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National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
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Seattle, WA 98115-0070

Refer to:
OSB2001-0192-FEC

September 18, 2001

Patricia Smith
Department of Energy
Bonneville Power Administration
P.O. Box 3621
Portland OR 97208-3621

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation for Richard's Riparian Restoration Project, Umatilla
County, Oregon

Dear Ms. Smith:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) that addresses the proposed Richard's Riparian Restoration Project in Umatilla County, Oregon. The NMFS concludes in this Opinion that the proposed action is not likely to jeopardize Middle Columbia River steelhead or destroy, or adversely modify their critical habitat. This Opinion includes reasonable and prudent measures with terms and conditions that are necessary and appropriate to minimize the potential for incidental take associated with this project.

In addition, this document also serves as consultation on Essential Fish Habitat (EFH) for chinook salmon under Public Law 104-267, the Sustainable Fisheries Act of 1996, as it amended the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). An EFH analysis is required for chinook salmon.

Questions regarding this Opinion should be directed to Eric Murray of the Oregon Habitat Branch's La Grande Field Office at 541.962.8606.

Sincerely,

Michael R. Cross

Donna Darm
Acting Regional Administrator



Endangered Species Act - Section 7 Consultation
&
Magnuson-Stevens Act
Essential Fish Habitat Consultation

BIOLOGICAL OPINION

Richard's Riparian Restoration Project
Umatilla River Basin, Umatilla County, Oregon

Agency: Bonneville Power Administration

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: September 18, 2001

Refer to: OSB2001-0192-FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

The National Marine Fisheries Service (NMFS) received a letter with an attached biological assessment (BA) dated May 14, 2001, from the Bonneville Power Administration (BPA) requesting formal consultation regarding the potential effects of the Richard's Riparian Restoration Project on Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) and its designated critical habitat. The Confederated Tribes of the Umatilla Indian Reservation (CTUIR) plans to conduct the proposed action as part of their Umatilla River Basin Anadromous Fish Habitat Enhancement Project. The proposed project will occur on Umatilla River in Umatilla County of northeastern Oregon. The stretch of river containing the proposed action area is under private ownership and the landowner has signed a 15-year conservation easement with the CTUIR.

The MCR steelhead was listed under the ESA on March 25, 1999 (64 FR 14517). The proposed project is within MCR steelhead critical habitat, which was designated February 16, 2000 (65 FR 7764). Protective regulations were issued for MCR steelhead under Section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

The objective of this Opinion is to determine whether the action to restore riparian and stream condition on the stretch in Umatilla County is likely to jeopardize the continued existence of the Middle Columbia River (MCR) steelhead or destroy or adversely modify its critical habitat.

1.2 Proposed Action

The proposed action is to add large woody debris, improve channel morphology, plant willows and cottonwoods along the bank and fence the riparian areas to prevent grazing by cattle. These actions will occur between river mile (RM) 87.0-87.3 of the mainstem Umatilla River on the property of Dave Richard's. The goal of this project is to decrease streambank erosion, improve instream rearing habitat for juvenile salmonids, and restore riparian vegetation.

Addition of large woody debris will include the placement of three keyed log jams consisting of 2-4 whole conifer trees. These structures will be keyed into the bank to ensure stability. Rootwads will be left attached to provide instream overhead cover. Placement of the log jams has been designed to prevent the river from leaving the current channel and to encourage point bar development and deposition. Installation of these structures will require operation of heavy machinery near the streambank and some excavation of the streambank will occur during keying of the log jams.

To improve width to depth ratios, central forming gravel bars will be moved with an excavator or bulldozer to existing gravel bars located on the inside corner of meanders. These point bars will then be graded, seeded with native grasses and will be planted with willow cuttings. Placement

of large woody debris has been designed to promote stability of these gravel bars. This should result in the formation of a deeper, more stable channel through the project area.

Planting of cottonwoods and willows in the riparian area will be accomplished by using a stinger mounted to an excavator. This method will improve survival of the willow cuttings by ensuring that the cuttings are planted deep enough to reach the water table. Under the terms of the easement with the landowner, a riparian buffer of 30 to 100 feet will be fenced to exclude cattle and encourage the development of a properly functioning riparian vegetation community.

1.3 Biological Information and Critical Habitat

Biological information concerning the MCR steelhead is found in Busby et al. (1996). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed. Within the Umatilla basin, returns of adult wild summer steelhead have declined from highs of 2,816 and 3,296 (in 1986 and 1987) to an average of 963 during 1995 - 1997. Hatchery steelhead, developed from wild Umatilla broodstock, were introduced to the Umatilla River basin in the late 1980s and an increasing percentage of the summer steelhead are of hatchery origin: 17% of the total adult returns in 1990 vs. 62% in 1997 (Chilcote, 1998).

Critical habitat for MCR steelhead encompasses the major Columbia River tributaries known to support this ESU, including the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the Columbia River and estuary. Critical habitat consists of all waterways below long-standing (100 years or more), naturally impassable barriers, including the Umatilla River, which is in the project area. The adjacent riparian zone 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.

The Umatilla River provides rearing and migratory habitats for both adult and juvenile life stages of MCR steelhead with spawning habitat in the upper reaches. Adult MCR steelhead enter the Columbia River beginning in the spring and migrate upriver through the summer, fall, and winter, seeking their tributary of origin. By early the next spring the adults have reached their natal streams and spawn in gravel redds/nests from March to early June. Deposited eggs usually hatch by the July of the same year. The resulting juveniles will spend from one to four years rearing to smolt size when they will begin their migration to the ocean.

Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitats for this species are: 1) Substrate, 2) water quality, 3) water quantity, 4) water temperature, 5) water velocity, 6) cover/shelter, 7) food (juvenile only), 8) riparian vegetation, 9) space, and 10) safe passage conditions. The essential features that the proposed project may affect are substrate, water quality, water temperature, water velocity, cover/shelter, food, and riparian vegetation.

1.4 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: 1) Defining the biological requirements and current status of the listed species; and 2) evaluating the relevance of the environmental baseline to the species' current status. Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: 1) Collective effects of the proposed or continuing action; 2) the environmental baseline; and 3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat and NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods the NMFS uses for applying the ESA section 7(a)(2) to listed MCR steelhead is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them

to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing.

MCR steelhead survival in the wild depends on the proper functioning of certain ecosystem processes including habitat formation and maintenance. The restoration of improperly functioning habitat properly functioning condition will likely lead to improved survival and recovery of MCR steelhead. In conducting analyses of habitat altering actions, NMFS defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and applies a “habitat” approach to its analysis (NMFS 1999). The current status of MCR steelhead, based on their risk of extinction, has not improved much since the species was listed.

1.4.2 Environmental Baseline

The current range-wide status of the identified ESU is found in Busby et al. (1995, 1996). The proposed action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, stream hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where actions described in this biological opinion (Opinion) lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term, by the proposed project. For this project, the action area will be the Umatilla River, from RM 87.0 to the downstream extent of sediment introduced by the activities, approximately 1 mile.

Summer steelhead, chinook, and coho salmon were abundant in the Umatilla River before the 1900's. Several factors have contributed to the decline of these populations including agricultural development, over-appropriation of stream flows to irrigators, stream channelization, and floodplain modification. Conditions in the project area are considered highly impacted. Sedimentation, partially due to poor agricultural practices, is a problem in the mainstem Umatilla River which was listed in 1998 for sedimentation on the Clean Water Act's 303(d) of water quality-limited river segments. Water quality in the action area is generally considered good, with low levels of chemical contaminants. However, nutrient additions from rural areas may cause some local problems and contribute to overabundance of algae and aquatic weeds in this river stretch.

The upper Umatilla system has no known fish passage barriers, but some barriers exist in the lower system. The river channel in the action area is considered “naturally constrained” and has a limited amount of off-channel rearing habitat for juvenile salmonids. Habitat modification is a problem in the upper Umatilla River. A lack of woody debris occurs throughout the upper Umatilla system with much of the wood deposited out of the wetted channel where it is of little value to fish. Width to depth ratios are very high and the system lacks pools. Temperatures in

the upper Umatilla River vary widely due to the presence of hot springs, but are mostly suitable for salmonids.

Riparian conditions in the upper Umatilla subbasin vary, with conditions generally better in the upstream sections. Tree density and shading decrease in the section between the Forks and Meacham Creek. Riparian vegetation communities consist of primarily hardwoods with some conifers present. Harvest and clearing of trees in this lower section have led to low tree densities, decreased shade, and lack of woody debris.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The purpose of the proposed action, as described in section 1.2 of this Opinion is to prevent further streambank erosion, improve instream salmonid habitat by adding woody debris, and improve the condition of riparian vegetation.

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in *Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale* (NMFS 1996). The effects of actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the action area. For the proposed actions, all conditions for Mission Creek will be maintained except habitat access which should be restored. NMFS does expect some negative effects in the short term. Specific effects are discussed below.

Potential short-term negative effects to MCR steelhead will result from this project. Juvenile MCR steelhead rearing in the project area could be killed or injured as trees used in creating the log jam are placed in the wetted channel. Direct mortality is expected to be minimal because juvenile steelhead will most likely be disturbed by the construction activities and leave the area before the logs are placed in the stream. Direct mortality of juvenile MCR steelhead may result from the instream operation of heavy machinery. Due to the low flows and higher temperatures found in this reach during construction activities, the number of rearing juveniles will be limited (Amy Sexton, CTUIR, pers. comm.). Also, direct mortality should be minimal because juvenile steelhead quickly move away from areas where construction is taking place. Increased sediment can be expected to occur due to the instream work associated with placing instream woody debris and relocation of point bars. The short-term increase in turbidity could result in temporary reduction in feeding efficiency for juvenile steelhead within the action area. Increased sedimentation may also lead to increased embeddness of spawning substrates downstream of the project. Instream work scheduled for this project will take place during the July 1- August 15 Oregon Department of Fish and Wildlife (ODFW) instream work window for the Umatilla River. Due to the typically low flows present in the Umatilla River during this time, sedimentation rates are expected to be minimal. Disturbance of riparian vegetation will result from operation of heavy machinery near the stream and could lead to decreased shade and increased water

temperatures until riparian vegetation is re-established. Spill of fuel or other contaminants associated with use of heavy equipment may also occur in or near the stream.

Although the potential for short-term negative effects exists, they will be offset in the long term by the projects beneficial effects. The proposed action should lead to improved habitat conditions for rearing MCR steelhead. Placement of woody debris in the action area will result in increased overhead cover for rearing MCR steelhead. The addition of willows and cottonwoods to the riparian areas will lead to increased shade and woody debris in the future. The proposed action should also result in decreased streambank erosion and consequently lower sedimentation rates in the action area. Relocation of point bars will improve width to depth ratios and lead to greater channel stability in the action area.

1.5.2 Cumulative Effects

“Cumulative effects” are defined in 50 CFR 402.02 as those 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.” The action area for this consultation includes the streambed and streambank, including riparian areas, of the Umatilla River within the area of the project site and for a short distance upstream and downstream. The agricultural and land use practices that have contributed to the degradation of the Umatilla River will most likely continue for the foreseeable future. The ODFW has conducted or plans to conduct habitat restoration in additional stretches of the Umatilla River near the action area described in this Opinion. These future actions are not addressed in this Opinion.

1.6 Conclusion

NMFS has determined that, when the effects of activities and actions associated with this project are added to the environmental baseline and the cumulative effects occurring in this area, it is not likely to jeopardize the continued existence of MCR steelhead. Additionally, NMFS concludes that the subject action would not cause adverse modification or destruction of critical habitat for MCR steelhead. NMFS believes that the proposed action will cause some minor short-term increases in stream turbidity and sedimentation rates in the Umatilla River and may result in some injury or mortality to juvenile MCR steelhead due to the instream placement of woody debris and required inwater work. In the long term, improvement in instream salmonid habitats and benefits associated with increased riparian vegetation are expected.

NMFS conclusions are based on the following considerations: 1) All instream work will occur during the ODFW instream work window for this area (July 1 - August 15), and instream work will be limited to the amount described in the BA; 2) all disturbed soils will be replanted with native vegetation; 3) salmonid habitats in this section of the Umatilla River will improve with the addition of overhead cover from log jams; and 4) the riparian plantings will result in increased stream shading and future woody debris recruitment and bank stability.

1.7 Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of proposed actions on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS has no additional conservation recommendations regarding the action addressed in this Opinion.

1.8 Reinitiation of Consultation

Reinitiation of consultation is required if: 1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; 2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or 3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Section 4(d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (64 FR 60727; November 8, 1999). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out 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 prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Extent of Take

The NMFS anticipates that the subject actions covered by this Opinion have more than a negligible likelihood of resulting in incidental take of juvenile MCR steelhead. Some minimal level of incidental take is expected to result from direct mortality or injury to juvenile MCR steelhead during instream work and placement of woody debris. The temporary increase in stream turbidity associated with this work could result in temporarily-reduced feeding efficiency

for juvenile MCR steelhead, both within and downstream of the project area. Effects from turbidity are expected to be of short duration, because turbidity levels will quickly return to preconstruction levels once instream work is completed. Because of the inherent biological characteristics of aquatic species such as MCR steelhead, the likelihood of discovering take attributable to this action is very limited. Effects of actions such as that addressed in this Opinion are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, although NMFS expects some incidental take to occur due to the action covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage associated with the proposed construction activities.

2.2 Effect of Take

In this Opinion, the NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat when the reasonable and prudent measures are implemented.

2.3 Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. Minimize the likelihood of incidental take from activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage by avoiding or minimizing disturbance to riparian and aquatic systems.
2. Ensure that measures to minimize take are effective by monitoring and reporting results.

2.4 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, the BPA must comply with the following terms and conditions, which carry out the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (construction) above, the BPA shall ensure that:
 - a. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project. In particular, disturbance to riparian vegetation will be minimized.
 - b. In-water work. All work within the active channel that could contribute sediment or toxicants downstream will be completed within the ODFW approved in-water

work period for the Umatilla River – July 1 through August 15.¹ Logs will be positioned carefully and lowered slowly into place to minimize the potential for direct mortality or injury to any juvenile MCR steelhead that may be present in the project area.

- c. Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved by biologists from NMFS.
- d. Fish passage. Work will not inhibit passage of any adult or juvenile salmonid species throughout the construction period or after project completion. All culvert and road designs must comply with ODFW guidelines and criteria for stream-road crossings² with appropriate grade controls to prevent culvert failure due to changes in stream elevation. Channel modifications which could adversely affect fish passage, such as by increasing water velocities, are not authorized by this Opinion.
- e. Pollution and erosion control plan. A Pollution and Erosion Control Plan (PECP) will be developed for each authorized project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations.
 - i. Methods that will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - ii. Methods that will be used to confine and remove and dispose of excess concrete, cement and other mortars or bonding agents, including measures for washout facilities.
 - iii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - iv. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - v. Measures that will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during

¹ Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)(http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

² Appendix A, Oregon Department of Fish and Wildlife Guidelines and Criteria for Stream-Road Crossings, in: G.E. Robison, A. Mirati, and M. Allen, *Oregon Road/Stream Crossing Restoration Guide: Spring 1999* (rules, regulations and guidelines for fish passage through road/stream crossings under the Oregon Plan) (<http://www.nwr.noaa.gov/1salmon/salmesa/4ddocs/orfishps.htm>).

construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

- f. Temporary access roads. Temporary access roads are designed as follows:
 - i. Existing roadways or travel paths will be used whenever reasonable.
 - ii. Where stream crossings are essential, a survey must determine and map any potential spawning habitat within 1,000 feet upstream and downstream.
 - iii. No stream crossings will occur at known or suspected spawning areas or within 300 feet upstream of such areas where impacts to spawning areas may occur.
 - iv. Where stream crossings are essential, the crossing design will accommodate reasonably foreseeable risks (e.g., flooding and associated bedload and debris) to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
 - v. Vehicles and machinery must cross riparian areas and streams at right angles to main the main channel wherever reasonable.
 - vi. Temporary roads within 150 feet of streams will avoid, minimize and mitigate soil disturbance and compaction by clearing vegetation to ground level and placing clean gravel over geotextile fabric.
 - vii. The number of stream crossings is minimized.
- g. Cessation of work. All project operations, except efforts to minimize storm or high flow erosion, will cease under high flow conditions that may result in inundation of the project area.
- h. Pre-construction activities. Before significant alteration of the action area, the following actions will be accomplished.
 - i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. The following erosion control materials are onsite.
 - (1) A supply of erosion control materials (e.g., silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.
 - (2) An oil absorbing, floating boom is available on-site during all phases of construction whenever surface water is present.
 - iii. All temporary erosion controls (e.g., straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until permanent erosion control measures are effective.
- i. Heavy Equipment. Heavy equipment use will be restricted as follows.
 - i. When heavy equipment is required, the applicant will use equipment having the least impact (e.g., minimally sized, rubber tired).

- ii. Excavators will have properly guarded belly pan for pioneering type of work in rough terrain.
- iii. Heavy equipment will be fueled, maintained and stored as follows.
 - (1) All equipment that is used for instream work will be cleaned before operations below the bankfull elevation. External oil and grease will be removed, along with dirt and mud. No untreated wash and rinse water will be discharged into streams and rivers without adequate treatment.
 - (2) Place vehicle staging, maintenance, refueling, and fuel storage areas a minimum of 150 feet horizontal distance from any stream.
 - (3) All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
 - (4) When not in use, vehicles will be stored in the vehicle staging area.
- j. Site preparation. Site preparation is completed in the following manner, including removal of stream materials, topsoil, surface vegetation and major root systems.
 - i. Any instream large wood or riparian vegetation moved or altered during construction will stay on the site or be replaced with a functional equivalent.
 - ii. Tree removal will be mitigated for onsite by a 2:1 replanting ratio.
 - iii. Whenever the project area is to be revegetated or restored, native channel material, topsoil and native vegetation removed for the project should be stockpiled for redistribution on the project area.
- k. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:
 - i. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside the riparian area.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.
 - iii. All exposed or disturbed areas will be stabilized to prevent erosion.
 - (1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,³ mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within seven days of exposure.
 - (2) All other areas will be stabilized quickly as reasonable, but within 14 days of exposure.

³ By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

- (3) Seeding outside the growing season will not be considered adequate nor permanent stabilization.
 - iv. All erosion control devices will be inspected during construction to ensure that they are working adequately.
 - (1) Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites.
 - (2) If inspection shows that the erosion controls are ineffective, work crews will be mobilized immediately, during working and off-hours, to make repairs, install replacements, or install additional controls as necessary.
 - (3) Erosion control measures will be judged ineffective when turbidity plumes are evident in waters occupied by listed salmonids during any part of the year.
 - v. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
 - vi. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 5 inches (12 cm). Catch basins will be maintained so that no more than 6 inches (15 cm) of sediment depth accumulates within traps or sumps.
 - vii. Sediment-laden water created by construction activity will be filtered before it leaves the right-of-way or enters a stream or other water body. Silt fences or other detention methods will be installed as close as reasonable to culvert outlets to reduce the sediment entering aquatic systems.
- I. Site restoration. Site restoration and cleanup, including protection of bare earth by seeding, planting, mulching and fertilizing, is done in the following manner.
 - i. All damaged areas 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 mulch, native herbaceous seeding, and native woody vegetation before October 1. On cut slopes steeper than 1:2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be 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 of the state where the project occurs, and will comprise a diverse assemblage of woody and herbaceous species.
 - iv. Plantings will be arranged randomly within the revegetation area.
 - v. All plantings will be completed before April 15.
 - vi. No herbicide application will occur within 300 feet of any stream channel as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.

- vii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
 - viii. Fencing will be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
 - ix. Plantings will achieve an 80 percent survival success after three years.
 - (1) If success standard has not been achieved after three years, the applicant will submit an alternative plan to the BPA. The alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue and plans will be submitted to the BPA until site restoration success has been achieved.
 - m. CTUIR Personnel. CTUIR personnel will be on-site for all construction and monitoring activities to ensure that these terms and conditions are met.
2. To implement Reasonable and Prudent Measure #2 (monitoring and reporting), above, the BPA shall submit a report to the NMFS within one year of completing the project. This report will consist of the following information.
- a. Project identification.
 - i. Permit number;
 - ii. applicant's name;
 - iii. project name;
 - iv. project location by 5th field hydrological unit code (HUC) and latilong;
 - v. starting and ending dates for work completed; and
 - vi. the BPA contact person.
 - b. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report of any seine and release activity including:
 - i. The name and address of the supervisory fish biologist;
 - ii. methods used to isolate the work area and minimize disturbances to ESA-listed species;
 - iii. stream conditions before and following placement and removal of barriers;
 - iv. the means of fish removal;
 - v. the number of fish removed by species;
 - vi. the location and condition of all fish released; and
 - vii. any incidence of observed injury or mortality.
 - c. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.
 - d. Site restoration. Documentation of the following conditions:
 - i. Finished grade slopes and elevations.
 - ii. Log and rock structure elevations, orientation, and anchoring, if any.
 - iii. Planting composition and density.
 - iv. A plan to inspect and, if necessary, replace failed plantings and structures for five years.

- v. A narrative assessment of the project's effects on natural stream function.
- e. Photographic documentation of environmental conditions at the project sites before, during and after project completion.
 - i. Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
 - ii. Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
 - iii. Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.
- f. The annual report will be submitted to:

National Marine Fisheries Service
Oregon Habitat Branch, Habitat Division
Attn: OSB2001-0193
525 NE Oregon Street, Suite 500
Portland, OR 97232

- g. NOTICE. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; phone: 360/418-4246. Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. Besides the care of sick or injured endangered and threatened species, or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence with the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the Essential Fish Habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.110).

Section 305(b) of the MSA [6 USC 1855(b)] requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NMFS shall provide conservation recommendations for any Federal or State Activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its reason for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O.gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-

impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information. Currently, the only chinook salmon present in the Umatilla River are of hatchery origin.

3.4 Proposed Action

The proposed action is detailed above in Section 1.2 of the ESA portion of this Opinion. The action area includes a section of the Umatilla River where these habitat and riparian improvement efforts are proposed. This area has been designated as EFH for various life stages of chinook salmon.

3.5 Effects of Proposed Action

As described in detail in the ESA portion of this consultation, the proposed activities may result in detrimental, short-term, adverse effects to a variety of habitat parameters.

3.6 Conclusion

NMFS believes that the proposed action may adversely affect the EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. In addition to conservation measures proposed for the project by the BPA and CTUIR, all of the Reasonable and Prudent Measures and the Terms and Conditions contained in Section 2.4 of the ESA portion of this Opinion are applicable to salmon EFH. Therefore, NMFS incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the BPA to provide a written response to NMFS' EFH conservation recommendations within 30 days of its receipt of this letter. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. If the response is inconsistent with NMFS' conservation recommendations, the reasons for not implementing the BPA shall explain its reasons for not following the recommendations.

3.9 Consultation Renewal

The BPA must reinitiate EFH consultation with NMFS if either action is substantially revised or new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600.920).

4. LITERATURE CITED

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion.

Busby, P., S. Grabowski, R. Iwamoto, C. Mahnken, G. Matthews, M. Schiewe, T. Wainwright, R. Waples, J. Williams, C. Wingert, and R. Reisenbichler. 1995. Review of the status of steelhead (*Oncorhynchus mykiss*) from Washington, Idaho, Oregon, and California under the U.S. Endangered Species Act.

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Chilcote, M. 1998. Conservation Status of Steelhead in Oregon. Oregon Department of Fish and Wildlife Information Report No. 98-3.

NMFS (National Marine Fisheries Service) 1996. Making Endangered Species Act determinations of effect for individual and grouped actions at the watershed scale. Habitat Conservation Program, Portland, Oregon. September 4, 1996.

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PFMC (Pacific Fishery Management Council). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon. Portland, Oregon.