Twisp River Restoration Strategy (USFS 2005). The strategy involves restoring riparian areas in the Twisp River watershed using fence to keep livestock and people from heavily impacting the stream channels and floodplains. In addition, the USFS is currently collaborating with Okanogan County to replace the Little Bridge Creek Culvert (potential FCRPS metric credit of 1 culvert and 5.08 miles of access). The Little Bridge Creek Culvert project will probably be submitted for funding through BPA. The USFS estimated contribution to the Little Bridge Creek Culvert project is approximately $200,000. They have already requested $20,000 from Region 6 of the USFS to create the design in FY06. They believe that these expenditures should count toward the USFS/BPA MOU of 30% cost-share.

The BPA/USFS MOU (Goodman et al. 2005) states:

> One of the key principles underlying this MOU is the agreement reached with BPA to fund proposed projects submitted by National Forests or Forest Service Research Stations through the Council's solicitation process. The MOU commits BPA to fund up to 70 percent and the Forest Service (and/or with other partners) at least 30 percent on a programmatic basis, averaged over three years (FY 07-09). **Although this a**

programmatic requirement, it will be important that each project submitted to the Council for funding try to attain this 30 percent goal to ensure that over three years we meet our commitment. The Forest Service's cost-share portion may be in cash or in-kind (NEPA, etc.), or may come from other entities, such as, States, Tribes, other Federal agencies, private landowners, or non-governmental organizations. Tracking of cost-share information will be a shared responsibility between the Council, BPA, and the Forest Service.

The following cost share can be directly applied to the Little Bridge Creek Fence project to meet the 30% requirement for the MOU:

1. Okanogan Conservation District (FY06 decreased Admin Costs): $8,447
2. USFS (FY06 fence posts and wire): $16,360
3. USFS (FY06 water trough): $620
4. USFS (FY06 pipeline): $210
5. USFS (FY06 Planning and Design): $4,217
6. USFS (FY06 NEPA): $2,505
7. USFS (FY06 Monitoring and Evaluation Level II): $9,000
8. WDFW (FY06 Monitoring and Evaluation redd counts): $1,000
9. USFS (FY06 Monitoring and Evaluation redd surveys): $1,600
10. USFS (FY07-2015: fence posts and wire at $200/yr x 10 yrs): $2,000
11. USFS (FY07-2015 Monitoring and Evaluation Level II): $9,000
12. USFS (FY07-2015 Monitoring and Evaluation snorkelling): $4,000
13. WDFW (FY07-2015 Monitoring and Evaluation redd counts): $9,000
14. USFS (FY07-2015 Monitoring and Evaluation redd surveys): $14,400
15. Permittees (FY07-2015 Operation and Maintenance): $5,000

This cost share contribution totals $87,359, which is 108% of the estimated Total Cost to BPA (FY06: $75,019 plus FY07-FY09: $5,840 for a total of $80,859). Therefore, the USFS has more than met their 30% obligation for cost-share for the Little Bridge Creek Fence project. If their contribution for other work in the Little Bridge Creek watershed, Twisp River watershed and Methow subbasin is considered, the USFS has contributed far more than the cost of the Little Bridge Creek Fence project.

8. The proposal states that some trees will be cleared for the fence (will logging revenues be applied to project costs?).

The Little Bridge Creek Fence project is going to construct a fence, there will be no logging. The fence specifications indicate:

C.2 Clearing:

1. The fence line corridor shall be cleared to an approximate width of 12 feet, measuring 6 feet on each side of fence centerline, and 8 feet above ground. All material greater than 24 inches in height is to be removed, except any live tree 5''or greater at DBH (diameter at 4.5 feet above the ground) will stay.
2. Dead or leaning trees on or near the fence line shall be removed before the fence is built. Green leaning trees greater than 15" DBH shall not be removed unless approved by Contracting Officer.
3. Slash created by clearing fence line will be lopped to 18" and scattered outside of the fence line corridor, and not in any ditch or roadway.

4. Stumps shall be cut flat and be within 6”of the ground.
5. Conifer species must be cut below the lowest live limb.

Clearing is used to prepare the area for fence to be built and to facilitate Operation and Maintenance of the fence in the future. No logging revenues will be generated by the Little Bridge Creek Fence project.

9. Discuss possible impact on wild animal movements.

Dean McFetridge, USFS Range Management Specialist, and Jennifer Molesworth, USFS Fisheries Biologist, stated that four-strand barbed wire fence that is built to USFS specifications has not been a problem on the Methow Ranger District (2005 pers. comm.). Although deer, bear and moose are seen on the District, there has not been a documented incidence of entrapment in the fence system. The top fence wire is set at 42 inches and the bottom wire is set as high as possible to provide the best opportunity for fawns to go under and adults to go over the fence, yet stop livestock from passing through the fence.

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