UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to NOAA Fisheries No:
2004/00745

September 20, 2004

Kelly Mason
Bonneville Power Administration
PO Box 3621
Portland, Oregon 97208-3621

Re: Endangered Species Act Interagency Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Wallowa River/McDaniel Restoration Project, Wallowa Subbasin, Wallowa County, Oregon

Dear Ms. Mason:

The enclosed document contains a biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7(a)(2) of the Endangered Species Act (ESA) on the effects of the Wallowa River/McDaniel Restoration Project. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of Snake River (SR) spring/summer Chinook salmon or SR steelhead, or result in the destruction or adverse modification of critical habitat. The Opinion also includes an incidental take statement with terms and conditions necessary to minimize the impact of taking that is reasonably likely to be caused by this action. Take from actions by the action agency and applicant, if any, that meet these terms and conditions will be exempt from the ESA take prohibition.

This document also includes the results of our consultation on the action's likely effects on essential fish habitats (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), and includes conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects to EFH. Section 305(b)(4)(B) of the MSA requires Federal agencies to provide a detailed written response to NOAA Fisheries within 30 days after receiving these recommendations. If the response is inconsistent with the recommendations, the Bonneville Power Administration must explain why the recommendations will not be followed, including the justification for any disagreements over the effects of the action and the recommendations.

If you have questions regarding this consultation, please contact Eric Murray, fisheries biologist in the Eastern Oregon Branch Office of the Oregon State Habitat Office at 541.975.1835, ext. 222.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Allen Childs, CTUIR
Vance McGowan, ODFW

Endangered Species Act – Section 7 Consultation
Biological Opinion

&

Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Wallowa River/McDaniel Restoration Project
Wallowa River
Wallowa Subbasin
Wallowa County, Oregon

Lead Action Agency:	Bonneville Power Administration
Consultation Conducted By:	NOAA's National Marine Fisheries Service, Northwest Region
Date Issued:	September 20, 2004
Issued by:	for Michael R Crouse _____ D. Robert Lohn Regional Administrator
NOAA Fisheries No.:	**2004/00745**

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INTRODUCTION

This document prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) includes a biological opinion (Opinion) and incidental take statement in accordance with section 7(b) the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531, et seq.), and implementing regulations at 50 C.F.R. 402. As a result of an August 6, 2004, decision by the Ninth Circuit Court of Appeals (*GiffordPinchot Task Force et al. v. U.S. Fish and Wildlife Service*), which ruled that the regulatory definition of destruction or adverse modification of critical habitat is flawed, NOAA Fisheries will rely on the ESA statutory requirement, at 16 U.S.C. 1536(a)(4), for its critical habitat analysis. The essential fish habitat (EFH) consultation was prepared in accordance with section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 *et seq*.) and implementing regulations at 50 C.F.R. 600. The administrative record for this consultation is on file at the Eastern Oregon Habitat Branch in LaGrande, Oregon.

Background and Consultation History

The Bonneville Power Administration (BPA) proposes to fund the Wallowa River/McDaniel Restoration Project (Project). The purpose of the Project is to restore the natural character and function of the subject reach of the Wallowa River with accompanying wetlands, floodplain, and a natural stable stream channel. The BPA is proposing the action according to its authority under the Pacific Northwest Electric Power Planning and Conservation Act of 1980 (Public Law 96-501).

The Oregon Department of Fish and Wildlife (ODFW) and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) have planned the proposed Project and will be carry out on-the-ground implementation. Other Project cooperators include the Grande Ronde Model Watershed Program, Wallowa Resources, and the Natural Resources Conservation Service (NRCS).

Staff from NOAA Fisheries, U.S. Fish and Wildlife Service, ODFW, and CTUIR visited the proposed Project site on March 18, 2004, to discuss the Project design and begin early consultation process. CTUIR and ODFW provided a draft biological assessment for comment on May 24, 2004. NOAA Fisheries provided comments and suggestions on the draft BA in early June, 2004. On July 1, 2004, NOAA Fisheries received a final BA and EFH assessment with a written request for consultation from the BPA. The BPA determined that the proposed Project is 'likely to adversely affect' SR spring/summer Chinook salmon and SR steelhead and 'may adversely affect' EFH for Chinook and coho salmon. Formal consultation was initiated at that time.

The proposed Project would likely affect tribal trust resources. For this reason, NOAA Fisheries has been in communication with CTUIR regarding this project throughout early and formal consultation.

Proposed Action

For purposes of this consultation, the proposed action includes the following:

- Construction of approximately 2,550 feet of new stream channel.
- Installation of rock cross-vane grade control structures and rootwad revetments and large woody debris.
- Fish trap and haul from the Wallowa River reach planned for abandonment.
- Diversion of the Wallowa River from its current channelized reach into the restoration channel.
- Construction or repair of riparian boundary fences.
- Revegetation activities involving seeding, installation of coir/sedge mats, and tree, sedge, and rush planting.

The proposed Project is scheduled to begin in the summer of 2004 with excavation of a new reach of stream channel. The current channel of the Wallowa River at the Project site has been manipulated and consists of primarily riffles with little pool habitat, instream structure, or overhead structure. The new channel will be a Rosgen C3 type channel (Rosgen 1996) with a bankfull width of 54 feet, a mean bankfull depth of 2.26 feet, a maximum bankfull depth of 3.25 feet and a cross sectional area of 121.9 square feet at bankfull discharge. The new channel would accommodate a bankfull discharge of 675 cubic feet per second (cfs) of water. Sinuosity of the new channel will be 1.48 with a slope of 0.0065.

An estimated 25,500 cubic yards of material will be excavated to form the new channel. Specific actions required to form the new channel would include excavation of soil and gravel, shaping point bars, and cutting and shaping outside meander bends. Streambanks and terraces will be shaped at an approximately 3 to 1 ratio. Excavated material will be stored and then used to fill the current stream channel.

Approximately 75 large root wads with tree boles attached will be used to construct revetments on outside meander bends. Rootwads will be spaced approximately 25 feet apart and will be keyed into the streambank at a 60° angle. Large basalt boulders will be used to ballast and stabilize the rootwad and footer logs will placed under the rootwads, parallel to the streambank. Large woody debris and/or whole trees will be placed on gravel bars and/or within the floodplain at various sites to provide floodplain stability and trap fine sediment.

Five to seven rock cross-vane grade control structures will be installed at glide-riffle transition zones to maintain vertical channel elevation and minimize the risk of channel incision or head-cuts. The cross vanes will typically be subsurface features and over time are expected to be completely buried by sediment.

The BA states that extensive seeding and planting will be completed to accelerate vegetation establishment. Initial revegetation will begin in late summer and fall 2004 following completion of the new channel construction. The revegetation efforts will include the following:

- Broadcast seeding with native or native-like seed mixture of all disturbed ground.
- Installation of sedge/rush plugs and/or mats on areas of the channel where the streambank or floodplain is composed of fine materials.
- Live-whip installation of willows mechanically or manually.
- Salvage and transplant of shrubs and trees from sections of the existing stream reach.
- Installation of containerized shrubs and trees.
- Installation of a temporary irrigation system utilizing the landowner's existing water right.

Before rerouting the Wallowa River into the new channel, a trap and haul operation will be conducted to salvage fish that would become stranded in the old channel. This operation is scheduled for July 2005. CTUIR and ODFW biologists expect that due to low stream flow and relatively high water temperatures during this time of the year, many of the juvenile salmonids normally present in the reach of the river will have migrated to areas with cooler water.

The following sequential steps will be carried out to during the trap and haul:

- The upper and lower limit of the Project area will be blocked with nets to prevent fish from entering the area.
- Seine nets will be used, where possible, to capture fish.
- A Smith-Root Model 12A POW electroshocker will be used to capture the remaining fish using NOAA Fisheries' Electrofishing Guidelines.[1]
- Fish will be transported to upstream locations using all terrain vehicles (ATVs) in 64-quart coolers. Temperatures will be monitored throughout this process to avoid thermal stress.
- Fish will be distributed at various upstream locations to avoid concentrating fish in one area.

The BA estimated that 15,000 to 25,000 juvenile salmonids could be encountered during the trap and haul operation. Many of these fish will be SR steelhead or SR spring/summer Chinook salmon.

After completion of the trap and haul operation, small earthen plugs will be created to divert Wallowa River into the new channel. After initial diversion of water into the channel, additional fill material and rootwad revetments will be added at the diversion point.

Following completion of the channel diversion, approximately 30-50% of the old channel will be backfilled with material excavated for the new channel. Floodplain ponds will be constructed to provide wildlife habitat in the lower portions of the old channel. Pond location and shape will be designed to take advantage of existing swales and depressions in the old channel. Associated gravel bars and islands will be developed into scrub/shrub wetland habitat.

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[1] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

The Project area will be enrolled in a conservation easement, either the Farm Service Agency's Conservation Reserve Enhancement Program or ODFW's Grande Ronde Basin Fish Habitat Enhancement Program, for a period of 10 to 15 years. Under this easement, the riparian areas will be fenced to exclude livestock grazing.

Conservation Measures

Conservation measures for the proposed project include the following:

- All instream work will be conducted during the ODFW in-water work window for the area, July 1 to October 15.
- Transportation of fuel will be occur only during dry weather and daylight hours.
- Spill absorbent material will stored on site and in transport vehicles.
- Refueling will occur at least 300 feet from aquatic habitat.
- Heavy equipment will be refueled at the beginning of the day to reduce the amount of fuel in unattended equipment.
- Heavy equipment will be maintained in a leak-free condition.

Proposed Monitoring and Evaluation

Monitoring of the proposed Project will be conducted by CTUIR, ODFW, and the NRCS. Monitoring will include the following:

- Channel morphology cross sections will be established along the Wallowa River (at least two) at representative sites. These sites will be resurveyed during the 1st, 5th and 10th years following implementation.
- Permanent photographic points will be installed by CTUIR before project installation and replicated annually following implementation for up to 10 years.
- Aquatic habitat and plant community conditions will be monitored through various protocols. Habitat conditions will generally be measured using longitudinal profile surveys and cross sections of pool and riffle habitat types. Vegetation plots and transects (shrub intercept) will be utilized to assess plant stocking survival and plant community development.
- Fish species presence and abundance will continue to be sampled through snorkeling by ODFW and CTUIR throughout the project reach on a bi-annual basis.
- Noxious weed surveys will be conducted to identify and prevent weed infestations.
- Water quality monitoring via thermographs.

Action Area

'Action area' means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 C.F.R. 402.02). For purposes of this consultation, the action area begins at river mile (RM) 32 of the Wallowa River, a few hundred feet downstream from the diversion point for the Cross County Canal irrigation ditch. The legal description of this area is Township 1 North, Range 43 East, Section 11, Willamette Meridian,

Wallowa County. The action areas extends to the furthest downstream extent of the turbidity plume created by the Project activities, approximately one mile.

The action area is used for spawning, rearing, and migration by adult and juvenile SR spring/summer Chinook salmon and SR steelhead. This area is within designated critical habitat for SR spring/summer Chinook salmon. The action area has also been designated as essential fish habitat (EFH) under the MSA for Chinook and coho salmon (*O. kisutch*) (PFMC 1999).

ENDANGERED SPECIES ACT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat on which they depend. Section 7(a)(2) of the ESA requires Federal agencies to consult with U.S. Fish and Wildlife Service and NOAA's National Marine Fisheries Service (NOAA Fisheries), as appropriate, to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy their critical habitats. Section 7(b)(4) requires the provision of an incidental take statement specifying the impact of any incidental taking and specifying reasonable and prudent measures to minimize such impacts.

Biological Opinion

This Opinion presents NOAA Fisheries' review of the status of SONC coho salmon, the condition of designated critical habitat, the environmental baseline for the action area, all the effects of the action as proposed, and cumulative effects. See, 50 C.F.R. 402.14(g). For the jeopardy analysis, NOAA Fisheries analyzes those combined factors to conclude whether the proposed action is likely to appreciably reduce the likelihood of both the survival and recovery of the affected ESA- listed species. For the critical habitat, Congress said that 'destruction or adverse modification' could occur when sufficient critical habitat is lost so as to threaten a species' recovery even if there remains sufficient critical habitat for the species' survival. If the action under consultation is likely to jeopardize the continued existence of an ESA-listed species, or destroy or adversely modify critical habitat, NOAA Fisheries must identify any reasonable and prudent alternatives for the action that avoid jeopardy or destruction or adverse modification of critical habitat and meet other regulatory requirements. (50 C.F.R. 402.02).

Status of the ESUs

This section defines range-wide biological requirements of each ESU, and reviews the status of the ESUs relative to those requirements. The present risk faced by each ESU informs NOAA Fisheries' determination of whether additional risk will 'appreciably reduce' the likelihood that an ESU will survive and recover in the wild. The greater the present risk, the more likely any additional risk resulting from the proposed action's effects on the population size, productivity (growth rate), distribution, or genetic diversity of the ESU will be an appreciable reduction (see, McElhaney *et al.* 2000).

Snake River (SR) Spring/Summer Chinook Salmon

The SR spring/summer Chinook ESU was listed as threatened, and protective regulations were issued under section 4(d) of the ESA, on April 22, 1992 (57 FR14653). This ESU occupies the Snake River Basin, which drains portions of southeastern Washington, northeastern Oregon, and north/central Idaho. Environmental conditions are generally drier and warmer in these areas than in areas occupied by other Chinook ESUs. The Grande Ronde River system, including the Wallowa River, is in northeastern Oregon and contributes to SR basin spring/summer Chinook salmon production.

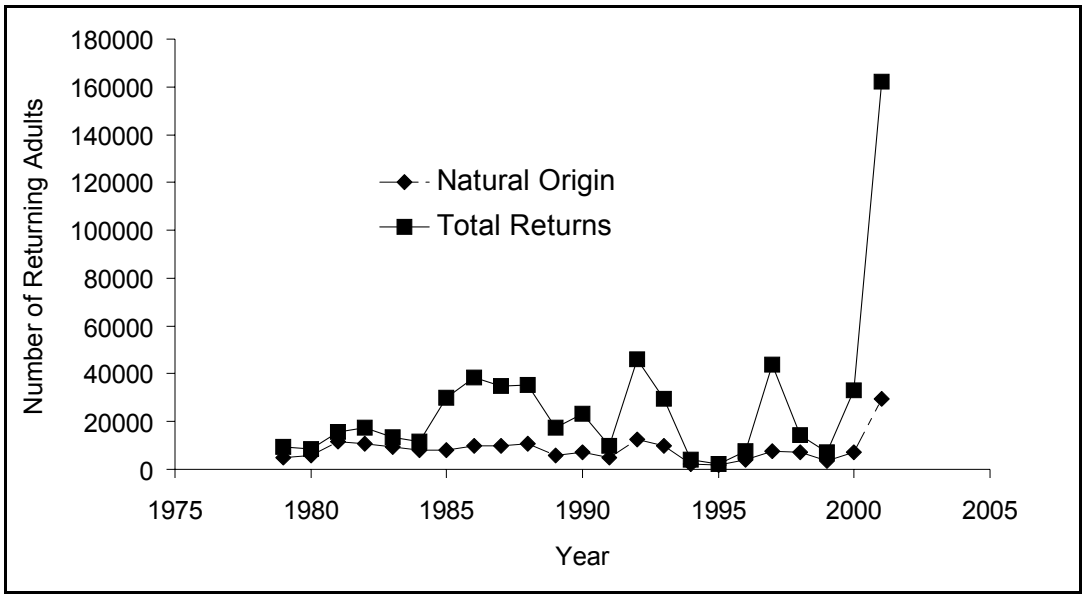
SR spring/summer Chinook exhibit a stream-type life history. Juvenile fish mature in fresh water for one year before they migrate to the ocean in the spring of their second year. Adults re-enter the Columbia River in late February and early March after two or three years in the ocean. In high elevation areas, mature fish hold in cool, deep pools until late summer and early fall, when they return to their native streams to begin spawning. Eggs incubate through the fall and winter and emergence begins in the late winter and early spring.

Direct estimates of historical annual SR spring/summer Chinook returns are not available. However, according to Matthews and Waples (1991), total annual SR spring/summer Chinook production may have exceeded 1.5 million adult fish in the late 1800s. Total (natural- + hatchery-origin) returns fell to roughly 100,000 spawners by the late 1960s (Fulton 1968) and were below 10,000 by 1980 (BRT 2003). Between 1981 and 2000, total returns fluctuated between extremes of 2,400 and 43,000 fish. The 2001 total return increased to over 162,000 adults (Figure 1). However, it is important to note that over 80% of these returning adults originated in hatcheries (BRT 2003).

Natural-origin SR spring/summer Chinook returns over the Lower Granite Dam fluctuated between 1,800 and 12,500 fish during the period of 1980 to 1999 (Figure 1). Despite brief increases in the 1992, 1993, and 1997 returns, natural returns were consistently lowest during the1990s. Five-year averages of natural-origin returns show a distinct downward trend with time. The five-year natural-origin return averages for 1980-1984, 1985-1989, 1990-1994, and 1995-1999, were 9,090, 8,820, 7,380, and 4,810 fish, respectively. Estimated natural-origin returns for 2000 and 2001 increased to 7,200 and 29,300 fish, respectively (BRT 2003).

The natural-origin SR spring/summer Chinook population growth rate must exceed 1.0 for ESU growth. Long-term SR spring/summer Chinook population growth rate estimates are below 1.0 and reflect the large population declines seen from the 1960s through the late 1990s. Although natural-origin returns in 2000 and 2001 gave rise to positive short-term growth rates, they were still well below the interim abundance target of 41,900 natural-origin spawners needed for ESU population recovery (BRT 2003).

Figure 1. Annual Snake River Adult Spring/Summer Chinook Salmon Returns Over Lower Granite Dam. (adapted from BRT 2003).



Critical habitat was designated for SR spring/summer Chinook salmon on December 28, 1993 (58 FR 68543) and was revised on October 25, 1999 (64 FR 57399). The proposed actions discussed in this Opinion are within designated critical habitat for SR spring/summer Chinook salmon. Critical habitat for SR spring/summer Chinook salmon encompasses the major Columbia River tributaries known to support this ESU including the Salmon, Grande Ronde, Imnaha, and Snake Rivers, as well as the Columbia River and estuary. Critical habitat consists of all waterways below long-standing (more than 100 years duration), naturally-impassable barriers, and therefore includes the Project area. The riparian zone beside these waterways is also considered critical habitat. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

Essential features of the adult spawning, juvenile rearing, and adult migratory habitat for the SR spring/summer Chinook salmon are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food, riparian vegetation, space, and safe passage conditions. The essential features that the project may affect are: Substrate, water quality, water temperature, water velocity, cover/shelter, food, and riparian vegetation.

Snake River (SR) Steelhead

The SR steelhead ESU was listed as threatened on August 18, 1997 (62 FR43937) and protective regulations were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). This ESU occupies the Snake River Basin, which drains portions of southeastern Washington,

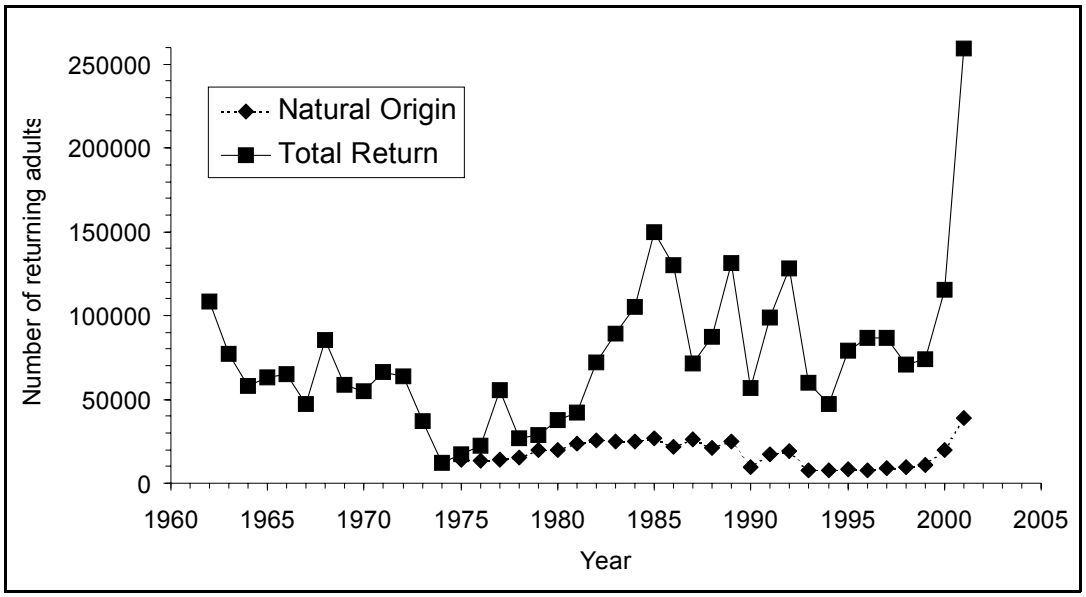
northeastern Oregon, and north/central Idaho. Environmental conditions are generally drier and warmer in these areas than in areas occupied by other steelhead ESUs in the Pacific Northwest. The Grande Ronde River system, including the Wallowa River, is in northeastern Oregon and is one of the principal contributors to steelhead production in the Snake River basin.

The SR steelhead run is considered a summer run based on the timing of adult upstream migration and consists of both A-run fish and B-run fish. A-run fish spend one year in the ocean before returning to spawn while the larger, B-run steelhead spend two years at sea before they return to spawn. The Grande Ronde steelhead run consists primarily of A-run fish.

Adult SR steelhead enter the Columbia River in the summer and migrate upriver until they spawn between March and May of the following year. There are few annual estimates of steelhead returns for specific production areas within the Snake River Basin. Most stream return estimates are extrapolated from returns over the Ice Harbor and Lower Granite Dams. Annual estimates of total (natural + hatchery origin) returns steadily declined from about 110,000 to about 12,000 fish between 1962 and 1974. This was a nearly 90% decline over eight years.

Estimated total return steadily climbed to approximately 130,000 spawners by 1986, but then oscillated, on a three-year cycle, between about 130,000 and 40,000 individuals until 1994 (Busby *et al.* 1996). Returns then fluctuated between 70,000 and 90,000 from 1995 to 1999, and increased to approximately 260,000 fish in 2001 (BRT 2003) (Figure 2). However, the overwhelming majority of these increases is due to returning hatchery-produced fish. It is estimated that natural-origin spawners only accounted for about 15% of these returns (BRT 2003).

Figure 2. Annual Snake River Adult Steelhead Returns Over Lower Granite Dam. (adapted from BRT 2003).



Natural-origin returns were estimated at 14,000 fish in 1975, then steadily climbed to, and held at, close to 27,000 fish between 1985 and 1987. Returns steadily declined to about 7,000 natural-origin spawners by 1994 (Busby *et al.* 1996). Recent counts of natural-origin spawners at the Lower Granite Dam increased to approximately 39,000 fish in 2001. However, this is still below the interim recovery target of 53,700 natural-origin spawners needed for population recovery of the ESU.

In order for the ESU population to increase, the growth rate for the natural-origin population must exceed 1.0. The ESU's exact population growth rate is not known, but it lies somewhere between best case estimates that assume no hatchery-origin fish account for natural production, and worst case estimates that assume both hatchery and wild fish contribute to natural production in proportion to their numbers. Short-term growth rate estimates range between 1.013 and 0.753 for the ESU (BRT 2003). However, median long-term growth rate estimates range from 0.998 to 0.733. Thus, despite recent increases in total steelhead returns to the Snake River Basin, it is likely that the natural-origin SR steelhead population is actually decreasing.

Important features of the adult spawning, juvenile rearing, and adult and migratory habitat for this species are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. (Bjornn and Reiser 1991; NOAA Fisheries 1996b; Spence *et al.* 1996).

Environmental Baseline

The 'environmental baseline' includes past and present impacts 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 impact of state or private actions which are contemporaneous with the consultation in process (50 C.F.R. 402.02). For projects that are ongoing actions, the effects of future actions over which the Federal agency has discretionary involvement or control will be analyzed as 'effects of the action.'

NOAA Fisheries describes the environmental baseline in terms of the biological requirements for habitat features and processes necessary to support life stages of the subject ESUs within the action area. When the environmental baseline departs from those biological requirements, the adverse effects of a proposed action on the ESU or its habitat are more likely to jeopardize the listed species or result in destruction or adverse modification of critical habitat (NMFS 1999). The biological requirements of salmon and steelhead in the action area vary depending on the life history stage present and the natural range of variation present within that system (Groot and Margolis 1991; NRC 1996; Spence *et al.* 1996).

Generally, during spawning migrations, adult salmon require clean water with cool temperatures and access to thermal refugia, dissolved oxygen near 100% saturation, low turbidity, adequate flows and depths to allow passage over barriers to reach spawning sites, and sufficient holding and resting sites. Anadromous fish select spawning areas based on species-specific requirements of flow, water quality, substrate size, and groundwater upwelling. Embryo survival and fry emergence depend on substrate conditions (e.g., gravel size, porosity, permeability, and oxygen concentrations), substrate stability during high flows, and, for most species, water temperatures of 13˚C or less. Habitat requirements for juvenile rearing include seasonally suitable microhabitats for holding, feeding, and resting. Migration of juveniles to rearing areas, whether the ocean, lakes, or other stream reaches, requires unobstructed access to these habitats. Physical, chemical, and thermal conditions may all impede migrations of adult or juvenile fish.

Each ESU considered in this Opinion resides in, or migrates through, the action areas. For this action area, the biological requirements for salmon and steelhead are the habitat characteristics that would support successful spawning, rearing, and migration.

Environmental baseline conditions within the action area were evaluated for the subject actions at the reach scale. The results of this evaluation, based on the 'matrix of pathways and indicators' (MPI) described in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NOAA Fisheries 1996), follow. This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

The BA rated 7 of 18 habitat indicators as 'not properly functioning.' These include: Sediment, substrate, pool frequency, floodplain connectivity, drainage network increase, road density and location, and riparian reserves. Seven of 18 indicators were rated as 'functioning at risk.' These include: Temperature, chemical contaminants/nutrients, pool quality, off-channel habitat, refugia, width/depth ratio, and peak/base flow. Physical barriers, large woody debris, streambank condition, and disturbance history were rated as 'properly functioning.'

The BA also provides a narrative description of the action area including the following:

> The Wallowa River watershed encompasses about 950 square miles and ranges from 10,000 feet in elevation at the headwaters in the Wallowa Mountains to 2,300 feet at its junction with the Grande Ronde River at Rondowa. The watershed contains about 494 miles of stream and provides over 200 miles of suitable salmon habitat. Nearly all of the lower elevations are held in private ownership with major land uses involving ranching and logging with field crop farming in the basin where gradients flatten. The middle reaches beside the project location flow through broad alluvial valleys substantially developed for hay and grain production. Withdrawals of the river water for irrigation are common and almost half of the low summer flow is diverted into the Cross-Country Canal just upstream of the project area.
>
> The EPA lists the lower Wallowa River as 'severely polluted.' Impacts of past management activities such as channelization, road/railroad construction, and agricultural practices have left the project reaches functioning well below levels that promote healthy salmonid populations and watershed health. The Wallowa River is a listed 303d stream by ODEQ for temperature, sedimentation, pH, habitat modification, flow modification, and bacteria.

SR spring/summer Chinook salmon and SR steelhead biological requirements are generally not being met under the current environmental baseline in the action area. Improvements in habitat conditions, particularly summer water temperatures, fine sediment levels, and summer and fall instream flow will be necessary to achieve recovery of these species in the Grande Ronde Basin.

Effects of the Action

'Effects of the action' means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 C.F.R. 402.02). If the proposed action includes offsite measures to reduce net adverse impacts by improving habitat conditions and survival, NOAA Fisheries will evaluate the net combined effects of the proposed action and the offsite measures.

'Indirect effects' are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50 C.F.R. 402.02). Indirect effects may occur outside the area

directly affected by the action, and may include other Federal actions that have not undergone section 7 consultation but will result from the action under consideration. To be considered indirect effects, such actions must be reasonably certain to occur, as evidenced by appropriations, work plans, permits issued, or budgeting; follow a pattern of activity undertaken by the agency in the action area; or be a logical extension of the proposed action.

'Interrelated actions' are those that are part of a larger action and depend on the larger action for their justification; 'interdependent actions' are those that have no independent utility apart from the action under consideration (50 C.F.R. 402.02). Future Federal actions that are not a direct effect of the action under consideration, and not included in the environmental baseline or treated as indirect effects, are not considered in this Opinion.

Effects on ESA-Listed Species

The construction activities proposed as part of this Project will require instream and near stream operation of heavy machinery and exposure of bare soil. Diversion of water into the new channel will create a pulse of turbidity. Potential direct effects include mortality and injury resulting from deposition of fine sediment in downstream reaches, behavioral changes resulting from elevated turbidity (Sigler *et al.* 1984; Berg and Northcote 1985; Whitman *et al.* 1982; Gregory and Levings 1998), and injury resulting from contaminants introduced into the stream.

Increased sedimentation may lead to increased embeddedness of spawning substrates downstream from the Project and reduced incubation success (Bell 1991). Fine, redeposited sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996) and cover for juvenile salmonids (Bjornn and Reiser 1991). Instream work for this Project will take place during the in-water window for the area (July 1 to October 15). Due to the typically low flows in the Project area during this time, sedimentation rates are expected to be reduced. Disturbance of riparian vegetation will result from operation of heavy machinery near the stream and could lead to decreased shade, increased water temperatures, and decreased streambank stability until riparian vegetation is re-established.

Suspended sediment and turbidity influences on fish reported in the literature range from beneficial to detrimental. Elevated total suspended solids (TSS) have been reported to enhance cover conditions, reduce piscivorus fish/bird predation rates, and improve survival. Elevated TSS have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration. Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). Fish that remain in turbid waters experience reduced predation from piscivorus fish and birds (Gregory and Levings 1998). However, research shows that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987; Lloyd 1987; Servizi and Martens 1991). A pulse of sediment is expected when the new channel is connected and during installation of the earthen plugs to block the old channel. SR spring/summer Chinook salmon and SR steelhead will be exposed to

turbidity for a period of two to three days, with turbidity dropping to background levels as streambanks of the new channel stabilize.

There is a potential for fuel or other contaminant spills associated with use of heavy equipment in or near the stream. Operation of back-hoes, excavators, and other equipment requires the use of fuel, lubricants, *etc.*, which, if spilled into the channel of a waterbody or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants, such as fuel, oil, and some hydraulic fluids, contain polycyclic aromatic hydrocarbons, which can be acutely toxic to salmonids at high levels of exposure and can cause mortailty and have acute and chronic sublethal effects on aquatic organisms (Neff 1985). Instream construction will elevate the risk for chemical contamination of the aquatic environment within the action area. Because the potential for chemical contamination should be localized and brief, the probability of direct mortality is negligible. Timing of in-water work to take place during the preferred in-water work period of July 1 through October 15 will reduce the risk of chemical contamination.

Trap and Haul

Direct effects on SR steelhead and SR spring/summer chinook salmon will occur in the form of harassment, physical harm, or death during the trap and haul operation necessary to remove them from the action area. ODFW and CTUIR fish biologists will remove stranded fish from the current stream channel by netting, seining, trapping, or electrofishing. The capture and transfer of these fish will create stress and may cause direct physical injury or death. Stress approaching or exceeding the physiological tolerance limits of individual fish can impair reproductive success, growth, resistance to infectious diseases, and may cause mortality (Wedemeyer *et al.* 1990).

Electrofishing is particularly stressful to fish. Harmful effects are detailed by Snyder (2003) and include internal and external hemorrhage, fractured spines, and death. Many factors influence the effects of electrofishing on fish including water conductivity and depth, substrate type, and fish size. Additionally, the amount of time taken to complete electrofishing within the sample area, the frequency of sampling through time, crew efficiency, and operator skill have been identified as factors influencing the magnitude of electrofishing effects. The conservation measures planned for the trap and haul operation will help to minimize the number of fish killed or seriously injured by the trap and haul operation. The number of fish killed or injured during the trap and haul is not expected to have population level effects on SR spring/summer chinook or SR steelhead ESUs.

Effects on Critical Habitat

The essential features of critical habitat include adequate: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food, (8) riparian vegetation, (9) space, and (10) safe passage conditions.

Habitat Effects of Channel Realignment

Implementation of the proposed Project will result in improvements to SR spring/summer Chinook salmon and SR steelhead habitat by increasing the total stream length in the project

areas and increasing habitat complexity. The constructed stream channel will be more similar to the channel that existed before human disturbance. The stream channel should gain access to its floodplain and thus be able to dissipate energy more efficiently during flood events. Increased water storage in the floodplain could result in some increase in base flows during summer.

Complete channel realignment is one of the more aggressive restoration techniques. Digging a new stream channel and diverting a live stream into it can be disruptive to the landscape and the animals and plants that live there (Sampson 2001). With these types of projects, there is a risk that the newly-constructed channel may fail during subsequent high flow events. The channel may return to its pre-project channel or channel avulsions may cut off the constructed meanders, resulting in a relatively straight channel with little fish habitat complexity. The former is more likely to occur when floodplain roughness is low, such as the case when floodplains are reshaped or cleared and devoid of vegetation of large woody debris. For the proposed Project, the chance of channel avulsion will be greatest during the first year after channel construction and will decrease as riparian vegetation becomes established, increasing floodplain roughness. The placement of rootwad revetments at meander bends and woody debris in the floodplain will reduce the chance of channel avulsions during future high flow events.

The proposed stream channel will be a Rosgen C3 type channel, a meandering, low gradient stream channel type with riffle-pool sequences and broad, well defined floodplains. Streambanks of the new channel will be primarily composed of a combination of cobbles, gravel, and fine material and susceptible to accelerated bank erosion. Rates of lateral adjustment for this type of channel will be influenced by the presence and condition of riparian vegetation (Rosgen 1996). It is likely that at least some bank erosion will occur during high flow events following Project implementation, resulting in some temporary sedimentation of downstream substrates. Additional high flows will eventually mobilize this fine sediment and disperse it over large areas downstream from the Project reach. The probability of streambank erosion occurring will decrease as riparian vegetation becomes established and stabilizes the banks.

Planning channel realignment projects can be difficult, as defining the appropriate planform geometry and meander size for the new stream channel may require considering numerous factors (Brookes 1990; Rinaldi and Johnson 1997). Modifications of proper channel planform geometry can induce undesirable morphological and ecological consequences and significant channel adjustments that can cause a failure of the restoration design (Rinaldi and Johnson 1997). For disturbed river basins such as Wallowa River, restoration planners must consider how past disturbances such as deforestation, intensive agricultural, and channelization have changed the sediment transport process in the stream. These activities often cause increased sediment loads to streams. An increase of sediment or bedload material may result in increased width, slope, and meander wavelength and a decrease in sinuosity and stream depth (Brookes 1987). Rinaldi and Johnson (1997) also stress that identification of unstable stream reaches as a consequence of disturbed basin conditions is crucial to the success of meander restoration projects. Often meander patterns are based on channel conditions before large scale human disturbance when stream channels were more stable.

When water is diverted from the existing channel to the new stream channel, a temporary decrease in stream shade, woody debris recruitment, and salmonid prey abundance will occur. Shade and woody debris recruitment will increase as planted vegetation becomes established, although this will take several years. Invertebrates that provide prey for juvenile salmonids will recolonize the new stream channel through drift and upstream migration of adult and immature invertebrates.

There is a minor chance that stream flow through portions of the new channel may go subsurface in the summer or fall following Project implementation. The BA states that the typical low flow water levels at the Project site are 235 cubic feet per second of water. With this amount of flow moving through the new channel it is highly unlikely that flow will go subsurface across the entire channel width in any areas. Therefore, fish passage through the new channel will be maintained and fish will be able to avoid any areas where flows go subsurface.

Effects of Fencing and Riparian Planting

As planted riparian vegetation begins to grow, stream shade will increase and a decrease in summer water temperatures is expected. Greater streambank stability will also result from the recovery of the riparian plant community. Vegetation is a highly desirable stabilization method, but it must become established before the next major flood event (Brookes 1987).

A healthy riparian plant community can also increase the prey base for juvenile salmonids by increasing the amount of terrestrial insect drop into the stream. Riparian vegetation also provides organic material directly to the stream, which makes up about 50% of the stream's nutrient energy supply for the food chain (Cummins 1974 *cited in* Platts 1991). This allochthonous material provides an important food source for aquatic insects, that, in turn become prey for salmonids.

Excluding livestock from the riparian areas will result in a decrease in trampling of streambanks and accelerated recovery of riparian vegetation. Fencing of sensitive riparian areas is an effective way of protecting riparian resources, fish habitat and fish populations. Platts (1991) found that in 20 of 21 studies identified, stream and riparian habitats were degraded by livestock grazing, and habitats improved when grazing was prohibited in the riparian zone.

An incremental change in the conservation value of critical habitat within the action area due to the proposed action cannot be quantified. However, based on the effects described above, it is reasonably likely that the proposed action will have local long-term positive effects on critical habitat in the area. Some minor, short-term negative effects will occur; however, an overall increase in the conservation value of this habitat is expected.

Cumulative Effects

'Cumulative effects' are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 C.F.R. 402.02). Cumulative effects that reduce the capacity of listed ESUs to

meet their biological requirements in the action area increase the risk to the ESU that the effects of the proposed action on the ESU or its habitat will result in jeopardy (NMFS 1999).

Recreational fishing for adult SR steelhead occurs throughout the Wallowa Subbasin. ODFW regulations limit the fishing season and require that all wild SR steelhead be released unharmed. However, hooking mortality and injury occurs to some fish that are caught by anglers. The same situation exists for juvenile SR steelhead throughout the subbasin, as there is no way for anglers to distinguish them from resident rainbow trout they are legally fishing for.

Ongoing activities affecting salmonids and their habitat reasonably certain to occur in the future include residential development, timber harvest, and road building and maintenance. Water withdrawal for irrigation and livestock grazing are likely to occur at present levels for the foreseeable future, resulting in the Wallowa River and some tributaries experiencing significantly reduced flows during parts of the summer and fall.

The NRCS, ODFW, US Forest Service, Bureau of Land Management, Nez Perce Tribe, Grande Ronde Model Waterhsed Program, and other groups continue to implement restoration projects throughout the Wallowa Subbasin. These projects include but are not limited to riparian planting, screening of irrigation diversions, fish passage improvements, culvert replacements, irrigation efficiency projects, and placement of instream structures.

Between 1990 and 2000, the population of Wallowa County increased by 4.6%.[2] NOAA Fisheries assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the action area continues to grow, demand for agricultural, commercial, or residential development is also likely to grow. The effects that new development have that are caused by that demand are likely to further reduce the conservation value of habitat within the action area.

Although quantifying an incremental change in survival for the ESUs considered in this consultation due to the cumulative effects is not possible, it is reasonably likely that those effects within the action area will have a small negative effect on the likelihood of their survival and recovery.

Conclusion

After reviewing the best available scientific and commercial information regarding the biological requirements and the status of the SR spring/summer Chinook salmon and SR steelhead considered in this Opinion, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, NOAA Fisheries' concludes that the action, as proposed, is not likely to jeopardize the continued existence of these species, and is not likely to destroy or adversely modify critical habitat.

[2] U.S. Census Bureau, State and County Quickfacts, Wallowa County. Available at http://quickfacts.census.gov/qfd/

These conclusions are based on the following considerations: (1) The proposed action will result in a more natural stream morphology and increased habitat quantity and complexity in the Project area; (2) all disturbed soils will be replanted with native or native-like vegetation; and (3) the enrollment of the project area in a conservation easement will eliminate adverse effects from livestock grazing and accelerate the establishment of a healthy riparian plant community. Thus, the proposed action is not expected to impair currently properly functioning habitats, appreciably reduce the functioning of already impaired habitats, or retard the long-term progress of impaired habitats toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

Reinitiation of Consultation

Reinitiation of formal consultation is required and shall be requested by the Federal agency or by the NOAA Fisheries, where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If the amount or extent of taking specified in the incidental take statement is exceeded; (b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) If the identified action is subsequently modified in a manner that has an effect to the listed species or critical habitat that was not considered in the biological opinion; or (d) If a new species is listed or critical habitat designated that may be affected by the identified action (50 C.F.R. 402.16). This Opinion and incidental take statement cover the described actions if conducted within five years of the signature date. Any activities not completed by that date will require subsequent consultation. To reinitiate consultation, contact the appropriate State Office Habitat Office of NOAA Fisheries and refer to the NOAA Fisheries Number assigned to this consultation.

Incidental Take Statement

Section 9(a)(1) and protective regulations adopted pursuant to section 4(d) of the ESA prohibit the taking of listed species without a specific permit or exemption. Among other things, an action that harasses, wounds, or kills an individual of a listed species or harms a species by altering habitat in a way that significantly impairs its essential behavioral patterns is a taking (50 C.F.R. 222.102). Incidental take refers to takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 C.F.R. 402.02). Section 7(o)(2) exempts any taking that meets the terms and conditions of a written incidental take statement from the taking prohibition.

Amount or Extent of Take

NOAA Fisheries anticipates that the habitat-related effects of the proposed action will harass, injure and kill SR spring/summer Chinook salmon and SR steelhead present within the action area as follows. Instream work, particularly creation of earthen plugs to divert the Wallowa River into the newly created channel, will temporarily increase sediment, turbidity, and other pollutants in the water. This will cause most fish to avoid the action area, although some

juvenile fish are likely be injured or killed because of this exposure due to reduced feeding and growth rates and; ultimately, impaired juvenile migration and growth to maturity. Further, connection of the new stream channel is likely to result in a temporary decrease in riparian vegetation and channel conditions that presently provide shade, organic matter contributions, large wood, bank stability, over-head cover, and seasonally suitable microhabitats for holding, feeding, and resting as required for juvenile rearing. Vegetation and stream bank characteristics in the action area will require three to 10 years to recover and become favorable for rearing, spawning, and migration.

Take caused by these habitat-related effects cannot be accurately quantified as a number of fish, in part because the long-term loss of habitat resulting in the injury or death of individuals may be more deleterious than the direct loss of a certain number of individuals. In such circumstances, NOAA Fisheries provides a habitat surrogate to quantify the extent of incidental take. For this project, the extent of take will be limited to the temporary loss of rearing and migration habitat that will occur when riparian, bank and channel habitat functions are decreased in an area approximately 3,000 feet by 50 feet of on each side of the new channel of the Wallowa River at the Project site.

Further, NOAA Fisheries anticipates that up to 25,000 individuals of SR steelhead and SR spring/summer Chinook salmon ESUs will be taken as a result of the trap and haul operation. This estimate is derived from the information provided in the BA which is based on juvenile fish densities estimated from previous surveys conduct near the Project area by ODFW and CTUIR. Due to the conservation measures planned for this activity it is likely that the number of fish killed by the operation will be low. The number of fish killed by the trap and haul will not exceed 50 juvenile fish. If adult SR spring/summer Chinook salmon adults are encountered during the trap and haul operation, the number of these fished killed will not exceed two individuals.

Reasonable and Prudent Measures

Reasonable and prudent measures are nondiscretionary measures to avoid or minimize take that must be carried out by cooperators for the exemption of section 7(o)(2) to apply. The BPA has the continuing duty to regulate the activities covered by this incidental take statement where discretionary Federal involvement or control over the action has been retained or is authorized by law. The protective coverage of section 7(o)(2) may lapse if the BPA fails to exercise its discretion to require adherence to terms and conditions of the incidental take statement, or to exercise that discretion as necessary to retain the oversight to ensure compliance with these terms and conditions. Similarly, if any applicant fails to act in accordance with the terms and conditions of the incidental take statement, protective coverage may lapse. The following reasonable and prudent measures are necessary and appropriate to minimize the impact on listed species of incidental taking caused by the proposed action

The BPA shall:

1. Avoid or minimize the amount and extent of take resulting from general construction activities, riparian disturbance, and in-water work required to complete the proposed action described in this Opinion.

2. Avoid or minimize the likelihood of incidental take from contaminant leaks and spills near and within watercourses.

3. Monitor the effects of the proposed action to determine the project's actual effects on listed fish (50 C.F.R. 402.14 (i)(3)). Monitoring should detect adverse effects of the proposed action, assess the actual levels of incidental take in comparison with anticipated incidental take documented in the Incidental Take Statement, and detect circumstances where the level of incidental take is exceeded

Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the BPA and its cooperators must comply with the following terms and conditions, that implement the reasonable and prudent measures described above. Partial compliance with these terms and conditions may invalidate this take exemption or lead NOAA Fisheries to a different conclusion regarding whether the proposed action will result in jeopardy or the destruction or adverse modification of critical habitats.

1. To implement Reasonable and Prudent Measure #1, the BPA shall ensure that:

    a. Minimum area. Confine construction impacts to the minimum area necessary to complete the Project.
    b. Timing of in-water work. Work below the bankfull elevation[3] will be completed using the most recent ODFW preferred in-water work period (presently July 1 to October 15) as appropriate for the Project area.
    c. Cessation of work. Cease Project operations under high flow conditions that may result in inundation of the Project area, except for efforts to avoid or minimize resource damage.
    d. Preconstruction activity. Complete the following actions before significant[4] alteration of the Project area.
        i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian

[3] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

[4] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. Emergency erosion controls. Ensure that silt fences and straw bales[5] for emergency erosion control are on site.

iii. Temporary erosion controls. All temporary erosion controls will be in place and appropriately installed downslope from Project activity within the riparian area until site restoration is complete.

iv. General erosion control. Practices will be carried out to prevent erosion and sedimentation associated with access roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations, staging areas, and roads being decommissioned.

v. Inspection of erosion controls. During construction, monitor instream turbidity and inspect all erosion controls daily during the rainy season and weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.[6]

(1) If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.

(2) Remove sediment from erosion controls once it has reached 1/3 of the exposed height of the control.

e. Heavy Equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (*e.g.*, minimally sized, low ground pressure equipment).

f. Site preparation. Conserve native materials for site restoration.

i. If possible, leave native materials where they are found.

ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iii. Stockpile any large wood[7], native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

g. Earthwork. Complete earthwork (including drilling, excavation, dredging, filling and compacting) as quickly as possible.

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[5] When available, certified weed-free straw or hay bales will be used to prevent introduction of noxious weeds.

[6] 'Working adequately' means that Project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream from the turbidity causing activity.

[7] For purposes of this Opinion only, 'large wood' means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull channel width of the stream in which the wood occurs. See Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

i. Site stabilization. Stabilize all disturbed areas following any break in work unless construction will resume within four days.

ii. Source of materials. Obtain boulders, rock, woody materials and other natural construction materials used for the Project outside the riparian area.

iii. Excavated material. Remove all unused excavated material for the new channel from the 100-year floodplain.

h. Site restoration. Site restoration and cleanup, including protection of bare earth by seeding, planting, mulching and fertilizing, is to be done in the following manner:

i. All areas damaged by the construction activities will be restored to pre-work conditions including restoration of original streambank lines and contours.

ii. All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with native herbaceous seeding and native woody vegetation as soon as possible during the appropriate planting season (immediately for seeding and the following fall or spring for woody plantings). On cut slopes steeper than 1 to 2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, consider using hydro-mulch applied at 1.5 times the normal rate.

iii. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region where the project occurs, and will comprise a diverse assemblage of woody and herbaceous species.

iv. All plantings and seeding will be completed before July 1 of the following year.

v. Plantings in areas disturbed by construction activities will achieve an 80% survival success after three years.

(1) If success standard has not been achieved after three years, the BPA will develop an alternative plan to remedy the issue.

(2) Plant establishment monitoring will continue and plans will be submitted to NOAA Fisheries until site restoration success has been achieved.

i. Pesticides and fertilizer. Do not apply fertilizer, herbicides, or other pesticides within 200 feet of any stream channel.

j. Isolation of in-water work area. Completely isolate the work area from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials.

k. Capture and release. Before and intermittently during pumping to isolate an in-water work area, attempt to capture and release fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury.

i. The entire capture and release operation must be conducted or supervised by a fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish.

ii. Do not use electrofishing if water temperatures exceed 18°C.
iii. If electrofishing equipment is used to capture fish, comply with NOAA Fisheries' electrofishing guidelines.[8]
iv. Handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures to prevent the added stress of out-of-water handling.
v. Transport fish in aerated buckets or tanks.
vi. Release fish into a safe release site as quickly as possible, and as near as possible to capture sites.
vii. Do not transfer ESA-listed fish to anyone except NOAA Fisheries.
viii. Obtain all other Federal, state, and local permits necessary to conduct the capture and release activity.
ix. Allow NOAA Fisheries representatives to accompany the capture team during the capture and release activity, and to inspect the team's capture and release records and facilities.

2. To implement Reasonable and Prudent Measure #2, the BPA shall ensure that:

a. Pollution Control Plan. Prepare and carry out a pollution and erosion control plan to prevent pollution caused by surveying or construction operations. The plan must be available for inspection on request by NOAA Fisheries.
i. Plan Contents. The pollution and erosion control plan will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
(1) The name and address of the party(s) responsible for accomplishment of the pollution and erosion control plan.
(2) A description of any regulated or hazardous products or materials that will be used for the Project, including procedures for inventory, storage, handling, and monitoring.
(3) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
(4) Practices will be carried out to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.
ii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain and store vehicles as follows.

[8] National Marine Fisheries Service, *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

(1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on site.
(2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area outside riparian areas.
(3) Inspect all vehicles operated within riparian areas daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by NOAA Fisheries.

b. Construction discharge water. Treat all discharge water created by construction (*e.g.*, pumping for work area isolation, vehicle wash water) as follows:
i. Water quality. Design, build and maintain facilities to collect and treat all construction discharge water using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.
iii. Pollutants. Do not allow pollutants including green concrete, contaminated water or silt to contact any wetland or the two-year floodplain.

3. To implement Reasonable and Prudent Measure #3, the BPA shall ensure that:

a. Reporting. Within one year of Project completion, the BPA will submit a monitoring report to the NOAA Fisheries describing the BPA's success in meeting the terms and conditions contained in this Opinion. Include the following information:
i. Project identification
(1) Project name.
(2) Type of activity.
(3) Project location, by 6th field HUCs and by latitude and longitude as determined from the appropriate USGS 7-minute quadrangle map.
(4) BPA contact person.
(5) Starting and ending dates for work completed.
ii. Photo documentation. Photos of habitat conditions at the project and any compensation site(s), before, during, and after Project completion.[9]

[9] Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the Project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the Project area, and upstream and downstream from the Project.

(1) Include general views and close-ups showing details of the Project and Project area, including pre- and post- construction.
(2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.

iii. Trap and Haul. Include following information:
(1) Number of fish captured by species.
(2) Number of fish killed by species.

iv. Other data. Additional project-specific data, as appropriate.
(1) Work cessation. Dates work ceased due to high flows, if any.
(2) Fish screen. Evidence of compliance with NOAA Fisheries' fish screen criteria.
(3) Pollution control. A summary of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.
(4) Site preparation. Total cleared area – riparian and upland.
(5) Site restoration. Photo or other documentation that site restoration performance standards were met.

b. Channel and riparian conditions of the new channel. Provide information on the following:
i. Linear distance of streambank disturbance required to create the new stream channel.
ii. Survival rates of vegetation planted along the new stream channel.
iii. Any failures of rootwad revetments or rock structures.

c. Effectiveness monitoring. Gather any other data or analyses the BPA deems necessary or helpful to complete an assessment of habitat trends in stream and riparian conditions as a result of this project.

d. Lethal take. If a sick, injured, or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at (360) 418-4246. The finder must take care in handling sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

e. Report submission. Submit a copy of the report to the Oregon State Habitat Office of NOAA Fisheries.

Oregon State Director
Habitat Conservation Division
NOAA Fisheries
Attn: **2004/00745**
525 NE Oregon Street
Portland, OR 97232

MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

The consultation requirements of section 305(b) of the MSA direct Federal agencies to consult with NOAA Fisheries on all actions, or proposed actions, that may adversely affect EFH. Adverse effects include the direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects on EFH may result from actions occurring within EFH or outside EFH, and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 C.F.R. 600.810). Section 305(b) also requires NOAA Fisheries to recommend measures that may be taken by the action agency to conserve EFH.

The Pacific Fishery Management Council designated EFH for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and Chinook salmon, coho salmon, and Puget Sound pink salmon (PFMC 1999). The proposed action and action area for this consultation are described in the Introduction to this document. The action area includes areas designated as EFH for various life-history stages of Chinook and coho salmon (PFMC 1999).

The effects on Chinook and coho salmon habitat are the same as those for SR steelhead and SR spring/summer Chinook and are described in detail in the Effects of the Action section of this document. The proposed action may result in short-term adverse effects on a variety of habitat parameters. These adverse effects are:

1. Riparian disturbance from accessing construction area and construction activities, including creation of the new channel.
2. Increased sedimentation from instream construction activities.
3. Temporary decreases in stream shade, allochthonous input, and food available for juvenile salmonids.

EFH Conservation Recommendations

NOAA Fisheries believes that Terms and Conditions 1 (a-j) and 2 (a and b) contained in ITS of this Opinion are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

Statutory Response Requirement

Federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse affects that the activity has on EFH. If the response is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the

anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

Supplemental Consultation

The BPA must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations [50 C.F.R. 600.920(l)]. This EFH consultation covers the proposed activities if completed within 5 years of the signature date of this document. Proposed activities not completed within 5 years would require another consultation.

DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

Section 515 of the Treasury and General Government Appropriations Act of 2001 (Public Law 106-554) ('Data Quality Act') specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the Opinion addresses these Data Quality Act (DQA) components, documents compliance with the DQA, and certifies that this Opinion has undergone pre-dissemination review.

Utility: This ESA section 7 consultation on the Wallowa River/McDaniel Restoration Project, concluded that the action will not jeopardize the continued existence of SR spring/summer Chinook salmon or SR steelhead. Therefore, the BPA may authorize that action. Pursuant to the MSA, NOAA Fisheries provided the BPA with conservation recommendations to conserve EFH.

The intended user of these consultations is the BPA. The American public will benefit from the consultation.

Individual copies were provided to the above listed entities. This consultation will be posted on the NOAA Fisheries NW Region web site (http://www.nwr.noaa.gov). The format and naming adheres to conventional standards for style.

Integrity: This consultation was completed on a computer system managed by NOAA Fisheries in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

Objectivity:

Information Product Category: Natural Resource Plan.

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NOAA Fisheries ESA Consultation Handbook, ESA Regulations, 50 C.F.R. 402.01 *et seq*., and the MSA implementing regulations regarding EFH, 50 C.F.R. 600.920(j).

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the literature cited section. The analyses in this biological opinion/EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NOAA Fisheries staff with training in ESA and MSA implementation, and reviewed in accordance with Northwest Region ESA quality control and assurance processes.

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