UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
BIN C15700
Seattle, WA 98115-0070

Refer to:
OSB2001-0277-FEC

February 25, 2002

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Attn: Susan Sturges
Regulatory Branch, CENWP-OP-G
P.O. Box 2946
Portland, OR 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation for the Construction of Two Residential Docks and Ramps by Mr. Howard Renner, City of Wilsonville, Clackamas County, Oregon (Corps No. 2001-00896)

Dear Mr. Evans:

Enclosed is a biological opinion (Opinion) prepared by the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act (ESA) on the effects of issuance of a permit by the Corps of Engineers (COE) for construction of two residential docks and ramps proposed by Mr. Howard Renner, City of Wilsonville, Clackamas County, Oregon. In this Opinion, NMFS concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Upper Willamette River chinook salmon (*Oncorhynchus tshawytscha*) and Upper Willamette River steelhead (*O. mykiss*) or destroy or adversely modify designated critical habitat(s). As required by section 7 of the ESA, we have included 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 Opinion also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and 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,

For Michael R Crouse

D. Robert Lohn
Regional Administrator

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

BIOLOGICAL OPINION

Construction of Residential Docks and Ramps
by Mr. Howard Renner, City of Wilsonville,
Clackamas County, Oregon
(Corps No. 2001-00896)

Agency: Army Corps of Engineers, Portland District

Consultation Conducted By: National Marine Fisheries Service, Northwest Region

Date Issued: February 25, 2002

Issued by: for Michael R Crouse

D. Robert Lohn
Regional Administrator

Refer to: OSB2001 - 0277 - FEC

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1. ENDANGERED SPECIES ACT

1.1 Background

On October 30, 2001, the National Marine Fisheries Service (NMFS) received a letter from the Corps of Engineers (COE) requesting informal consultation on the issuance of a permit to Mr. Howard Renner to construct a residential dock and ramp on the Willamette River. On November 19, 2001 the COE sent an additional letter to change the proposed project from construction of one dock to construction of two residential docks on adjacent lots. In the November letter, the COE determined that Upper Willamette River (UWR) steelhead (*Oncorhynchus mykiss*) and Upper Willamette River chinook (*O. tshawytscha*) may occur within the project area. The NMFS responded with a letter dated December 18, 2001, recommending formal consultation and indicating NMFS would proceed with formal consultation unless requested otherwise by the COE. Based on adequate information received from the COE, NMFS has prepared this biological opinion (Opinion). The NMFS has determined that the proposed project is "likely to adversely affect" (LAA) the listed species or their designated critical habitat. The NMFS listed UWR steelhead and chinook salmon under the ESA as threatened on March 24, 1999 (64 FR 14517). Critical habitat for these species was designated on February 16, 2000 (65 FR 7764). Protective regulations for steelhead and chinook were designated on July 10, 2000 (65 FR 42423).

The NMFS has prepared this Opinion to address impacts to these species as a result of the proposed project. The objective of this Opinion is to determine whether the actions, including the proposed mitigation measures, are likely to jeopardize the continued existence of the above listed species or destroy or adversely modify critical habitat.

1.2. Proposed Action

The COE proposes to issue a permit for a proposed project involving construction of two separate residential docks and dock ramps on the Willamette River at Wilsonville, Oregon. The docks each measure 20' by 35', including a 10' by 25' boat well and a 65' by 4' dock ramp. Each dock requires the placement of two steel piles, two wood piles and a 5' by 10' concrete pad to secure the ramp to the bank. Aluminum light-permeable gratings will be installed at least every 4' to minimize shade from the docks.

1.3. Biological Information and Critical Habitat

The action area is defined by NMFS 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 includes designated critical habitat affected by the proposed action within the Willamette River. The action area is the Willamette River (river mile 42-43) adjacent to the applicant's property including riparian habitat, substrate and water column. Essential habitat features for salmonids are: (1) Substrate, (2) water quality, (3) water quantity, (4) water

temperature, (5) water velocity, (6) cover/shelter, (7) food (juvenile only), (8) riparian vegetation, (9) space, and (10) safe passage conditions (50 CFR 226). The proposed action may affect the essential habitat features of water quality, cover/shelter, riparian vegetation and safe passage conditions.

1.4. 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). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed species' life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

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

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

1.4.1. Biological Requirements

The first step in the methods NMFS uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts

with the determinations made in its decision to list 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 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, NMFS 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. NMFS is not aware of any new data that would indicate otherwise.

1.4.2. Environmental Baseline

The Willamette River watershed covers a vast area (11,500 square miles) bordered on the east and west by the Cascades and the Pacific coast ranges. It drains from as far south as Cottage Grove and flows north to its confluence with the Columbia River. The Willamette River watershed is the largest river basin in Oregon. It is home to most of the state's population, its largest cities, and many major industries. The watershed also contains some of Oregon's most productive agricultural lands and supports important fishery resources (City of Portland 2001).

The uplands (Coast and Cascade Ranges) receive about 80 percent of the precipitation falling on the Willamette River basin, and store much of this water as snow. Ecosystem productivity in these upland streams is relatively low, with aquatic insects gleaning much of their diet from material that falls into running water. In larger, slower tributaries, more plant material is produced in the stream itself. The mainstem supports a highly productive algal community that blooms as temperatures rise in the summer. Insects and some vertebrates feed on these plants, and many vertebrates, including salmonids, feed on stream-dwelling insects. Much of the habitat for Willamette River salmonids has been degraded by various land use practices or eliminated by

[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.

dams. Wild salmonid populations have declined precipitously over the last century in the Willamette River (WRI 1999).

Basin health has been affected in terms of water and habitat quality and quantity. Many native species have been adversely affected due to the introduction of non-native species, loss of habitat and habitat degradation, and contaminated waters which impede species' development. Some streams and rivers in the basin have high temperatures and insufficient flows during summer months, which adversely impact aquatic species such as salmon and steelhead. Low flows also reduce the ability of the river to dilute contaminants, the presence of which may lead to dangers for both aquatic species and humans. Such contaminants are often found with great frequency in the basin as a result of erosion from agricultural, industrial, urban and forested lands. Increased population and development have further compounded these problems, resulting in the loss of much critical habitat and increased pollution (WRI 1999).

1.5. Analysis of Effects

1.5.1. Effect of Proposed Action

The Willamette River serves as an important migration route for numerous species of anadromous fish, whether they key on shallow, nearshore habitats like fall chinook salmon or mid-river like steelhead juveniles (Dawley et al. 1986). The addition of boat docks and their accompanying in-water structures and upland facilities may affect anadromous fish through loss of riparian habitat providing food and cover for fish, creation of predatory fish and avian habitat, decrease in water quality from contamination, and increased turbidity, disturbance or pollution due to increased boat activity.

Riparian habitats are one of the most ecologically-productive and diverse terrestrial environments (Kondolf et al. 1996, Naiman et al. 1993). Vegetation in riparian areas provides soil stability, shade, large wood (LW) supply, and food for fish and their prey. In addition, riparian vegetation and LW can provide low velocity shelter habitat for fish during periods of flooding. Instream LW provides similar habitat at all flow levels, as well as shelter from predators, habitat for prey species, and sediment storage and channel stability attributes (Spence *et al*. 1996).

The manipulation of vegetation and LW associated with construction in riparian areas and in stream channels can change the characteristics of the riparian area in ways which would tend to adversely affect fish. Short-term effects on vegetation include the outright destruction or removal of vegetation and LW, as well as lesser disturbances such as: Trampling; shallow or temporary burial by stockpiled material; temporary displacement of LW; and trimming, mowing, and scraping of vegetation. Long-term effects include permanent, or near-permanent, displacement of habitat for vegetation through paving, armoring, or maintenance of utility or access corridors. Such long-term effects on vegetation would also tend to cause a long-term reduction in riparian and instream LW.

The placement of a boat dock will generally result in permanent loss of some riparian habitat. The extent of area of that loss is usually small. Revegetation of any riparian areas disturbed by construction activities, in time, will maintain or improve habitat conditions for salmonids within the action area by potentially increasing plant densities in degraded areas or changing plant species at the site to those that are more beneficial to aquatic species.

An effect of over-water structures is the creation of a light/dark interface that allows ambush predators to remain in a darkened area (barely visible to prey) and watch for prey to swim by against a bright background (high visibility) (Helfman 1981). Prey species moving around the structure are unable to see predators in the dark area under the structure and are more susceptible to predation. The incorporation of grating into docks allows for more light penetration and diffuses the light/dark interface. This will minimize the susceptibility of juvenile salmonids to piscivorus predation resulting from this type of project.

Shading from docks, piers, boat houses and moored boats may also reduce juvenile salmonid prey organism abundance and the complexity of the habitat by reducing aquatic vegetation and phytoplankton abundance (Kahler et al. 2000). This area of the Willamette River does not support substantial aquatic vegetation. The small size of the docks with grating should minimize shading. This will minimize any potential loss of aquatic vegetation or phytoplankton productivity.

In-water structures (tops of pilings) also provide perching platforms for avian predators such as double-crested cormorants (*Phalacrocorax auritis*), from which they can launch feeding forays or dry plumage. High energy demands associated with flying and swimming create a need for voracious predation by cormorants on live prey (Ainley 1984). Placement of piles to support the dock structures will potentially provide for some usage by cormorants. Placement of anti-perching devices on the top of the pilings would preclude their use by any potential avian predators.

Treated wood used for pilings and docks releases contaminants into both fresh and saltwater environs. Polycyclic aromatic hydrocarbons (PAHs) are commonly released from creosote treated wood. PAHs may cause a variety of deleterious effects (cancer, reproductive anomalies, immune dysfunction, and growth and development impairment) to exposed fish (Johnson 2000, Johnson et al. 1999, Stehr et al. 2000). Wood also is commonly treated with other chemicals such as ammoniacal copper zinc arsenate (ACZA) and chromated copper arsenate (CCA) (Poston 2001). Direct exposure to the contaminants occurs as salmon migrate past installations with treated wood or when the area is used for rearing, and indirect exposure occurs through ingestion of other organisms that have been exposed (Posten 2001). Leaching rates of contaminants from treated wood is highly variable and dependent on many factors (Posten 2001). Consequently, Posten (2001) recommends that use of treated wood for each individual situation needs to be evaluated on its own merits and subject to an evaluation of the pertinent conditions at each site.

This area of the Willamette River has been shown to have high contaminant problems (Wentz 1998). Since the applicant has indicated that treated wood will not be used for any part of the structure it would not add to this problem.

Residential docks and especially marinas are likely to have high levels of boating activity in their immediate vicinity, particularly adjacent to floats. Specifically, docks serve as a mooring area for boats or a staging platform for recreational boating activities. Boating activity may result in several impacts on listed salmonids and aquatic habitat. Engine noise, prop movement, and the physical presence of a boat hull may disrupt or displace nearby fishes (Mueller 1980, Warrington 1999a). Boat traffic may also cause: (1) Increased turbidity in shallow waters, (2) uprooting of aquatic macrophytes in shallow waters, or (3) aquatic pollution (through exhaust, fuel spills, or release of petroleum lubricants) (Warrington 1999b). These boating impacts indirectly affect listed fish in a number of ways. Turbidity may injure or stress affected fishes (Spence *et al.* 1996). The loss of aquatic macrophytes may expose salmonids to predation, decrease littoral productivity, or alter local species assemblages and trophic interactions. Despite a general lack of data specifically for salmonids, pollution from boats may cause short-term injury, physiological stress, decreased reproductive success, cancer, or death for fishes in general. Further, pollution may also impact fishes by impacts to potential prey species or aquatic vegetation. The proposed two small docks would not substantially alter the above listed parameters.

1.5.2. Effects on Critical Habitat

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Effects on critical habitat from the proposed action are included in the effects description above.

1.5.3. 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 impact fish and habitat within the action area. 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.

Non-federal activities within the action area 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, NMFS assumes that future private and State actions will continue within the action area, but at increasingly higher levels as population density climbs.

1.6. Conclusion

The NMFS has determined, based on the information, analysis, and assumptions described in this Opinion, that the COE's issuance of a permit with proposed conditions for installation of Mr. Howard Renner's boat docks in the Willamette River is not likely to jeopardize the continued existence of the listed UWR chinook salmon and steelhead. In arriving at this determination, NMFS considered the status of the listed species, environmental baseline conditions, the direct and indirect effects of the action, and the cumulative effects of actions anticipated in the action area. The NMFS evaluated the proposed action and found that it would cause short-term adverse degradation of some environmental baseline indicators for listed species. Timing and construction restrictions would minimize these impacts. Construction materials (untreated wood and steel) will not affect water quality. Plantings in disturbed areas would alleviate any long-term impacts to riparian areas. Dock configuration incorporating light permeable gratings would reduce effects of shading. Boat traffic from the two boat docks is not likely to cause detrimental effects. The proposed action is not expected to result in further degradation of aquatic habitats over the long term. Thus, the effects of the proposed action would not reduce water quality, cover/shelter, riparian vegetation, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of listed fishes, nor is it likely to result in destruction or adverse modification of critical habitats.

1.7. Conservation Recommendations

Section 7 (a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitats, or to develop additional information.

Human activities alter the structural elements of aquatic systems and cause changes to the landscape through run off of nutrients, sediments, organic material and contaminants (Jennings et al. 1999). Littoral zone habitat alterations are incremental and cumulative occurring at the spatial scale of individual properties (Jennings et al. 1999). This puts at odds the concern for ecosystem functions and the perception that minor, localized modifications are insignificant (Jennings et al. 1999).

To monitor the role of ecosystem functions and the extent of these minor modifications, NMFS believes the following conservation recommendation should be carried out by the COE:

1. To the greatest extent possible, the COE should develop a database that consists of all existing permits that have resulted in projects. The database should be compatible with monitoring information that will be produced to meet the requirements of this Opinion. Thus each project entered into the database should be identified by 5th field hydrological unit code (HUC), and contain, where possible, the following information: 1) Permit

number, 2) applicant name, 3) project name, 4) the category of activity under which the permit was issued, 5) location by river mile and lat/long, 6) starting and ending dates for work done under the permit; and 7) the COE contact person.

NMFS believes this information will help to reduce uncertainty about the effects of past and ongoing human and natural factors affecting the status of listed salmon and steelhead, their habitats, and the aquatic ecosystem within the Portland District of the COE.

In order for NMFS to be kept informed of actions minimizing or avoiding adverse effects, or those that benefit listed salmon and steelhead or their habitats, NMFS requests notification of the achievement of any conservation recommendations by submitting an annual report describing achievements of the permitting process during the previous year.

1.8. Reinitiation of Consultation

This concludes formal consultation on these actions in accordance with 50 CFR 402.14(b)(1). Reinitiation of consultation is required: (1) If the amount or extent of incidental take is exceeded, (2) if the action is modified in a way that causes an effect on the listed species that was not previously considered in the information provided by the COE and this biological opinion, (3) new information or project monitoring reveals effects of the action that may affect the listed species in a way 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. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion is reasonably certain to result in incidental take of listed species. Effects of actions such as these are largely unquantifiable and are not expected to be measurable as long-term effects on population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information provided by the COE, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion.

2.2. Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The COE has the continuing duty to regulate the activities covered in this incidental take statement. If the COE fails to require the applicants to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

The NMFS believes that, in addition to the conditions proposed by the COE, the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of listed fish resulting from implementation of this Opinion. These reasonable and prudent measures would also minimize adverse effects to designated critical habitat.

1. The COE shall minimize the likelihood of incidental take from boat docks by applying permit conditions to avoid or minimize disturbance to riparian and aquatic systems.

2. The COE shall minimize the likelihood of incidental take from activities involving use of heavy equipment and site restoration, or that may otherwise involve in-water work or affect fish passage by applying permit conditions to avoid or minimize disturbance to riparian and aquatic systems.

3. The COE shall complete a comprehensive monitoring and reporting program to ensure that the terms and conditions included in this Opinion are effective in minimizing the likelihood of take from permitted activities.

2.3. Terms and Conditions

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

1. To implement the Reasonable and Prudent Measure #1, the COE shall ensure that in addition to their proposed conditions:
   A. Access walkways, docks and related features. All access walkways, docks and related features will be constructed as follows:
      i. All walkways, docks, and related features wider than four feet located in waters with current velocity less than 20 cm/sec will include grating, translucent panels, or other light diffusers to maintain a minimum of 60 percent of the ambient light levels under the docks.
      ii. Docks will be placed in water deep enough so that moored boats never ground out or prop wash the bottom.
      iii. The docks shall be located in areas that currently have sufficient depth to preclude dredging. The design of the facility shall not create a deposition zone that would necessitate future dredging.
      iv. Pilings shall be limited in size and quantity to the minimum necessary to support dock structures.
      v. Treated wood for dock decking shall not be allowed.
      vi. Prior to construction, the applicant will supply to the COE a report indicating the presence or absence of aquatic vegetation that may be lost by placement of the docks. If aquatic vegetation is present, the docks should be realigned to prevent loss.

   B. Piscivorus bird deterrence. All pilings and navigational aids, such as moorings, and channel markers, will be fitted with devices to prevent perching by piscivorus bird species.

2. To implement Reasonable and Prudent Measure # 2, the COE shall ensure that:
   A. Each project will be individually reviewed to ensure that all reasonable alternatives have been considered and impacts to natural resources have been avoided, minimized and mitigated, and that the following overall project design conditions are met:
      i. Minimum area. Construction impacts will be confined to the minimum area necessary to complete the project;
      ii. In-water work. All work within the active channel of all anadromous fish-bearing streams, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within

the ODFW approved in-water work period;[2] except for Oregon Coast estuaries and tidally affected waters.

(1) Work period extensions. Extensions of the in-water work period, including those for work outside the wetted perimeter of the stream but below the ordinary high water mark must be approved by biologists from NMFS.

iii. Site restoration. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching and fertilizing, shall be done in the following manner:

(1) All damaged areas will be restored to pre-work conditions including restoration of original streambank lines, and contours.

(2) All exposed soil surfaces, including construction access roads and associated staging areas, will be stabilized at finished grade with mulch, native herbaceous seeding, and native woody vegetation prior to October 1. On cut slopes steeper than 1:2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the normal rate.

(3) Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.

(4) Plantings will be arranged randomly within the revegetation area.

(5) All plantings will be completed prior to April 15.

(6) No herbicide application will occur within 300 feet of any stream channel as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.

(7) No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.

(8) Fencing will be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

(9) Plantings will achieve an 80 percent survival success after three years.

(a) If success standard has not been achieved after 3 years, the applicant will submit an alternative plan to the COE. The alternative plan will address temporal loss of function.

(b) Plant establishment monitoring will continue and plans will be submitted to the COE until site restoration success has been achieved.

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

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

A. Within 30 days of completing the project, the applicant will submit a monitoring report describing the applicant's success meeting their permit conditions. This report will consist of the following information:

i. Project identification.
ii. Permit number.
iii. Applicant's name.
iv. Project name.
v. Project location by 5th field hydrological unit code (HUC) and lat/long.
vi. Compensatory mitigation site(s) (if any) by 5th field HUC and lat/long.
vii. Starting and ending dates for work performed under the permit.
viii. The COE contact person.
ix. Site restoration monitoring to include documentation of the following conditions:
(1) Planting composition and density
(2) A plan to inspect and, if necessary, replace failed plantings and structures for a period of five years
(3) A narrative assessment of the project's effects on natural stream function.
(4) Photographic documentation of environmental conditions at the project site and compensatory mitigation site(s) (if any) before, during and after project completion.
(a) Photographs will include general project location views and close-ups showing details of the project area and project, including pre and post construction.
(b) 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.
x. Relevant habitat conditions including 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.
xi. Monitoring reports will be submitted to:

National Marine Fisheries Service
Attn: OSB2001-0213-FEC
525 NE Oregon Street
Portland, OR 97232

B. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the National Marine Fishery Service Law Enforcement Office, located at 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 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-STEVENS 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 NMFS on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NMFS shall provide conservation recommendations for any Federal or State activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NMFS provide a detailed response in writing to NMFS regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the

case of a response that is inconsistent with the conservation recommendations of NMFS, the Federal agency shall explain its 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 NMFS is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*)(PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the Pacific Coast Salmon Plan (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed actions are detailed above in section 1.2. The action area includes designated EFH affected by the proposed action within the Willamette River. This area has been designated as EFH for chinook and coho salmon.

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in short-term adverse effects to a variety of habitat parameters. Construction of docks and dock ramps may result in effects on water quality, riparian habitat and predation of salmonids.

3.6 Conclusion

NMFS believes that the proposed action may temporarily adversely affect the EFH for Pacific salmon species, however**,** the proposed action is not expected to result in degradation of EFH habitats over the long term**.**

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the Corps, all Conservation Recommendations outlined above in Section 1.7 and all of the Reasonable and Prudent Measures and the Terms and Conditions contained in Sections 2.2 and 2.3 are applicable to EFH. Therefore, NMFS incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NMFS 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 impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NMFS, the agency must explain its reasons for not following the recommendation.

3.9 Consultation Renewal

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

4. LITERATURE CITED

Ainley, D.G. 1984. Cormorants Family Phalacrocoracidae. Pages 92- 101 *In:* D. Haley ed. Seabirds of the eastern North Pacific and Arctic waters. Pacific Search Press, Seattle. 214 p.

City of Portland, Bureau of Environmental Services. Website accessed October 2001 http://www.cleanrivers-pdx.org/clean_rivers/ws_willamette.htm

Dawley, E.M., R.D. Ledgerwood, T.H. Blahm, C.W. Sims, J.T. Durkin, R.A. Kirn, A.E. Rankis, G.E. Monan and F.J. Ossiander. 1986. Migrational Characteristics, Biological Observations, and Relative Survival of Juvenile Salmonids Entering the Columbia River Estuary. Final Report of Research. Bonneville Power Administration Contract DE-AI79-84BP39652. Project No. 81-102. 256 p.

Helfman, G.S. 1981. The advantage to fishes of hovering in shade. Copeia. 1981(2):392-400.

Jennings, M.J., M.A. Bozek, G.R. Hatzenbeler, E.E. Emmons, M.D. Staggs. 1999. Cumulative effects of incremental shoreline habitat modification on fish assemblages in north temperate lakes. N. Am. J. Fish. Mgmt. 19:18-27.

Johnson, L. 2000. An analysis in support of sediment quality thresholds for polycyclic aromatic hydrocarbons (PAHs) to protect estuarine fish. White Paper from National Marine Fisheries Service , Northwest Fisheries Science Center, Seattle, Washington. 29 p.

Johnson, L., S.Y. Sol, G.M. Ylitalo, T. Hom, B. French, O.P. Olson, and T.K. Collier. 1999. Reproductive injury in English sole (*Pleuronectes vetulus*) from the Hylebos Waterway, Commencement Bay, Washington. Journal of Aquatic Ecosystem Stress and Recovery. 6:289-310.

Kahler, T., M. Grassley and D. Beauchamp. 2000. A summary of the effects of bulkheads, piers, and other artificial structures and shorezone development on ESA-listed salmonids in lakes. Final Report to the City of Bellevue, Washington. 74 p.

Kondolf, G.M., R. Kattlemann, M. Embury, and D.C. Erman. 1996. Status of riparian habitat. Pages 1009-1029 *In:* Sierra Nevada Ecosystem Project: Final report to Congress, vol. II, assessments and scientific basis for management options. University of California, Davis, Centers for Water and Wildland Resources.

Mueller, G. 1980. Effects of recreational river traffic on nest defense by longear sunfish. Trans. Am. Fish. Soc. 109: 248-251.

Naiman, R.J., H. DeCamps, and M. Pollock. 1993. The role of riparian corridors in maintaining regional biodiversity. Ecological Applications, 3(2):209-212.

Oregon Department of Administrative Services. 1999. Oregon economic and revenue forecast. Vol. XIX. No. 2. Office of Economic analysis, Salem.

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

Poston, T. 2001. Treated wood issues associated with overwater structures in marine and freshwater environments. White Paper submitted to Washington Department of Fish and Wildlife, Washington Department of Ecology and Washington Department of Transportation by Batelle. 85 p.

Spence, B.C., G.A. Lomnicky, R.M. Hughes, and R.P. Novitzki. 1996. An ecosystem approach to salmonid conservation. TR-4501-96-6057. ManTech Environmental Research Services Corp., Corvallis, Oregon.

Stehr, C.M., D.W. Brown, T. Hom, B.F. Anulacion, W.L. Reichert, and T.K. Collier. 2000. Exposure of juvenile chinook and chum salmon to chemical contaminants in the Hylebos

Waterway of Commencement Bay, Tacoma, Washington. Journal of Aquatic Ecosystem Stress and Recovery. 7:215-227.

Warrington, P. D. 1999a. Impacts of recreational boating on the aquatic environment. http://www.nalms.org/bclss/impactsrecreationboat.htm

Warrington, P.D1999b. Impacts of outboard motors on the aquatic environment. http://www.nalms.org/bclss/impactsoutboard.htm

Wentz, D.A., Bonn, B.A., Carpenter, K.D., Hinkle, S.R., Janet, M.L., Rinella, F.A., Uhrich, M.A., Waite, I.R., Laenen, A., and Bencala, K.E., 1998, Water Quality in the Willamette Basin, Oregon, 1991-95: U.S. Geological Survey Circular 1161, on line at <URL: http://water.usgs.gov/pubs/circ1161>, updated June 25, 1998 .

Willamette Restoration Initiative (WRI). 1999. Restoring the Willamette Basin: Issues and Challenges. Prepared by Institute for the Northwest. Report accessed at: http://www.oregonwri.org/basin_restore/rest_will_basin2a.pdf