



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

Refer to:
2003/00136

May 16, 2003

Larry Timchak, Forest Supervisor
Ochoco National Forest
3160 NE Third Street
P.O. Box 490
Prineville, OR 97754

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project, John Day River Basin, Wheeler County, Oregon

Dear Mr. Timchak:

Enclosed is a document containing the biological opinion (Opinion) prepared by NOAA's National Marine Fisheries Service (NOAA Fisheries) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of the proposed West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project in Wheeler County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Middle Columbia River (MCR) summer steelhead (*Oncorhynchus mykiss*). As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with nondiscretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the effect of incidental take associated with this action.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). The John Day River basin is designated as EFH for chinook salmon (*O. tshawytscha*).

If you have any questions regarding this letter, please contact Scott Hoefler of my staff in the Oregon Habitat Branch at 503.231.6938.

Sincerely,

Michael R. Crouse

D. Robert Lohn
Regional Administrator

cc: Brent Ralston, Prineville BLM
Dan Rife, Ochoco/Deschutes NF
Barb Franano, Ochoco NF
Jennifer O'Reilly, USFWS
Tim Unterwegner, ODFW



Endangered Species Act - Section 7 Consultation Biological Opinion

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

West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project,
John Day River Basin, Wheeler County, Oregon

Agency: Forest Service

Consultation
Conducted By: NOAA's National Marine Fisheries Service,
Northwest Region

Date Issued: May 16, 2003

Issued by: *for* 
D. Robert Lohn
Regional Administrator

Refer to: 2003/00136

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1. INTRODUCTION

1.1 Background and Consultation History

On February 18, 2003, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a complete biological assessment (BA), essential fish habitat assessment (EFH), and request from the Ochoco National Forest (ONF) for Endangered Species Act (ESA) section 7 formal consultation and EFH consultation for the West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project. The project is along West Branch Bridge Creek in the Lookout Mountain Ranger District of the Ochoco National Forest, in Wheeler County, Oregon. West Branch Bridge Creek is part of the John Day River basin. West Branch Bridge Creek flows into Bridge Creek, then Keys Creek, Mountain Creek, Rock Creek, and then to the John Day River.

The ONF has determined that the Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) occurs within the project area. MCR steelhead were listed as threatened under the ESA on March 25, 1999 (64 FR 14517). NOAA Fisheries applied protective regulations to MCR steelhead under section 4(d) of the ESA on July 10, 2000 (65 FR 42422).

This biological opinion (Opinion) reflects the results of the consultation process. The consultation process involved a site visit on June 20, 2002, where modifications to the proposal to reduce effects to the indicated species were discussed. The ONF has incorporated the modifications into the proposed action.

The objective of this Opinion is to determine whether the actions to construct a road and remove a culvert on West Branch Bridge Creek are likely to jeopardize the continued existence of the MCR steelhead.

1.2 Proposed Actions

Proposed actions are defined in NOAA Fisheries' regulations (50 CFR 402.02) as "all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas." The ONF has been designated the lead Federal action agency, as it proposes to complete National Environmental Policy Act (NEPA) analysis and assist in implementation of the West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project, and therefore, it must consult under ESA section 7(a)(2). The ONF is developing this project with funding from Federal Highway Administration and in partnership with Wheeler County.

The ONF proposes improvements to road structures and drainage, and enhancement of safety features on approximately 2.3 miles of West Branch Bridge Creek Road (Highway 12). Proposed work includes improving drainage by installing a series of ditch relief pipes, replacing and/or upgrading three culverts, and building a road base before paving with BST-3 (chip seal) pavement. This project also includes installing five "j-hook" instream structures to divert stream

away from road prism, armoring drainage outlets and headwalls to reduce erosion, widening and realignment of the road surface, and reconstruction of the road intersection with Highway 26.

1.2.1 Road Construction/Maintenance

Approximately 2.3 miles of West Branch Bridge Road will be resurfaced. The resurfacing is necessary because the road has insufficient drainage and no base rock or engineered surfacing. The road is easily eroded, and it floods several times each year, depositing silt directly into West Branch Bridge Creek. This resurfacing will include building a road base and then paving with BST-3 (chip seal) pavement. The roadway will be an 11-foot lane with two-foot shoulders. Also, the intersection between West Branch Bridge Road and Highway 12 will be lengthened for increased visibility and safety.

1.2.2 Culvert Upgrades/Ditch Relief Pipes (Non-Fish-Bearing Channels)

Two culverts (four to six feet wide) will be replaced with a series of appropriately sized and graded ditch relief pipes. These pipes will drain run-off associated with two non-fish-bearing, Class IV stream channels. Riprap will be placed on the upstream and downstream end of each pipe to reduce erosion and sediment movement.

1.2.3 Culvert Replacement (Fish-Bearing Stream)

A culvert that is currently a fish barrier on Carroll Creek will be replaced to allow for fish passage that will create access to 1.75 miles of potential MCR steelhead habitat, although portions of these newly accessible stream miles are currently degraded from riparian grazing. The new culvert will be a 70-foot long, seven-foot wide¹, structural plate box culvert. The culvert removal will involve removal of approximately 135 cubic yards (yd³) of material. Approximately 73 yd³ of material will be replaced for the new culvert. Unsuitable excess material will be taken to Brooks Material Source, approximately two miles from the project area off Hwy 26. The objectives for replacing this culvert include: (1) Providing fish passage for adult and juvenile life stages; and (2) providing appropriately sized road crossing structures to pass flood flows and associated bedload.

The current situation prevents downstream fish from accessing spawning and rearing habitat above the culvert and may result in sediment production from road damage and ditch scour during high flows. The culvert will be replaced using an excavator and a dump truck. During

¹E-mail from Barbara Franano, Fisheries Biologist, ONF (April 10, 2002) clarifying that the Carroll Creek culvert will be seven feet wide. The culvert has been designed to be able to handle a 100-year flood event (estimated to be 243 cubic feet per second (cfs) on West Branch Bridge Creek in this location) and to be at least the bankfull width of a properly functioning stream (estimated to be six feet on Carroll Creek in this location). Although the current bankfull width immediately above the culvert is 8.5 feet, Franano explained that the ONF hydrologist believes that the current bankfull width is artificially elevated because of grazing in upstream riparian areas. Therefore, the current bankfull width is not the correct estimate from which to build the culvert.

culvert replacement, public and administrative access will be provided on the open forest road system. The culvert replacement will be monitored using photo points and other aquatic habitat inventories. Aquatic habitat inventories that follow these projects focus on investigating attributes of cross-sectional area, slope, pools, wood, shade, bedload particle distribution, and bank stability.

There will be rip-rap placed around the girth of the fill and cut of the road prism, possibly on both the upstream and downstream sides of the culvert. The new bottomless box culvert is designed to pass a 100-year flood and associated bedload and debris. The new culvert will provide fish passage for all life stages 90% of the time water is in the culvert. The culvert will be replaced within the designated in-water work period (July 15-August 31) identified by the Oregon Department of Fish and Wildlife (ODFW).

The preferred method to minimize turbidity will be to keep the stream in the existing culvert during excavation and construction. However, if a diversion is necessary due to stream or construction conditions, the stream will be routed around the culvert work areas in a low-gradient, plastic-lined channel. In either case, machinery will not enter the channel.

Fish residing within the work diversion area and fish that are present during sensitive times of construction² will be removed (by netting) and transported from the construction zone either approximately 200 feet upstream or downstream.

After the bottomless box culvert is installed, the excavated area will be planted with willow, alder, and dogwood. The plants originate from a Forest Service program that uses hardwood clones transferred from the project area.

1.2.4 “J-hook” Instream Structures

Five “J-hook” instream structures will be constructed following Rosgen J-hook construction methodology (Rosgen 2001). J-hooks will be constructed at two sites where streambank erosion is threatening the road shoulder. These j-hooks will be placed in two series, with the second series of j-hooks placed 196 feet downstream from the first series. The two j-hooks in the upstream series will be spaced 35 feet apart. The three j-hooks in the downstream series will also be spaced 35 feet apart. The structures will take the stress off of the streambank by providing directional flow away from the meander during high run-off. A floodplain bench will be constructed at the two sites to allow for high flow to access the floodplain, which will further reduce stress on the streambanks. The length of each j-hook will be no more than two-thirds of the bankfull channel width. The first one-third will be the arm, and the second arm will be the hook. The j-hooks will be composed of large riprap that is keyed into the bank and extends into

²As stated above, the preferred method will be to not divert the water. Therefore, if water is not diverted and fish are present immediately before the culvert is actually “pulled”, the fish would be removed before the “pull” because this would represent a sensitive time of construction that could have negative effects on the fish.

the channel to make a “J” shape. There will be gaps between some of the rip-rap to increase localized turbulence, decrease overall stream energy, and create a scour pool.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR 402.02 (the consultation regulations). In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the consultation regulations combined with the Habitat Approach (NMFS 1999) in the following steps: (1) Consider the status and biological requirements of the species, (2) evaluate the relevance of the environmental baseline in the action area to the species’ current status, (3) determine the effects of the proposed or continuing action on the species, (4) consider cumulative effects, and (5) determine whether the proposed action, in light of the above factors, is likely to jeopardize the continued existence of species survival in the wild. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects, and added to the environmental baseline, is likely to jeopardize the ESA-listed species. If the action is likely to jeopardize the species, NOAA Fisheries will identify reasonable and prudent alternatives for the action that would avoid jeopardy.

2.1.1.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed steelhead is to define the species’ biological requirements that are most relevant to each consultation. NOAA Fisheries 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, NOAA Fisheries 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 time 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 spawning, adult and juvenile migration, and rearing (*i.e.*, removing fish passage barriers to allow access to upstream habitat and placing j-hook to increase habitat complexity). In addition, culverts will be sized to pass 100-year flows, thus reducing the

risk of failure and allowing habitat-forming processes (wood and substrate transport) to occur. The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

2.1.1.2 Environmental Baseline

The current range-wide status of the identified evolutionarily significant unit (ESU) may be found in Busby, *et al.* (1995). 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 action. The direct effects occur at the project site and may extend upstream or downstream, based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed, where the actions described in this Opinion lead to additional activities, or affect ecological functions, thus contributing to stream degradation. As such, the action area for the proposed activities includes 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. For the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of West Branch Bridge Creek, Carroll Creek, and unnamed tributaries from the downstream extent of the turbidity plume below the culvert replacement furthest downstream, to immediately upstream of the culvert replacements on the unnamed tributaries and Carroll Creek, and immediately upstream of the most upstream portion of stream that is adjacent to the road construction on West Branch Bridge Creek. Other areas of the John Day River watershed are not expected to be directly or indirectly affected.

West Branch Bridge Creek and Carroll Creek are in the Bridge Creek watershed. Carroll Creek, is a Rosgen B-Type stream channel (Rosgen and Silvey 1998) and has a bankfull width upstream of the current culvert of 8.5 feet. Carroll Creek flows into West Branch Bridge Creek, which has a bankfull width of 11 feet and transitions from a B-Type to a C-Type channel in the project area. West Branch Bridge Creek flows into Bridge Creek, then Keys Creek, Mountain Creek, Rock Creek, and then to the John Day River. These streams are in the Ochoco Mountains, the westernmost extension of the Blue Mountains of central and northeastern Oregon. Only the upper quarter of West Branch Bridge Creek's length resides on land administered by the ONF. West Branch Bridge Creek contains MCR steelhead and Carroll Creek has the potential to contain MCR steelhead, while the two unnamed Class IV channels are non-fish-bearing.

The existing culvert on Carroll Creek has a two-foot drop. The downstream end of the culvert is approximately 10 feet from the confluence of Carroll Creek with West Branch Bridge Creek. The upstream end of the culvert is approximately 25 feet downstream of a corral. Approximately 150 feet of stream is not fenced within the corral, and fish passing upstream through the culvert could encounter livestock use of the corral. Also, the corral is devoid of riparian vegetation, and therefore that portion of stream does not provide any shade or cover. To date, there is no agreement between the private landowner and ODFW to fence the creek out from the corral use.

Upstream of the corral, there are approximately .75 miles of potential MCR steelhead habitat in Carroll Creek and one mile of potential MCR steelhead habitat in an unnamed tributary stream. Upstream from the corral in Carroll Creek, past heavy livestock grazing is evident, although the stream is fenced, and with time, riparian vegetation could improve and expand. Upstream from the corral in the unnamed tributary, though not confirmed with an official survey, riparian vegetation, including alder and willow, is present and fish habitat is improving.

The checklist from *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) was used to document baseline habitat conditions. According to the BA, substrate is rated as properly functioning whereas pool quality, off-channel habitat, refugia and floodplain connectivity are rated as not properly functioning. All other habitat indicators (*i.e.* temperature, sediment, chemical contamination/nutrients, physical barriers, large woody debris, pool frequency, wet width/max. depth ratio, streambank condition, flow hydrology) are rated as functioning at risk.

Based on the best available information on the current status of MCR steelhead range-wide, the population status, trends, and genetics, and the poor environmental baseline condition within the action area (as described in the BA), NOAA Fisheries concludes that the biological requirements of the identified ESU are not currently being met within the action area. Numbers of MCR steelhead are substantially below historic numbers. Long-term trends are decreasing. The John Day River basin displays degraded habitat conditions resulting from agricultural practices, water diversions, road building, mining, forest management activities, and flooding in addition to the habitat indicators discussed above, which are important relative to this project.

2.1.2 Analysis of Effects

2.1.2.1 Effects of Proposed Action

NOAA Fisheries' jeopardy approach requires evaluation of the effects of proposed actions on listed steelhead within the context of species survival with an adequate potential for recovery under the effects of the proposed action. The action also must restore, maintain, or at least not appreciably interfere with the recovery of the properly functioning condition (PFC) of the various fish habitat within a watershed.

The West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project provides a detailed analysis of the effects of the proposed action on MCR steelhead in the action area. The analysis uses the matrix found in *Making Endangered Species Act Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) and information in the BA to determine and evaluate the elements of the proposed action that have the potential to affect MCR steelhead and its habitat. The habitat indicators affected by this project include temperature, sediment, substrate, physical barriers, refugia, streambank condition, floodplain connectivity, and riparian reserves.

The temperature indicator rating will be moved slightly toward properly functioning because stream shade will increase in the Branch Creek watershed as a result of riparian planting around the culvert sites. Also, the j-hooks will create pools that provide low-temperature in-water habitat during summer low flow periods.

The removal and installation of culverts will result in temporary increases in turbidity. Turbidity will be minimized by keeping the stream in the existing culvert during excavation or by routing the stream around the culvert work areas in a plastic-lined channel and by not entering the channels with machinery. Localized turbidity at the culvert sites will be greatest after construction, when the stream is placed back into its original channel and disturbed fines are suspended in the water column. These localized increases in turbidity will likely displace steelhead in the project area and disrupt normal behavior. A small, temporary increase in sedimentation may also occur due to the road construction and resurfacing. The effects are expected to be temporary and localized.

Undersized culverts produce sediment during higher flows when water is dammed behind the pipe and roadfill erodes. During larger events, flows can be high enough to erode roadfill to the extent that the pipe is washed out. In addition, undersized culverts have a smaller cross-sectional area than the stream channel so water velocities increase through the pipe, giving the stream more energy to recruit sediment by eroding streambanks below the culvert. Over the long term, sediment generated by undersized culverts will be reduced by the new structures designed to pass 100-year events and associated debris. The addition of j-hooks in West Branch Bridge Creek will increase channel roughness which reduces water velocity. Reduced water velocity results in decreased bank erosion. Also, improvements to the roadbed will reduce long-term erosion. As a result of replacing undersized culverts, adding j-hooks, and road construction, the “at risk” rating for sediment will be moved towards properly functioning.

The culvert replacements will move the physical barrier rating towards properly functioning condition by replacing one undersized fish barrier culvert with a structure that will provide fish passage and is sized to pass flows and debris associated with a 100 year event.

Although substrate is rated properly functioning, the culvert replacement will improve substrate condition. Currently, the culvert does not have a natural substrate stream bottom, but after the culvert are replaced they will have natural substrate bottoms. The presence of natural substrate will allow MCR steelhead to pass through the culvert, rear in it, and potentially spawn in it.

The j-hook structures will also move the “functioning at risk” rating for pool frequency toward properly functioning, because the structure provided by the j-hooks will interact with high flows to scour new pools or increase the size of existing pools. The “not properly functioning” pool quality rating will be moved toward “functioning at risk” with the increase in pool depth provided by the j-hooks.

In addition, the removal of the passage barriers will move the “not properly functioning” refugia rating toward “functioning at risk” by providing MCR steelhead access to additional habitat.

The culvert replacement and j-hooks will move the “not properly functioning” rating for floodplain connectivity toward “functioning at risk.” The undersized fish-bearing culvert will be replaced with a structure that spans the bankfull width and the j-hooks will include grading of the project area so that the stream has access to the floodplain during high flows.

As noted above, undersized culverts increase water velocities as water passes through the culvert making it more likely that streambanks below the culvert will be eroded. The replacement of undersized culverts with a culvert designed to pass 100-year events and associated debris should result in less bank erosion below the culvert. As a result the at risk rating for streambank condition will be moved toward properly functioning. The planting of riparian vegetation in areas disturbed by the installation of the culverts will also maintain streambank condition and have a positive effect on riparian habitats.

Although the widening of the roadway and surfacing with chip seal may create a small increase in overall impervious surface area of the watershed, the new roadway will be constructed so that the overall road drainage and location is improved and there will be no increase in peak flows.

Isolation of the channel during culvert replacement would have direct effects to ESA-listed fish during the fish removal and relocation process. Direct harm to fish species may occur during structure removal and construction activities. The probability of harm is less likely because these activities would be conducted during the ODFW defined in-water work period, when fewer adult fish are likely to be present. During channel modification activities, fish will be removed from the work area and relocated to an area either upstream or downstream with adequate cover and water quality. Staging activities and operation of machinery adjacent to the stream could result in a spill of hazardous materials into the stream. As a result of the Carroll Creek culvert replacement, approximately 100 feet of the channel could be de-watered. Rescue, salvage and relocation of fish and other aquatic species may result in the potential capture and handling of up to 100 juvenile MCR steelhead. Assuming a 5% direct or delayed mortality rate from capture and relocation stress, up to 5 juvenile listed salmonids may be killed.

For the proposed action, NOAA Fisheries expects that the effects of the proposed project will tend to maintain or move towards restoration each of the habitat elements over the long term, greater than one year. However, in the short term, a temporary increase in sedimentation and turbidity, and disturbance of riparian and instream habitat is expected. Fish will be temporarily displaced, and possibly injured or killed during work isolation and fish salvage. The net effect from the proposed action, is the maintenance and restoration of functional steelhead habitat conditions.

2.1.2.2 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." Other activities within the watershed have the potential to affect fish and habitat within the action area. A wide variety of actions including

ranching, irrigation, and timber harvest occur within the John Day watershed. Non-Federal activities within the watershed are expected to increase with a projected 34 percent increase in human population over the next 25 years in Oregon (Oregon Department of Administrative Services 1999). Thus, NOAA Fisheries assumes that future private and state actions will continue within the watershed, but at increasingly higher levels as population density climbs.

2.1.3 Conclusion

After reviewing the current status of MCR steelhead, the environmental baseline for the action area, the effects of the proposed West Branch Bridge Creek Road Reconstruction and Culvert Replacement Project and cumulative effects, it is NOAA Fisheries' opinion that this project, as proposed, is not likely to jeopardize the continued existence of MCR steelhead. NOAA Fisheries believes that the proposed action would cause a minor, short-term increase in stream turbidity in Carroll Creek and West Branch Bridge Creek downstream from the project area. In the long term, survival and safe passage conditions for adult and juvenile MCR steelhead will be improved. Although direct mortality of juvenile MCR steelhead from this project could occur during in-water work, the level of potential mortality would be minimal and would not result in jeopardy.

These conclusions are based on the following considerations: (1) Replacement of the undersized culvert will allow access by MCR steelhead to previously unavailable spawning and rearing habitat; (2) j-hooks will be placed in West Branch Bridge Creek to improve habitat complexity; (3) work will be conducted during low water and within the ODFW designated in-water work period to decrease the likelihood of encountering fish during construction; (4) revegetation of the banks will result in long-term improvement of riparian resources; and (5) NOAA Fisheries expects that the net effect of the proposed action will be to maintain or help restore properly functioning habitat conditions in the project area of Carroll Creek and West Branch Bridge Creek.

2.1.4 Conservation Recommendations

Conservation recommendations are defined as "discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information" (50 CFR 402.02). 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. NOAA Fisheries has no additional conservation recommendations regarding the action addressed in this Opinion. In order for NOAA Fisheries to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed salmon and steelhead or their habitats, we request notification of the achievement of any conservation recommendations when the UNF submits its annual report describing achievements of the fish monitoring program during the previous year.

2.1.5 Reinitiation of Consultation

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

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) 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 by annoying it 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 effect of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize effects and sets forth terms and conditions with which the action agency must comply to implement the reasonable and prudent measures.

2.2.1 Amount and Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of MCR steelhead because of harm from increased sediment levels (non-lethal), the potential for direct incidental take during isolation of the work area (lethal and non-lethal), and delayed mortality due to handling during the fish removal process. Effects of actions such as the placement of j-hooks in the channel and increased sediment levels are largely 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 MCR steelhead behavior or population levels.

Therefore, even though NOAA Fisheries expects some low-level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected level of take as “unquantifiable”. Based on the information in the BA, NOAA Fisheries anticipates that an unquantifiable amount of incidental take is reasonably certain to occur as a result of the actions covered by this Opinion.

In addition, NOAA Fisheries expects that the possibility exists for handling MCR steelhead during a potential fish rescue and/or work isolation process for the Carroll Creek culvert replacement, which will result in incidental take to individuals during the construction period. NOAA Fisheries anticipates that incidental take of up to 100 juvenile MCR steelhead could occur as a result of the fish removal process due to fish removal and/or dewatering and rewatering of the channel for the Carroll Creek culvert replacement. Five of these juveniles may be wounded or killed, and up to 100 may be harassed.

The extent of the take is limited to MCR steelhead within the action area. The extent of the take for the j-hook placement, road construction, and culvert constructions includes the streambed and riparian habitat of West Branch Bridge Creek, Carroll Creek and unnamed tributaries from the downstream extent of the turbidity plume below the most downstream culvert replacement to immediately upstream of the culvert replacements on the unnamed tributaries and Carroll Creek and immediately upstream of the most upstream portion of stream that is adjacent to the road construction on West Branch Bridge Creek.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from implementation of this Opinion. The ONF shall:

1. Minimize the likelihood of incidental take from culvert replacement actions by using an approach that maximizes the maintenance or improvement of ecological functions.
2. Minimize the likelihood of incidental take from activities involving culvert replacement, j-hook placement, 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.
3. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (culvert replacement) are isolated from flowing water.
4. Complete a comprehensive monitoring and reporting program to ensure that implementation of these conservation measures is effective in minimizing the likelihood of take from permitted activities.

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, ONF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

5. To implement reasonable and prudent measure #1 (culvert replacement and bridge placement), the ONF shall ensure that:
 1. The use of rock and riprap is minimized. Rocks will be individually placed in a way that produces an irregularly- contoured face, providing velocity disruption. No end dumping will be allowed.
 - b. Any instream large wood or riparian vegetation moved or altered during construction will stay on site, and will be replaced during site restoration, or be replaced with a functional equivalent.
 - c. Where feasible, the bankline will be revegetated with natural vegetation.

2. To implement reasonable and prudent measure #2 (culvert replacement, j-hook placement, use of heavy equipment, earthwork, site restoration, or involving in-water work or affecting fish passage), the ONF shall ensure that:
 - a. Project design. Alteration or disturbance of the streambanks and existing riparian vegetation will be minimized.
 - b. In-water work. All work within the active channel will be completed within the ODFW-recommended in-water work period of July 15 - August 31 for the site. Extensions of the in-water work period must be concurred with by NOAA Fisheries.
 - c. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for the 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. Measures will be taken to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations, and staging areas.
 - ii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.
 - iii. 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.
 - iv. Measures 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 effect on the streambed and water quality.
- d. 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 will be flagged to prevent ground disturbance of critical riparian vegetation, wetlands, and other sensitive sites beyond the flagged boundary.
 - ii. 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.
 - 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 such time that the permanent erosion control measures are effective.
- e. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling, and compacting, will be completed in the following manner:
- i. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside of the riparian area or as otherwise approved by NOAA Fisheries.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other waterbodies.
 - 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 as quickly as reasonable, but within 14 days of exposure.
 - (3) Seeding outside of the growing season will not be considered adequate for permanent stabilization.
- f. Heavy Equipment. Heavy equipment will be fueled, maintained and stored as follows:
- i. Vehicle staging, maintenance, refueling, and fuel storage areas will be a minimum of 150 feet horizontal distance from any stream.
 - ii. All vehicles operated within 150 feet of any stream or waterbody will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.

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.

- iii. When not in use, vehicles will be stored in the vehicle staging area.
 - g. Site restoration. Site restoration and clean up, including protection of bare earth by seeding, planting, mulching and fertilizing, will be done in the following manner:
 - i. Disturbed areas will be planted with native vegetation specific to the project vicinity and/or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
 - ii. No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
 - iii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
 - iv. Plantings will achieve an 80% cover success after five years.
 - (1) If success standard has not been achieved after five years, the applicant will submit an alternative plan to NOAA Fisheries. This alternative plan will address temporal loss of function.
 - (2) Plant establishment monitoring will continue, and monitoring reports will be submitted to NOAA Fisheries on an annual basis for at least five years, and until site restoration success has been achieved.
- 3. To implement reasonable and prudent measure #3, the ONF shall ensure that the in-water work activities (culvert replacement and stream channel relocation), are isolated from flowing water.
 - a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
 - i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
 - ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
 - iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever necessary to prevent the added stress of an out-of-water transfer.
 - iv. Seined fish must be released as near as possible to capture sites.
 - v. If a dead, injured, or sick listed species specimen is found, initial notification must be made to the NOAA Fisheries Law Enforcement Office, in the Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, Washington 98661; or call: 360.418.4246. Care should be

taken in handling sick or injured specimens to ensure effective treatment and care. Dead specimens should be handled to preserve biological material in the best possible state for later analysis of cause of death. With the care of sick or injured listed 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 intrinsic to the specimen is not disturbed.

- vi. The ONF shall ensure that no ESA-listed fish are transferred to third parties other than NOAA Fisheries personnel without prior written approval from the NOAA Fisheries.
 - vii. The ONF shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained before project seining activity.
 - viii. The ONF must allow the NOAA Fisheries or its designated representative to accompany field personnel during the seining activity and allow such representative to inspect the seining records and facilities.
 - ix. A description of any seine and release effort will be included in a post project report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.
- b. After completion of the project the existing channel should be re-watered in a way that will not significantly affect water quality or cause fish stranding.
4. To implement reasonable and prudent measure #4 (monitoring and reporting), the ONF shall ensure that:
- a. Within 120 days of completing the project, the ONF shall ensure submittal of a monitoring report to NOAA Fisheries describing the ONF's success meeting their permit conditions. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name;
 - (2) starting and ending dates of work completed for this project; and
 - (3) the ONF contact person.
 - ii. 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.
 - iii. Site restoration. Documentation of the following conditions:
 - (1) Finished grade slopes and elevations;
 - (2) log and rock structure elevations, orientation, and anchoring, if any;

- (3) planting composition and density; and
 - (4) a plan to inspect and, if necessary, replace failed plantings and structures for a period of five years.
 - iv. Photographic documentation of environmental conditions at the project site before, during and after project completion.
 - (1) Photographs will include both general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
 - (2) 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.
 - (3) 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.
- b. On an annual basis, for five years after completing the project, the ONF shall ensure submittal of a monitoring report to NOAA Fisheries describing the ONF's success in meeting their site restoration goals. This report will consist of the following information:
 - i. Project identification.
 - (1) Project name;
 - (2) starting and ending dates of work completed for this project; and
 - (3) the ONF contact person.
 - ii. Site restoration. Documentation of the following conditions:
 - (1) Any changes in log structure elevations and orientation;
 - (2) any changes in planting composition and density; and
 - (3) a plan to inspect and, if necessary, replace failed plantings and structures.
 - iii. Photographic documentation of environmental conditions at the project site after project completion as they relate to fish passage and site restorations goals as described above.
 - (1) Photographs will include general both project location views and close-ups showing details of the project area and habitat features of the channel relocated reaches.
 - (2) 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.
 - (3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, as they relate fish passage and site restorations goals.

c. Submit monitoring reports to:

NOAA Fisheries
Oregon Habitat Branch, Habitat Conservation Division
Attn: 2003/00136
525 NE Oregon Street, Suite 500
Portland, Oregon 97232-2778

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 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries 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 NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries 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 NOAA Fisheries provide a detailed response in writing to NOAA Fisheries 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 NOAA Fisheries, the Federal agency shall explain its reasons 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 NOAA Fisheries 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 waterbodies 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 actions are detailed above in section 1.2. The action area is defined as the streambed and riparian habitat of West Branch Bridge Creek, Carroll Creek and unnamed tributaries from the downstream extent of the turbidity plume below the most downstream culvert replacement to immediately upstream of the culvert replacements on the unnamed tributaries and Carroll Creek and immediately upstream of the most upstream portion of stream that is adjacent to the road construction on West Branch Bridge Creek. 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 section 2.1.3, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These effects include increases in turbidity, disturbance to the beds and bank of the river, removal of riparian vegetation, and the potential for pollutants to enter the water.

3.6 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect EFH for chinook salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the ONF and all of the reasonable and prudent measures and the terms and conditions contained in section 2 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the MSA (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse effects of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The ONF must reinstate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' 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.

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