



## Department of Energy

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

FREEDOM OF INFORMATION ACT PROGRAM

August 20, 2015

In reply refer to: FOIA #BPA-2015-01485-F

Arlene Montgomery  
Friends of the Wild Swan  
PO Box 103  
Bigfork, MT 59911

Ms. Montgomery:

This is the final response regarding documents transferred from the Department of the Interior, Fish and Wildlife Service (FWS-2015-00279) for Bonneville Power Administration's (BPA) review and direct response. The transfer was received in this office on June 15, 2015, and was acknowledged in a letter to you dated June 22, 2015.

You requested:

- 1) Any and all communications, meeting minutes and other correspondence between the Bureau of Reclamation, Army Corps of Engineers, Bonneville Power Administration and/or Federal Energy Regulatory Commission and U.S. Fish and Wildlife Service regarding dam operations in bull trout critical habitat since November 17, 2010.
  - 2) Any and all communications, meeting minutes and other correspondence between the Fish and Wildlife Service and other federal agencies regarding dam operations in bull trout critical habitat since November 17, 2010.
  - 3) Any and all communications, meeting minutes and other correspondence between the Fish and Wildlife Service and state agencies regarding dam operations in bull trout critical habitat since November 17, 2010.
  - 4) Any and all communications, meeting minutes and other correspondence between the Fish and Wildlife Service and agricultural or energy interests in bull trout critical habitat since November 17, 2010.
  - 5) Any and all documents that are the result of consultation between the U.S. Fish and Wildlife Service and/or Bureau of Reclamation, Army Corps of Engineers, Bonneville Power Administration and Federal Energy Regulatory Commission regarding dam operations in bull trout critical habitat since November 17, 2010.
- The FWS transferred three documents totaling 36 pages.

**Response:**

The three documents (totaling 32 pages) are released in their entirety.

There are no fees associated with this request.

**Appeal:**

Pursuant to Department of Energy FOIA regulations at 10 C.F.R. § 1004.8, you may administratively appeal this response in writing within 30 calendar days. If you choose to appeal, please include the following:

- (1) The nature of your appeal - denial of records, partial denial of records, adequacy of search, or denial of fee waiver;
- (2) Any legal authorities relied upon to support the appeal; and
- (3) A copy of the determination letter.

Clearly mark both your letter and envelope with the words "FOIA Appeal," and direct it to the following address:

Director, Office of Hearings and Appeals  
Department of Energy  
1000 Independence Avenue SW  
Washington DC 20585-1615

I appreciate the opportunity to assist you. If you have any questions, please contact Kim Winn, Case Coordinator, at 503-230-5273.

Sincerely,



C. M. Frost  
Freedom of Information/Privacy Act Officer

Enclosure: Responsive documents

**From:** [Karl Halupka](#)  
**To:** [Brian Fisher](#)  
**Cc:** [Jessica Goldberg](#)  
**Subject:** Re: Chewuch Canal Efficiencies BA  
**Date:** 09/27/2012 12:31 PM  
**Attachments:** [Chewuch Canal Efficiencies BA for USFWS.docx](#)

---

hi Brian,  
thanks for the opportunity to review this early draft BA.  
BA looks like it's ready to go. Only substantive comment I have is to add the words "and their designated critical habitat." to the last sentence.  
Checked the info sources I had available regarding bull trout use of Bear creek and they supported your findings.  
Thanks for going into some detail about flow effects in the lower Chewuch, especially using the Golder approach to describing the hydrograph. I think this makes a good case for your NLAA determinations.  
Please go ahead and send this to BPA.  
We'll be able to turn this around quickly once we get the official request (hopefully back to you by Oct 15).  
cheers,  
k

Karl Halupka  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
215 Melody Lane, Suite 103  
Wenatchee, Washington 98801-8122  
Phone: 509.665.3508 x2001  
[www.fws.gov/wafwo](http://www.fws.gov/wafwo)

▼ [Brian Fisher <brian@methowsalmon.org>](mailto:brian@methowsalmon.org)

**Brian Fisher**  
**<brian@methowsalmon.org>**

09/26/2012 05:42 PM

To: Karl Halupka <Karl\_Halupka@fws.gov>  
cc: Jessica Goldberg  
<jessica@methowsalmon.org>  
Subject: Chewuch Canal Efficiencies BA

Hi Karl,

Here is an advance nearly final draft of the BA for the Chewuch Canal Efficiencies project funded by BPA. I'm really sorry it's taken so long to finish.  
During the last review, we realized the piping from Winthrop to Bear Creek will eliminate a spill to Bear Creek, and needed to include this in the effects analysis. This periodic influx represents the majority of flow in late summer in Bear Creek. After reviewing the

available  
data, we concluded that bull trout don't really use Bear Creek,  
especially during the low flows, therefore arrived at a NLAA  
determination for that portion. We had previously thought that  
the  
Winthrop to Bear Creek piping planned to begin Oct 15 could be  
covered  
under a no effect memo.  
If you are okay with the determination and analysis, we can send  
it to  
BPA tomorrow, but we know we are well under the 30 day turn  
around  
time. Do you think it is doable?

Thank you for your help with this,

--

Brian Fisher  
Project Manager  
Methow Salmon Recovery Foundation  
(509) 387-1716



Chewuch Canal Efficiencies BA for USFWS.docx

# Biological Assessment for USFWS

---

*Chewuch Canal Efficiency under contract with Bonneville Power Administration*

Prepared by: Brian Fisher, Aquatic Ecologist, Van Hees Environmental

## 1. Introduction

The Bonneville Power Administration (BPA) is funding the Chewuch Canal Efficiency Project to reduce the impact of irrigation diversions by the Chewuch Canal Company (CCC) from the Chewuch River by reducing diversions when river flows are low. The Project includes two primary components: (1) Changing the season of reservoir filling under CCC's Reservoir Permit No. 9 through a water right change and an overriding consideration of public interest ("OCPI") determination, and (2) piping and system improvements in two identified sections of the Chewuch Canal (Lake Creek Piping and Winthrop to Bear Creek Piping). Because these two components will affect separate areas and will have substantially different effects, they are discussed individually.

Because BPA is a federal agency, it is required to analyze the effects of its actions on species listed under the Endangered Species Act (ESA) of 1973 as amended. This biological assessment assesses project impacts to Columbia River (CR) bull trout and discusses impacts to terrestrial species listed under the ESA. The construction activities are located in Pearrygin Lake, Lake Creek, Bear Creek, and adjacent uplands. At the Lake Creek Piping, including Pearrygin Lake, Lake Creek, and adjacent uplands, bull trout are not present, thus construction activities will have no effect on CR bull trout. Considering the Winthrop to Bear Creek Piping, including Bear Creek, as well as the changes to water rights, the projects May Affect, but are **Not Likely to Adversely Affect** CR bull trout. The project will have **No Effect** on gray wolves, grizzly bear, Canada lynx, or Ute ladies'-tresses.

## 2. Federally Listed Species Present

The action area for the Chewuch Canal Efficiency Project includes the lower 8 miles of the Chewuch River; Pearrygin Lake; the two construction areas including the lake outlet, Lake Creek, the area around the Chewuch Canal, and Bear Creek. The action area includes habitat for endangered Upper Columbia River (UCR) spring Chinook (*Oncorhynchus tshawytscha*), threatened Upper Columbia River steelhead (*O. mykiss*), and threatened CR bull trout (*Salvelinus confluentus*). The Chewuch River is designated critical habitat for UCR spring Chinook, UCR steelhead, and CR bull trout. Please note that there are two tributaries to the Chewuch River named Lake Creek. This project includes the Lake Creek that is the outlet to Pearrygin Lake and which does not support anadromous fish due to a natural barrier.

A natural barrier in the lower reaches of Lake Creek prevents bull trout, steelhead, and Chinook from reaching the construction area. Pearrygin Lake is managed for recreational fishing and was treated with Rotenone in 2006. The construction area includes listed critical habitat for endangered UCR spring Chinook in Lake Creek, but is above a natural barrier and is not occupied.

In Bear Creek, bull trout have been documented in the lowest reach – in the entrance to the Barkley Ditch and one individual in Bear Creek just above where it enters the Barkley Ditch. Bull trout have not been documented near or above the operational spill, and have not been documented outside of the irrigation season. There are passage barriers to bull trout under the Eastside County Road and Lower Bear Creek Road that prevent bull trout from accessing Bear Creek as high as CCC’s spill. Bear Creek is not identified as critical habitat for bull trout (USFWS 2010).

Listed wildlife species that are known or suspected to occur in the Methow watershed include the gray wolf (*Canis lupus*), grizzly bear (*Ursus arctos*), northern spotted owl (*Strix occidentalis*), and Canada lynx (*Lynx canadensis*). The only federally listed plant species that is suspected to occur in the Methow Valley is the Ute ladies’ tresses (*Spiranthes diluvialis*).

**Table 1. USFWS Jurisdiction Species List**

Species (Scientific Name)	ESA Status & Critical Habitat Designation	Effect of the Project
Bull trout, Columbia River DPS ( <i>Salvelinus confluentus</i> )	Threatened designated SR Critical Habitat	Present in Chewuch River, Not present in construction area. Construction at Lake Creek Piping will have <b>No Effect</b> . Construction at Winthrop to Bear Creek Piping <b>May Affect</b> but is <b>Not Likely to Adversely Affect bull trout</b> . Change to diversion schedule <b>May Affect</b> , but is <b>Not Likely to Adversely Affect bull trout</b> .
Gray wolf ( <i>Canis lupus</i> )	Endangered	No known occurrence in project area, no effect to prey base, very low probability of disturbance <b>No Effect</b>
Grizzly bear ( <i>Ursus arctos horribilis</i> )	Threatened	Not present, no known occurrence- <b>No Effect</b>
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	Threatened Critical Habitat	Not present, no habitat- <b>No Effect</b>
Canada lynx	Threatened	Not present, no habitat present, <b>No</b>

<i>(Lynx Canadensis)</i>		<b>Effect</b>
<i>Spiranthes diluvialis</i> (Ute ladies'-tresses)	Threatened	Not present, no habitat- <b>No Effect</b>

### 3. Project Description

#### 3.1. Background

The overall Chewuch Canal Efficiencies Project aims to reduce the impact of irrigation diversions from the Chewuch River by reducing diversions when river flows are low. This phase of the project includes two primary components: (1) Changing the season of reservoir filling under CCC’s Reservoir Permit No. 9 through a water right change and an overriding consideration of public interest (“OCPI”) determination, and (2) irrigation ditch piping and system improvements in two identified sections of the Chewuch Canal (Lake Creek Piping and Winthrop to Bear Creek Piping).

Under Water Right Claim No. 095223, CCC is authorized to divert 34 cubic feet per second (cfs) from the Chewuch River throughout the irrigation season, May 1-October 1, regardless of river flows. Under Reservoir Permit No. 9, CCC is allowed to divert 34 cfs to fill their reservoir (Pearrygin Lake) up to 1,000 acre-feet per year, but only during the non-irrigation season, October 1 to May 1. CCC’s normal practice is to divert to fill the reservoir in the fall immediately after the irrigation season, when the Chewuch River is usually below 100 cfs. At these low flows, diversions that further reduce instream flow have the potential to negatively affect ESA-listed fish and other aquatic species in the Chewuch River. Delivery of water to the lake is currently restricted to 9 cfs through a compromised pipe in the Wright Lateral; as a result, it takes approximately two months to fill the lake. To deliver 9 cfs to the lake, the CCC must divert approximately 15 cfs from the Chewuch River. This means filling the lake currently requires a diversion of about 15 cfs from the Chewuch River during October and November.

Under their Water Right, CCC provides water via a combination of open ditch and more recently piped canal sections, using Pearrygin Lake as a reservoir, and the seasonal Lake Creek as an open ditch in their canal system. From the intake in the Chewuch River, there are approximately 6 miles of open ditch, with diverted water flowing into or adjacent to Pearrygin Lake, entering Lake Creek and then being diverted into a piped section which extends south to the southern edge of the Town of Winthrop, where there is approximately 1.5 miles of open ditch, an operational spill into Bear Creek, and then the ditch is piped until the end. The Bear Creek spill puts water into Bear Creek, which due to upstream water rights, often runs dry by late summer above the spill. Below the spill, Bear Creek has water added to it by a spill on the Fulton Ditch, and then Bear Creek runs into the intake to the Barkley Ditch, which is located above Barkley’s fish screen.

### 3.2. Proposed Improvements

To reduce diversions from the Chewuch River during low flow periods, this project includes a flow reduction agreement, infrastructure improvements, and changes to the water rights. The project will change CCC's storage right under Reservoir Permit No. 9 to allow diverting to fill the lake year-round and restrict diversions when river levels are below 100 cfs. This will shift diversions from low-flow periods to high-flow periods, increasing fall instream flows to benefit ESA-listed fish in the Chewuch River. The water rights change is currently in progress, and it is anticipated that the Washington State Department of Ecology will approve the water right change application, No. CR4-CV1-3P18, by fall 2012.

The second component of the project aims to improve irrigation efficiencies by piping sections of open ditch, including one operational spill, and improving irrigation infrastructure around the Pearrygin Lake reservoir. By addressing the existing restriction in the Wright Lateral, the CCC should be able to fill the reservoir in the spring in as few as three weeks, rather than the two months required with the existing infrastructure. This will allow CCC to fill the reservoir in the spring, when the diversions are expected to be less harmful to ESA-listed fish. As a condition of a Diversion Reduction Agreement between CCC and Trout Unlimited, once the efficiencies are complete CCC will be required to fill the reservoir in the spring and reduce its diversion rate to 24 cfs when flows in the Chewuch River are below 100 cfs.

For ease of understanding, the affects of the construction activities, the changes to diversion rates in the Chewuch River, and the affects to Bear Creek are analyzed separately. These activities will not have any cumulative adverse affects.

## 4. Construction Activities

The Chewuch Canal Efficiencies project includes five construction elements:

- *Lake Creek Pipe*: a new pipe in the hillside above Lake Creek between Pearrygin Lake and the existing Bubbler debris screen;
- *Pearrygin Intake Structure*: a new intake structure at Pearrygin Lake to supply the Lake Creek Pipe;
- *Silverline Pipe*: a new pipe connecting the Wright Lateral and the new Lake Creek Pipe;
- *Debris, Flow Control, and Flow Metering Structures*: two new debris screening structures in upland areas; a new concrete flow metering structure and two new flow control structures in the new and existing pipe alignments near the Bubbler
- *Winthrop to Bear Creek Pipe*: a conversion of existing open irrigation ditch to pipe in the area between the south city limits of the Town of Winthrop and Bear Creek;

## 4.1. Construction Project Area Description

The construction portion of the project will occur in a mix of riparian and upland habitat. The upland habitat consists of a mix of steep and rolling hillsides, dominated by grasses but invaded with weedy species. The riparian habitat within the project area is around Lake Creek, Pearrygin Lake, and Bear Creek in a narrow line of riparian shrubs along stream banks, including birch, willow, and hawthorn. The pipe also crosses several wetlands in the vicinity of Lake Creek & Pearrygin Lake.

Pearrygin Lake is used as a reservoir by CCC, who manages the top 5 feet of water (1,000 acre-feet per year). Pearrygin Lake is currently managed to spill water into Lake Creek during the spring freshet and in a controlled manner in late summer and fall to supply off-site irrigation .

Lake Creek is a seasonal creek that has been used by CCC to transport irrigation water from the Pearrygin Lake reservoir to the main ditch of their irrigation system. Prior to Lake Creek being used to transport CCC irrigation water, the creek ran seasonally during spring high water. Typically, once the irrigation water is shut off in the fall, Lake Creek does not run again until the following spring.

Bear Creek is a seasonal creek that has been used by CCC to waste water as needed from an operational spill. Due to upstream water rights, Bear Creek typically runs dry by mid-late summer above CCC's spill. Below the CCC spill, the Fulton Ditch also spills into Bear Creek. Bear Creek empties into the Barkley intake canal above Barkley Ditch's fish screen.

### 4.1.1. Lake Creek Pipe:

Currently, irrigation water exiting Pearrygin Lake runs down Lake Creek to the Bubbler, an existing debris screening structure that directs irrigation water out of Lake Creek and down through a pipe to the main Chewuch Canal, where it serves down-valley irrigation users. To improve irrigation efficiency, this project will install a new pipe in the hillside above and roughly parallel to Lake Creek to convey irrigation water from the Pearrygin Lake reservoir and thus remove the irregular influx of ditch water from Lake Creek and its associated wetlands (See Figure 3).

### 4.1.2. Pearrygin Intake Structure:

This project will add a new diversion structure at the lake adjacent to the existing dam and within the outflow bay to Lake Creek. The new diversion will connect directly to the Lake Creek Pipe and serve as the intake to the canal system when the reservoir water is required for irrigation, and as the outlet to the lake while the reservoir is being filled. The existing Lake Creek dam will remain in place.

### 4.1.3. Silverline Pipe:

To assist with filling the reservoir on a compressed spring/early summer schedule, a new, larger pipe will be installed to augment the compromised section of the Wright Lateral pipe that runs beneath the Silverline Resort campground to supply several irrigators and fill Pearrygin Lake. The new pipe will be installed through a vacant field at the Silverline Resort and will help increase the filling efficiency of Pearrygin Lake by bypassing the compromised section of the Wright Lateral. The Silverline Pipe will

**Commented [JG1]:** Does this cover the Winthrop to Bear section, or do we need to talk about Bear Creek?

not flow directly into Pearrygin Lake; rather, it will connect the Wright Lateral to the new Lake Creek Pipe.

#### **4.1.4. Debris, Flow Control, and Flow Metering Structures:**

The project will construct two new debris screening structures to remove debris carried down the six-mile stretch of open ditch between the Chewuch River and the lake. These structures will be installed in upland areas along the Wright Lateral; the section of open ditch between these two new structures will also be widened and deepened.

A concrete flow control structure will be installed in the existing pipe between the Bubbler and the junction of the new Lake Creek Pipe. In addition, a flow metering structure and a flow control structure will be installed in the new Lake Creek pipe near the junction of the new pipe and the existing pipe. This will allow the section of Lake Creek Pipe between the Pearrygin Intake and the Silverline Pipe to operate bi-directionally, depending on whether the irrigation water is entering the lake to fill the reservoir or exiting the lake for use by down-valley irrigation users.

#### **4.1.5. Winthrop to Bear Creek Pipe:**

This portion of the project will improve irrigation efficiencies by converting existing open canal to pressurized pipe. Pipe will be installed within the existing irrigation ditch alignment in approximately 1 ½ miles of canal from the south city limit of Winthrop to Bear Creek. This newly piped section will connect two existing sections of pipe installed previously by the canal company. An existing operational spill from the open canal into Bear Creek will no longer be needed and will be eliminated during piping.

### **4.2. Effects Analysis- Construction Activities**

The construction activities of this project are expected to have “No Effect” on ESA listed fish, plants or terrestrial wildlife species. The project site is not appropriate habitat for Ute Ladies’ tresses. The site is not remote, is in near developed areas with regular human activity, and is at low elevation, so it is not appropriate habitat for grizzly bear or Canada lynx. The project site is outside of the known range and is not appropriate habitat for Northern Spotted Owl.

Gray wolves inhabit the Methow watershed; most sightings are in the Twisp River and Libby Creek drainages far south of the project area. There have been no recent reports of gray wolves near the project area. The project will not affect the prey base or be cause a significant increase in human disturbance, so will have no effect on grey wolves.

As mentioned previously, bull trout, spring Chinook, and steelhead are not present in Pearrygin Lake or Lake Creek. Pearrygin Lake was treated with Rotenone in 2006 and the natural barrier in Lake Creek and the fish screens at the CCC intake structure will have prevented these fish from colonizing the lake since the treatment. Bull trout have been documented in the lowest reaches of Bear Creek but not up as high as the spill, and all construction work associated with piping the spill will be adjacent to Bear

Creek, not in Bear Creek. Because bull trout are not present in or around the construction area and the construction will not affect the habitat in any areas bull trout are able to access, the construction portion of the project will have **No Effect** on bull trout or their habitat.

## 5. Bear Creek Spill

### 5.1.Existing Conditions

An operational spill on the Chewuch Canal at Bear Creek allows ditch operators to control water amounts entering into the closed pipe downstream by spilling water into Bear Creek. Upstream water rights often divert all of the water in Bear Creek, causing the creek to run dry by late summer down to the CCC spill. All of the summer flow in the lower reaches of Bear Creek comes from spills from the CCC and Fulton ditches. Bear Creek flows into the Barkley intake canal above the Barkley fish screen. During the irrigation season, fish can enter Bear Creek from the Methow River through Barkley's intake gate and canal.

### 5.2.Proposed Improvements

As part of this project, improvements to existing irrigation infrastructure includes piping the existing spill, thus no water will spill from CCC into Bear Creek. This will extend the dry section of Bear Creek downstream to the Fulton operational spill. Without the CCC spill, summer flows will be significantly reduced in lower Bear Creek.

### 5.3.Effects Analysis- Bear Creek Spill

Bear Creek is potential bull trout habitat from where it flows into the Barkely intake canal to the culvert under Lower Bear Creek Road approximately ¼ mile upstream. In repeated sampling in this reach between 2007 and 2008, one bull trout was observed in Bear Creek in June 2008, during high water. Bull trout are also observed in the Barkely intake canal. During summer, low flows and warm water temperatures mean that Bear Creek is marginal to poor habitat. The few observations and the marginal habitat suggest bull trout use Bear Creek for opportunistic foraging. The proposed change will reduce summer flows in the lower reaches of Bear Creek. This affects Bear Creek when the habitat is least attractive, so the reduction of flow in this marginal habitat would not negatively affect bull trout. Therefore, eliminating the CCC spill into Bear Creek may affect, but is not likely to adversely affect bull trout.

## 6. Diversion Timing Change

### 6.1.Existing Conditions

Under their current water rights, CCC can divert 34 cfs for irrigation from May 1 through September 30 regardless of flow in the Chewuch River. From October 1 through April 30th (weather permitting)

they can divert up to 34 cfs to fill Pearrygin Lake for a total of 1,000 acre-feet per year. The current water rights do not allow the CCC to fill the lake during the irrigation season. In practice, the physical infrastructure limits the delivery rate, so it takes 2 months for the CCC to fill the lake in the fall. During this time, they divert approximately 15 cfs from the beginning of October through the end of November, while flows in the Chewuch River are low.

### 6.2. Proposed Improvements

As part of this project, CCC is entering into a permanent agreement with Washington Water Project of Trout Unlimited (WWP) to restrict their diversion to 24 cfs when flows in the Chewuch River are below 100 cfs. The infrastructure improvements will allow them to fill the lake at a rate of up to 28 cfs during high flow periods, allowing them to fill the lake in as few as 18 days. Changing the storage water right to allow water to be put into the lake during the irrigation season will allow a portion of this to overlap with irrigation diversions when demand is low. Together, these changes will allow the CCC to fill the lake in the spring, when river flows are high and the impact to the river is lower.

These improvements will benefit to ESA-listed fish by (1) reducing diversions by 10 cfs during low flow periods in the irrigation season, May 1- Sept 30, and (2) moving the diversion to Pearrygin Lake from fall to spring. This will result in more water in the river during late summer and fall low-flow periods. The changes will not increase the maximum diversion rate at any time, and will not change the total volume diverted. Because they will be filling the reservoir in the spring, diversions from the Chewuch River will begin earlier in the year.

### 6.3. Effects Analysis- Change in Diversion Timing

The project area for the diversion changes is the area downstream of the CCC diversion, or the lower approximately 8 miles of the Chewuch River. The project area is within designated feeding, migration, and overwinter (FMO) critical habitat for Columbia River Bull trout (USFWS 2010). Sub-adult and adult bull trout are present in this reach of the Methow year around, so there may be bull trout present in and immediately downstream of the project area during both periods with increases and decreases in irrigation diversions. The bull trout will experience the change as higher flows in late summer and fall, and lower flows in the spring. No direct affects are expected.

Commented [KW2]: Citation at end for this!!

#### 6.3.6. Critical Habitat Primary Constituent Elements

Bull trout are dependant on a suite of physical and biological features essential to their growth and survival. These factors are the Primary Constituent Elements of bull trout habitat. The critical habitat designation (2010) identifies nine factors as PCE's for bull trout, including groundwater connectivity, migration habitat without physical, biological, or water quality barriers, abundant food base, complex in-stream habitat, cool water, spawning substrate, a natural hydrograph, sufficient water quality and quantity, and low levels of non-native predators and competitors. This project will not affect habitat complexity; substrate size, quantity or distribution; or the food base for bull trout. Moving diversions from low flow to high flow periods will not impair, and may help maintain water temperature, water

quality, perennial water distribution, and passage through migratory corridors in the lower 8 miles of the Chewuch River. The project is not expected to change the abundance or distribution of non-native species in the Chewuch watershed.

The project will affect the hydrograph of the lower 8 miles of the Chewuch River, so requires more discussion. The Golder report on streamflow in the Chewuch River (2002) divided the hydrograph into five sections, the rising limb, peak flow, peak flow recession, base flow recession, and baseflow. This framework is helpful for discussing flows in the Chewuch River and how the changes to diversion timing will affect fish and other aquatic organisms. Generally in the Chewuch River, baseflow begins in late summer and persists through fall and winter. The river responds to melting snowpack with rising flows in the spring. Peak flows in the Chewuch River occur in May-June with a median annual peak of about 2000 cfs. Peak flow recession is the period when flows are declining and most of the flow comes from snowmelt. Baseflow recession is the period of declining flows when most of the flow is coming from groundwater.

The Chewuch River hydrograph is considered to be functioning at risk while moving toward restoration. Peak flows are believed to be within their natural range of variability, with total diversions from the river amounting to less than 5% of typical peak flows. Peak flows are therefore considered to be functioning appropriately. Base flows are considered to be functioning at risk with a net impact of irrigation diversions amounting to 30 to 50 cfs from a baseflow of about 70 cfs (Golder Associates 2002). Irrigation efficiency improvements since 2002 have reduced the total diversions during baseflow.

By allowing the CCC to fill the reservoir in the spring, this project will allow CCC to move diversions from the fall baseflow period to the spring rising limb and peak flow periods. During the irrigation season, the total irrigation diversions will continue to be limited to 34 cfs during peak flow, peak flow recession and baseflow recession periods. Therefore, the project will not affect these portions of the hydrograph. Limiting flows to 24 cfs will reduce diversions during late summer baseflow, and not filling the lake in the fall will allow the CCC to shut down earlier in the year; these changes will increase flows during late summer and early fall.

The one period when there is potential for diversions not currently possible is in the spring. If low flows persist later than normal, this could mean diversions during spring low flows. If diversions were to start before flows begin to increase, this would mean that flows drop in the spring. This is expected to be a rare occasion, because flows typically begin to increase in before the time when the ditch would need to turn on to fill the reservoir. Flows typically begin to increase in March, but on occasion the spring freshet does not begin until April or early May. Based on the period of record, at USGS gauge #12448000, and allowing three weeks to fill the reservoir before irrigation starts on May 1<sup>st</sup>, spring diversions during periods below 100 cfs would be required about 1 year out of 10. Since irrigation demand is typically lower in the first few weeks of the irrigation season, a portion of the lake

could be filled during the May, while also providing water for irrigation. Assuming half of the water for the reservoir could be provided during the irrigation season, this approach could reduce the need to divert during spring low flows to about 1 out of 20 years.

Bull trout move from overwinter areas to spawning areas with increasing spring flows. During this time, they respond to flow triggers. Consequently, in low flow years when the ditch is turned on before the river flows increase in the spring, bull trout are likely to remain in the overwinter areas until flows increase above baseflow levels. Once flows begin to increase above baseflow levels, they tend to go up quickly. Because of this the 34 cfs diversion would be quickly lost in the increasing spring flows. Fish responding to flow triggers would not be delayed once flows begin to rise. In most years, river flows begin to rise before the ditch will be turned on, so the project will not change the flows bull trout are responding to. Therefore, the earlier ditch turn on to fill the reservoir may result in some fish remaining in overwinter areas for up to a few additional days in low flow years. This affect would be mitigated by reduced diversions in almost all years during low flows in summer and fall.

This project is expected to benefit base flows in the lower eight miles of the Chewuch River by reducing diversions for both irrigation and storage during base flow periods. This will continue the trend of the baseflow moving toward restoration.

## 7. Effects Determination

As outlined above, the construction activities at Lake Creek Piping will have no direct or indirect effects to bull trout. The construction activities at Winthrop to Bear Creek piping will stop the spilling of water into Bear Creek, which will increase fish dependency on natural water in Bear Creek, which as it dries up will signal bull trout to move downstream until they encounter spill water from the Fulton Ditch. The changes to diversion timing will increase flows in late summer and fall, while slightly decreasing flows during spring high water. The earlier ditch turn on may delay some bull trout on their overwinter areas for several days during low flow years. All effects to the primary constituent elements of bull trout critical habitat are expected to be neutral or beneficial. Consequently we find that the proposed action “**May Affect but is Not Likely to Adversely Affect**” bull trout.

## 8. References

Golder Associates. 2002. Draft report on Streamflow and Channel Analysis Chewuch River. Golder Associates Inc.

**From:** [Gresh, Ted S \(CONTR\) - KEC-4](#)  
**To:** ['Karl\\_Halupka@fws.gov'](mailto:Karl_Halupka@fws.gov)  
**Subject:** RE: Chewuch Canal BA  
**Date:** 09/28/2012 03:39 PM  
**Attachments:** [Final Chewuch Canal Efficiencies BA for USFWS.docx](#)  
[Chewuch Canal BA Coverletter.doc](#)

---

Thanks Carl. Here it is. Hard copy going out today.

Ted

---

**From:** Karl\_Halupka@fws.gov [mailto:Karl\_Halupka@fws.gov]  
**Sent:** Friday, September 28, 2012 3:23 PM  
**To:** Gresh, Ted S (CONTR) - KEC-4  
**Subject:** Re: Chewuch Canal BA

hi Ted,  
Yes, please send hard copy to the mailing address you provided, and an e-mail to me will help to expedite our reply.  
cheers,  
Karl

Karl Halupka  
Fish and Wildlife Biologist  
U.S. Fish and Wildlife Service  
215 Melody Lane, Suite 103  
Wenatchee, Washington 98801-8122  
Phone: 509.665.3508 x2001  
[www.fws.gov/wafwo](http://www.fws.gov/wafwo)

▼ "Gresh, Ted S (CONTR) - KEC-4" <esgresh@bpa.gov>

"Gresh, Ted S (CONTR) - KEC-4" <esgresh@bpa.gov>  
To "Karl\_Halupka@fws.gov" <Karl\_Halupka@fws.gov>  
cc  
Subject Chewuch Canal BA

09/28/2012 02:34 PM

Hi Karl,

I just received the BA for the Chewuch Canal Project from Trout Unlimited. I see in their email that you reviewed a draft of it. I am the EC lead for BPA so I will be submitting this to USFWS. I have previously sent BAs to:

Jessica Gonzales, Assistant Project Leader

USFWS - Central Washington Field Office  
215 Melody Lane, Suite 103  
Wenatchee, WA 98801-8122

Should I send it there and email a copy to you?

Thanks,

Ted  
Ted Gresh  
CRGT, Inc.  
Environmental Protection Specialist  
Bonneville Power Administration, KEC-4  
905 NE 11th Ave  
Portland, OR 97206  
P: 503.230.5756 F: 503.230.5699  
esgresh@bpa.gov

# Biological Assessment for USFWS

---

## *Chewuch Canal Efficiency under contract with Bonneville Power Administration*

Prepared by: Brian Fisher, Aquatic Ecologist, Van Hees Environmental

### 1. Introduction

The Bonneville Power Administration (BPA) is funding the Chewuch Canal Efficiency Project to reduce the impact of irrigation diversions by the Chewuch Canal Company (CCC) from the Chewuch River by reducing diversions when river flows are low. The Project includes two primary components: (1) Changing the season of reservoir filling under CCC's Reservoir Permit No. 9 through a water right change and an overriding consideration of public interest ("OCPI") determination, and (2) piping and system improvements in two identified sections of the Chewuch Canal (Lake Creek Piping and Winthrop to Bear Creek Piping). Because these two components will affect separate areas and will have substantially different effects, they are discussed individually.

Because BPA is a federal agency, it is required to analyze the effects of its actions on species listed under the Endangered Species Act (ESA) of 1973 as amended. This biological assessment assesses project impacts to Columbia River (CR) bull trout and discusses impacts to terrestrial species listed under the ESA. The construction activities are located in Pearrygin Lake, Lake Creek, Bear Creek, and adjacent uplands. At the Lake Creek Piping, including Pearrygin Lake, Lake Creek, and adjacent uplands, bull trout are not present, thus construction activities will have no effect on CR bull trout. Considering the Winthrop to Bear Creek Piping, including Bear Creek, as well as the changes to water rights, the projects **May Affect**, but are **Not Likely to Adversely Affect** CR bull trout. The project will have **No Effect** on gray wolves, grizzly bear, Canada lynx, or Ute ladies'-tresses.

### 2. Federally Listed Species Present

The action area for the Chewuch Canal Efficiency Project includes the lower 8 miles of the Chewuch River; Pearrygin Lake; the two construction areas including the lake outlet, Lake Creek, the area around the Chewuch Canal, and Bear Creek. The action area includes habitat for endangered Upper Columbia River (UCR) spring Chinook (*Oncorhynchus tshawytscha*), threatened Upper Columbia River steelhead (*O. mykiss*), and threatened CR bull trout (*Salvelinus confluentus*). The Chewuch River is designated critical habitat for UCR spring Chinook, UCR steelhead, and CR bull trout. Please note that there are two tributaries to the Chewuch River named Lake Creek; this project includes the Lake Creek that is the outlet to Pearrygin Lake and which does not support anadromous fish due to a natural barrier.

A natural barrier in the lower reaches of Lake Creek prevents bull trout, steelhead, and Chinook from reaching the construction area. Pearrygin Lake is managed for recreational fishing and was treated with Rotenone in 2006. The construction area includes listed critical habitat for endangered UCR spring Chinook in Lake Creek, but is above a natural barrier and is not occupied.

In Bear Creek, bull trout have been documented in the lowest reach – in the entrance to the Barkley Ditch and one individual in Bear Creek just above where it enters the Barkley Ditch. Bull trout have not been documented near or above the operational spill, and have not been documented outside of the irrigation season. There are passage barriers to bull trout under the Eastside County Road and Lower Bear Creek Road that prevent bull trout from accessing Bear Creek as high as CCC’s spill. Bear Creek is not identified as critical habitat for bull trout (USFWS 2010).

Listed wildlife species that are known or suspected to occur in the Methow watershed include the gray wolf (*Canis lupus*), grizzly bear (*Ursus arctos*), northern spotted owl (*Strix occidentalis*), and Canada lynx (*Lynx canadensis*). The only federally listed plant species that is suspected to occur in the Methow Valley is the Ute ladies’ tresses (*Spiranthes diluvialis*).

**Table 1. USFWS Jurisdiction Species List**

<b>Species (Scientific Name)</b>	<b>ESA Status &amp; Critical Habitat Designation</b>	<b>Effect of the Project</b>
Bull trout, Columbia River DPS ( <i>Salvelinus confluentus</i> )	Threatened designated SR Critical Habitat	Present in Chewuch River, Not present in construction area. Construction at Lake Creek Piping will have <b>No Effect</b> . Construction at Winthrop to Bear Creek Piping <b>May Affect</b> but is <b>Not Likely to Adversely Affect bull trout</b> . Change to diversion schedule <b>May Affect</b> , but is <b>Not Likely to Adversely Affect bull trout</b> .
Gray wolf ( <i>Canis lupus</i> )	Endangered	No known occurrence in project area, no effect to prey base, very low probability of disturbance- <b>No Effect</b>
Grizzly bear ( <i>Ursus arctos horribilis</i> )	Threatened	Not present, no known occurrence- <b>No Effect</b>
Northern spotted owl ( <i>Strix occidentalis caurina</i> )	Threatened Critical Habitat	Not present, no habitat- <b>No Effect</b>
Canada lynx	Threatened	Not present, no habitat present, <b>No</b>

<i>(Lynx Canadensis)</i>		<b>Effect</b>
<i>Spiranthes diluvialis</i> (Ute ladies'-tresses)	Threatened	Not present, no habitat- <b>No Effect</b>

### 3. Project Description

#### 3.1. Background

The overall Chewuch Canal Efficiencies Project aims to reduce the impact of irrigation diversions from the Chewuch River by reducing diversions when river flows are low. This phase of the project includes two primary components: (1) Changing the season of reservoir filling under CCC’s Reservoir Permit No. 9 through a water right change and an overriding consideration of public interest (“OCPI”) determination, and (2) irrigation ditch piping and system improvements in two identified sections of the Chewuch Canal (Lake Creek Piping and Winthrop to Bear Creek Piping).

Under Water Right Claim No. 095223, CCC is authorized to divert 34 cubic feet per second (cfs) from the Chewuch River throughout the irrigation season, May 1-October 1, regardless of river flows. Under Reservoir Permit No. 9, CCC is allowed to divert 34 cfs to fill their reservoir (Pearrygin Lake) up to 1,000 acre-feet per year, but only during the non-irrigation season, October 1 to May 1. CCC’s normal practice is to divert to fill the reservoir in the fall immediately after the irrigation season, when the Chewuch River is usually below 100 cfs. At these low flows, diversions that further reduce instream flow have the potential to negatively affect ESA-listed fish and other aquatic species in the Chewuch River. Delivery of water to the lake is currently restricted to 9 cfs through a compromised pipe in the Wright Lateral; as a result, it takes approximately two months to fill the lake. To deliver 9 cfs to the lake, the CCC must divert approximately 15 cfs from the Chewuch River. This means filling the lake currently requires a diversion of about 15 cfs from the Chewuch River during October and November.

Under their Water Right, CCC provides water via a combination of open ditch and more recently piped canal sections, using Pearrygin Lake as a reservoir, and the seasonal Lake Creek as an open ditch in their canal system. From the intake in the Chewuch River, there are approximately 6 miles of open ditch, with diverted water flowing into or adjacent to Pearrygin Lake, entering Lake Creek and then being diverted into a piped section which extends south to the southern edge of the Town of Winthrop. From the Winthrop town limits, there are approximately 1.5 miles of open ditch, an operational spill into Bear Creek, and then the ditch is piped until the end. The Bear Creek spill puts water into Bear Creek, which due to upstream water rights often runs dry by late summer above the spill. Below the spill, Bear Creek has water added to it by a spill on the Fulton Ditch, and then Bear Creek runs into the intake to the Barkley Ditch, which is located above Barkley’s fish screen.

### 3.2. Proposed Improvements

To reduce diversions from the Chewuch River during low flow periods, this project includes a flow reduction agreement, infrastructure improvements, and changes to the water rights. The project will change CCC's storage right under Reservoir Permit No. 9 to allow diverting to fill the lake year-round and restrict diversions when river levels are below 100 cfs. This will shift diversions from low-flow periods to high-flow periods, increasing fall instream flows to benefit ESA-listed fish in the Chewuch River. The water rights change is currently in progress, and it is anticipated that the Washington State Department of Ecology will approve the water right change application, No. CR4-CV1-3P18, by fall 2012.

The second component of the project aims to improve irrigation efficiencies by piping sections of open ditch, including one operational spill, and improving irrigation infrastructure around the Pearrygin Lake reservoir (Figures 1 and 2). By addressing the existing restriction in the Wright Lateral, the CCC should be able to fill the reservoir in the spring in as few as three weeks, rather than the two months required with the existing infrastructure. This will allow CCC to fill the reservoir in the spring, when the diversions are expected to be less harmful to ESA-listed fish. As a condition of a Diversion Reduction Agreement between CCC and Trout Unlimited, once the efficiencies are complete CCC will be required to fill the reservoir in the spring and reduce its diversion rate to 24 cfs when flows in the Chewuch River are below 100 cfs.

For ease of understanding, the effects of the construction activities, the changes to diversion rates in the Chewuch River, and the effects to Bear Creek are analyzed separately. These activities will not have any cumulative adverse effects.

## 4. Construction Activities

The Chewuch Canal Efficiencies project includes five construction elements:

- *Lake Creek Pipe*: a new pipe in the hillside above Lake Creek between Pearrygin Lake and the existing Bubbler debris screen;
- *Pearrygin Intake Structure*: a new intake structure at Pearrygin Lake to supply the Lake Creek Pipe;
- *Silverline Pipe*: a new pipe connecting the Wright Lateral and the new Lake Creek Pipe;
- *Debris, Flow Control, and Flow Metering Structures*: two new debris screening structures in upland areas; a new concrete flow metering structure and two new flow control structures in the new and existing pipe alignments near the Bubbler;
- *Winthrop to Bear Creek Pipe*: a conversion of existing open irrigation ditch to pipe in the area between the south city limits of the Town of Winthrop and Bear Creek.

## **4.1. Construction Project Area Description**

The construction portion of the project will occur in a mix of riparian and upland habitat. The upland habitat consists of a mix of steep and rolling hillsides, dominated by grasses but invaded with weedy species. The riparian habitat within the project area is around Lake Creek, Pearrygin Lake, and Bear Creek in a narrow line of riparian shrubs along stream banks, including birch, willow, and hawthorn. The pipe also crosses several wetlands in the vicinity of Lake Creek & Pearrygin Lake.

Pearrygin Lake is used as a reservoir by CCC, which manages the top 5 feet of water (1,000 acre-feet per year). Pearrygin Lake is currently managed to spill water into Lake Creek during the spring freshet and in a controlled manner in late summer and fall to supply off-site irrigation.

Lake Creek is a seasonal creek that has been used by CCC to transport irrigation water from the Pearrygin Lake reservoir to the main ditch of their irrigation system. Prior to Lake Creek being used to transport CCC irrigation water, the creek ran seasonally during spring high water. Typically, once the irrigation water is shut off in the fall, Lake Creek does not run again until the following spring.

Bear Creek is a seasonal creek that has been used by CCC to waste water as needed from an operational spill. Due to upstream water rights, Bear Creek typically runs dry by mid-late summer above CCC's spill. Below the CCC spill, the Fulton Ditch also spills into Bear Creek. Bear Creek empties into the Barkley intake canal above Barkley Ditch's fish screen.

### **4.1.1. Lake Creek Pipe:**

Currently, irrigation water exiting Pearrygin Lake runs down Lake Creek to the Bubbler, an existing debris screening structure that directs irrigation water out of Lake Creek and down through a pipe to the main Chewuch Canal, where it serves down-valley irrigation users. To improve irrigation efficiency, this project will install a new pipe in the hillside above and roughly parallel to Lake Creek to convey irrigation water from the Pearrygin Lake reservoir and thus remove the irregular influx of ditch water from Lake Creek and its associated wetlands (see Figures 2 and 3).

### **4.1.2. Pearrygin Intake Structure:**

This project will add a new diversion structure at the lake adjacent to the existing dam and within the outflow bay to Lake Creek. The new diversion will connect directly to the Lake Creek Pipe and serve as the intake to the canal system when the reservoir water is required for irrigation, and as the outlet to the lake while the reservoir is being filled. The existing Lake Creek dam will remain in place (see Figure 2).

### **4.1.3. Silverline Pipe:**

To assist with filling the reservoir on a compressed spring/early summer schedule, a new, larger pipe will be installed to augment the compromised section of the Wright Lateral pipe that runs beneath the Silverline Resort campground to supply several irrigators and fill Pearrygin Lake. The new pipe will be installed through a vacant field at the Silverline Resort and will help increase the filling efficiency of

Pearrygin Lake by bypassing the compromised section of the Wright Lateral. The Silverline Pipe will not flow directly into Pearrygin Lake; rather, it will connect the Wright Lateral to the new Lake Creek Pipe (see Figure 2).

#### **4.1.4. Debris, Flow Control, and Flow Metering Structures:**

The project will construct two new debris screening structures to remove debris carried down the six-mile stretch of open ditch between the Chewuch River and the lake. These structures will be installed in upland areas along the Wright Lateral; the section of open ditch between these two new structures will also be widened and deepened.

A concrete flow control structure will be installed in the existing pipe between the Bubbler and the junction of the new Lake Creek Pipe. In addition, a flow metering structure and a flow control structure will be installed in the new Lake Creek pipe near the junction of the new pipe and the existing pipe. This will allow the section of Lake Creek Pipe between the Pearrygin Intake and the Silverline Pipe to operate bi-directionally, depending on whether the irrigation water is entering the lake to fill the reservoir or exiting the lake for use by down-valley irrigation users (see Figure 2).

#### **4.1.5. Winthrop to Bear Creek Pipe:**

This portion of the project will improve irrigation efficiencies by converting existing open canal to pressurized pipe. Pipe will be installed within the existing irrigation ditch alignment in approximately 1 ½ miles of canal from the south city limit of Winthrop to Bear Creek. This newly piped section will connect two existing sections of pipe installed previously by the canal company. An existing operational spill from the open canal into Bear Creek will no longer be needed and will be eliminated during piping (see Figure 4).

### **4.2. Effects Analysis- Construction Activities**

The construction activities of this project are expected to have “No Effect” on ESA listed fish, plants or terrestrial wildlife species. The project site is not appropriate habitat for Ute Ladies’ tresses. The site is not remote, is in near developed areas with regular human activity, and is at low elevation, so it is not appropriate habitat for grizzly bear or Canada lynx. The project site is outside of the known range and is not appropriate habitat for Northern Spotted Owl.

Gray wolves inhabit the Methow watershed; most sightings are in the Twisp River and Libby Creek drainages far south of the project area. There have been no recent reports of gray wolves near the project area. The project will not affect the prey base or cause a significant increase in human disturbance, so will have no effect on grey wolves.

As mentioned previously, bull trout, spring Chinook, and steelhead are not present in Pearrygin Lake or Lake Creek. Pearrygin Lake was treated with Rotenone in 2006 and the natural barrier in Lake Creek and the fish screens at the CCC intake structure will have prevented these fish from colonizing the lake since the treatment. Bull trout have been documented in the lowest reaches of Bear Creek but not up

as high as the spill, and all construction work associated with piping the spill will be adjacent to Bear Creek, not in Bear Creek. Because bull trout are not present in or around the construction area and the construction will not affect the habitat in any areas bull trout are able to access, the construction portion of the project will have **No Effect** on bull trout or their habitat.

## 5. Bear Creek Spill

### 5.1.Existing Conditions

An operational spill on the Chewuch Canal at Bear Creek allows ditch operators to control water amounts entering into the closed pipe downstream by spilling water into Bear Creek. Upstream water rights often divert all of the water in Bear Creek, causing the creek to run dry by late summer down to the CCC spill. All of the summer flow in the lower reaches of Bear Creek comes from spills from the CCC and Fulton ditches. Bear Creek flows into the Barkley intake canal above the Barkley fish screen. During the irrigation season, fish can enter Bear Creek from the Methow River through Barkley's intake gate and canal.

### 5.2.Proposed Improvements

As part of this project, improvements to existing irrigation infrastructure includes piping the existing spill, thus no water will spill from CCC into Bear Creek. This will extend the dry section of Bear Creek downstream to the Fulton operational spill. Without the CCC spill, summer flows will be significantly reduced in lower Bear Creek.

### 5.3.Effects Analysis- Bear Creek Spill

Bear Creek is potential bull trout habitat from where it flows into the Barkley intake canal to the culvert under Lower Bear Creek Road approximately ¼ mile upstream. In repeated sampling in this reach between 2007 and 2008, one bull trout was observed in Bear Creek in June 2008, during high water. Bull trout are also observed in the Barkley intake canal. During summer, low flows and warm water temperatures mean that Bear Creek is marginal to poor habitat. The few observations and the marginal habitat suggest bull trout use Bear Creek for opportunistic foraging. The proposed change will reduce summer flows in the lower reaches of Bear Creek. This affects Bear Creek when the habitat is least attractive, so the reduction of flow in this marginal habitat would not negatively affect bull trout. Therefore, eliminating the CCC spill into Bear Creek **May affect, but is Not Likely to Adversely Affect** bull trout.

## **6. Diversion Timing Change**

### **6.1.Existing Conditions**

Under their current water rights, CCC can divert 34 cfs for irrigation from May 1 through September 30 regardless of flow in the Chewuch River. From October 1 through April 30th (weather permitting) they can divert up to 34 cfs to fill Pearrygin Lake for a total of 1,000 acre-feet per year. The current water rights do not allow the CCC to fill the lake during the irrigation season. In practice, the physical infrastructure limits the delivery rate, so it takes 2 months for the CCC to fill the lake in the fall. During this time, they divert approximately 15 cfs from the beginning of October through the end of November, while flows in the Chewuch River are low.

### **6.2.Proposed Improvements**

As part of this project, CCC is entering into a permanent agreement with Washington Water Project of Trout Unlimited (WWP) to restrict their diversion to 24 cfs when flows in the Chewuch River are below 100 cfs. The infrastructure improvements will allow them to fill the lake at a rate of up to 28 cfs during high flow periods, allowing them to fill the lake in as few as 18 days. Changing the storage water right to allow water to be put into the lake during the irrigation season will allow a portion of this to overlap with irrigation diversions when demand is low. Together, these changes will allow the CCC to fill the lake in the spring, when river flows are high and the impact to the river is lower.

These improvements will benefit to ESA-listed fish by (1) reducing diversions by 10 cfs during low flow periods in the irrigation season, May 1- Sept 30, and (2) moving the diversion to Pearrygin Lake from fall to spring. This will result in more water in the river during late summer and fall low-flow periods. The changes will not increase the maximum diversion rate at any time, and will not change the total volume diverted. Because they will be filling the reservoir in the spring, diversions from the Chewuch River will begin earlier in the year.

### **6.3.Effects Analysis- Change in Diversion Timing**

The project area for the diversion changes is the area downstream of the CCC diversion, or the lower approximately 8 miles of the Chewuch River. The project area is within designated feeding, migration, and overwinter (FMO) critical habitat for Columbia River Bull trout (US FWS 2010). Sub-adult and adult bull trout are present in this reach of the Methow year around, so there may be bull trout present in and immediately downstream of the project area during both periods with increases and decreases in irrigation diversions. The bull trout will experience the change as higher flows in late summer and fall, and lower flows in the spring. No direct affects are expected.

#### **6.3.1. Critical Habitat Primary Constituent Elements**

Bull trout are dependent on a suite of physical and biological features essential to their growth and survival. These factors are the Primary Constituent Elements of bull trout habitat. The critical habitat designation (2010) identifies nine factors as PCE's for bull trout, including groundwater connectivity,

migration habitat without physical, biological, or water quality barriers, abundant food base, complex in-stream habitat, cool water, spawning substrate, a natural hydrograph, sufficient water quality and quantity, and low levels of non-native predators and competitors. This project will not affect habitat complexity; substrate size, quantity or distribution; or the food base for bull trout. Moving diversions from low flow to high flow periods will not impair, and may help maintain water temperature, water quality, perennial water distribution, and passage through migratory corridors in the lower 8 miles of the Chewuch River. The project is not expected to change the abundance or distribution of non-native species in the Chewuch watershed.

The project will affect the hydrograph of the lower 8 miles of the Chewuch River, so requires more discussion. The Golder report on streamflow in the Chewuch River (2002) divided the hydrograph into five sections, the rising limb, peak flow, peak flow recession, base flow recession, and baseflow. This framework is helpful for discussing flows in the Chewuch River and how the changes to diversion timing will affect fish and other aquatic organisms. Generally in the Chewuch River, baseflow begins in late summer and persists through fall and winter. The river responds to melting snowpack with rising flows in the spring. Peak flows in the Chewuch River occur in May-June with a median annual peak of about 2000 cfs. Peak flow recession is the period when flows are declining and most of the flow comes from snowmelt. Baseflow recession is the period of declining flows when most of the flow is coming from groundwater.

The Chewuch River hydrograph is considered to be functioning at risk while moving toward restoration. Peak flows are believed to be within their natural range of variability, with total diversions from the river amounting to less than 5% of typical peak flows. Peak flows are therefore considered to be functioning appropriately. Base flows are considered to be functioning at risk with a net impact of irrigation diversions amounting to 30 to 50 cfs from a baseflow of about 70 cfs (Golder Associates 2002). Irrigation efficiency improvements since 2002 have reduced the total diversions during baseflow.

By allowing the CCC to fill the reservoir in the spring, this project will allow CCC to move diversions from the fall baseflow period to the spring rising limb and peak flow periods. During the irrigation season, the total irrigation diversions will continue to be limited to 34 cfs during peak flow, peak flow recession and baseflow recession periods. Therefore, the project will not affect these portions of the hydrograph. Limiting flows to 24 cfs will reduce diversions during late summer baseflow, and not filling the lake in the fall will allow the CCC to shut down earlier in the year; these changes will increase flows during late summer and early fall.

The one period when there is potential for diversions not currently possible is in the spring. If low flows persist later than normal, this could mean diversions during spring low flows. If diversions were to start before flows begin to increase, this would mean that flows drop in the spring. This is expected to be a rare occasion, because flows typically begin to increase in before the time when the ditch

would need to turn on to fill the reservoir. Flows typically begin to increase in March, but on occasion the spring freshet does not begin until April or early May. Based on the period of record, at USGS gauge #12448000, and allowing three weeks to fill the reservoir before irrigation starts on May 1<sup>st</sup>, spring diversions during periods below 100 cfs would be required about 1 year out of 10. Since irrigation demand is typically lower in the first few weeks of the irrigation season, a portion of the lake could be filled during the May, while also providing water for irrigation. Assuming half of the water for the reservoir could be provided during the irrigation season, this approach could reduce the need to divert during spring low flows to about 1 out of 20 years.

Bull trout move from overwinter areas to spawning areas with increasing spring flows. During this time, they respond to flow triggers. Consequently, in low flow years when the ditch is turned on before the river flows increase in the spring, bull trout are likely to remain in the overwinter areas until flows increase above baseflow levels. Once flows begin to increase above baseflow levels, they tend to go up quickly. Because of this, the effect of the 34 cfs diversion would quickly become negligible in the increasing spring flows. Fish responding to flow triggers would not be delayed once flows begin to rise. In most years, river flows begin to rise before the ditch will be turned on, so the project will not change the flows bull trout are responding to. Therefore, the earlier ditch turn on to fill the reservoir may result in some fish remaining in overwinter areas for up to a few additional days in low flow years. This affect would be mitigated by reduced diversions in almost all years during low flows in summer and fall.

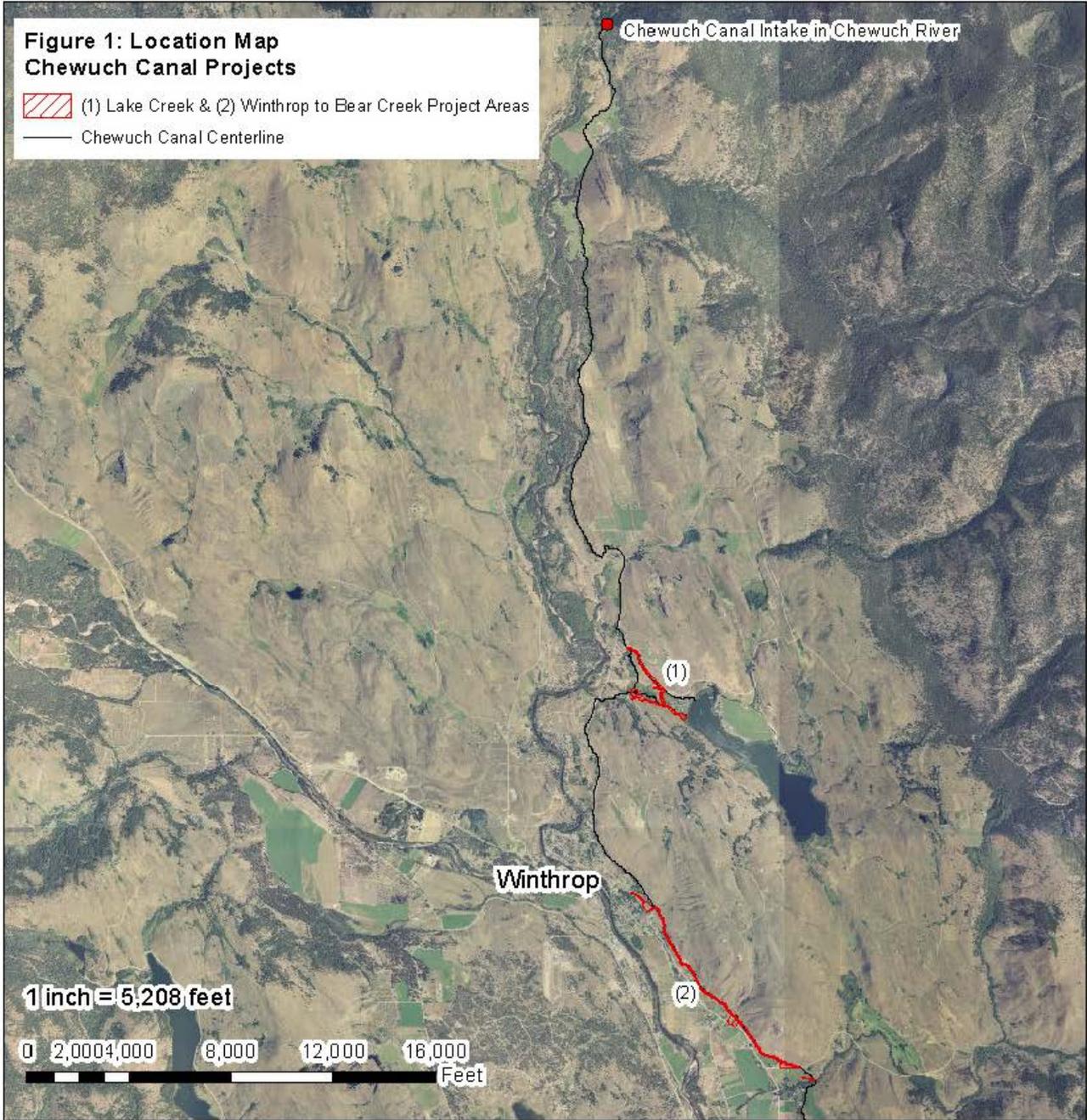
This project is expected to benefit base flows in the lower eight miles of the Chewuch River by reducing diversions for both irrigation and storage during base flow periods. This will continue the trend of the baseflow moving toward restoration.

## 7. Effects Determination

As outlined above, the construction activities at Lake Creek Piping will have no direct or indirect effects to bull trout. The construction activities at Winthrop to Bear Creek piping will stop the spilling of water into Bear Creek, which will increase fish dependency on natural water in Bear Creek, which as it dries up will signal bull trout to move downstream until they encounter spill water from the Fulton Ditch. The changes to diversion timing will increase flows in late summer and fall, while slightly decreasing flows during spring high water. The earlier ditch turn on may delay some bull trout on their overwinter areas for several days during low flow years. All effects to the primary constituent elements of bull trout critical habitat are expected to be neutral or beneficial. Consequently we find that the proposed action “**May Affect but is Not Likely to Adversely Affect**” bull trout and their designated critical habitat.

## 8. References

- 1) Golder Associates. 2002. Draft report on Streamflow and Channel Analysis Chewuch River. Golder Associates Inc.
- 2) USFWS. 2010. Final Bull Trout Critical Habitat Designation. US Fish and Wildlife Service . Available Online: <http://www.fws.gov/pacific/bulltrout/FinalCH2010.html#FinalCH>



**Project Location**



*(1) Lake Creek Project*

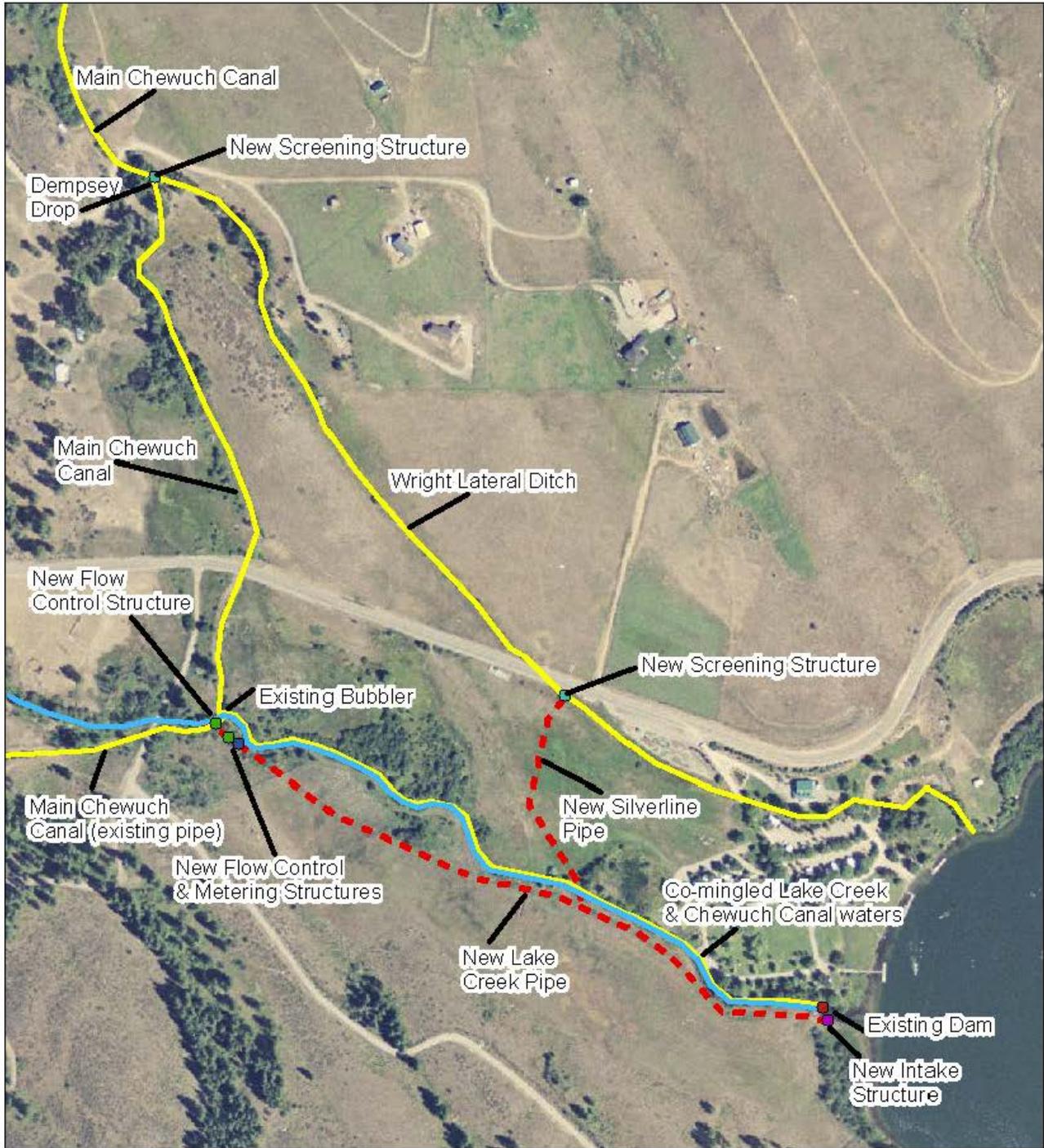
Latitude: 48.49333° N  
 Longitude: -120.16718° W

Township: T35N  
 Range: R21E  
 Sections: 26 & 35 & 36

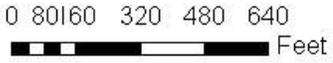
*(2) Winthrop to Bear Creek Piping Project*

Latitude: 48.462463° N  
 Longitude: -120.16090° W

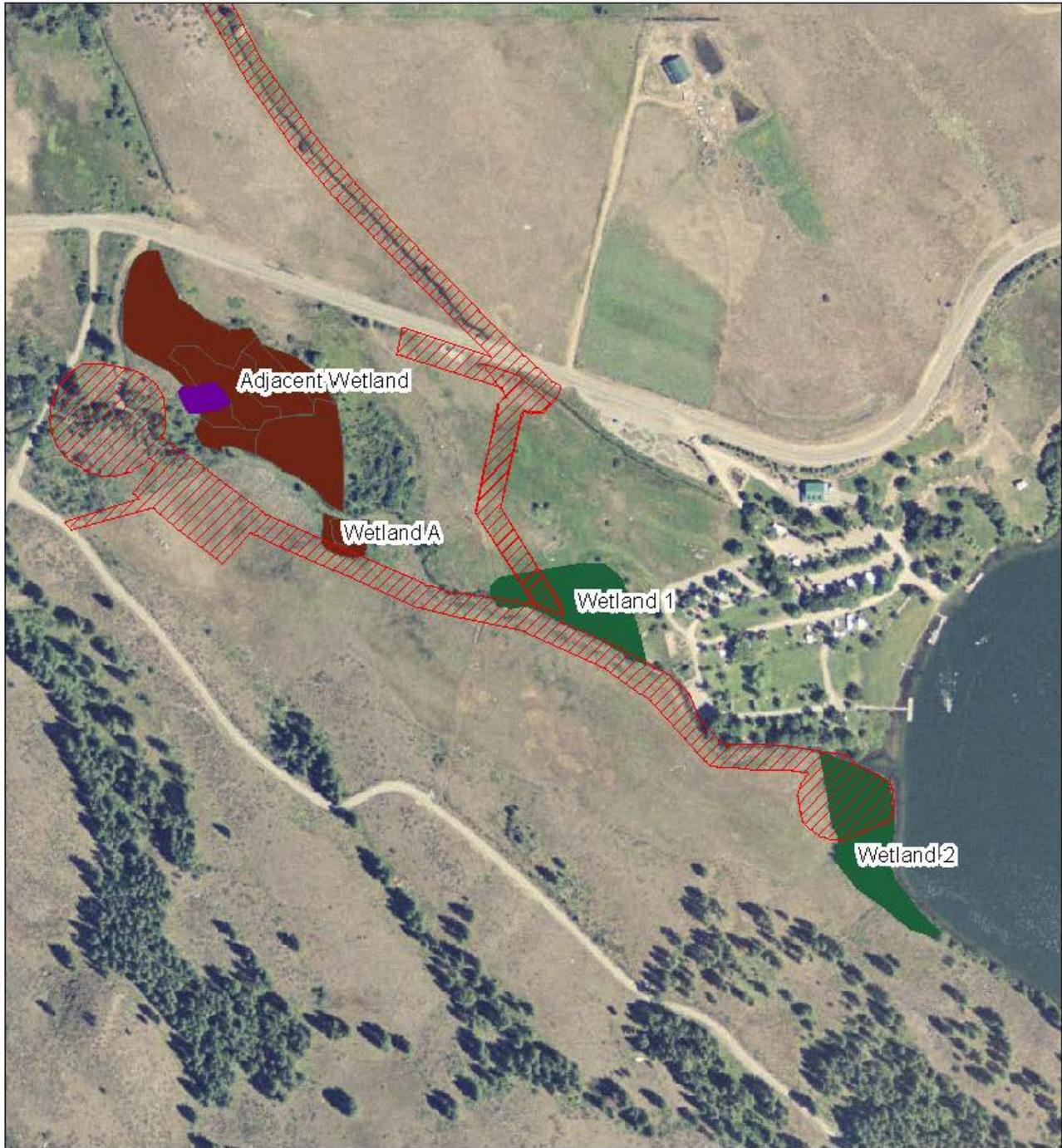
Township: T34N  
 Range: R21E  
 Sections: 2 & 11 & 12



**Figure 2: Site Map  
Lake Creek Piping Project**

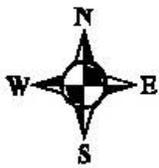


- |   |   |
|---|---|
| <span style="color: blue;">—</span> Lake Creek  | <span style="color: green;">●</span> Flow Control Structure |
| <span style="color: yellow;">—</span> Existing Chewuch Canal                              | <span style="color: red;">●</span> Existing Dam             |
| <span style="color: red; border-bottom: 1px dashed red;">—</span> Proposed Pipe Alignment | <span style="color: purple;">●</span> New Intake            |
|   | <span style="color: blue;">●</span> Flow Meter Structure    |
|   | <span style="color: teal;">●</span> Screening Structure     |



**Figure 3: Wetlands  
Lake Creek Piping Project**

-  Maximum Construction Footprint
- Wetland Areas**
-  Category I
-  Category II
-  Category III

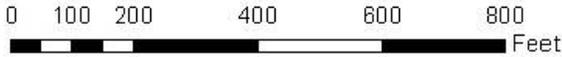


Wetland Boundaries are Approximate

0 150 300 600 900 1,200 Feet



**Figure 4: Bear Creek Vicinity  
Winthrop to Bear Creek Piping Project**



- Bear Creek
- Maximum Construction Footprint
- Approximate Centerline of Chewuch Canal



## Department of Energy

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

September 28, 2012

In reply refer to: KEC-4

Jessica Gonzales  
USFWS - Central Washington Field Office  
215 Melody Lane, Suite 103  
Wenatchee, WA 98801-8122

Dear Ms. Gonzales,

Bonneville Power Administration (BPA) is proposing to fund the Chewuch Canal Efficiency Project to reduce the impact of irrigation diversions by the Chewuch Canal Company (CCC) from the Chewuch River by reducing diversions when river flows are low. The project is sponsored by Washington Water Project of Trout Unlimited. The Chewuch Canal Efficiency Project includes two primary components: (1) Changing the season of reservoir filling under CCC's Reservoir Permit No. 9 through a water right change and an overriding consideration of public interest ("OCPI") determination, and (2) piping and system improvements in two identified sections of the Chewuch Canal (Lake Creek Piping and Winthrop to Bear Creek Piping). Because these two components will affect separate areas and will have substantially different effects, they are discussed individually. The purpose of this letter is to initiate informal consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended. A Biological Assessment (BA) is attached for your consideration.

The construction activities are located in Pearrygin Lake, Lake Creek, Bear Creek, and adjacent uplands. At the Lake Creek Piping, including Pearrygin Lake, Lake Creek, and adjacent uplands, bull trout are not present, thus construction activities will have no effect on CR bull trout. Considering the Winthrop to Bear Creek Piping, including Bear Creek, as well as the changes to water rights, the projects **May Affect**, but are **Not Likely to Adversely Affect** CR bull trout. The project will have **No Effect** on gray wolves, grizzly bear, Canada lynx, or Ute ladies'-tresses.

In accordance with the requirements of Section 7 of the Endangered Species Act of 1973, as amended, BPA is requesting your concurrence with our determination of the effects of the proposed Chewuch Canal Efficiency Project.

Sincerely,

A handwritten signature in blue ink that reads "Ted Gresh". The signature is written in a cursive style with a large initial "T" and "G".

/s/ Ted Gresh September 28, 2012

Ted Gresh

Environmental Protection Specialist – KEC-4

Enclosure:

Chewuch Canal Efficiency Project Biological Assessment

ebcc:

J. Marcotte—KEW-4

J. Goldberg— Washington Water Project of Trout Unlimited

B. Rogers—Yakama Nation

Official File – KEC (EQ-23-11)

*ESGresh:esg:5756:28Sept2012,*

**From:** [Brown, Daniel](#)  
**To:** [Krupka, Jeff](#)  
**Cc:** [Michelle Eames](#); [Erin BrittonKuttel](#); [Judy Neibauer](#); [Jessica Gonzales](#); [Stephen Lewis](#); [Russ Holder](#)  
**Subject:** Re: FCRPS Bull Trout Consultation Status  
**Date:** Thursday, April 24, 2014 11:29:39 AM

---

Hi Jeff,

Thanks for your reply. Larry and I continue to support the position that consultation should be completed on the species as well. Larry and I will be meeting with Russ Holder (acting for Mike Roy) next week to discuss. There has been quite a bit of PL-ARD-level correspondence lately on the subject from Boise, so we are kind of in the midst of the conversation about process questions. My expectation is we will be responding back to the email I received from BPA with a reiteration of the process we agreed to when our discussions began.

db

---

Daniel R. Brown  
U.S. Fish and Wildlife Service  
Pacific Region, Ecological Services  
Division of Consultation and Conservation Planning  
911 NE 11th Avenue  
Portland, OR 97232-4181  
phone: (503) 231-6281  
fax: (503) 231-6243  
email: [daniel\\_brown@fws.gov](mailto:daniel_brown@fws.gov)

On Thu, Apr 24, 2014 at 10:46 AM, Krupka, Jeff <[jeff\\_krupka@fws.gov](mailto:jeff_krupka@fws.gov)> wrote:

Hey Dan. Judy forwarded this and I wanted to reiterate one of our earlier concerns when this reinitiation first kicked off in 2011 (as far as my involvement goes). While I understand their desire to reinitiate due to bull trout CH, we have also clearly expressed to the AA's that they should reinitiate effects to bull trout. Sarah McNary (BPA) acknowledged this point on our August 17, 2011, conference call.

Just looking at our portion of the FCRPS world, reinitiation on bull trout is appropriate due to a number of reasons, including: (1) no effects analysis or take issued for Chief Joseph and Grand Coulee dams; (2) substantial new information regarding bull trout distribution/abundance and movement patterns which suggests more extensive effects than described in the 2000 BO; and (3) changes in the proposed action (e.g., actions that are currently proposed/occurring were not covered activities in the 2000 BO, or it is not clear if they are covered activities due to the very general description provided). I know recently, Spokane is struggling with the COE on a number of issues in the Snake River and would probably agree that points 2 and 3 above also applies to them. I bet many Service offices (maybe all) can say this.

Failure to reinitiate on bull trout is putting us in an increasingly awkward position. I've recently been contacted by the COE regarding their intent to conduct maintenance on the spillways at Chief Joseph. They are currently drafting their BA

and expect the primary effect to fish is "effects of total dissolved gas (TDG) levels on listed Chinook, steelhead and bull trout downstream of the dam...." (excerpt from an April 22, 2014, email from the COE). Other times I've been told a given action is already covered by the 2000 BO. It's all over the board; reinitiation would solve this problem and provide clarity.

One thing is certain though, there are zero effects described in the 2000 BO regarding Chief Joseph and Grand Coulee, zero take was exempted, and I think their section 7(a)(2) duty has not been met.

Just for fun, do a word search for Chief Joseph and Grand Coulee. You will find exactly 3 and 7 returns, respectively, in the 2000 BO. And when these dams are mentioned, it is more an acknowledgement that they exist and their role in FCRPS is described. It's not even close to meeting any standard for section 7, whether you are talking about the standards of 2000 or 2014; they clearly need to reinitiate on bull trout.

I know you've been advocating this, I'm simply reinforcing that and providing specific examples from CWFO on why reinitiation on bull trout needs to occur. What was once described as a one year process now appears to be four. Surely with this sort of delay and additional time, they can do the right thing for bull trout, reinitiate, and follow the law.

Thanks, jk

Jeff Krupka, Supervisory Fish and Wildlife Biologist  
USFWS - Central Washington Field Office  
215 Melody Lane, Suite 103  
Wenatchee, WA 98801-8122  
509.665.3508 x2008 (tel)  
509.665.3509 (fax)  
[www.fws.gov/wafwo/](http://www.fws.gov/wafwo/)

----- Forwarded message -----

From: **Neibauer, Judy** <[judy\\_neibauer@fws.gov](mailto:judy_neibauer@fws.gov)>  
Date: Thu, Apr 24, 2014 at 9:19 AM  
Subject: Fwd: FCRPS Bull Trout Consultation Status  
To: Jeff Krupka <[jeff\\_krupka@fws.gov](mailto:jeff_krupka@fws.gov)>  
Cc: Erin Britton-Kuttel <[erin\\_brittonkuttel@fws.gov](mailto:erin_brittonkuttel@fws.gov)>, Michelle Eames <[michelle\\_eames@fws.gov](mailto:michelle_eames@fws.gov)>, Jessica Gonzales <[jessica\\_gonzales@fws.gov](mailto:jessica_gonzales@fws.gov)>, Karl Halupka <[karl\\_halupka@fws.gov](mailto:karl_halupka@fws.gov)>, Stephen Lewis <[stephen\\_lewis@fws.gov](mailto:stephen_lewis@fws.gov)>

FYI... FCRPS bull trout consultation timeline from Dan Brown....I did not see you listed below, maybe you have seen this, sorry if its a duplicate.

----- Forwarded message -----

From: **Brown, Daniel** <[daniel\\_brown@fws.gov](mailto:daniel_brown@fws.gov)>  
Date: Thu, Apr 24, 2014 at 7:37 AM  
Subject: Fwd: FCRPS Bull Trout Consultation Status  
To: Brendan White <[Brendan.White@fws.gov](mailto:Brendan.White@fws.gov)>, Bridget Moran <[Bridget.Moran@fws.gov](mailto:Bridget.Moran@fws.gov)>, Cat Brown <[Cat.Brown@fws.gov](mailto:Cat.Brown@fws.gov)>, Daniel Brown <[daniel\\_brown@fws.gov](mailto:daniel_brown@fws.gov)>, Dawn Bruns <[dawn\\_bruns@fws.gov](mailto:dawn_bruns@fws.gov)>, Emily Teachout <[emily\\_teachout@fws.gov](mailto:emily_teachout@fws.gov)>, Jeffrey Dillon <[jeffrey\\_dillon@fws.gov](mailto:jeffrey_dillon@fws.gov)>, Jody Caicco <[Jody.Caicco@fws.gov](mailto:Jody.Caicco@fws.gov)>, Kristi Young <[kristi\\_young@fws.gov](mailto:kristi_young@fws.gov)>, Larry Salata <[Larry.Salata@fws.gov](mailto:Larry.Salata@fws.gov)>, Mark Robertson <[Mark.Robertson@fws.gov](mailto:Mark.Robertson@fws.gov)>, Chris Allen <[chris\\_allen@fws.gov](mailto:chris_allen@fws.gov)>, Clay Fletcher <[Clay.Fletcher@fws.gov](mailto:Clay.Fletcher@fws.gov)>, Dan

Brewer <[Dan\\_Brewer@fws.gov](mailto:Dan_Brewer@fws.gov)>, Doug Laye <[Doug\\_Laye@fws.gov](mailto:Doug_Laye@fws.gov)>, Judy Neibauer <[Judy\\_Neibauer@fws.gov](mailto:Judy_Neibauer@fws.gov)>, Nancy BrennanDubbs <[Nancy\\_BrennanDubbs@fws.gov](mailto:Nancy_BrennanDubbs@fws.gov)>

FYI - FCRPS consultation schedule update. Call if questions or concerns.

db

---

Daniel R. Brown  
U.S. Fish and Wildlife Service  
Pacific Region, Ecological Services  
Division of Consultation and Conservation Planning  
911 NE 11th Avenue  
Portland, OR 97232-4181  
phone: (503) 231-6281  
fax: (503) 231-6243  
email: [daniel\\_brown@fws.gov](mailto:daniel_brown@fws.gov)

----- Forwarded message -----

From: **Barco III, John W (BPA) - A-7** <[jwbarco@bpa.gov](mailto:jwbarco@bpa.gov)>  
Date: Wed, Apr 16, 2014 at 6:30 PM  
Subject: FCRPS Bull Trout Consultation Status  
To: "Brown, Daniel" <[daniel\\_brown@fws.gov](mailto:daniel_brown@fws.gov)>  
Cc: "Smith, Gregory M NWP" <[Gregory.M.Smith@usace.army.mil](mailto:Gregory.M.Smith@usace.army.mil)>, "Peters, Rock D NWD" <[Rock.D.Peters@usace.army.mil](mailto:Rock.D.Peters@usace.army.mil)>, "[KPuckett@usbr.gov](mailto:KPuckett@usbr.gov)" <[KPuckett@usbr.gov](mailto:KPuckett@usbr.gov)>, "McNary, Sarah R (BPA) - A-7" <[srmcnary@bpa.gov](mailto:srmcnary@bpa.gov)>

Dan,

On behalf of the Action Agencies (AA's), I wanted to provide a response to your inquiry via e-mail April 8th regarding the status of the consultation on the effects of operation and maintenance of the Federal Columbia River Power System (FCRPS) to species under the jurisdiction of the USFWS. As you are aware, the AA's have been working to develop a Biological Assessment (BA) for the FCRPS's effects to revised bull trout designated critical habitat but have experienced delays. The AA's received a draft BA from our contractor that was insufficient to initiate Section 7 consultation with USFWS. The AA's are working to revise key elements of the BA, such as the proposed action, in order to ensure the revised draft BA will sufficiently describe our proposed action and associated affects. Following are key milestones for our revised schedule:

1. Revised proposed action to be completed to provide to the contractor for development of revised draft BA - October 2014
2. AA's to evaluate sufficiency of contractor's draft BA - March 2015
3. AAs providing a BA to USFWS - June 2015

Please feel free to give me a call with additional questions or concerns.

John Barco  
Bonneville Power Administration  
PO Box 3621  
Portland, Oregon 97208-3621  
503-230-3223  
Fax: 503-230-5699  
[jwbarco@bpa.gov](mailto:jwbarco@bpa.gov)

--

Judy Neibauer  
Fish and Wildlife Biologist  
US Fish&Wildlife Service, Central Washington Field Office  
215 Melody Lane, Wenatchee, WA 98801  
509-665-3508 ext.2003 (office)

"What was big was not the trout, but the chance." "What was full was not my creel, but my memory." Aldo Lepold