



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:
2003/00264

August 4, 2003

Mr. Lawrence Evans
U.S. Army Corps of Engineers, Portland District
ATTN: Mary Headley
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Georgia-Pacific Sundial Chip Facility Bank Stabilization, Columbia River, Multnomah County, Oregon [Corps No. 199701394(1)]

Dear Mr. Evans:

Enclosed is a 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 proposed bank stabilization by Georgia-Pacific at River Mile 119, Columbia River, Multnomah County, Oregon. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize the continued existence of Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR fall chinook salmon (*O. tshawytscha*), SR spring/summer chinook salmon, Upper Columbia River (UCR) spring-run chinook salmon, Lower Columbia River (LCR) chinook salmon, Upper Willamette River (UWR) chinook salmon, Columbia River chum salmon (*O. keta*), SR steelhead (*O. mykiss*), UCR steelhead, Middle Columbia River steelhead, UWR steelhead, and LCR steelhead, or destroy or adversely modify designated critical habitat(s) of Snake River stocks. As required by section 7 of the ESA, we include reasonable and prudent measures with non-discretionary terms and conditions that are necessary to minimize the potential for incidental take associated with this action.

This document also serves as consultation on essential fish habitat for chinook salmon and coho salmon (*O. kisutch*) and starry flounder (*Platyichthys stellatus*) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation Management Act and its implementing regulations at 50 CFR Part 600.



If you have any questions regarding this consultation, please contact Christy Fellas of my staff in the Oregon Habitat Branch at 503.231.2307.

Sincerely,

Michael R Crouse

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D. Robert Lohn
Regional Administrator

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1. ENDANGERED SPECIES ACT

1.1 Background and Consultation History

On March 14, 2003, NOAA's National Marine Fisheries Service (NOAA Fisheries) received a letter from the U.S. Army Corps of Engineers (COE) requesting formal consultation pursuant to the Endangered Species Act (ESA) for the issuance of a permit under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act to Georgia-Pacific for bank stabilization at River Mile (RM) 119, Columbia River, Multnomah County, Oregon. The COE determined the proposed action was likely to adversely affect the following ESA-listed species: Snake River (SR) sockeye salmon (*Oncorhynchus nerka*), SR fall chinook salmon (*O. tshawytscha*), SR spring/summer chinook salmon, Upper Columbia River (UCR) spring-run chinook salmon, Lower Columbia River (LCR) chinook salmon, Upper Willamette River (UWR) chinook salmon, Columbia River (CR) chum salmon (*O. keta*), SR steelhead (*O. mykiss*), UCR steelhead, Middle Columbia River (MCR) steelhead, UWR steelhead, and LCR steelhead.

Species' information references, listing dates and take prohibitions are listed in Table 1. The objective of this document is to determine whether the proposed action is likely to jeopardize the continued existence of the ESA-listed species for these species, and to explain why NOAA Fisheries believes the proposed action will adversely effect essential fish habitat (EFH). This consultation is conducted pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

1.2 Proposed Action

Georgia-Pacific (GP) proposes to repair and restore a 320-foot section of riverbank along the Columbia River and beside the GP Sundial Chip Transfer Facility that was damaged by flooding in 1996. GP engineers have determined that the best approach is to use a roughened riprap surface to armor the section of restored bank. The GP engineers and their contractors determined that no other practical alternatives could withstand a 50-year flood.

Design elements include 3,000 cubic yards (cy) of fill, 2,600 of which will be placed below ordinary high water (OHW), large woody debris (LWD), and native plantings. Dump trucks will haul the material to the site, and excavators working from the top of the bank will place the fill and riprap. The bulk of the riprap will be placed below OHW to protect the toe of the bank.

The project includes installation of LWD, which will be anchored to the riprap using galvanized-steel, screw-type helical anchors. The logs may be attached directly to the anchors through holes drilled into the logs, or by using steel brackets. The anchors will be screwed into the substrate to the required depth using a hydraulic power unit. The specialty contractor will determine the specific design based on required anchor performance criteria. During the 1996 flood and the

continuing bank erosion, nine trees were downed, many of which were conifers. These trees are stockpiled onsite and will be used as LWD for the design. Approximately five other trees are expected to fall before September 2003, and these will also be used as LWD.

Before the proposed work begins, supported silt fencing will be installed along the project area. Many of the cottonwoods now growing along the bank will need to be removed to allow equipment access to the bank. Dump trucks will haul materials to the site, and excavators will place materials along the bank. A hydraulic power unit will be used to install LWD. Materials will include: (1) 3,000 cy of fill, approximately 60% of which will be 8-inch-minus fill; (2) up to 14 salvaged trees for installation as LWD; and (3) between 30 and 35 willow and cottonwood trees as well as native shrubs and grasses. The riprap will vary in size and will be placed randomly to create a habitat as diverse as possible.

The GP Sundial Chip Transfer Facility is a large site encompassing approximately five acres. All work will be done between the toe of slope, while exposed, and the inland borders of the GP property. Staging will be confined to the existing GP facility. Equipment will be washed before vehicles leave the GP facility. Stockpiling will occur at the GP facility.

Where practical, plastic tarps will be used to avoid erosion during rainy weather. Immediately after construction is completed, the contractor will plant native herbs and grasses where the streambanks were left unvegetated. After this planting, the remaining site restoration will continue. Excess materials and waste will be removed from the site. Soil will be placed in the spaces between the riprap, and native vegetation will be planted down to the OHWM. The banks above the riprap will be planted with a mixture of willow and cottonwood trees as well as native shrubs and grasses. The plantings will be maintained for at least five years to achieve 80% native cover.

Construction will be scheduled during late September of 2003, when the Columbia River water level is at its lowest elevation of the year. The timing will allow all work to occur above the water level. All construction will take place during daylight hours only. All work will occur above the active flowing river. If the low water period during 2003 does not expose the toe of the slope, the project will be postponed until the toe of the slope is exposed. Construction of the proposed project is expected to be completed in five to 10 days.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information and Critical Habitat

The action area is defined by NOAA Fisheries regulations (50 CFR 402) as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” The action area is the Columbia River beside the work area, and downstream to the limit of visible turbidity. Essential habitat features for salmonids are: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions. The proposed action may affect the essential habitat features of water quality and substrate. References for further background on listing status and biological information can be found in Table 1.

The Columbia River within the action area serves as a migration area for all listed species under consideration in this Opinion. It may also serve as a feeding and rearing area for juvenile steelhead and chinook salmon. References for further background on listing status and biological information can be found in Table 1.

2.1.2 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 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species. This analysis involves the initial steps of defining the biological requirements of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries 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, NOAA Fisheries 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 species' life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for migration, spawning, and rearing of the listed species under the existing environmental baseline.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon 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 the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for salmonids 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 its capacity to adapt to various environmental conditions, and allow it to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration, rearing habitat and over-wintering refugia. Salmon survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NOAA Fisheries usually defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and utilizes a "habitat approach" to its analysis.¹ The current status of listed salmonids in the Willamette River, based upon their risk of extinction, has not significantly improved since the species were listed. NOAA Fisheries is not aware of any new data that would indicate otherwise.

2.1.4 Environmental Baseline

The most recent evaluation of the environmental baseline for the Columbia River is part of the NOAA Fisheries's Opinion for the Federal Columbia River Power System (FCRPS) issued in

¹ National Marine Fisheries Service, Northwest Region. 26 August 1999. The Habitat Approach: Implementation of Section 7 of the Endangered Species Act for Actions Affecting the Habitat of Pacific Anadromous Salmonids. Guidance memorandum from Assistant Regional Administrators for Habitat Conservation and Protected Resources to staff. 13 pages. NMFS, 525 NE Oregon St, Ste 500, Portland, OR 97232-2737.

December 2000. This Opinion assessed the entire Columbia River system below Chief Joseph Dam, and downstream to the farthest point (the Columbia River estuary and nearshore ocean environment) at which listed salmonids are influenced. A detailed evaluation of the environmental baseline of the Columbia River basin can be found in the FCRPS Opinion (NMFS 2000).

The quality and quantity of freshwater habitats in much of the Columbia River basin have declined dramatically in the last 150 years. Forestry, farming, grazing, road construction, hydrosystem development, mining, and urbanization have radically changed the historical habitat conditions of the basin. Depending on the species, they spend from a few days to one or two years in the Columbia River and its estuary before migrating out to the ocean, and another one to four years in the ocean before returning as adults to spawn in their natal streams.

Water quality in streams throughout the Columbia River basin has been degraded by human activities such as dams and diversion structures, water withdrawals, farming and grazing, road construction, timber harvest activities, mining activities, and urbanization. Tributary water quality problems contribute to poor water quality where sediment and contaminants from the tributaries settle in mainstem reaches and the estuary. Temperature alterations also affect salmonid metabolism, growth rate, and disease resistance, as well as the timing of adult migrations, fry emergence, and smoltification. Many factors can cause high stream temperatures, but they are primarily related to land-use practices rather than point-source discharges. Loss of wetlands and increases in groundwater withdrawals have contributed to lower base-stream flows, which in turn contribute to temperature increases. Channel widening and land uses that create shallower streams also cause temperature increases.

Pollutants also degrade water quality. Salmon require clean gravel for successful spawning, egg incubation, and emergence of fry. Fine sediments clog the spaces between gravel and restrict the flow of oxygen-rich water to the incubating eggs. Excess nutrients, low levels of dissolved oxygen, heavy metals, and changes in pH also directly affect the water quality for salmon and steelhead.

Water quantity problems are also a significant cause of habitat degradation and reduced fish production. Withdrawing water for irrigation, urban, and other uses can increase temperatures, smolt travel time, and sedimentation. Return water from irrigated fields can introduce nutrients and pesticides into streams and rivers. On a larger landscape scale, human activities have affected the timing and amount of peak water runoff from rain and snowmelt. Many riparian areas, flood plains, and wetlands that once stored water during periods of high runoff have been developed. Urbanization paves over or compacts soil and increases the amount and concentration of runoff reaching rivers and streams.

Based on the best available information regarding the current status of the listed species range-wide, the population status, trends, genetics, and the poor environmental baseline conditions within the action areas, NOAA Fisheries concludes that the biological requirements of these species are not currently being met. Degraded habitat resulting from agricultural practices, forestry practices, road building, and residential construction indicate many aquatic habitat indicators are not properly functioning within the Columbia River basin. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of these species.

2.1.5 Analysis of Effects

2.1.5.1 Effects of the Proposed Action

Rivers are dynamic systems that perpetually alter their courses in response to multiple physical criteria. Residences and other structures constructed along waterways are subject to flooding and undercutting as a result of these natural changes in stream course. Structural embankment hardening has been a typical means of protection for structures along waterways. Impacts to waterways from revetment installation are simplification of stream channels, alteration of hydraulic processes, and prevention of natural channel adjustments (Spence *et al.* 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the subject site and contribute to stream velocity acceleration. As erosive forces impact different locations, and bank hardening occurs in response, the river eventually attains a continuous fixed alignment lacking habitat complexity (COE 1977). The proposed project area, on the Columbia River, is currently constrained by bank hardening along most of the river.

Fish habitat is enhanced by the diversity of habitat at the land-water interface and adjacent bank (COE 1977). Streamside vegetation provides shade which reduces water temperature. Overhanging branches provide cover from predators. Organisms that fall from overhanging branches may be preyed upon by fish. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events, and retain bed load materials. The proposed LWD and vegetation on the newly sloped bank will provide shelter during high flows and shade as the vegetation matures.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3:1 (vertical:horizontal) or areas of high velocity (COE 1977). Although biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort. Combining structural measures (*i.e.* sloped riprap or mechanically stabilized earth walls) and vegetation is preferable to an unvegetated structural solution. The least preferable alternative is a vertical bulkhead (COE 1977). Due to the velocity and flows in the Columbia River, revegetation alone will not adequately protect the failing bank. The proposed riprap will protect the bank from further

damage, and the LWD and vegetation will add to the habitat complexity as well as provide cover for salmonids during high flow events.

The proposed action is repair of a 320-foot section of the Columbia River bank with a combination of rock, fill material, large wood, and native vegetation. All work is proposed to occur from the top of bank. Construction is scheduled in September or will be postponed until the toe of the slope is exposed and work can be completed in the dry. This will minimize the potential for stream turbidity and the likelihood that sediment will be transported to the river.

As with all construction activities, there is potential for accidental release of fuel, oil, and other contaminants to the waterway. To minimize this potential, no equipment would enter below the top of the bank. All equipment would work from above the bankline and would be serviced away from any waterbodies. Best Management Practices (BMPs), including a spill management plan and an inspection schedule for equipment, will further minimize the potential for accidental release of hazardous materials.

2.1.5.2 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.” Future federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Therefore, these actions are not considered cumulative to the proposed action.

NOAA Fisheries is not aware of any specific future non-federal activities within the action area that would cause greater impacts to listed species than presently occurs. NOAA Fisheries assumes that future private and state actions will continue at similar intensities as in recent years.

2.1.6 Conclusion

NOAA Fisheries has determined that, based on the available information, the proposed action is not likely to jeopardize the continued existence of listed species. NOAA Fisheries used the best available scientific and commercial data to analyze the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NOAA Fisheries believes that the proposed action will cause a minor, short-term degradation of anadromous salmonid habitat due to increased turbidity and potential hazardous material spills. Direct mortality is not expected. In-water work will be performed during September, or whenever the toe of the slope is exposed, to allow work to occur in the dry. Erosion control measures will be employed as part of the proposed project. The LWD and

vegetation will increase habitat complexity and provide shelter and food as the vegetation matures.

2.1.7 Reinitiation of Consultation

Consultation must be reinitiated if: (1) The amount or extent of taking specified in the incidental take statement is exceeded, or is expected to be exceeded; (2) new information reveals effects of the action may affect listed species in a way not previously considered; (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 (50 CFR 402.16).

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 impact of any incidental taking of 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 to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the action covered by this Opinion is reasonably certain to result in incidental take resulting from the disturbance and displacement of juvenile ESA-listed species from the construction area due to use of equipment, delayed migration, and stranding of individuals resulting from the management of water levels. Even though NOAA Fisheries expects some low level of non-lethal incidental take to occur due to the action 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 amount of take as “unquantifiable.” Based on

the information provided by the COE and other available information, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion. The extent of the take is limited to disturbance resulting from construction activities in the Columbia River adjacent to and downstream downstream to the limit of visible turbidity.

2.2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of listed salmonid species resulting from the action covered by this Opinion. The COE shall include measures that will:

1. Minimize incidental take from general construction by avoiding or minimizing adverse effects to riparian and aquatic systems.
2. Complete a comprehensive monitoring and reporting program to ensure implementation of these conservation measures are effective at 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, COE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To implement reasonable and prudent measure #1 (general conditions for construction, operation and maintenance), the COE shall ensure that:
 - a. Timing of in-water work. Work will occur during September, or whenever the toe of the slope is exposed, unless otherwise approved in writing by NOAA Fisheries.
 - b. Cessation of work. Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.
 - c. Fish passage. Passage will be provided for any adult or juvenile salmonid species present in the project area during, and after, construction for the life of the project.
 - d. Pollution and Erosion Control Plan. A pollution and erosion control plan will be prepared and carried out to prevent pollution related to construction operations. The plan must be available for inspection on request by COE or NOAA Fisheries.

- i. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
 - (1) Practices 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.
 - (2) Practices to confine, remove and dispose of excess concrete, cement and other mortars, or bonding agents, including measures for washout facilities.
 - (3) A description of any hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.
 - (4) 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 the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
 - (5) Practices to prevent construction debris from dropping into any stream or waterbody, and to remove any material that does drop with a minimum disturbance to the streambed and water quality.
- ii. Inspection of erosion controls. During construction, all erosion controls must be inspected daily during the rainy season and weekly during the dry season to ensure they are working adequately.²
 - (1) If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.
 - (2) Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.
- e. Construction discharge water. All discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water) will be treated as follows:
 - i. Water quality. Facilities must be designed, built and maintained to collect and treat all construction discharge water using the best available technology applicable to site conditions. The treatment must remove debris, nutrients, sediment, petroleum hydrocarbons, metals and other pollutants likely to be present.
 - ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities must not exceed four feet per second.

² "Working adequately" means no turbidity plumes are evident during any part of the year.

- iii. Spawning areas, marine submerged vegetation. No construction discharge water may be released within 300 feet upstream of active spawning areas or areas with marine submerged vegetation.
- f. Preconstruction activity. Before significant ³ alteration of the project area, the following actions must be completed:
 - i. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.
 - ii. Emergency erosion controls. Ensure that the following materials for emergency erosion control are onsite:
 - (1) A supply of sediment control materials (*e.g.*, silt fence, straw bales). ⁴
 - (2) An oil-absorbing, floating boom whenever surface water is present.
 - iii. Temporary erosion controls. All temporary erosion controls must be in place and appropriately installed downslope of project activity within the riparian area until site restoration is complete.
- g. Heavy Equipment. Use of heavy equipment will be restricted as follows:
 - i. Choice of equipment. When heavy equipment must be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally sized, rubber-tired).
 - ii. Vehicle staging. Vehicles must be fueled, operated, maintained and stored as follows:
 - (1) Vehicle staging, cleaning, maintenance, refueling, and fuel storage must take place in a vehicle staging area placed 150 feet or more from any stream, waterbody or wetland.
 - (2) All vehicles operated within 150 feet of any stream, waterbody or wetland must be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected must be repaired in the vehicle staging area before the vehicle resumes operation. Inspections must be documented in a record that is available for review on request by COE or NOAA Fisheries.
 - (3) All equipment operated instream must be cleaned before beginning operations below the bankfull elevation to remove all external oil, grease, dirt, and mud.

³ "Significant" means an effect can be meaningfully measured, detected or evaluated.

⁴ When available, certified weed-free straw or hay bales must be used to prevent introduction of noxious weeds.

- iii. Stationary power equipment. Stationary power equipment (e.g., generators, cranes) operated within 150 feet of any stream, waterbody or wetland must be diapered to prevent leaks, unless otherwise approved in writing by NOAA Fisheries.
- h. Site preparation. Native materials will be conserved for site restoration.
 - i. If possible, native materials must be left where they are found.
 - ii. Materials that are moved, damaged or destroyed must be replaced with a functional equivalent during site restoration.
 - iii. Any large wood,⁵ native vegetation, weed-free topsoil, and native channel material displaced by construction must be stockpiled for use during site restoration.
- i. Earthwork. Earthwork (including drilling, excavation, dredging, filling and compacting) will be completed as quickly as possible.
 - i. Site stabilization. All disturbed areas must be stabilized, including obliteration of temporary roads, within 12 hours of any break-in work unless construction will resume work within seven days between June 1 and September 30, or within two days between October 1 and May 31.
 - ii. Source of materials. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained outside the riparian area.
- j. Site restoration. All streambanks, soils and vegetation disturbed by the project are cleaned up and restored as follows:
 - i. Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements, such as large woody debris, channel conditions, flows, watershed conditions, and other ecosystem processes that form and maintain productive fish habitats.
 - ii. Streambank shaping. Damaged streambanks must be restored to a natural slope, pattern, and profile suitable for establishment of permanent woody vegetation.
 - iii. Revegetation. Areas requiring revegetation must be replanted before the first April 15 following construction with a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs, and trees.
 - iv. Pesticides. No pesticide application is allowed, although mechanical or other methods may be used to control weeds and unwanted vegetation.

⁵ For purposes of this Opinion only, "large wood" means a tree, log, or rootwad big enough to dissipate stream energy associated with high flows, capture bedload, stabilize streambanks, influence channel characteristics, and otherwise support aquatic habitat function, given the slope and bankfull width of the stream in which the wood occurs. See, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, *A Guide to Placing Large Wood in Streams*, May 1995 (www.odf.state.or.us/FP/RefLibrary/LargeWoodPlacemntGuide5-95.doc).

- v. Fertilizer. No surface application of fertilizer may occur within 50 feet of any stream channel.
- vi. Fencing. Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

2. To implement reasonable and prudent measure #2 (monitoring), the COE shall:

- a. Implementation monitoring. Ensure that each permittee submits a monitoring report to the COE within 120 days of project completion describing the permittee's success meeting his or her permit conditions. Each project level monitoring report will include the following information.
 - i. Project identification.
 - (1) Permittee name, permit number, and project name.
 - (2) Project location, including any compensatory mitigation site(s), by 5th field HUC and by latitude and longitude as determined from the appropriate USGS seven-minute quadrangle map
 - (3) COE contact person.
 - (4) Starting and ending dates for work completed
 - ii. Photo documentation. Photo of habitat conditions at the project and any compensation site(s), before, during, and after project completion.⁶
 - (1) Include general views and close-ups showing details of the project and project area, including pre and post construction.
 - (2) Label each photo with date, time, project name, photographer's name, and a comment about the subject.
 - iii. Other data. Additional project-specific data, as appropriate for individual projects.
 - (1) Work cessation. Dates work cessation was required due to high flows.
 - (2) A summary of pollution and erosion control inspections, including any erosion control failure, hazardous material spill, and correction effort.
 - (3) Site preparation.
 - (a) Total cleared area – riparian and upland.
 - (b) Total new impervious area.
 - (4) Site restoration.
 - (a) Finished grade slopes and elevations.

⁶ Relevant habitat conditions may include characteristics of channels, eroding and stable streambanks in the project area, riparian vegetation, water quality, flows at base, bankfull and over-bankfull stages, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

- (b) Log and rock structure elevations, orientation, and anchoring (if any).
 - (c) Planting composition and density.
- b. Submit monitoring reports to:

NOAA Fisheries
Oregon Habitat Branch, Habitat Conservation Division
Attn: **2003/00264**
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

- (c) If a dead, injured, or sick endangered or threatened species specimen is found, initial notification must be made to:

NOAA Fisheries Law Enforcement Office
Vancouver Field Office
600 Maritime, Suite 130
Vancouver, WA 98661
360.418.4246

Care will 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. In conjunction with 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 intrinsic to the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance essential fish habitat (EFH) for those species regulated under a federal fisheries management plan. Pursuant to the MSA:

- 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 (§305(b)(2)).

- NOAA Fisheries must provide conservation recommendations for any federal or state action that would adversely affect EFH (§305(b)(4)(A)).
- Federal agencies must provide a detailed response in writing to NOAA Fisheries within 30 days after receiving EFH conservation recommendations. The response must 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 NOAA Fisheries EFH conservation recommendations, the federal agency must explain its reasons for not following the recommendations (§305(b)(4)(B)).

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting this 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; “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle (50 CFR 600.10), and “adverse effect” means any impact which reduces quality and/or quantity of EFH, and may include direct (*e.g.*, contamination or physical disruption), indirect (*e.g.*, loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

EFH consultation with NOAA Fisheries is required regarding any federal agency action that may adversely affect EFH, including actions that occur outside EFH, such as certain upstream and upslope activities.

The objectives of this EFH consultation are to determine whether the proposed action would adversely affect designated EFH and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH.

3.2 Identification of EFH

Pursuant to the MSA the Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. Designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km) (PFMC 1998a, 1998b). 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 1999), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception to the Canadian border (PFMC 1999).

Detailed descriptions and identifications of EFH are contained in the fishery management plans for groundfish (PFMC 1998a), coastal pelagic species (PFMC 1998b), and Pacific salmon (PFMC 1999). Casillas *et al.* (1998) provides additional detail on the groundfish EFH habitat complexes. Assessment of the potential adverse effects to these species' EFH from the proposed action is based, in part, on these descriptions and on information provided by the COE.

3.3 Proposed Actions

The proposed action and action area are detailed above in sections 1.2 and 2.1.1 of this Opinion. The action area includes habitats that have been designated as EFH for various life-history stages of starry flounder (*Platichthys stellatus*) and chinook and coho salmon.

3.4 Effects of Proposed Action

As described in detail in section 2.1.5 of this document, the proposed action may result in short-term adverse effects to a variety of habitat parameters. These adverse effects are: Decreased water quality (turbidity) and potential for hazardous materials spills.

3.5 Conclusion

NOAA Fisheries concludes that the proposed action will adversely affect the EFH for starry flounder (*Platichthys stellatus*) and chinook and coho salmon.

3.6 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the MSA, NOAA Fisheries is required to provide EFH conservation recommendations to federal agencies regarding actions which may adversely affect EFH. While NOAA Fisheries understands that the conservation measures described in the BA will be implemented by the COE, it does not believe that these measures are sufficient to address the adverse impacts to EFH described above. However, the terms and conditions outlined in section 2.2.3 are generally applicable to designated EFH for the species designated in section 3.3, and address these adverse effects. Consequently, NOAA Fisheries incorporates them here as EFH conservation measures.

3.7 Statutory Response Requirement

Pursuant to the MSA (§305(b)(4)(B)) and 50 CFR 600.920(j), federal agencies are required to provide a detailed written response to NOAA Fisheries' EFH conservation recommendations within 30 days of receipt of these recommendations. The response must include a description of measures proposed to avoid, mitigate, or offset the adverse impacts of the activity on EFH. In the case of a response that is inconsistent with the EFH conservation recommendations, the response must explain the reasons for not following the recommendations, including the scientific justification for any disagreements over the anticipated effects of the proposed action and the measures needed to avoid, minimize, mitigate, or offset such effects.

3.8 Supplemental Consultation

The COE must reinitiate EFH consultation with NOAA Fisheries if the proposed action is substantially revised in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920(k)).

4. LITERATURE CITED

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Table 1. References for Additional Background on Listing Status, Biological Information, Protective Regulations, and Critical Habitat Elements for the ESA-Listed Species Considered in this Consultation.

| Species ESU | Status | Critical Habitat ⁷ | Protective Regulations | Biological Information, Historical Population Trends |
|---|-------------------------------------|------------------------------------|------------------------|--|
| Chinook salmon (<i>O. Tshawytscha</i>) | | | | |
| Snake River fall-run | T 4/22/92; 57 FR 14653 ⁸ | 12/28/93; 58 FR 68543 | 7/10/00; 65 FR 42422 | Waples <i>et al.</i> 1991b; Healey 1991 |
| Snake River spring/summer-run | T 4/22/92; 57 FR 14653 ² | 10/25/99; 64 FR 57399 ⁹ | 7/10/00; 65 FR 42422 | Matthews and Waples 1991; Healey 1991 |
| Lower Columbia River | T 3/24/99; 64 FR 14308 | | 7/10/00; 65 FR 42422 | Myers <i>et al.</i> 1998; Healey 1991 |
| Upper Willamette River | T 3/24/99; 64 FR 14308 | | 7/10/00; 65 FR 42422 | Myers <i>et al.</i> 1998; Healey 1991 |
| Upper Columbia River spring-run | E 3/27/99; 64 FR 14308 | | 7/10/00; 65 FR 42422 | Myers <i>et al.</i> 1998; Healey 1991 |
| Chum salmon (<i>O. keta</i>) | | | | |
| Columbia River | T 3/25/99; 64 FR 14508 | | 7/10/00; 65 FR 42422 | Johnson <i>et al.</i> 1997; Salo 1991 |
| Sockeye salmon (<i>O. nerka</i>) | | | | |
| Snake River | E 11/20/91; 56 FR 58619 | 12/28/93; 58 FR 68543 | 11/20/91; 56 FR 58619 | Waples <i>et al.</i> 1991a; Burgner 1991 |
| Steelhead (<i>O. mykiss</i>) | | | | |
| Lower Columbia River | T 3/19/98; 63 FR 13347 | | 7/10/00; 65 FR 42422 | Busby <i>et al.</i> 1995; 1996 |
| Middle Columbia River | T 3/25/99; 64 FR 14517 | | 7/10/00; 65 FR 42422 | Busby <i>et al.</i> 1995; 1996 |
| Upper Columbia River | E 8/18/97; 62 FR 43937 | | 7/10/00; 65 FR 42422 | Busby <i>et al.</i> 1995; 1996 |
| Upper Willamette River | T 3/25/99; 64 FR 14517 | | 7/10/00; 65 FR 42422 | Busby <i>et al.</i> 1995; 1996 |
| Snake River Basin | T 8/18/97; 62 FR 43937 | | 7/10/00; 65 FR 42422 | Busby <i>et al.</i> 1995; 1996 |

⁷ Critical habitat designations (excluding Snake River chinook and sockeye salmon) were vacated and remanded on May 7, 2002 by a federal Court

⁸ Also see 6/3/92; 57 FR 23458, correcting the original listing decision by refining ESU ranges.

⁹ This corrects the original designation of 12/28/93 (58 FR 68543) by excluding areas above Napias Creek Falls, a naturally impassable barrier.