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National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
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Refer to:
OHB2002-0052-FEC

April 16, 2002

Ms. Bonnie J. Wood
Forest Supervisor
Malheur National Forest
P.O. Box 909
John Day, Oregon 97845

Re: Endangered Species Act Formal Section 7 Consultation and Magnuson-Stevens Act
Essential Fish Habitat Consultation for the Crawford Vegetation Management Project,
Grant County, Oregon.

Dear Ms. Wood:

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 Crawford Vegetation Management Project on the Malheur National Forest (MNF) in Grant County, Oregon. NMFS concludes in this Opinion that the proposed action is not likely to jeopardize Middle Columbia River (MCR) 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, at 541.975.1835 ext. 222.

Sincerely,

Michael R. Crouse
f.l

D. Robert Lohn
Regional Administrator

cc. Larry Bright - MNF
Jennifer O'Reilly - USFWS
Tim Unterwegner - ODFW



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

BIOLOGICAL OPINION

Crawford Vegetation Management Project
Middle Fork John Day Subbasin
John Day River Basin, Grant County, Oregon

Agency: Malheur National Forest

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: April 16, 2002

Issued by: *fsl* 

D. Robert Lohn
Regional Administrator

Refer to: OHB-2002-0035-FEC

TABLE OF CONTENTS

1. ENDANGERED SPECIES ACT	<u>1</u>
1.1 Background	<u>1</u>
1.2 Proposed Action	<u>1</u>
1.2.1 Vegetation Management	<u>2</u>
1.2.2 Fire and Fuels Treatment	<u>2</u>
1.2.3 Roads Management	<u>3</u>
1.3 Biological Information and Critical Habitat	<u>4</u>
1.4 Evaluating Proposed Action	<u>5</u>
1.4.1 Biological Requirements	<u>6</u>
1.4.2 Environmental Baseline	<u>7</u>
1.5 Analysis of Effects	<u>8</u>
1.5.1 Effects of Proposed Action	<u>8</u>
1.5.2 Cumulative Effects	<u>10</u>
1.6 Conclusion	<u>10</u>
1.7 Conservation Recommendations	<u>11</u>
1.8 Reinitiation of Consultation	<u>11</u>
2. INCIDENTAL TAKE STATEMENT	<u>11</u>
2.1 Amount or Extent of Take	<u>12</u>
2.2 Effect of the Take	<u>12</u>
2.3 Reasonable and Prudent Measures	<u>12</u>
2.4 Terms and Conditions	<u>13</u>
3. ESSENTIAL FISH HABITAT	<u>19</u>
3.1 Background	<u>19</u>
3.2 Magnuson-Stevens Fishery Conservation and Management Act	<u>19</u>
3.3 Identification of EFH	<u>20</u>
3.4 Proposed Actions	<u>20</u>
3.5 Effects of Proposed Action	<u>20</u>
3.6 Conclusion	<u>20</u>
3.7 EFH Conservation Recommendations	<u>20</u>
3.8 Statutory Response Requirement	<u>21</u>
3.9 Supplemental Consultation	<u>21</u>
4. LITERATURE CITED	<u>21</u>

1. ENDANGERED SPECIES ACT

1.1 Background

The National Marine Fisheries Service (NMFS) received a letter on February 27, 2002, from the Malheur National Forest (MNF) requesting formal consultation regarding the potential effects of the Crawford Vegetation Management Project on Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) and their designated critical habitat. The Crawford Vegetation Management Project is located in the Upper Middle Fork John Day River watershed, within the Middle Fork John Day River (MFJDR) sub-basin. The MFJDR sub-basin is part of the John Day River (JDR) basin, a major tributary of the Columbia River. The accompanying biological assessment (BA) described the project and its potential effects on MCR steelhead and their designated critical habitat. Additional documents provided by the MNF during the consultation process described the environmental baseline of the Upper Middle Fork John Day watershed.

The MCR steelhead were listed under the ESA on March 25, 1999 (64 FR 14517). The proposed action 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). All streams and their adjacent riparian areas in the JDR basin downstream from longstanding, naturally impassable barriers (i.e., natural waterfalls in existence for at least 100 years) are designated critical habitat for MCR steelhead. The proposed actions addressed in this biological opinion (Opinion) are within designated critical habitat for MCR steelhead in the MFJDR sub-basin.

The objective of this Opinion is to determine whether the actions included in the Crawford Vegetation Management Project are likely to jeopardize the continued existence of MCR steelhead or destroy or adversely modify their critical habitat.

1.2 Proposed Action

The Crawford Vegetation Management Project involves vegetation treatments, prescribed fire and fuels treatment, and road management activities in the Upper Middle Fork John Day River watershed. According to the BA, the primary purpose of the project is to “Change the species composition and structure of the vegetation to develop a trend toward more resilient historical vegetative conditions” and “Implement a road system that meets public and management access needs, while reducing the risk of sediment reaching streams.” The MNF has determined that the road management activities may affect, and are likely to adversely affect (LAA) MCR steelhead. The MNF has determined the remaining activities associated with this project are not likely to adversely affect (NLAA) MCR steelhead. A brief description of the activities follows.

1.2.1 Vegetation Management

Commercial timber harvest is proposed for 72 harvest units consisting of 2,963 acres. No harvest will occur in Riparian Habitat Conservation Areas (RHCA) but some units are directly

adjacent to RHCAs. Sixty six of the units will be harvested with ground based systems and six of the units will require skyline yarding. In the skylining units, some suspension of cable across RHCAs will occur to gain a foothold, but no logs will be yarded across RHCAs. No heavy equipment will be allowed to operate in RHCAs except on existing roads. In addition to the commercial timber harvest, other activities are likely occur in the harvest units. These activities may include non-commercial thinning, diseased and dead tree removal, hand piling of logging slash, mechanical treatment of slash, and subsoiling of skid trails. Most of the units will receive prescribed fire to reduce slash and other fuel levels. This activity will be discussed further in the prescribed fire section of this Opinion. Conifer planting and animal damage control may also take place in the harvest units. Mechanical trapping and fumigation with aluminum phosphide may be carried out to control gopher populations.

Non-commercial thinning will take place on 383 acres in areas located outside of the proposed harvest units. Thinning will be done by hand with chainsaws and no cutting of trees will occur in RHCAs. After the thinning operations, these areas will receive treatment to reduce fuel levels such as hand piling and burning or mechanical chipping.

The MNF proposes restoration for 27 meadow sites in the project area, 8 of which are located in RHCAs. The MNF is concerned that the health of hardwood vegetation communities in these meadows is threatened by conifer encroachment and over browsing by ungulates. The planned restoration activities include removal of conifers from meadow sites, cutting aspen to stimulate suckering, caging and fencing of areas with hardwood vegetation, and cutting junipers to create barriers at 8 sites. Conifer removal will occur in meadows and within hardwood stands with felling being done with chainsaws. Some felling of conifers will occur in RHCAs but larger trees felled in these areas and associated slash will be left onsite. Conifers felled in RHCAs six inches in diameter or less may be moved by hand and used to construct fences to protect groups of hardwood plants. In RHCAs, removal of conifers will reduce competition with hardwood species and lead to improved vigor of these hardwood plant communities.

1.2.2 Fire and Fuels Treatment

Prescribed fire will be used to treat 9,498 acres within the next 10-15 years to reduce fuel levels in the project area. The completion of the fire and fuels treatment component of this project is highly dependant on fuel moisture content and weather. For this reason, the proposed time line for this activity is much longer than that of the other activities included in this project.

Prescribed fire treatments will include broadcast burning, under burning, and jackpot burning. Burning treatments in areas with low fuel levels will be repeated over time to gradually reduce the litter layer, which has increased beyond historical conditions. No ignition of prescribed fire will occur in RHCAs. Fire ignited outside RHCAs will be allowed to back into these areas.

The construction of 1.4 miles of hand constructed fire line is proposed for areas being harvested with skyline equipment. These fire lines will be created by removing vegetation with a chainsaw and then using hand tools to expose bare mineral soil. Water bars will be created at intervals along the hand line to provide drainage. No hand line will be created in RHCAs. Some creation

of fire line with heavy equipment will occur in areas adjacent to RHCAs. The length of this constructed line will be approximately 1,000 feet.

Mechanical treatment of slash is prescribed for 653 acres of commercial harvest units. This treatment will consist of shredding or chipping by mechanical means, use of a grapple skidder to pile slash, or use of a yarder to remove trees with the tops attached. Mechanical treatment of slash will not occur in RHCAs, areas where soil erosion potential is high, or where slope exceeds 35 percent. Equipment will not operate on wet soil to limit compaction and mobilization of sediment.

1.2.3 Roads Management

The construction of approximately 7.9 miles of new road is planned, with most of the new construction being extensions of existing roads or side roads to access harvest units for this project. None of the new roads will cross streams or RHCAs and no culverts will be needed. Because of the gentle terrain in the area, large cuts and fills will not be necessary for the newly constructed roads. These roads are scheduled to be closed after the project has been completed.

The construction of 4.1 miles of temporary roads is also planned with none of these temporary roads located in RHCAs. No stream crossings will occur, but the roads will have limited cuts and fills. All of these roads will be decommissioned after the removal of timber has been completed. Decommissioning will involve subsoiling, scarification, and/or seeding and planting to improve infiltration and reestablish ground cover.

Approximately 43.5 miles of road reconstruction is planned, with 3.2 miles of these roads occurring in RHCAs. Road reconstruction includes the following activities: Addition of drainage structures, grading or blading, adding rock surface, removing trees within the road, and hazard tree removal. Instream work required to clean culverts will occur during the Oregon Department of Fish and Wildlife (ODFW) in-water work window for the area (July 15 - August 15). Reconstruction of six rock ford stream crossings in Category IV RHCAs is planned as part of road reconstruction activities. Rock will be placed in the crossing as well as in the approaches to the crossing.

Road maintenance is planned for 10.7 miles of roads that will be used for timber harvest. Limited maintenance will occur on these roads, including road blading, adding cross ditches, or removing hazard trees. Some ditch relief culverts need to be replaced as well. Snow plowing will be necessary to facilitate the use of many of the roads during winter. In the BA, the MNF has identified best management practices for snow plowing that minimize the amount of sediment that may reach streams generated by this activity.

Decommissioning is planned for 24.4 miles of existing road, with 4.8 miles being accomplished as part of the timber sale contract and 19.6 miles under separate contract or by MNF personnel. Decommissioning will be accomplished as described above. In addition, 2.3 miles of existing

road will be closed by blocking the entrance. A summary of road management activities in each sub-watershed in the project area is found below.

Table 1. Road Management Activities for Each Sub-Watershed in the Project Area

Pre-Project			Project Actions							Post-Project		
Sub-watershed	Total Open Road Miles	Total Closed Road Miles	Total Road Miles	Maintain	Reconstruct	Temp. Construct	Construct	Close	Decommission	Total Open Road Miles	Total Closed Road Miles	Total Road Miles
Crawford	11.2	18.4	29.6	2.9	10.1	1.1	3.2	3.2	7.2	11.1	14.5	25.6
Dry Fork Clear	2.4	0.2	2.6	0.0	2.1	0.2	0.0	0.0	0.4	2.3	0.0	2.3
Bridge Creek	15.4	26.5	41.9	0.0	1.4	0.0	0.4	1.0	2.9	14.5	24.9	39.4
Clear Creek	2.3	0.0	2.3	0.0	0.3	0.2	0.0	0.4	0.3	1.6	0.4	2.0
Idaho/Summit	28.9	40.0	68.9	4.8	1.8	0.1	0.0	0.9	0.0	29.0	39.6	68.6
Mill	5.7	23.3	29.0	1.7	14.5	0.6	3.7	3.6	6.9	5.0	20.7	25.7
Phipps	13.0	11.9	24.9	0.9	13.3	1.9	0.6	1.1	6.7	11.8	7.1	18.9
Squaw	0.4	0.4	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.8
Total	79.3	120.7	200.0	10.7	43.5	4.1	7.9	10.2	24.4	75.7	107.6	183.3

1.3 Biological Information and Critical Habitat

The MCR steelhead Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by NMFS on March 25, 1999 (64 FR 14517). 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.

The JDR is the largest river system in the range of MCR steelhead free of dams. There is also currently no artificial propagation of steelhead in the system and runs are composed completely of native stocks. However, there is some straying of hatchery fish into the JDR system from the Columbia River (Unterwagner and Gray 1997). The ODFW estimates yearly returns of adult steelhead to the JDR basin from 3,900 to 36,400, with estimated escapement averaging 13,988 adults since 1987. The MFJDR has historically contributed 23% of the total run for the basin (USFWS and NMFS 1981). NMFS (1997) citing Chilcote (1997) states that recent MCR steelhead redd counts conducted in established index areas throughout the John Day River basin

suggest universal declines in redd abundance ranging from -0.9 to -5.6% over the past several years.

Critical habitat was designated for the MCR steelhead on February 16, 2000 (65 FR 7764). 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 MFJDR. 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 (LWD)/organic matter. Protective regulations for MCR steelhead were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42423).

The MFJDR and its tributaries provide spawning, rearing, and migratory habitat for both adult and juvenile life stages of MCR steelhead. 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 following 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 at which time they will begin their migration to the ocean. Juvenile steelhead are expected to be rearing in the project area during all phases of this project.

Essential features of the adult spawning, juvenile rearing, and adult and juvenile migratory habitat 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. NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. 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 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 to a more 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 identified 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 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.

The MFJDR subbasin, including the Upper Middle Fork John Day River watershed encompasses 506,853 acres from its headwaters to its confluence with the North Fork John Day River at RM 32.2. The Forest Service manages 270,473 acres (53%) of the subbasin. Major tributaries to the MFJDR include Clear Creek, Big Creek, and Granite Boulder Creek.

In general, the current status of MCR steelhead populations is the result of several longterm, human-induced factors (e.g. habitat degradation, water diversions, hydropower dams) that serve to exacerbate the adverse effects of natural environmental variability from such factors as drought, floods, and poor ocean conditions. Within the action area, habitat degradation has occurred from timber harvest, road construction, water diversions, livestock grazing, and agriculture. Currently, there are several chronic sources of sediment to streams in the watershed due to the existing road system.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project level and watershed scales. 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* (NMFS 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.

In the Upper Middle Fork John Day River watershed, 13 of the 19 habitat indicators in the MPI were rated as “functioning at risk.” These were: Sediment, nutrients, LWD, off-channel habitat, refugia, width\depth ratio, streambank condition, floodplain connectivity, change in peak/base flow, drainage network increase, disturbance history, riparian habitat conservation areas, and disturbance regime. Six of the 19 were rated as “not properly functioning.” These were: Temperature, physical barriers, substrate embeddedness, pool frequency and quality, large pools, and road density and location. None of the habitat indicators were rated by the MNF as properly functioning. The environmental baseline conditions for each habitat indicator in the MPI are described in the BA and incorporated into this Opinion by reference. These habitat indicators provide the template for assessing the essential elements of MCR critical habitat. 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. An assessment of the essential features of MCR steelhead critical habitat is obtained by using the MPI process to evaluate whether aquatic habitat is properly functioning.

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

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. 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 Upper Middle Fork John Day watershed will be maintained in the long term. NMFS does expect some negative effects in the short-term. Specific effects are discussed below.

Impacts of the proposed actions to stream habitat and fish populations can be separated into direct and indirect effects. Direct effects are those which contribute to the immediate loss or harm to individual fish or embryos (e.g., directly stepping on a fish, trampling a redd that results in the actual destruction of embryos, or dislodging the embryos from the protective nest and ultimately destroying eggs).

Indirect effects are those impacts which occur at a later time, causing loss of specific habitat features (e.g., undercut banks, sedimentation of spawning beds), localized reductions in habitat quality (e.g., sedimentation, loss of riparian vegetation, changes in channel stability and structure), and, ultimately, cause loss or reductions of entire populations of fish, or widespread reductions in habitat quantity and/or quality.

Direct effects to MCR steelhead could result from sediment introduced to streams in the action area by some of the activities proposed in this project. These actions include road decommissioning and maintenance, snow plowing, subsoiling, timber harvest and prescribed fire. Many of these activities will occur outside of RHCAs and the vegetative buffer provided by the RHCA will be sufficient to prevent sediment from entering streams. In addition, these activities have been designed with protective measures to keep sediment introduction into streams minimal. However, some of the activities, particularly culvert cleaning, will occur in RHCAs and will generate additional sediment inputs to streams resulting in both direct effects to MCR steelhead and potentially detrimental effects to their habitat. In the short term, a temporary increase in sediment and turbidity could reduce light penetration and inhibit primary production, abrade and clog fish gills, prevent foraging of sight feeding juvenile steelhead, and cause fish to avoid disturbed areas of the stream. During culvert cleaning, heavy equipment or associated workers entering the water could injure or kill rearing juvenile MCR steelhead. These activities could also result in harassment of juvenile steelhead as the this work could interrupt daily activities such as feeding and sheltering. Once these juveniles fish are frightened from cover and

swim into open water, they become more susceptible to predation from larger fish and avian predators.

Direct effects to MCR steelhead could possibly result from the reconstruction and use of the six rocky fords crossing PACFISH Category IV streams. Juvenile MCR steelhead could be killed or injured as these crossings are used by vehicles or when rock is placed in the stream to maintain the crossing. Since these crossings are located in intermittent channels, the ability of fish to use these areas to rear is limited by flow and most likely temperature. Additionally, at the actual sight of the crossing, the limited water depth further reduces the suitability of the site for rearing. The chance of MCR steelhead being in the crossing when vehicles are using it is very small.

The greatest indirect effects from implementation of projects covered in this Opinion are likely to be related to additional inputs of sediment to streams in the action area. The activities likely to generate sediment proposed in this project have been designed with specific protective measures to limit the amount of sediment that will reach streams in the action area. However, even with the protective measures proposed in the BA, some sediment particularly from culvert cleaning will enter streams. This could result in additional substrate embeddedness and degradation of MCR steelhead spawning habitat. Inputs of fine sediment to these streams could also reduce benthic invertebrate abundance. Studies have shown that sediment inputs resulting in substrate embeddedness of greater than one third can result in a decrease in benthic invertebrate abundance and thus a decrease in food available for juvenile salmonids (Waters 1995). However, the amount of sediment generated from the culvert cleaning will most likely not occur in amounts sufficient to cause the above mentioned adverse effects to MCR steelhead habitat. By scheduling the cleaning during times of low flows, the amount of sediment mobilized in the water column will be minimal. Sediment levels will drop to background levels shortly after culvert cleaning is completed. Many of the activities proposed in the road management component of this project especially road closures and decommissioning, will alleviate some of the chronic sediment inputs now occurring to local streams as a result of the current road system.

Beneficial effects to MCR steelhead habitat should also result from the meadow restoration proposed in this project. Removing encroaching conifers from meadow sites combined with other planned restoration activities should facilitate the reestablishment of a riparian hardwood community. Improved bank stability, shading, and increased inputs of allochthonous material should result from the reestablishment of this community.

1.5.2 Cumulative Effects

“Cumulative effects” are defined in 50 CFR 402.02 as 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. The “action area” is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR 402.02). The "action area" for this consultation, therefore, includes the entire Upper Middle Fork John Day watershed.

The MNF has identified several actions occurring on private land in this watershed that are reasonably certain to continue in the future. These include ranching, timber harvest, and withdrawal of water for irrigation.

Significant improvement in MCR steelhead reproductive success outside of Federally-administered land is unlikely without changes in grazing, agricultural, and other practices occurring within these non-Federal riparian areas in the John Day River basin. NMFS is not aware of any other specific future actions which are reasonably certain to occur on non-Federal lands.

1.6 Conclusion

NMFS has determined that, when the effects of the subject actions addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, NMFS concludes that the subject actions would not cause adverse modification or destruction of designated 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 Upper Middle Fork John Day watershed. These conclusions were reached primarily because the actions are expected to reduce chronic sediment inputs resulting from the current road system and sediment generated from other proposed ground disturbing activities is unlikely to reach streams. The short-term negative impacts due to sedimentation in Upper Middle Fork John Day watershed will be offset in the long term by the reduction in chronic sediment inputs from the current road system and restoration of meadow hardwood communities.

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. 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). The MNF may also be required to reinitiate consultation if the proposed actions are not consistent with conservation measures developed through the pending consultation on land and resource management plans for Federal land management units in the Middle and Upper Columbia River Basins. To reinitiate

consultation, the MNF must contact the Habitat Conservation Division, Oregon Habitat Branch, of NMFS, and refer to OHB2002-0052-FEC.

2. INCIDENTAL TAKE STATEMENT

Sections 4(d) and 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 further 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. 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 endangered or threatened species. 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 Amount or Extent of Take

NMFS anticipates that the proposed action is reasonably certain to result in incidental take of species listed in this Opinion because of detrimental effects from increased sediment (non-lethal). It is also possible that some incidental take may result from the instream work (lethal), although this is expected to be minimal.

Effects of actions such as minor sedimentation are unquantifiable in the short-term and are not expected to be measurable as long term harm to habitat features or by long term harm to salmonid behavior or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the proposed actions covered by this Opinion, best scientific and commercial data available are not sufficient to enable NMFS to estimate the specific amount of incidental take to the species itself. Additionally, because the distribution of rearing MCR steelhead located at the sites where culvert cleaning will occur is dependant on many factors, including stream flow levels and temperature, the amount of take associated with these activities can not be quantified. In instances such as these, NMFS designates the expected level of take as “unquantifiable.” Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the habitat altering actions covered by the Opinion. The extent of the take includes the aquatic and associated riparian

habitats affected by the culvert cleaning extending upstream to the edge of disturbance, and downstream 1 mile.

2.2 Effect of the Take

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

2.3 Reasonable and Prudent Measures

NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by this Opinion. The MNF shall:

1. Minimize the likelihood of incidental take resulting from road maintenance activities (including culvert cleaning) and proposed fire activities by implementing these projects such that the direct and indirect effects of inchannel or near-channel heavy equipment use on spawning adult MCR steelhead, steelhead eggs, pre-emergent fry, rearing juveniles and their designated critical habitat are avoided or minimized.
2. Minimize the likelihood of incidental take resulting from constructions activities in or near watercourses by ensuring that an effective spill prevention, containment, and control plan is developed, implemented, and maintained to avoid or minimize point-source pollution both into and within watercourses over the short term and the long term.
3. Complete a comprehensive monitoring and reporting program to ensure implementation of requirements found in this Opinion.

2.4 Terms and Conditions

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

1. To implement Reasonable and Prudent Measure #1, the MNF shall ensure that:
 - a. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project.
 - 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 (July 15 - August 15). Work will be completed from the bank to

- minimize disturbance of the stream bottom; no equipment will be allowed into the active wetted channel.
- 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. Isolation of in-water work area. During in-water work, if listed fish may be present, including incubating eggs or juveniles, and the project involves either significant channel disturbance or use of equipment instream, ensure that the work area is well isolated from the active flowing stream within a cofferdam (made out of sandbags, sheet pilings, inflatable bags, etc.), or similar structure, to minimize the potential for sediment entrainment. Furthermore, no ground or substrate disturbing action will occur within the active channel 1,000 feet upstream of potential spawning habitats as measured at the thalweg without isolation of the work area from flowing waters.
 - e. Water pumped from the work isolation area will be discharged into an upland area providing over ground flow before returning to the creek. Discharge will occur so that it does not cause erosion. Discharges into potential fish spawning areas or areas with submerged vegetation are prohibited.
 - f. 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 crossings 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.
 - g. Temporary access roads. Temporary access roads are designed as follows:
 - i. Existing roadways or travel paths will be used whenever possible.
 - 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 1,000 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 the main channel wherever possible.
 - vi. The number of stream crossings is minimized.
 - h. 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.

- i. 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.
- j. Heavy Equipment. Heavy equipment use will be restricted as follows.
 - i. When heavy equipment is required, the MNF 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) Vehicle staging, maintenance, refueling, and fuel storage areas will be located outside RHCAs.
 - (3) All vehicles operated within RHCAs 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.
- k. 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.
- I. 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 RHCA.
 - 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,¹ mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within seven days of exposure.
 - (2) Seeding outside the growing season will not be considered adequate nor permanent stabilization.
 - iv. All erosion control devices will be inspected before, during, and after construction to ensure that they are working adequately.
 - (1) Erosion control devices will be inspected periodically to ensure proper function.
 - (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 are 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

¹ 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.

reasonable to culvert outlets to reduce the sediment entering aquatic systems.

- m. 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 June 1 of the following Spring.
 - vi. No herbicide application will occur within RHCA's 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. Plantings in areas disturbed by construction activities will achieve an 80 percent survival success after three years.
 - (1) If success standard has not been achieved after three years, the MNF will submit an alternative plan to NMFS. The alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue and plans will be submitted to the MNF until site restoration success has been achieved.
- n. Construction of fire lines. Construction of fire lines with heavy equipment will occur at least 500 feet from any stream channel, including intermittent stream channels.

2. To implement reasonable and prudent measure #2, the MNF shall ensure that:

- a. 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 construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
3. To implement Reasonable and Prudent Measure #3, the MNF shall submit a report by March 1 of the following year to NMFS describing the previous years activities related to this project. This report will consist of the following information:
- a. Project identification.
 - i. project name;
 - ii. project location by 5th field hydrological unit code (HUC) and lat long;
 - iii. starting and ending dates for work completed; and
 - iv. the MNF contact person.
 - b. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report with the following information:
 - 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;
 - 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. Summary of the following conditions:
 - i. Log and rock structure repair.
 - ii. Planting composition and density.
 - iii. A Summary of planting and seeding efforts.
 - iv. A narrative assessment of the project's effects on natural stream function.

- e. The annual report will be submitted to:

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

- f. NOTICE. If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to the National Marine Fisheries 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. ESSENTIAL FISH HABITAT

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 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 EFH: 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 (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 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.

3.4 Proposed Actions

The proposed action is detailed above in Section 1.2 of the ESA portion of this Opinion. The action area includes the Upper Middle Fork John Day River Watershed. 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 MNF, 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

The Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the MNF 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 MNF shall explain its reasons for not following the recommendations.

3.9 Supplemental Consultation

The MNF must reinitiate EFH consultation with NMFS if either the 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 in addition to the BA and additional information requested by NMFS and provided by the UNF.

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