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DEC 15 2006

Jane L. Cottrell
Forest Supervisor
Nez Perce National Forest
1005 Highway 13
Grangeville, Idaho 83530

Subject: Newsome Creek Watershed Rehabilitation Project—Idaho County, Idaho—
Biological Opinion and Concurrence
File #106.0200 2007-F-0061

Dear Ms. Cottrell:

This letter transmits the Fish and Wildlife Service's (Service) Biological Opinion (Opinion) and concurrence on the effects of the proposed Newsome Creek Watershed Rehabilitation Project to species listed under the Endangered Species Act (Act) of 1973, as amended. In a letter dated October 18, 2006, and received by the Service on October 23, the Nez Perce National Forest (Forest) requested formal consultation on the determination, under section 7 of the Act, that the project is likely to adversely affect bull trout (*Salvelinus confluentus*). You also determined that the proposed action is not likely to adversely affect the bald eagle (*Haliaeetus leucocephalus*). We acknowledge your no effect determination for Canada lynx (*Lynx canadensis*) and your not likely to jeopardize the continued existence determination for the gray wolf (*Canis lupus*).

The enclosed Opinion is based primarily on our review of the proposed action as described in your September 2006 Biological Assessment (Assessment) regarding the effects of the proposed action on the bull trout and was prepared in accordance with section 7 of the Act. Our Opinion concludes that the survival and recovery of bull trout populations will not be jeopardized by the project. A complete administrative record of this consultation is on file at this office.

Thank you for your continued interest in the conservation of threatened and endangered species. Please contact Clay Fletcher at (208) 378-5256 if you have questions concerning this Opinion.

Sincerely,

Jeffery L. Foss, Field Supervisor
Snake River Fish and Wildlife Office

Enclosure

cc: IDFG, Lewiston (Hennekey)
NOAA Fisheries, Grangeville (Brege)
NPT, Lapwai (Jones)

BIOLOGICAL OPINION
AND CONCURRENCE
FOR THE
NEWSOME CREEK WATERSHED REHABILITATION PROJECT
NEZ PERCE TRIBE
AND
NEZ PERCE NATIONAL FOREST
2007-F-0061

DECEMBER 2006
FISH AND WILDLIFE SERVICE
SNAKE RIVER FISH AND WILDLIFE OFFICE
BOISE, IDAHO

TABLE OF CONTENTS

INTRODUCTION 1
CONSULTATION HISTORY 1
BIOLOGICAL OPINION 2
I. DESCRIPTION OF PROPOSED ACTION 2
A. Action Area 2
B. Proposed Action 2
1. Newsome Creek Channel and Riparian Rehabilitation 2
2. Road Obliteration/Improvements/Abandonment 3
3. Culvert Replacement/Removal 3
4. Resource Protection Measures 3
II. STATUS OF THE SPECIES 4
A. Listing Status 4
B. Reasons for Listing 4
C. Species Description 5
D. Life History 5
E. Population Dynamics 6
F. Status and Distribution 8
1. Jarbidge River 8
2. Klamath River 9
3. Coastal-Puget Sound 9
4. St. Mary-Belly River 9
5. Columbia River 10
a. Clearwater River Recovery/Management Unit 10
b. South Fork Clearwater River Core Area 11
G. Consulted-on Effects Rangewide 12
H. Conservation Needs 12
I. Critical Habitat 13
III. ENVIRONMENTAL BASELINE 13
A. Status of the Species in the Action Area 13
B. Factors Affecting the Species in the Action Area 14

IV. EFFECTS OF THE ACTION ON BULL TROUT 15
A. Direct and Indirect Effects 15
B. Effects of Interrelated or Interdependent Actions 18
V. CUMULATIVE EFFECTS 18
VI. CONCLUSION 18
VII. INCIDENTAL TAKE STATEMENT 19
A. Amount or Extent of Take 20
B. Effect of the Take 21
C. Reasonable and Prudent Measures 21
D. Terms and Conditions 21
E. Monitoring/Reporting 22
VIII. CONSERVATION RECOMMENDATIONS 22
IX. REINITIATION NOTICE 23
LITERATURE CITED 24
APPENDIX A. Resource Protection Measures from the Assessment 31

INTRODUCTION

The Fish and Wildlife Service (Service) has prepared the following Biological Opinion (Opinion) in response to the Nez Perce National Forest's (Forest) and Nez Perce Tribe's (Tribe) request for formal consultation on the effects to bull trout (*Salvelinus confluentus*) from the proposed Newsome Creek Watershed Rehabilitation Project.

The Forest determined that the project is likely to adversely affect bull trout. Based in part on the analysis presented in the Biological Assessment (Assessment) for this action, the Service concludes that the survival and recovery of bull trout populations will not be jeopardized by the project.

The National Marine Fisheries Service is also consulting on this project for steelhead (*Oncorhynchus mykiss*).

CONSULTATION HISTORY

The Forest and the Service have had the following meetings and correspondence concerning the proposed Project.

December 8, 2005	The Service received an electronic mail (email) from the Tribe and Forest (project proponents) requesting review and comments on a draft Assessment received November 25, 2006.
January 13, 2006	The Service discussed, by telephone, comments on the Assessment and additional information needs with the project proponents.
January 17, 2006	The Service attended a Level 1 meeting where project proponents presented an overview of the project.
March 21, 2006	The Service discussed the project with project proponents at a Level 1 meeting.
May 31, 2006	The Service received a revised version of the Assessment from the project proponents by email.
June 1, 2006	The Service participated in a conference call on the project with project proponents and other Level 1 team members. Additional information needs and clarifications were discussed and agreed upon.
June 9, 2006	The Service received an electronic facsimile from the Forest discussing suggested edits to the draft Assessment.
July 13, 2006	The Service sent comments on the revised Assessment to the project proponents by email. The Service later received an email from the proponents discussing our comments.

July 21, 2006 — The Service notified the proponents by email that we agreed with the contents of the final Assessment including the determinations for listed species.

BIOLOGICAL OPINION

I. DESCRIPTION OF PROPOSED ACTION

A. Action Area

The proposed project is located on the Red River Ranger District, Nez Perce National Forest, in the Newsome Creek watershed. Newsome Creek flows approximately 15 miles from its headwaters near Hamby Saddle at 5,000 feet elevation to 3,630 feet at the confluence with the South Fork Clearwater River and drains approximately 42,567 acres.

The legal description of the proposed project area is portions of T30N, R6E, Sections 12 and 13; T30N, R7E, Sections 4, 5, 6, 7, 8, 9, 16, 17, 18, 19, 20, 29, 30, and 31; and T31N, R7E Sections 29, 30, 31, and 32.

The action area is encompassed by the following 6th field Hydrologic Units: Upper Newsome Creek (170603050601), Lower Newsome Creek (170603050608), Mule Creek (170603050602), and Beaver Creek (170603050622).

B. Proposed Action

The Nez Perce Tribe and Nez Perce National Forest (in conjunction with Bonneville Power Administration) are jointly proposing a watershed rehabilitation project in the Newsome Creek watershed. The restoration project consists of stream reconstruction and rehabilitation; road improvements, obliteration, and abandonment; and culvert removals and replacements. The goal of the project is to improve fisheries habitat in the Newsome Creek watershed.

The project is planned to begin the summer of 2007, with implementation of road improvements, road obliteration, and one culvert replacement. Stream reconstruction is planned to begin in the summer of 2008. Road related work will continue through 2009, while the stream channel restoration will continue through 2012.

1. Newsome Creek Channel and Riparian Rehabilitation

The approximately 3.5 mile length of Newsome Creek to be rehabilitated is located from just above the confluence of Baldy and Pilot creeks upstream to the confluence with Radcliff Creek. This three mile length is divided into six reaches; of the six only four reaches will be worked on. Specific work to be performed in each reach is described in the Assessment. Mining severely altered the riparian and instream habitat in this portion of Newsome Creek and habitat condition has never recovered. Mining tailing piles are currently confining stream flow and preventing stream migration within the riparian zone and valley bottom. The present channel has frequent riffle sequences and few pools.

The goals are to restore the stream to a more natural-like channel with meander bends and a pool-riffle-glide pattern similar to the un-dredged portion of Newsome Creek upstream of Radcliff Creek, and to restore the riparian vegetation community. In general, work will consist of creating pools, installing new channels, removing mine tailings, and planting trees and shrubs.

2. Road Obliteration/Improvements/Abandonment

A total of fifty-two miles of road are proposed for treatment: 28 miles of obliteration, 22 miles of improvement, and two miles of abandonment. Roads that are obliterated or abandoned will no longer be part of the transportation system and will be rendered unusable for any type of vehicle. Road obliteration will include removal of structures at selected stream and draw crossings and reestablishment of a more natural channel course; removal of shoulder fill, decompaction of the roadbed, and recontouring; as well as decompaction and recontouring of selected landings, skid trails, and other disturbed areas adjacent to decommissioned roads. Disturbed areas will be reseeded with annual rye seed. Slash will be put on the site to discourage off-highway vehicle use and to provide structure for retaining soil and increased shade for plant reestablishment. Road abandonment includes stabilizing and seeding sources of erosion, but the road prism is left intact. Boulders or slash may be placed on the road to discourage use. Improvement of existing roads primarily consists of reducing erosion and potential maintenance problems by activities such as the addition of drainage structures, where needed, and the replacement of undersized culverts.

3. Culvert Replacement/Removal

The culverts to be replaced are both located on the 1826 Road. One is near the confluence of Mare and Donkey Creeks in the Mule Creek subwatershed, approximately 0.5 mile upstream from Mule Creek and 1.1 mile upstream from Newsome Creek. The other is located on an unnamed drainage just above Mule Creek, approximately 1.5 mile upstream from Newsome Creek. The existing culverts will be replaced with larger culverts designed using natural stream simulation design criteria.

Thirty-five (mostly failed log) culverts will be removed from roads proposed for obliteration. While most of these are dry during the summer when they will be removed, 11 are located in potentially flowing streams.

4. Resource Protection Measures

The project proponents have prescribed specific resource protection measures and design criteria for each of the three project components. Refer to the Assessment or Appendix A of this Opinion for a complete listing of these measures.

II. STATUS OF THE SPECIES

A. Listing Status

The coterminous United States population of the bull trout was listed as threatened on November 1, 1999 (64 FR 58910). The threatened bull trout occurs in the Klamath River Basin of south-central Oregon and in the Jarbidge River in Nevada, north to various coastal rivers of Washington to the Puget Sound and east throughout major rivers within the Columbia River Basin to the St. Mary-Belly River, east of the Continental Divide in northwestern Montana (Cavender 1978, Bond 1992, Brewin and Brewin 1997, Leary and Allendorf 1997).

The bull trout was initially listed as three separate Distinct Population Segments (DPSs) (63 FR 31647, 64 FR 17110). The preamble to the final listing rule for the United States coterminous population of the bull trout discusses the consolidation of these DPSs, plus two other population segments, into one listed taxon and the application of the jeopardy standard under section 7 of the Act relative to this species (64 FR 58930):

> Although this rule consolidates the five bull trout DPSs into one listed taxon, based on conformance with the DPS policy for purposes of consultation under section 7 of the Act, we intend to retain recognition of each DPS in light of available scientific information relating to their uniqueness and significance. Under this approach, these DPSs will be treated as interim recovery units with respect to application of the jeopardy standard until an approved recovery plan is developed. Formal establishment of bull trout recovery units will occur during the recovery planning process.

B. Reasons for Listing

Though wide-ranging in parts of Oregon, Washington, Idaho, and Montana, bull trout in the interior Columbia River basin presently occur in only about 45 percent of the historical range (Quigley and Arbelbide 1997; Rieman et al. 1997). Declining trends due to the combined effects of habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, angler harvest and poaching, entrainment into diversion channels and dams, and introduced nonnative species (e.g., brook trout, *Salvelinus fontinalis*) have resulted in declines in rangewide bull trout distribution and abundance (Bond 1992; Schill 1992; Thomas 1992; Ziller 1992; Rieman and McIntyre 1993; Newton and Pribyl 1994; Idaho Department of Fish and Game in litt. 1995). Several local extirpations have been reported, beginning in the 1950s (Rode 1990; Ratliff and Howell 1992; Donald and Alger 1993; Goetz 1994; Newton and Pribyl 1994; Berg and Priest 1995; Light et al. 1996; Buchanan and Gregory 1997; Washington Department of Fish and Wildlife 1997).

Land and water management activities such as dams and other diversion structures, forest management practices, livestock grazing, agriculture, road construction and maintenance, mining, and urban and rural development continue to degrade bull trout habitat and depress bull trout populations (Service 2002).

C. Species Description

Bull trout *(Salvelinus confluentus)*, member of the family Salmonidae, are char native to the Pacific Northwest and western Canada. The bull trout and the closely related Dolly Varden (*Salvelinus malma*) were not officially recognized as separate species until 1980 (Robins et al. 1980). Bull trout historically occurred in major river drainages in the Pacific Northwest from the southern limits in the McCloud River in northern California (now extirpated), Klamath River basin of south central Oregon, and the Jarbidge River in Nevada to the headwaters of the Yukon River in the Northwest Territories, Canada (Cavender 1978; Bond 1992). To the west, bull trout current range includes Puget Sound, coastal rivers of British Columbia, Canada, and southeast Alaska (Bond 1992). East of the Continental Divide, bull trout are found in the headwaters of the Saskatchewan River in Alberta and the MacKenzie River system in Alberta and British Columbia (Cavender 1978; Brewin and Brewin 1997). Bull trout are wide-spread throughout the Columbia River basin, including its headwaters in Montana and Canada.

D. Life History

Bull trout exhibit resident and migratory life-history strategies throughout much of the current range (Rieman and McIntyre 1993). Resident bull trout complete their entire life cycle in the streams where they spawn and rear. Migratory bull trout spawn and rear in streams for one to four years before migrating to either a lake (adfluvial), river (fluvial), or in certain coastal areas, to saltwater (anadromous), where they reach maturity (Fraley and Shepard 1989; Goetz 1989). Resident and migratory forms often occur together and it is suspected that individual bull trout may give rise to offspring exhibiting both resident and migratory behavior (Rieman and McIntyre 1993).

Bull trout have more specific habitat requirements than other salmonids (Rieman and McIntyre 1993). Watson and Hillman (1997) concluded that watersheds must have specific physical characteristics to provide habitat requirements for bull trout to successfully spawn and rear, and that the characteristics are not necessarily ubiquitous throughout these watersheds resulting in patchy distributions even in pristine habitats.

Bull trout are found primarily in colder streams, although individual fish are migratory in larger, warmer river systems throughout the range (Fraley and Shepard 1989; Rieman and McIntyre 1993, 1995; Buchanan and Gregory 1997; Rieman et al. 1997). Water temperature above 15°C (59°F) is believed to limit bull trout distribution, which may partially explain the patchy distribution within a watershed (Fraley and Shepard 1989; Rieman and McIntyre 1995). Spawning areas are often associated with cold-water springs, groundwater infiltration, and the coldest streams in a given watershed (Pratt 1992; Rieman and McIntyre 1993; Rieman et al. 1997). Goetz (1989) suggested optimum water temperatures for rearing of about 7 to 8°C (44 to 46°F) and optimum water temperatures for egg incubation of 2 to 4°C (35 to 39°F).

All life history stages of bull trout are associated with complex forms of cover, including large woody debris, undercut banks, boulders, and pools (Oliver 1979; Fraley and Shepard 1989; Goetz 1989; Hoelscher and Bjornn 1989; Sedell and Everest 1991; Pratt 1992; Thomas 1992; Rich 1996; Sexauer and James 1997; Watson and Hillman 1997). Jakober (1995) observed bull trout overwintering in deep beaver ponds or pools containing large woody debris in the Bitterroot River drainage, Montana, and suggested that suitable winter habitat may be more restrictive than summer habitat. Bull trout prefer relatively stable channel and water flow conditions (Rieman and McIntyre 1993). Juvenile and adult bull trout frequently inhabit side channels, stream margins, and pools with suitable cover (Sexauer and James 1997).

The size and age of bull trout at maturity depend upon life-history strategy. Growth of resident fish is generally slower than migratory fish; resident fish tend to be smaller at maturity and less fecund (Fraley and Shepard 1989; Goetz 1989). Bull trout normally reach sexual maturity in 4 to 7 years and live as long as 12 years. Repeat and alternate year spawning has been reported, although repeat spawning frequency and post-spawning mortality are not well known (Leathe and Graham 1982; Fraley and Shepard 1989; Pratt 1992; Rieman and McIntyre 1996).

Bull trout typically spawn from August to November during periods of decreasing water temperatures. Migratory bull trout frequently begin spawning migrations as early as April, and have been known to move upstream as far as 250 kilometers (km) (155 miles (mi)) to spawning grounds (Fraley and Shepard 1989). Depending on water temperature, incubation is normally 100 to 145 days (Pratt 1992), and after hatching, juveniles remain in the substrate. Time from egg deposition to emergence may exceed 200 days. Fry normally emerge from early April through May depending upon water temperatures and increasing stream flows (Pratt 1992; Ratliff and Howell 1992).

Bull trout are opportunistic feeders with food habits primarily a function of size and life-history strategy. Resident and juvenile migratory bull trout prey on terrestrial and aquatic insects, macro-zooplankton and small fish (Boag 1987; Goetz 1989; Donald and Alger 1993). Adult migratory bull trout are primarily piscivores, known to feed on various fish species (Fraley and Shepard 1989; Donald and Alger 1993).

Bull trout are iteroparous (they spawn more than once in a lifetime), and both repeat- and alternate-year spawning has been reported, although repeat-spawning frequency and post-spawning mortality are not well documented (Leathe and Graham 1982, Fraley and Shepard 1989, Pratt 1992, Rieman and McIntyre 1996).

The iteroparous reproductive system of bull trout has important repercussions for the management of this species. Bull trout require two-way passage up and downstream, not only for repeat spawning but also for foraging. Most fish ladders, however, were designed specifically for anadromous semelparous (fishes that spawn once and then die, and therefore require only one-way passage upstream) salmonids. Therefore even dams or other barriers with fish passage facilities may be a factor in isolating bull trout populations if they do not provide a downstream passage route.

E. Population Dynamics

The draft bull trout Recovery Plan (Service 2002) defined core areas as groups of partially isolated local populations of bull trout with some degree of gene flow occurring between them. Based on this definition, core areas can be considered metapopulations. A metapopulation is an interacting network of local populations with varying frequencies of migration and gene flow among them (Meefe and Carroll 1994). In theory, bull trout metapopulations (core areas) can be composed of two or more local populations, but Rieman and Allendorf (2001) suggest that for a bull trout metapopulation to function effectively, a minimum of between five and 10 local populations are required. Bull trout core areas with fewer than five local populations are at increased risk of local extirpation, core areas with between five and 10 local populations are at intermediate risk, and core areas with more than 10 interconnected local populations are at diminished risk (Service 2002).

The presence of a sufficient number of adult spawners is necessary to ensure persistence of bull trout populations. In order to avoid inbreeding depression, it is estimated that a minimum of 100 spawners is required. Inbreeding can result in increased homozygosity of deleterious recessive alleles which can in turn reduce individual fitness and population viability (Whitesel et al. 2004). For persistence in the longer term, adult spawning fish are required in sufficient numbers to reduce the deleterious effects of genetic drift and maintain genetic variation. For bull trout, Rieman and Allendorf (2001) estimate that approximately 1,000 spawning adults within any bull trout population are necessary for maintaining genetic variation indefinitely. Many local bull trout populations individually do not support 1,000 spawners, but this threshold may be met by the presence of smaller interconnected local populations within a core area.

For bull trout populations to remain viable (and recover) natural productivity should be sufficient for the populations to replace themselves from generation to generation. A population that consistently fails to replace itself is at an increased risk of extinction. Since estimates of population size are rarely available, the productivity or population growth rate is usually estimated from temporal trends in indices of abundance at a particular life stage. For example, redd counts are often used as an indicator of a spawning adult population. The direction and magnitude of a trend in an index can be used as a surrogate for growth rate.

Survival of bull trout populations is also dependent upon connectivity among local populations. Although bull trout are widely distributed over a large geographic area, they exhibit a patchy distribution even in pristine habitats (Rieman and McIntyre 1993). Increased habitat fragmentation reduces the amount of available habitat and increases isolation from other populations of the same species (Saunders et al. 1991). Burkey (1989) concluded that when species are isolated by fragmented habitats, low rates of population growth are typical in local populations and their probability of extinction is directly related to the degree of isolation and fragmentation. Without sufficient immigration, growth of local populations may be low and probability of extinction high. Migrations also facilitate gene flow among local populations because individuals from different local populations interbreed when some stray and return to non-natal streams. Local populations that are extirpated by catastrophic events may also become reestablished in this manner.

In summary, based on the works of Rieman and McIntyre (1993) and Rieman and Allendorf (2001), the draft bull trout Recovery Plan identified four elements to consider when assessing long-term viability (extinction risk) of bull trout populations: 1) number of local populations, 2) adult abundance (defined as the number of spawning fish present in a core area in a given year); 3) productivity, or the reproductive rate of the population; and 4) connectivity (as represented by the migratory life history form).

F. Status and Distribution

As noted above, in recognition of available scientific information relating to their uniqueness and significance, five population segments[1] of the coterminous United States population of the bull trout are considered essential to the survival and recovery of this species and are identified as: 1) Jarbidge River; 2) Klamath River; 3) Coastal-Puget Sound; 4) St. Mary-Belly River; and 5) Columbia River. Each of these segments is necessary to maintain the bull trout's distribution, as well as its genetic and phenotypic diversity, all of which are important to ensure the species' resilience to changing environmental conditions.

A summary of the current status and conservation needs of the bull trout within these units is provided below. A comprehensive discussion of these topics is found in the draft bull trout Recovery Plan (Service 2002).

Central to the survival and recovery of the bull trout is the maintenance of viable core areas (Service 2002, 2004a,b). A core area is defined as a geographic area occupied by one or more local bull trout populations that overlap in their use of rearing, foraging, migratory, and overwintering habitat, and in some cases in their use of spawning habitat. Each of the population segments listed above consists of one or more core areas. One hundred and twenty one core areas are recognized across the United States range of the bull trout (Service 2002; 2004a,b).

A core area assessment conducted by the Service for the five-year bull trout status review determined that of the 121 core areas comprising the coterminous listing, 43 are at high risk of extirpation, 44 are at risk, 28 are at potential risk, four are at low risk and two are of unknown status (Service 2005).

1. Jarbidge River

This population segment currently contains a single core area with six local populations. Less than 500 resident and migratory adult bull trout, representing about 50 to 125 spawners, are estimated to occur within the core area. The current condition of the bull trout in this segment is attributed to the effects of livestock grazing, roads, angler harvest, timber harvest, and the introduction of non-native fishes (Service 2004a). The draft bull trout recovery plan (Service 2004a) identifies the following conservation needs for this segment: maintain the current distribution of the bull trout within the core area; maintain stable or increasing trends in abundance of both resident and migratory bull trout in the core area; restore and maintain suitable habitat conditions for all life history stages and forms; and conserve genetic diversity and increase natural opportunities for genetic exchange between resident and migratory forms of the bull trout. An estimated 270 to 1,000 spawning fish per year are needed to provide for the persistence and viability of the core area and to support both resident and migratory adult bull trout (Service 2004a). Currently this core area is at high risk of extirpation (Service 2005).

[1] Population segment will be used in this Opinion rather than interim recovery unit to avoid confusion with recovery units identified in the draft bull trout Recovery Plans (Service 2002, 2004 a,b).

2. Klamath River

This population segment currently contains three core areas and 12 local populations. The current abundance, distribution, and range of the bull trout in the Klamath River Basin are greatly reduced from historical levels due to habitat loss and degradation caused by reduced water quality, timber harvest, livestock grazing, water diversions, roads, and the introduction of non-native fishes (Service 2002). Bull trout populations in this unit face a high risk of extirpation (Service 2002). The draft bull trout recovery plan (Service 2002) identifies the following conservation needs for this unit: maintain the current distribution of the bull trout and restore distribution in previously occupied areas; maintain stable or increasing trends in bull trout abundance; restore and maintain suitable habitat conditions for all life history stages and strategies; conserve genetic diversity and provide the opportunity for genetic exchange among appropriate core area populations. Eight to 15 new local populations and an increase in population size from about 3,250 adults currently to 8,250 adults are needed to provide for the persistence and viability of the three core areas (Service 2002).

3. Coastal-Puget Sound

Bull trout in the Coastal-Puget Sound population segment exhibit anadromous, adfluvial, fluvial, and resident life history patterns. The anadromous life history form is unique to this unit. This population segment currently contains 14 core areas and 67 local populations (Service 2004b). Bull trout are distributed throughout most of the large rivers and associated tributary systems within this unit. With limited exceptions, bull trout continue to be present in nearly all major watersheds where they likely occurred historically within this unit. Generally, bull trout distribution has contracted and abundance has declined especially in the southeastern part of the unit. The current condition of the bull trout in this population segment is attributed to the adverse effects of dams, forest management practices (e.g., timber harvest and associated road building activities), agricultural practices (e.g., diking, water control structures, draining of wetlands, channelization, and the removal of riparian vegetation), livestock grazing, roads, mining, urbanization, angler harvest, and the introduction of non-native species. The draft bull trout recovery plan (Service 2004b) identifies the following conservation needs for this unit: maintain or expand the current distribution of bull trout within existing core areas; increase bull trout abundance to about 16,500 adults across all core areas; and maintain or increase connectivity between local populations within each core area.

4. St. Mary-Belly River

This populations segment currently contains six core areas and nine local populations (Service 2002). Currently, bull trout are widely distributed in the St. Mary River drainage and occur in nearly all of the waters that inhabited historically. Bull trout are found only in a 1.2-mile reach of the North Fork Belly River within the United States. Redd count surveys of the North Fork Belly River documented an increase from 27 redds in 1995 to 119 redds in 1999. This increase was attributed primarily to protection from angler harvest (Service 2002). The current condition of the bull trout in this population segment is primarily attributed to the effects of dams, water diversions, roads, mining, and the introduction of non-native fishes (Service 2002). The draft bull trout recovery plan (Service 2002) identifies the following conservation needs for this unit: maintain the current distribution of the bull trout and restore distribution in previously occupied areas; maintain stable or increasing trends in bull trout abundance; restore and maintain suitable habitat conditions for all life history stages and forms; conserve genetic diversity and provide the opportunity for genetic exchange; and establish good working relations with Canadian interests because local bull trout populations in this unit are comprised mostly of migratory fish, whose habitat is mainly in Canada.

5. Columbia River

The Columbia River population segment includes bull trout residing in portions of Oregon, Washington, Idaho, and Montana. Bull trout are estimated to have occupied about 60 percent of the Columbia River Basin, and presently occur in 45 percent of the estimated historical range (Quigley and Arbelbide 1997). This population segment currently contains 97 core areas and 527 local populations. About 65 percent of these core areas and local populations occur in Idaho and northwestern Montana.

The condition of the bull trout within these core areas varies from poor to good but generally all have been subject to the combined effects of habitat degradation, fragmentation and alterations associated with one or more of the following activities: dewatering; road construction and maintenance; mining, and grazing; the blockage of migratory corridors by dams or other diversion structures; poor water quality; incidental angler harvest; entrainment into diversion channels; and introduced non-native species.

The Service has determined that of the total 97 core areas in this population segment, 38 are at high risk of extirpation, 35 are at risk, 20 are at potential risk, two are at low risk, and two are at unknown risk (Service 2005).

The Columbia River population segment has declined in overall range and numbers of fish (63 FR 31647). Although some strongholds still exist with migratory fish present, bull trout generally occur as isolated local populations in headwater lakes or tributaries where the migratory life history form has been lost. Though still widespread, there have been numerous local extirpations reported throughout the Columbia River basin. In Idaho, for example, bull trout have been extirpated from 119 reaches in 28 streams (Idaho Department of Fish and Game in litt. 1995).

The draft bull trout recovery plan (Service 2002) identifies the following conservation needs for this population segment: maintain or expand the current distribution of the bull trout within core areas; maintain stable or increasing trends in bull trout abundance; maintain/restore suitable habitat conditions for all bull trout life history stages and strategies; and conserve genetic diversity and provide opportunities for genetic exchange.

a. Clearwater River Recovery/Management Unit

The draft bull trout Recovery Plan (Service 2002) identified 22 recovery units within the Columbia River population segment. These units are now referred to as management units (Service 2004c). Management units are groupings of bull trout with historical or current gene flow within them and were designated to place the scope of bull trout recovery on smaller spatial scales than the larger population segments.

Achieving recovery goals within each management unit is critical to recovering the Columbia River population segment. Recovering bull trout in each management unit will maintain the overall distribution of bull trout in their native range. Individual core areas are the foundation of management units and conserving core areas and their habitats within management units preserves the genotypic and phenotypic diversity that will allow bull trout access to diverse habitats and reduce the risk of extinction from stochastic events. The continued survival and recovery of each individual core area is critical to the persistence of management units and their role in the recovery of a population segment (Service 2002).

Bull trout are distributed throughout most of the large rivers and associated tributary systems within the Clearwater River management unit (Clearwater Subbasin Summary 2001) and exhibit adfluvial, fluvial, and resident life history patterns. There are two naturally occurring adfluvial bull trout populations within the Clearwater River management unit; one is associated with Fish Lake in the upper North Fork Clearwater River drainage, and the other is associated with Fish Lake in the Lochsa River drainage (CBBTTAT 1998a, CBBTTAT 1998b). The Bull Trout Recovery Team has identified five core areas and 36 local bull trout populations within the Clearwater management unit (Service 2002, 2004c). The core areas include the North Fork Clearwater River, Lochsa River, South Fork Clearwater River, Selway River, and Lower and Middle Fork Clearwater Rivers.

b. South Fork Clearwater River Core Area

Core areas are the building blocks for conserving the bull trout's evolutionary legacy, and are appropriate units of analysis by which threats to bull trout and recovery standards should be measured (70 FR 56258, September 26, 2005). As discussed above, four factors are used to examine the risk of extinction for a core area: number of local populations, adult abundance, productivity, and connectivity. Bull trout are currently known to use spawning and rearing habitat in five stream complexes within the South Fork Clearwater River management unit (i.e., local populations). These local populations include Red River, Crooked River, Newsome Creek, Tenmile Creek and Johns Creek. Because this core area does not have (and is unlikely to achieve) 10 local populations, the core area is at moderate risk of extinction from stochastic events. The loss of one local population in this core area may threaten its long-term viability and recovery. Current abundance and distribution of bull trout in the core area are considered lower than historic levels. It is estimated that there at least 500 spawners present (Service 2002) so this core area is at an intermediate risk of genetic drift. Population trend data is lacking for the core area, so the Recovery Plan determined that until such data is available, the core area is at an increased risk of extinction (Service 2002, 2004c). There is an extremely low incidence of fluvial migratory adults in the core area (Forest Service 1999), as well as resident adults (D. Mays, personal communication, January 30, 2006), but migratory bull trout persist in some local populations so the core area is at an intermediate risk of extinction due to loss of connectivity (Service 2002).

A core area assessment conducted by the Service for the five-year status review ranked this core area as being at risk of extirpation. The main factor determined to be contributing to this risk was threats from habitat destruction or degradation, effects of exotic species, overexploitation and direct human-caused mortality and elimination of natural disturbance regimes, such as fire or flooding. Other factors are low population numbers and geographic distribution (i.e., area of occupancy within the core area is relatively small).

Roads, forestry, grazing, residential development, brook trout, and angling threaten bull trout in this core area. Other limiting factors include water temperature, sediment, instream cover, watershed disturbances (includes upland disturbances such as mining, timber harvest, and roading), habitat degradation, exotics/introgression, harvest, and connectivity (Service 2004c).

G. Consulted-on Effects Rangewide

Consulted-on effects are those effects that have been analyzed through section 7 consultation as reported in a biological opinion. These effects are an important component of objectively characterizing the current condition of the species. To assess consulted-on effects to bull trout, we analyzed all of the biological opinions received by the Region 1 and Region 6 Offices, from the time of listing until August 2003; this summed to 137 biological opinions. Of these, 124 biological opinions (91 percent) applied to activities affecting bull trout in the Columbia Basin population segment. The geographic scale of these consultations varied from individual actions (e.g., construction of a bridge or pipeline) within one basin to multiple-project actions occurring across several basins.

Our analysis showed that we consulted on a wide array of actions that had varying level of effects. Many of the actions resulted in only short-term adverse effects – some with long-term beneficial effects. Some of the actions resulted in long-term adverse effects. No actions that have undergone consultation were found to appreciably reduce the likelihood of survival and recovery of the bull trout. Furthermore no actions that have undergone consultation were anticipated to result in the loss of local populations of bull trout.

H. Conservation Needs

Recovery for bull trout will entail reducing threats to the long-term persistence of populations and their habitats, ensuring the security of multiple interacting groups of bull trout, and providing habitat conditions and access to them that allow for the expression of various life-history forms (Service 2002). The draft Bull Trout Recovery Plan identifies the following tasks needed for achieving recovery: 1) protect, restore, and maintain suitable habitat conditions for bull trout;
2) prevent and reduce negative effects of nonnative fishes and other nonnative taxa on bull trout; 3) establish fisheries management goals and objectives compatible with bull trout recovery; 4) characterize, conserve, and monitor genetic diversity and gene flow among local populations of bull trout; 5) conduct research and monitoring to implement and evaluate bull trout recovery activities, consistent with an adaptive management approach using feedback from implemented, site-specific recovery tasks; 6) use all available conservation programs and regulations to protect and conserve bull trout and bull trout habitats; and 7) assess the implementation of bull trout recovery by management units, and revise management unit plans based on evaluations.

Generally, the conservation needs of the bull trout are often generally expressed as the need to provide the four Cs: cold, clean, complex, and connected habitat. Cold stream temperatures, clean water quality that is relatively free of sediment and contaminants, complex channel characteristics (including abundant large wood and undercut banks), and large patches of such habitat that are well connected by unobstructed migratory pathways are all needed to promote conservation of bull trout at multiple scales ranging from the coterminus to local populations. The recovery planning process for the bull trout (Service 2002; 2004a, b) has also identified the following conservation needs for the bull trout: (1) maintain and restore multiple, interconnected populations in diverse habitats across the range of each interim recovery unit; (2) preserve the diversity of life-history strategies; (3) maintaining genetic and phenotypic diversity across the range of each interim recovery unit; and (4) establish a positive population trend. Recently, it has also been recognized that bull trout populations need to be protected from catastrophic fires across the range of each interim recovery unit.

I. Critical Habitat

The Service issued a final rule designating critical habitat for bull trout range wide on September 26, 2005. The designation includes 4,813 miles of stream or shoreline and 143,218 acres of lake or reservoir. We designated areas as critical habitat that 1) have documented bull trout occupancy within the last 20 years, 2) contain features essential to the conservation of the bull trout, 3) are in need of special management, and 4) were not excluded under section 4(b)(2) of the Act. The Final Rule excluded from designation those federally managed areas covered under PACFISH, INFISH, the Interior Columbia Basin Ecosystem Management Project, and the Northwest Forest Plan Aquatic Conservation Strategy. The Service determined that these strategies provide a level of conservation and adequate protection and special management for the primary constituent elements of critical habitat at least comparable to that achieved by designating critical habitat. Areas managed under these strategies do not meet the statutory definition of critical habitat (i.e., areas requiring special management considerations) and were therefore excluded. The excluded areas include much of the proposed critical habitat in Idaho; the final rule only designates 294 miles of stream/shoreline and 50,627 acres of reservoirs or lakes. There is no designated critical habitat for bull trout within the action area.

III. ENVIRONMENTAL BASELINE

The environmental baseline is defined as the current habitat condition including the past and present impacts on bull trout of all Federal, state or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impacts of state or private actions that are contemporaneous with the consultation in process.

A. Status of the Species in the Action Area

The draft bull trout Recovery Plan identifies bull trout in the Newsome Creek watershed as a local population where spawning and early rearing occur (Service 2002). Bull trout occur in Newsome, Pilot, and Baldy Creeks, and the lower reaches of Bear, Beaver, and Mule Creeks. Idaho

Department of Fish and Game documented 34 bull trout in the Newsome Creek watershed during surveys conducted in 1993. In 1998, Forest biologists recorded 32 bull trout in Pilot Creek. Current (since 1985) bull trout spawning and early rearing are known to occur in upper Newsome, Pilot, and Baldy Creeks and are suspected in Beaver Creek (Forest Service 2005).

Between 2002 and 2006, the Nez Perce Tribe documented a total of 15 fluvial (presumably) adult bull trout in their Chinook salmon weir in Newsome Creek (R. Johnson in litt. 2006). The Tribe operates the weir between May and September. The majority of bull trout were captured (and immediately released) between June and July. The average length of these bull trout was 441 millimeters (17 inches). The Tribe also operates a screw trap in order to estimate Chinook salmon juvenile production. The trap captures emigrating salmonids. Between 2002 and 2005, a total of 65 bull trout were captured between June and November during these years; forty-three of these fish were measured. The average length of these fish was 231 millimeters (9 inches).

Bull trout status in the Newsome Creek watershed is considered to be weak throughout most areas for which there is available information, except for the headwaters of Pilot Creek which is considered a strong population thought to be comprised of resident fish (Forest Service 2005).

In the stream restoration project area, low densities of bull trout are known to occur in the mainstem Newsome Creek. In the road decommissioning and improvement project area, bull trout are known to occur in lower Mule Creek up to the confluence with Mare Creek.

B. Factors Affecting the Species in the Action Area

As previously described in the Status of the Species section of this Opinion, bull trout distribution, abundance, and habitat quality have declined range wide primarily from the combined effects of habitat degradation and fragmentation, blockage of migratory corridors, poor water quality, angler harvest, poaching, entrainment, and introduced non-native fish species.

Although Newsome Creek historically provided some of the most productive fish habitat in the South Fork Clearwater subbasin, conditions have been altered from historic primarily by dredge mining and streamside roads. Historic mining has affected stream and riparian processes in most of the mainstem of Newsome Creek and in some tributaries. In most mined reaches the channel has been straightened and tailing piles confine the channel. Dredging has lowered the channel and disconnected it from its former floodplain (CBBTTAT 1998c). In dredged reaches riffle habitats are more abundant and run/glide and pool habitats are less abundant when compared to similar undredged reaches (Forest Service and Nez Perce Tribe 2005).

Road densities are elevated throughout the Newsome Creek drainage ranging from a low of 1.27 miles per square mile in Pilot Creek to a high of 5.0 in Bear Creek (CBBTTAT 1998c). There appears to be an inverse relationship between watershed road density and bull trout occurrence in that bull trout typically do not occur where road densities exceed 1.7 miles per square mile (Service 2002). Ripley et al. (2005) found a negative relationship between road density and bull trout occurrence and abundance. Bull trout population strongholds occur most often in roadless areas (Quigley and Arbelide 1997, Kessler et al. 2001).

Cobble embeddedness, percent surface fines, fines by depth, acting large woody debris, and pool frequency are all rated as being in low condition (Dechert et al. 2004). Mainstem Newsome Creek from the mouth to Beaver Creek and Beaver Creek from the headwaters to Newsome Creek are 303(d) listed for sediment (Dechert et al. 2004).

The Forest attempted to address some of these habitat issues in the 1980s by installing instream structures which included check dams, habitat rocks, and large woody debris. The current project will continue to improve habitat conditions in the Newsome Creek drainage and benefit bull trout in the long term.

Status Summary

The Service concludes that bull trout, a species requiring relatively pristine habitat conditions, are in general exposed to suboptimal habitats in the action area primarily as a result of past and on-going human activities, and population numbers are reduced from historic levels.

No known trend data exist for bull trout in Newsome Creek. The Forest concludes that the population is stable or fluctuating in a downward trend with the total number of individuals less than 500 but greater than 50 (Forest Service 2005).

IV. EFFECTS OF THE ACTION ON BULL TROUT

A. Direct and Indirect Effects

Direct effects are defined as those that result from the proposed action and directly or immediately impact the species or its habitat. Indirect effects are those that are caused by or will result from the proposed action and are later in time but are still reasonably certain to occur (50 CFR §402).

Beneficial effects to bull trout are expected from project implementation in terms of improvements to habitat quality and habitat access. A short-term increase in suspended and deposited sediment is the main adverse effect expected from the project.

Road decommissioning and improvement activities have the potential to increase sediment production and delivery into streams during the short term but are designed to result in long-term reductions in sediment and an overall net improvement on a watershed basis.

Replacing/removing culverts to eliminate fish barriers can also have a short-term negative effect on fish habitat because of the sediment deposition that occurs downstream of the culvert during the replacement/removal process.

Stream and riparian restoration will also result in short-term (less than 5 years) negative effects on fish habitat due to the release of sediment in Newsome Creek, but provide long-term benefits in terms of improvement in channel morphology and hiding cover.

Monitoring results from other instream projects can provide an idea of expected suspended sediment concentrations and duration of effects. For example, monitoring results from culvert replacement projects (Thompson 1995, Forest Service 2000, 2003) indicate that suspended sediment concentrations downstream of culvert replacement sites will remain elevated for up to 24 hours but will probably peak within two to three hours at levels as high 950 mg/l. Sedimentation on the stream bottom will occur up to 300 feet downstream of the site but the sediment plume will probably extend further.

Monitoring of in-channel work on the Nez Perce National Forest showed that sediment concentrations immediately downstream of where machinery was working ranged from 270 to 623 mg/l (Forest Service 2002). Concentrations in the mixing zone ranged from 69 to 190 mg/l. Visible suspended sediment was observed for no more than 10 minutes following disturbance, although it is not clear from the report how long the machine worked and how long associated suspended sediment was produced or how far downstream the sediment plume extended.

Based on the work of Newcombe and Jensen (1996) sublethal adverse effects are expected for juvenile and adult salmonids at suspended sediment concentrations as low as 55 mg/l at exposure times of three hours. This level of exposure may produce short-term reductions in feeding rates and feeding success, and minor physiological stress. Compared with other salmonids, bull trout are more sensitive to sediment and require the lowest suspended sediment levels (Bash et al. 2001). Based on the monitoring results summarized above, the Service anticipates that bull trout present in the action area during project implementation may be adversely affected by exposure to suspended sediment concentrations exceeding 55 mg/l for durations of three hours or more.

The extent and magnitude of sediment effects to bull trout depend on numerous factors including age of fish (eggs, larvae, and fry are generally more susceptible (Bash et al. 2001)), suspended sediment concentration, duration of exposure, stream flow, precipitation events, and the efficacy of project erosion control measures. Given the predicted level of suspended sediment exposure (concentration and duration), no bull trout mortality is expected from the project.

A reasonable expectation would be that, in order to avoid adverse effects, bull trout juveniles and adults may move away from areas with elevated levels of suspended sediment if possible Bison and Bilby (1982) found that juvenile coho salmon (*Oncorhynchus kisutch*) avoided increasingly turbid waters in a laboratory setting. But, relocating to avoid sediment may have indirect adverse effects on bull trout. Salmonids exhibit a dominance hierarchy where the dominant fish (usually the largest) maintain the most desirable territories (i.e., defended area) in terms of available cover and food sources (Gilmour et al. 2005). Subordinate fish may be excluded from food and cover resources and show reduced fitness and mortality (Gilmour et al. 2005). Berg and Northcote (1985) found that dominance hierarchies broke down and territories were not defended when juvenile coho salmon were exposed to short term sediment pulses. We assume that bull trout behave similarly to other studied salmonids. Based on this assumption we expect bull trout that abandon territories in order to avoid turbidity associated with culvert replacement projects, may suffer increased competition, predation (through loss of cover), stress, and reduced feeding efficiency.

Sediment deposition will occur downstream of the instream work sites. The extent of deposition is dependent upon stream size and flow. Culvert replacement monitoring on the Bitterroot National Forest showed that deposited sediment was visible 150 feet below the replacement site (Forest Service 2003). Although unlikely, bull trout spawning and early rearing (life history stages especially connected with stream channel substrate) may occur in the action area and may be impacted by deposited sediment. Indirectly, there may be a short-term reduction in macro-invertebrate abundance (a potential bull trout food resource) in areas of sediment deposition (Henley et al. 2000). However, deposition areas will be relatively small and localized in the Project area so effects on bull trout prey availability or foraging efficiency are expected to be insignificant. Additionally, high flow events following project implementation are expected to flush any deposited sediment from the action area.

Project design criteria and turbidity monitoring (Appendix A) will be used to minimize sediment effects and prevent exposure from reaching levels where bull trout mortality might occur. These design criteria include the use of erosion control measures such as silt fences, sediment traps, and mulching. Disturbed areas will be seeded with native species and mulched. Ground disturbing activities within 300 feet of streams will be conducted during low flow conditions between July 1 and October 31. Instream work will be conducted between July 1 and August 15. A technical advisor will be on-site when in-channel work occurs. Turbidity will be monitored to ensure that risks to bull trout from suspended sediment are minimized.

Other potential adverse effects to bull trout may result from the introduction of toxic fuels, lubricants, coolants, or hydraulic fluids into the stream through accidental spills or equipment leaks. The risk of these effects will be minimized because equipment will be checked for leaks daily and fuel storage and refueling will occur at the greatest possible distance from surface water. An insignificant short-term increase in stream temperature is expected due to the removal of existing vegetation on top of mining waste. However, the riparian area will be revegetated and will provide increased shade over the long term.

Additionally, bull trout may be injured or killed in the process of collecting and removing them from the culvert removal/replacement sites and channel restoration sites. The use of electrofishing or other methods to remove bull trout from these work sites requires that the Forest possess a current Scientific Collecting Permit issued by Idaho Department of Fish and Game, and follow all associated requirements. The Service has already analyzed the effect of work conducted under the Department's permits in a February 2000 intra-Service Biological Opinion (Service 2000).

Although the project is expected to have some adverse impacts on bull trout in the action area, beneficial effects are anticipated as well. Potential direct beneficial effects for bull trout include access to previously unavailable habitat and improvement in habitat conditions. Improved habitat conditions may indirectly benefit bull trout by increasing the abundance of salmonid prey species.

Newsome Creek channel morphology will be greatly improved with stream restoration. The project area is divided into 6 reaches for analysis and most of the proposed work will occur in Reaches 2, 4, and 5. The proposed project will increase channel length and sinuosity by approximately 20 percent in Reaches 2 and 5 and by 10 percent in Reach 4. The number of pools will be increased by approximately 50 percent in Reach 2 and 4 and by nearly 100 percent in Reach 5. Flood-prone width will be doubled in Reach 2 and 4 and tripled in Reach 5. The recovery of natural geomorphic process is expected to occur in less than 50 years.

B. Effects of Interrelated or Interdependent Actions

The Service considers any required maintenance of culverts and instream structures in bull trout habitat to be actions that are interrelated and interdependent with the project. The temporal and spatial scope of these anticipated activities is not known, but short-term adverse effects to bull trout from increases in suspended and deposited sediment are expected. The Service assumes that effects to bull trout will be reduced but not eliminated by the use of best management practices.

V. CUMULATIVE EFFECTS

Cumulative effects are the effects of future state, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Because approximately 99 percent of the Newsome Creek watershed is under Forest Service management, the cumulative effects of state, tribal, local, and private actions is limited, with the exception of the on-going operation of the Tribe's weir and screw trap at the mouth of Newsome Creek. Both upstream and downstream migrating bull trout may be negatively impacted through trapping and handling.

Illegal and inadvertent harvest of bull trout is also considered a cumulative effect. Harvest can occur through both misidentification and deliberate catch. Schmetterling and Long (1999) found that only 44 percent of the anglers they interviewed in Montana could successfully identify bull trout. Similarly Polzin and Fredenberg (2005) surveyed anglers at Swan Lake, Montana, and found that only about 54 and 26 percent of the respondents could correctly identify adult and juvenile bull trout respectively. Being aggressive piscivores, bull trout readily take lures or bait (Ratliff and Howell 1992). Idaho Department of Fish and Game reports that, during the 2002 salmon and steelhead fishing seasons, 400 bull trout were caught and released in the regional (Clearwater administrative region) waters of the Salmon and Snake Rivers (Idaho Department of Fish and Game 2004). Spawning bull trout are particularly vulnerable to harvest because the fish are easily observed during autumn low flow conditions. Hooking mortality rates range from 4% for nonanadromous salmonids with the use of artificial lures and flies (Schill and Scarpella 1997) to a 60 percent worst case scenario for bull trout taken with bait (Idaho Department of Fish and Game 2001). Thus, even in cases where bull trout are released after being caught some mortality can be expected.

VI. CONCLUSION

The Service has reviewed the current status of bull trout, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects. It is the Service's biological opinion that the project is not likely to jeopardize the continued existence of the South Fork Clearwater River core area or the Columbia River population segment of bull trout, and therefore the species (64 FR 58930, November 1, 1999).

The Service concludes that direct effects would be limited to short-term disturbance or harassment of migrating and resident adult bull trout with potential for harm and harassment to eggs, alevins, fry, and juvenile fish. Short-term and long-term indirect effects from proposed project activities may occur but these effects are anticipated to occur only within the action area and should be minimized by the design criteria incorporated into the project proposal. The Service expects that the numbers, distribution, and reproduction of bull trout in the action area, the Newsome Creek local population, the South Fork Clearwater core area, the Clearwater River management unit, or in the Columbia Basin population segment will not be significantly changed as a result of this project. Reproduction is not expected to be appreciably altered because no project activities will occur in documented bull trout spawning areas (although an unknown quantity of bull trout spawning may occur in the action area). Connectivity between the Newsome Creek local population and other local populations in the Clearwater River recovery unit will not be significantly affected. Proposed restoration actions should result long term improvements in habitat quality and connectivity. As such, we have concluded that the survival and recovery of bull trout populations will not be jeopardized by the project.

No critical habitat is designated in the action area so none will be affected.

VII. INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The Forest has a continuing duty to regulate the activity covered by this incidental take statement. If the Forest fails to assume and implement the terms and conditions the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Forest must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

A. Amount or Extent of Take

The Service expects that all bull trout (including eggs, alevins, fry, and spawning adults) in the immediate vicinity of stream crossing improvement sites and instream restoration activities and within the downstream extent of sediment and/or turbidity effects (300 feet) may be subject to take in the form of harm or harassment. Similarly all bull trout occupying affected streams, whether resident or migratory, in the action area may be harmed by sediment pulses and hydrograph changes resulting from road reconstruction and road decommissioning. The Service believes that the risk of take will be minimized through application of the resource protection measures to be applied during implementation of the proposed action, which may reduce impacts to bull trout and bull trout habitat.

Survey and monitoring data indicate the presence of bull trout throughout the action area. The Service anticipates that incidental take will only occur and be permitted during the following time period and in the following forms during the estimated six year life of the project.

1. Take of bull trout (including eggs, alevins, and fry) in the form of harm or harassment associated with direct disturbance from instream project activities such as channel restoration and culvert replacement. These types of instream activities will be confined to a July 1 to August 15 work window. This work window may be adjusted on a site specific basis with Service approval.

2. Take of bull trout in the form of harm or harassment associated with the disturbance of substrate materials or sediment production, intentionally or unintentionally, while working in the stream channel between July 1 and August 15. This date may be extended where applicable and agreed upon by the Service (e.g., in reaches upstream of bull trout habitat).

Incidental take will be limited to the following locations, life forms, and life stages that are likely to be affected.

1. The location of the expected incidental take is in mainstem Newsome Creek, Mare Creek, and Mule Creek.

2. The life forms expected to be harmed or harassed include fluvial and resident bull trout.

3. The life stages expected to be harmed or harassed include adult and juvenile fish, as well as eggs, alevins, and fry.

The Service expects no direct lethal take of bull trout (including eggs, alevins, and fry). If the incidental take anticipated by this document (i.e., harm and harassment to bull trout within the action area) is exceeded, project activities associated with this exceedence will cease and the Forest will immediately contact the Service to determine if consultation should be reinitiated. Authorized take will be exceeded if project activities result in any bull trout (including eggs, alevins, and fry) mortality; instream restoration or stream crossing improvement activities result in suspended sediment exposure (concentration and duration) levels determined to have more than minor physiological effects to bull trout within 300 feet downstream of the instream work site; or if changes to bull trout habitat in the action area exceed what is predicted in the Assessment (including changes to sediment yield, cobble embeddedness, stream temperature, water quality, bank stability, or channel morphology). Authorized take will also be exceeded if instream work occurs outside of the July 1 to August 15 work window unless a different window is agreed upon by the Service.

Bull trout may be injured or killed in the process of collecting and removing fish prior to instream work. This take has already been anticipated and analyzed in the Service's Biological Opinion for Idaho Department of Fish and Game's Scientific Collecting Permit (Service 2000), and will not be addressed in this Opinion.

B. Effect of the Take

The Columbia River population segment comprises 22 management units including the Clearwater River unit (Service 2002). The Clearwater management unit contains five core areas with 36 local populations. The Newsome Creek watershed contains the only local population within the action area. In the action area, early rearing (and therefore spawning) is only known to occur in the Upper Newsome. Anticipated take may be reduced because the project includes design criteria to avoid and reduce adverse effects. The probability that the proposed action will eliminate the Newsome Creek local population of bull trout is discountable. Local bull trout densities and distribution in the affected streams are not expected to be significantly altered. As only one out of a total of 36 local populations may be affected by project activities, it is unlikely that the proposed action would impair productivity or population numbers of bull trout in the Clearwater recovery units or in the Columbia River population segment. Watershed restoration activities, such as instream and riparian rehabilitation, road decommissioning, and culvert replacement/upgrades are expected to result in long-term improvements in bull trout habitat conditions in the Newsome Creek watershed.

C. Reasonable and Prudent Measures

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take from Project related activities in the action area.

- Minimize the potential for harm to habitat and harm or harassment of bull trout associated with watershed restoration activities including installation of instream structures, channel realignment, and culvert replacements.

D. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Forest must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline required reporting and monitoring requirements. These terms and conditions are non-discretionary.

1a. The Forest will plan and implement instream restoration projects to avoid bull trout spawning habitat and spawning adults. The Forest will conduct bull trout redd surveys in upper Newsome Creek prior to implementing any instream restoration actions in this section of creek.

1b. Where their use is required to prevent bull trout from entering instream work areas, block nets shall be checked regularly to ensure that they are functioning properly, are free of debris and are not entraining any bull trout.

1c. When conducting instream work (other than crossing upgrades) in mainstem Newsome Creek, passage for migrating bull trout will be maintained at all times.

1d. To avoid harassment effects, instream activities in or near occupied bull trout habitat shall only be conducted during daylight hours within the identified instream work window.

1e. The Forest will ensure that all erosion and sediment control measures are maintained until construction activities are complete and disturbed areas are stabilized.

1f. Project activities shall cease during periods of heavy precipitation where run-off could potentially cause erosion and sediment delivery to bull trout habitat in the action area.

E. Monitoring/Reporting

1. The Forest shall provide an annual report detailing Project implementation progress and baseline updates (e.g., changes to watershed and habitat indicators such as road density and pool frequency) that will include results of applicable implementation and effectiveness monitoring, any bull trout surveys conducted in the project area, a summary of bull trout observed or handled under the state Collecting Permit, as well as the results of monitoring revegetation efforts. The monitoring report will be sent to the Snake River Fish and Wildlife Office, 1387 South Vinnell Way, Suite 368, Boise, Idaho 83709 by March 1.

2. Upon locating dead, injured, or sick bull trout, or upon observing destruction of redds as a result of Project activities such activities shall be terminated and notification must be made within 24 hours to the Service's Division of Law Enforcement at (208) 378-5333. Additional protection measures will be developed through discussions with the Service.

3. During Project implementation the Forest shall promptly notify the Service of any emergency or unanticipated situations arising that may be detrimental for bull trout relative to the proposed activity.

VIII. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act requires Federal Agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends that the Forest implement the following conservation measures.

1. In order to better assess sediment effects on bull trout from future instream projects, take suspended sediment samples at the turbidity monitoring stations established for the project. Although turbidity and suspended sediment concentration are correlated, the relationship varies between individual streams and watersheds (Bash et al. 2001, Lewis et al. 2002, Rowe et al. 2003). Measuring suspended sediment will assist in making stream specific correlations between suspended sediment concentrations and turbidity.

2. Monitor and evaluate all-terrain vehicle use of trails within the project action area as a source of sediment to aquatic systems in project area. If assessment indicates these trails are adversely affecting aquatic systems then eliminate source of adverse effects by closing and rehabilitating trails or where closure is not feasible install bridges at stream crossings.

3. Promote recovery of bull trout in the action area by identifying potential habitat restoration opportunities and implementing these actions in the near-term.

4. Continue to survey and document bull trout distribution in the action area using a suitable protocol (e.g., Peterson et al. 2002).

5. Continue to promote recovery of bull trout by identifying additional habitat restoration and fish passage opportunities, and implementing these actions in the near-term.

6. When re-establishing riparian vegetation, focus on establishing native woody vegetation, such as willows, where appropriate.

To keep the Service informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification on implementation of any conservation recommendations.

IX. REINITIATION NOTICE

This concludes formal consultation on the action outlined in the request. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion; 3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

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APPENDIX A. Resource Protection Measures from the Assessment.

Stream Reconstruction

1. The NPT habitat biologists and engineer, Red River Ranger District fisheries biologist, NPNF hydrologist, the contractor (or their qualified representative), and contracting officer representative (COR) will be the technical advisors and function as an adaptive management/problem avoidance team, as was done successfully by the TAC in the Red River WMA project. This team will be available during the entire field season. If any team member has to be absent due to fire duty, personal matters, etc., an interim member will be appointed. The IDFG, IDEQ, IDWR, NOAA, U.S. Fish and Wildlife Service (hereafter "FWS"), Army Corps of Engineers, and BPA will be invited to participate in any technical field reviews.

2. One of the technical advisors (No. 1, above) or one of their technicians will be on-site any time in-channel work occurs during the six-week, in-channel window (July 1-August 15).

3. The contractor performing the in-channel work, the COR, and a fisheries biologist or hydrologist from the technical advisory team (or one of their technicians) will meet the first morning the in-channel work begins, and at the beginning of every work week thereafter, for as long as necessary. The purpose is to review work plans and to determine if any changes are needed based on recent work activity.

4. Ground-disturbing activities will be completed during base-, low-flow conditions, approximately July 1 to October 31.

5. Activities will be conducted in the channel between July 1 and August 15 to avoid sediment deposition on redds with emerging steelhead, to avoid adult chinook spawning activity, and to avoid any bull trout migrating to the headwaters of Newsome Creek to spawn. These dates may be adjusted in cooperation with the FWS and NOAA.

6. Stream crossings along the access road (Trail 826) will be inspected for steelhead redds during May. If any redds are found, measures will be taken by a NPNF or NPT fisheries biologist or biological technician so that vehicles will not affect the redds. If any chinook are exhibiting spawning behavior at the crossings, measures will be taken to avoid disturbing any subsequent redds.

7. All disturbed sites will be graded and shaped, including the tailings piles, which will be moved to the toe slope repository areas located away from the stream channel. The feasibility study identified these areas, but their proximity to Newsome Creek will be re-checked during relocation of the tailings to assure they are far enough from Newsome Creek to prevent sediment delivery.

8. Disturbed areas on the actual floodplain will be seeded as needed with annual rye grass, planted with native shrubs, and/or conifers (approximately 4-foot by 4-foot spacing on all disturbed areas), and covered with weed-free straw mulch immediately upon completion of

work in that area. Any small trees that need to be cleared from the work sites will be placed on disturbed areas to help stabilize the soils. These areas will be monitored during post-project monitoring to assess revegetation success.

9. Work will be stopped if erosion or saturated soil conditions exist at the work site.

10. A spill prevention and control plan that is approved by the NPNF COR will be required for handling and storage of petroleum products. Any storage of petroleum products in excess of 200 gallons will be kept within constructed containment structures that have an impervious liner with a capacity equal to or larger than the storage container. The containment structure will be located at least 100 feet from live water. Before being used within 300 feet of Newsome Creek, all heavy equipment or other machinery will be inspected for hydraulic or other leaks daily. Leaking or faulty equipment will not be used or stored anywhere that leaked fluid could reach water. Equipment with accumulations of oil, grease, or other toxic materials will be cleaned prior to use in these areas. Storage areas for equipment used along Newsome Creek will be approved by the NPNF COR. No disposal of petroleum products will be permitted on national forest land.

11. All equipment used in the stream restoration activities will be thoroughly washed before it enters the NPNF to prevent the introduction of noxious weeds. In addition, mulching material and applied seed will be certified as weed seed free.

12. Known noxious weed infestations on or adjacent to the construction sites will be treated prior to any further ground disturbance. Sites will also be monitored frequently to ensure early detection and treatment of noxious weeds after the earthwork is completed. Use of herbicide, if needed, will be limited to use of glyphosphate, in a product formulation such as Rodeo that contains no surfactant.

13. Conservations measures described in *Canada Lynx Conservation Assessment and Strategy* will be applied (Ruediger et al. 2000).

14. Fish in old sections of channel to be abandoned will be removed before the new sections of channel are connected to the main stem. This will be accomplished in the following manner listed below (the NPNF or NPT biologist or their biological technician leading the work will have an annual IDFG collection permit which includes NOAA electrofishing provisions).

    (1.) A seine will be pulled through the old channel section, keeping it as close to the bottom and bank contours as possible. Fish will be removed from the seine periodically and placed into buckets.

    (2.) At the end of the seining pass, fish will be released in the main stem.

(3.) If fish are seen escaping the seine or are seen in the old channel the following morning, another pass with the seine will be made.

(4.) If fish are seen after Step (3.), electrofishing gear will be used to capture the remaining fish, which will then be transferred to the main stem.

14. When water is introduced to new sections of channel, at first a small breach of the remaining streambank will be dug between the new channel and main stem to allow water to slowly flow into the new section, thereby avoiding excessive turbidity.

15. The dewatered section of the old channel will again be checked for stranded fish after the flows sufficiently recede. Any stranded fish will be immediately moved to a portion of the channel that has not been dewatered.

16. The upstream 50-100 feet of old channel sections will be plugged with boulder and cobble to help prevent any tendency of the stream to "jump" back into the old channel during high flow events (this could strand fish in the newly-created channel section).

17. Silt fences, straw bales, and/or sand bag windrows will be installed as needed before excavation occurs to separate the disturbed areas from the live water and prevent eroded soil from entering the stream channel.

18. In order to reduce the amount of sediment production from vehicles working on the project, the existing single-track "jeep road" (now called Trail 826) would be minimally improved to provide motorized access to the stream reaches. This would require application of gravel, particularly in wet areas, limited brush removal, and hardening of those ford approaches without sufficient streambank rock content. Some widening may be necessary at selected places. The single-track road may be relocated to the outside edge of the riparian habitat where feasible, to get it out of the riparian zone to prevent sediment deposition during the channel project and during any future use of the road. The final details on the access route will be available once the design plan is completed by the contractor. These details will be reviewed by NOAA, FWS, the NPT and NPNF during the review of the design and build plan - see "Review of the Final Design and Build Plan".

19. After construction activities are completed, motorized administrative access along Newsome Creek to the Haysfork hydraulic placer mine would be maintained in a primitive state. Upstream of the Haysfork hydraulic placer mine, the temporary road would be decommissioned and reverted to a narrow trail providing non-motorized access to the upper project reaches.

20. During implementation, if previously unknown Forest Service sensitive plant species are observed and activities would impact individuals or populations, appropriate protection measures will be implemented. Appropriate measures will vary depending upon the ecology of the species involved and nature of the activity and will be directed by a botanist.

21. The State of Idaho Best Management Practices and Forest Service Soil and Water Conservation Practices will be applied and are incorporated by reference.

Road Obliteration/Improvements

1. Ground-disturbing activities within 300 feet of streams will be completed during base-, low-flow conditions. Road work will occur from approximately mid-June through October. Fish passage will be provided at all times during the culvert replacements for salmon, steelhead, bull trout, and westslope cutthroat trout.

2. All disturbed sites will be graded and shaped to allow drainage. Areas of disturbance will be seeded with annual rye grass and mulched immediately upon completion of work in that area. Existing downed logs will be placed on the slope of disturbed soils to reduce surface erosion.

3. Work will be stopped if erosion or saturated soil conditions exist at the work site.

4. A spill prevention and control plan that is approved by the contracting officer will be required for the handling and storage of petroleum products. Any storage of petroleum products in excess of 200 gallons will be kept in constructed containment structures that have an impervious liner with a capacity equal to or greater than the storage container. The containment structure will be located at least 300 feet from live water (a surface water body that supports aquatic life and is connected to fish-bearing waters). No disposal of petroleum products will be permitted on national forest land.

5. All equipment used in the obliteration activities will be thoroughly washed before it enters the NPNF to prevent the introduction of noxious weeds. In addition, mulching material and applied seed will be certified as weed seed free. Known noxious weed infestations on or adjacent to the construction sites will be treated prior to any further ground disturbance. Sites will also be monitored frequently to ensure early detection and treatment of noxious weeds after the earthwork is completed. Use of herbicide, if needed, will be limited to glyphosphate, in a product formulation such as Rodeo that contains no surfactants.

6. Conservation measures described in *Canada Lynx Conservation Assessment and Strategy* will be applied (Ruediger et al. 2000).

7. If a cultural resource is encountered, the contractor would cease all work in the immediate area and contact the NPNF Archaeologist.

8. Any road cuts, fills, and treads will be stabilized with a cover of annual grass where roads will remain for more than one year. If avoidance of live water is not possible, stream crossings will be designed according to criteria that are consistent with those described below and in Forest Plan Amendment 20 (PACFISH) (USDA Forest Service 1995).

Culvert Removal and Replacement

1. Removal of culverts in streams in the national forest will require the implementation of several standard construction practices to reduce sedimentation. The culvert removal sites will be dewatered during construction activities. Temporary in-channel sediment traps (weed-free straw bales) will be installed below each culvert removal site to catch sediment resulting from the construction. After the spike in sediment has receded, the straw bales will be removed. The slopes adjacent to the streams will be graded to approximate the natural contour, seeded with annual rye grass, and mulched. The natural regeneration of shrubs and trees will be supplemented as necessary with plantings. The in-channel work will be limited to periods of low-flow conditions.

2. At each culvert replacement site, the stream will be diverted (by means of a temporary culvert) or pumped around the work site (dewatered), and fish screens will be placed on the pump intakes.

3. In fish-bearing streams in which culvert replacements will occur, fish will be driven away from the work site by individuals wading in the stream before work begins. This will harass, but not result in injury to these fish or significantly disrupt behavior. It is unlikely that steelhead occupy any culvert removal or replacement site on this project except that a few juvenile steelhead may be as far upstream as the culvert replacement site on Mule Creek. Almost all culverts on the project are located in upper elevation areas in westslope cutthroat habitat or in non-fish bearing creeks. It is unlikely that bull trout will be encountered at any culvert site on the project, due to the very low numbers of bull trout found in any subwatershed of the project area. A fisheries biologist or biological technician will be onsite during dewatering and will follow this procedure:

    (1) A block net will be placed at a point upstream of the dewatering.

    (2) Beginning at the upstream end of the section to be dewatered, fish will be driven downstream by individuals wading in the stream and pushing the fish with a seine.

    (3) Step 2 will be repeated until no fish are observed.

    (4) After the final pass with the seine net, a block net will be installed at the downstream end of the dewatered area (approximately 200 feet from the downstream end of the section to be dewatered).

    (5) Water will be diverted after the lower block net is in place.

    (6) The dewatered channel will be surveyed for stranded fish after flows sufficiently recede and before any equipment is operated in the channel. Any stranded fish will be immediately moved to a portion of the channel that has not been dewatered.

(7) In the event the seine net does not work, electrofishing may need to be done (using NOAA guidelines included with the IDFG collection permit).

4. Silt fences, straw bales, and/or sand bag windrows will be installed as needed before excavation occurs to separate the disturbed areas from live water, and prevent eroded soil from entering the stream channel.

5. Disturbed areas will be seeded as necessary with annual rye grass, planted with native shrubs and/or conifer seedlings (4-foot by 4-foot spacing in all disturbed areas), and covered with weed-free straw mulch. Any small trees excavated from the work sites will be placed on the rehabilitated disturbed areas to help stabilize the soils.

6. Any riprap or other rock materials used for reinforcement will be placed so the material does not narrow the channel or confine the floodplain.

7. The State of Idaho Best Management Practices and Forest Service Soil and Water Conservation Practices will be implemented and are incorporated by reference.

Monitoring and Effectiveness

1. A fisheries biologist, hydrologist, or their technician from either the NPNF or NPT will visit the work sites at least once a week to ensure that the mitigation measures are being adequately followed. Inspections on the stream restoration reaches will occur more often during the in-channel work (see "Mitigation – Stream Reconstruction," measure no. 2). The NPNF COR will also monitor compliance with the mitigation measures. Any site-specific adjustments made during the replacement process must be within the effects analyzed in this biological assessment/evaluation.

2. All completed work will be monitored for effectiveness. Weeds will also be monitored to ensure that new infestations are treated.

3. Revegetation will be monitored for effectiveness and survival. Areas that are not successfully revegetated will be reseeded (grasses) and replanted (trees and shrubs). Monitoring of revegetation success may have to continue significantly longer than other monitoring because effects such as soil and weather conditions, elk and moose browsing, beaver activity, etc., may take 3-7 years or longer to become apparent.

4. Water temperature has been monitored above and within the project area since 2002 and will continue for at least three years after all in-channel work is completed.

5. Turbidity will also be monitored for potential effects on fish (incidental take) and for state water quality standards, according to the following methods (state water quality standards allow 25 NTUs above background levels for up to 10 consecutive days): In addition to turbidity considerations for listed fish, Idaho state water quality standards allow A standard

of 25 NTUs for up to three continuous hours was used as a surrogate in the American and Crooked River Project Section 7 consultations to approximate the effects from turbidity on listed fish. In-channel activities causing this level of turbidity or higher for over a three hour duration will be suspended. Samples will be taken above the work sites to determine the background turbidity level. Activities will be allowed to proceed once the NTU readings return to the background level or 10 NTUs. Samples will be collected 300 feet below the in-channel work site. Turbidity will be monitored at least 20-30 percent of the time machinery is working on in-channel improvements. As an example, turbidity would be measured one day during a five-day workweek and multiple samples will be collected throughout the day. The frequency will be increased if 25 NTUs is exceeded within the three hour time period to determine if the exceedance is anything more than momentary. Samples will be collected using a DH-48 depth integrated sampler. This sampling device integrates width and depth of the mixing zone and the entire channel width in the fully mixed zone. Samples will be analyzed using a field turbidimeter.

6. Incidental take will also be monitored to document the actual number of steelhead and bull trout encountered in the capture and transfer process from old sections of the channel. Capture by netting and electrofishing and the bucket transfer process are forms of harassment and could also result in injury or mortality of a small percentage of individuals. The total number of bull trout and juvenile steelhead, including resident rainbow, collected during netting and electrofishing will be documented and reported to NOAA, FWS, and IDFG.

   As fish are being transferred in buckets from the old channel sections they will be observed for signs of odd movements and electrofishing burn marks; this data will also be reported. All of the information in this item (6.) including the approximate size of the area electrofished will be kept in a record book.

7. If any incidental take limit in the BOs is exceeded, the activity causing the limit to be exceeded will be stopped until NOAA and/or FWS is contacted.

8. The NPT Fisheries Department, Habitat/Watershed Division, has comprehensive as well as site-specific monitoring plans for watershed restoration activities that will be implemented following project completion. For the channel restoration, the NPT Monitoring Team has already collected one season of cross-sectional monitoring data at some of the original sites established in the 2004 feasibility study. This will be repeated annually beginning the first season of in-channel work and continuing for at least three years after all in-channel work is completed. After that time, monitoring will be changed to a longer interval, based on funding and staff availability.

9. The monitoring results will be documented in the NPT's Annual Report to the Bonneville Power Administration (BPA). Photographs of the project work will be included. Copies of turbidity, electrofishing, and revegetation monitoring results and results of specific take

monitoring will be submitted to NOAA and FWS. Copies of the reports and/or data will also be available to other interested agencies. Annual monitoring will occur for up to three years following project work to ensure that stream channel conditions, hydrologic functions and revegetation are achieved as planned. This effectiveness monitoring will be documented in the annual reports to BPA.