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:
2003/01146

June 7, 2004

Mr. Lawrence C. Evans
U.S. Army Corps of Engineers
Attn: Karla Ellis
Portland District, CENWP-CO-GP
P.O. Box 2946
Portland, Oregon 97208-2946

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Union Pacific Bridge Repair, Columbia Slough, Multnomah County, Oregon (Corps No. 199800086)

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) for the issuance of a permit to Union Pacific Railroad under section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act to authorize the repair of a railroad bridge over Columbia Slough in Multnomah County, Oregon. The Corps of Engineers (COE) determined that the action is likely to adversely affect Lower Columbia River (LCR) and Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*) and LCR and UWR steelhead (*O. mykiss*) and requested formal consultation on this action. NOAA Fisheries concludes in this Opinion that the proposed action is not likely to jeopardize the continued existence of the above-listed species.

Pursuant to section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary and appropriate to minimize the potential for incidental take associated with this project.

This document also serves as consultation on essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR Part 600). NOAA Fisheries concludes that the proposed action may adversely affect designated EFH for coho salmon (*O. kisutch)* and Chinook salmon. As required by section 305(b)(4)(A) of the MSA, included are conservation recommendations that NOAA Fisheries believes will avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from the proposed action. As described in the enclosed consultation,

305(b)(4)(B) of the MSA requires that a Federal action agency must provide a detailed response in writing within 30 days after receiving an EFH conservation recommendation.
Questions regarding this letter should be directed to Christy Fellas of my staff in the Willamette Basin Habitat Branch of the Oregon State Habitat Office at 503.231.2307.

Sincerely,

for Michael R Course

D. Robert Lohn
Regional Administrator

Endangered Species Act - Section 7 Consultation
Biological Opinion

&

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

Union Pacific Bridge Replacement, Columbia Slough,
Multnomah County, Oregon
(Corps No. 199800086)

Agency:	U.S. Army Corps of Engineers
Consultation Conducted By:	NOAA's National Marine Fisheries Service, Northwest Region
Date Issued:	June 7, 2004
Issued by:	for Michael R Course D. Robert Lohn Regional Administrator
Refer to:	**2003/01146**

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1. INTRODUCTION

1.1 Background

On September 9, 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 Union Pacific Railroad to replace a bridge spanning Columbia Slough in Multnomah County, Oregon. The COE determined the proposed action was not likely to adversely affect (NLAA) the following ESA-listed species: Lower Columbia River (LCR) and Upper Willamette River (UWR) Chinook salmon (*Oncorhynchus tshawytscha*) and LCR and UWR steelhead (*O. mykiss*). References and dates listing status and ESA section 4(d) take prohibitions are can be found in Table 1.

NOAA Fisheries responded in a letter dated September 18, 2003, indicating non-concurrence with the COE's NLAA determination, suggesting that the COE request formal consultation, and requesting additional project information. The COE then requested formal consultation and supplied additional information in a letter received by NOAA Fisheries on December 2, 2003.

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

Species / ESU	Status	Protective Regulations	Biological Information
Chinook salmon (*O. tshawytscha*)			
Lower Columbia River	Threatened 3/24/00; 64 FR 14308	7/10/00; 65 FR 42422	Myers *et al.* 1998; Healey 1991
Upper Willamette River	Threatened 3/24/00; 64 FR 14308	7/10/00; 65 FR 42422	Myers *et al.* 1998; Healey 1991
Steelhead (*O. mykiss*)			
Lower Columbia River	Threatened 3/19/98; 63 FR 13347	7/10/00; 65 FR 42422	Busby *et al.* 1995; 1996
Upper Willamette River	Threatened 3/25/99; 64 FR 14517	7/10/00; 65 FR 42422	Busby et al. 1995; 1996

1.2 Proposed Action

The applicant proposes to replace the deteriorating timber pile trestle approach bridges with 30-foot span concrete box girders. The steel girders are 24-inch diameter filled with concrete. The existing 40 trestles will be replaced with 22 new steel and concrete trestles. The work will be done during the in-water work window of June 15 to September 15.

Construction of the replacement bridge will be conducted from the bank. Equipment staged on the bank will be used to drive new steel piles, remove existing timber piles, remove the existing bridge deck, and place the new bridge on new piles. Staging of equipment in or access to the area under the bridge is not anticipated. Foot access will be required to cut the existing timber piles and the piles will be removed with a track-mounted crane.

Earth moving, stockpiling, and construction access activities are not anticipated for this project. However, if needed, erosion control will be used to stabilize sediment such as, sediment fences, hay bales, stockpile covering, and graveled construction access.

1.3 Action Area

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 a portion of the Columbia Slough, including the streambed, streambank, water column, and adjacent riparian zone, 100 feet upstream and 100 feet downstream of the construction area at Columbia Slough mile 5.2.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

The objective of this biological opinion (Opinion) is to determine whether the proposed action is likely to jeopardize the continued existence of these ESA-listed species. This consultation is conducted pursuant to section 7(a)(2) of the ESA and its implementing regulations, 50 CFR 402.

2.1.1 Biological Information

According to a recent draft of "Preliminary conclusions regarding the updated status of listed ESUs of West Coast salmon and steelhead," drafted by the West Coast Salmon Biological Review Team (BRT), a number of evolutionarily significant units (ESUs) were concluded by the majority of the BRT "likely to become endangered in the foreseeable future"(NMFS 2003). Preliminary conclusions for each listed ESU considered in this Opinion are discussed below.

LCR Chinook

Natural-origin fish had parents that spawned in the wild as opposed to hatchery-origin fish whose parents were spawned in a hatchery. The abundance of natural-origin spawners ranges from completely extirpated for most of the spring-run populations, to over 6,500 for the Lewis River bright population. The majority of the fall-run tule populations have a substantial fraction of hatchery-origin spawners in the spawning areas and are hypothesized to be sustained largely by hatchery production. Exceptions are the Coweeman and Sandy River fall-run populations which have few hatchery fish spawning on the natural spawning areas. These populations have recent mean abundance estimates of 348 and 183 spawners, respectively. The majority of the spring-run populations have been extirpated largely as the result of dams blocking access to their high elevation habitat. The two bright Chinook populations (*i.e.* Lewis and Sandy) have relatively high abundances, particularly the Lewis.

In many cases, data were not available to distinguish between natural- and hatchery-origin spawners, so only total spawner (or dam count) information is presented. This type of figure can give a sense of the levels of abundance, overall trend, patterns of variability, and the fraction of hatchery-origin spawners. A high fraction of hatchery-origin spawners indicates that the population may potentially be sustained by hatchery production and not the natural environment. It is important to note that estimates of the fraction of hatchery-origin fish are highly uncertain since the hatchery marking rate for LCR fall Chinook is generally only a few percent and expansion to population hatchery fraction is based on only a handful of recovered marked fish.

LCR Steelhead

Based on the updated information provided in this report, the information contained in previous LCR status reviews, and preliminary analyses, the number of historical and currently viable populations have been tentatively identified. This summary indicates some of the uncertainty about this ESU. Like the previous BRT, the current BRT could not conclusively identify a single population that is naturally self-sustaining. Over the period of the available time series, most of the populations are in decline and are at relatively low abundance (no population has recent mean greater than 750 spawners). In addition, many of the populations continue to have a substantial fraction of hatchery-origin spawners and may not be naturally self-sustaining.

UWR Chinook

All spring Chinook in the ESU, except those entering the Clackamas River, must pass Willamette Falls. There is no assessment of the ratio of hatchery-origin to wild-origin Chinook passing the falls, but the majority of fish are undoubtedly of hatchery origin (natural-origin fish are defined has having had parents that spawned in the wild as opposed to hatchery-origin fish whose parents spawned in a hatchery).

No formal trend analyses were conducted on any of the UWR Chinook populations. The two populations with long time series of abundance (Clackamas and McKenzie) have insufficient

information on the fraction of hatchery-origin spawners to permit a meaningful analysis. In general, the majority of the populations in this ESU are extirpated, or nearly so, or are considered not self-sustaining. The exceptions are the Clackamas and McKenzie Rivers.

UWR Steelhead

Populations of UWR steelhead are at relatively low abundance, and overall abundance of the ESU has been steeply declining since 1988, with adult returns improving in 2001 and 2002 (NOAA Fisheries 2003). It is uncertain whether the recent increases can be sustained. The previous BRT was concerned about the potential negative interaction between non-native summer steelhead and wild winter steelhead (cited in NOAA Fisheries 2003). The loss of access to historical spawning grounds because of dams was considered a major risk factor.

2.1.2 Evaluating Proposed Action

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402. In conducting analyses of habitat-altering actions under section 7 of the ESA, NOAA Fisheries uses the following steps of the consultation regulations combined with the Habitat Approach (NMFS 1999): (1) Consider the status and biological requirements of the species; (2) evaluate the relevance of the environmental baseline in the action area to the species' current status; (3) determine the effects of the proposed or continuing action on the species; (4) consider cumulative effects; and (5) determine whether the proposed action, in light of the above factors, is likely to appreciably reduce the likelihood of species survival in the wild or adversely modify its critical habitat. In completing this step of the analysis, NOAA Fisheries determines whether the action under consultation, together with all cumulative effects when added to the environmental baseline, is likely to jeopardize the ESA-listed species or result in the destruction or adverse modification of critical habitat. If either or both are found, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

2.1.3 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmonids 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 the listed species to survive and recover to a naturally-reproducing population level, 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 rearing and migration. The current status of the listed species, based upon their risk of extinction, has not significantly improved since the species were listed.

2.1.4 Environmental Baseline

The Columbia Slough discharges to the Willamette River near Kelley Point Park and the confluence of the Columbia and Willamette Rivers. The lower slough is accessible to salmonids via the Willamette River and splits at river mile (RM) 1.5 into the north slough and mainstem. The mainstem of the slough is accessible until RM 8.2 where a levee and pump station prevent further access (Ellis 2001). The Columbia Slough is tidal riverine habitat, and is used by salmonids as refugia during migration and for rearing.

The slough was originally a series of wetlands and marshes; it is now a highly managed water system with dikes and pumps to provide watershed drainage and flood control for the surrounding lowlands (ODEQ 1998). The slough is listed on the Oregon Department of Environmental Quality (DEQ) 303(d) list as water quality limited for: Bacteria, phosphorus, pH, dissolved oxygen, chlorophyll and temperature (ODEQ 1998). According to Ellis (2001), the Columbia Slough has few functioning environmental indicators including: Water quality, access, habitat elements, channel conditions, hydrology, and watershed conditions.

Channelization of the Columbia Slough reduced the complexity of the habitat features and the connectivity with adjacent wetlands and sloughs. Refugia for migrating salmonids is present but not abundant (Ellis 2001). There is some large woody debris (LWD) present in the slough, but no comprehensive study had been done when the biological assessment (BA) was written.

The riparian vegetation in the slough at the project site has been modified over the years by levee and dike construction and commercial and industrial development. According to Ellis (2001), the riparian area consists mostly of mature cottonwoods and no conifers. The cottonwoods along the bank provide some stabilization, but up to 10% of the bank is eroding. Within the lower slough, most of the riparian areas are connected and dominated by cottonwood with red-osier dogwood, Himalayan blackberry and Pacific willow (Ellis 2001). The disturbance in the watershed continues with road expansion and water management (Ellis 2001).

In the action area for the proposed project, the environmental baseline has been further degraded by human activity. This area consists of large industrial shipping facilities, including berths and dense roadways. There is some riparian vegetation present in the project area, but habitat function and erosion control would be increased with more planting in the riparian area. The industrialization of this area also contributes to the degraded conditions of the Willamette River, including reduced water quality, increased water temperature, altered timing and quantity of runoff, decreased riparian cover, and habitat refugia.

2.1.5 Analysis of Effects

Potential effects of the proposed action on listed salmonids include the potential for short-term construction effects, direct take, harm, or disturbance during in-water work, and an increase in turbidity during in-water work.

Turbidity from Construction

The effects of suspended sediment and turbidity on fish, as reported in the literature, range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorus fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish are the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd, 1987).

Turbidity caused by this project from pile removal, pile installation and general construction activities is expected to be minor, local, and short-term. No equipment access will be required below OHW.

Pile Driving

Pile driving often generates intense sound pressure waves that can injure or kill fish (Reyff 2003, Abbott and Bing-Sawyer 2002, Caltrans 2001, Longmuir and Lively 2001, Stotz and Colby 2001). The type and size of the pile, the firmness of the substrate into which the pile is being driven, the depth of water, and the type and size of the pile-driving hammer all influence the sounds produced during pile driving. Sound pressure is positively correlated with the size of the pile because more energy is required to drive larger piles. Wood and concrete piles produce lower sound pressures than hollow steel piles of a similar size, and may be less harmful to fishes. Firmer substrates require more energy to drive piles and produce more intense sound pressures. Sound attenuates more rapidly with distance from the source in shallow than in deep water (Rogers and Cox 1988). Impact hammers produce intense, sharp spikes of sound that can easily reach levels that harm fishes, and the larger hammers produce more intense sounds. Vibratory hammers, on the other hand, produce sounds of lower intensity, with a rapid repetition rate.

Sound pressure levels (SPLs) greater than 150 decibels (dB) root mean square (RMS) produced when using an impact hammer to drive a pile have been shown to affect fish behavior and cause physical harm when peak SPLs exceed 180 dB (re: 1 microPascal). Surrounding the pile with a bubble curtain can attenuate the peak SPLs by approximately 20 dB and is equivalent to a 90% reduction in sound energy. However, a bubble curtain may not bring the peak and RMS SPLs

below the established thresholds, injuring or killing fish. Without a bubble curtain, SPLs from driving 12-inch diameter steel pilings, measured at 10 meters (m), will be approximately 205 dB_{peak} (Pentec 2003) and 185 dB_{rms}. With a bubble curtain, SPLs are approximately 185 dB_{peak} and 165 dBrms. Using the spherical spreading model to calculate attenuation of the pressure wave (TL = 50*log(R1/R2)), physical injury to sensitive species and life-history stages may occur up to 18 m from the pile driver, and behavioral effects up to 56 m. Studies on pile driving and underwater explosions suggest that, besides attenuating peak pressure, bubble curtains also reduce the impulse energy and, therefore, the potential for injury (Keevin 1998). Because sound pressure attenuates more rapidly in shallow water (Rogers and Cox 1988), it may have fewer deleterious effects there.

Fish respond differently to sounds produced by impact hammers than they do to sounds produced by vibratory hammers. Fish consistently avoid sounds like those of a vibratory hammer (Enger *et al.* 1993; Dolat 1997; Knudsen *et al.* 1997; Sand *et al.* 2000) and appear not to habituate to these sounds, even after repeated exposure (Dolat, 1997; Knudsen *et al.* 1997). On the other hand, fish may respond to the first few strikes of an impact hammer with a 'startle' response, but then the startle response wanes and some fish remain within the potentially-harmful area (Dolat 1997). Compared to impact hammers, vibratory hammers make sounds that have a longer duration (minutes vs. milliseconds) and have more energy in the lower frequencies (15-26 Hz vs.100-800 Hz) (Würsig, *et al.* 2000; Carlson *et al.* 2001; Nedwell and Edwards 2002).

Piles will be driven with an impact hammer. NOAA Fisheries expects few salmonids to be present during the in-water work period due to run timing and elevated water temperatures. A sound attenuation device should be used when driving piles if piles are proofed or driven with an impact hammer to further minimize impacts to listed salmonids during construction.

2.1.6 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 effects to listed species than presently occurs. Between 1990 and 2000, the population of Multnomah County increased by 20.4%.[1] Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, increasing as population density rises. As the human population in the state continues to grow, demand for actions

[1] U.S. Census Bureau, State and County Quickfacts, Columbia County, Oregon. Available at http://quickfacts.census.gov/

similar to the subject project likely will continue to increase as well. Each subsequent action may have only a small incremental effect, but taken together they may have a significant effect that would further degrade the watershed's environmental baseline and undermine the improvements in habitat conditions necessary for listed species to survive and recover.

2.1.7 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.

These conclusions are based on the following considerations: (1) The work will be completed during the recommended in-water work window of June 15 to September 15, when the fewest numbers of listed species are likely to be present; (2) any increases in sedimentation and turbidity in the project area will be minor, local, and short-term; (3) best management practices will be followed for all construction activities; and (4) with minimization measures incorporated into the project design, the proposed action is not likely to impair properly functioning habitat, or retard the long-term progress of impaired habitat toward proper functioning condition essential to the long-term survival and recovery at the population or ESU scale.

2.1.8 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

The ESA at section 9 [16 USC 1538] prohibits take of endangered species. The prohibition of take is extended to threatened anadromous salmonids by section 4(d) rule [50 CFR 223.203]. Take is defined by the statute as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." [16 USC 1532(19)] Harm is defined by regulation as "an act which actually kills or injures fish or wildlife. Such an act may include significant habitat modification or degradation which actually kills or injures fish or wildlife by significantly impairing essential behavior patterns, including, breeding, spawning, rearing, migrating, feeding or sheltering." [50 CFR 222.102] Harass is defined as "an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering." [50 CFR 17.3] Incidental take is defined as "takings that

result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant." [50 CFR 402.02] The ESA at section 7(o)(2) removes the prohibition from any incidental taking that is in compliance with the terms and conditions specified in a section 7(b)(4) incidental take statement [16 USC 1536].

An incidental take statement specifies the impact of any incidental taking of listed species. It also provides reasonable and prudent measures that are necessary to minimize the effects of take and sets forth non-discretionary 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 actions covered by this Opinion are reasonably certain to result in incidental take of listed species present in the action area because of potential adverse effects from turbidity due to construction and sound effect from pile driving. Even though NOAA Fisheries expects some low level of incidental take to occur due to harassment and harm from construction activities caused by the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, NOAA Fisheries designates the expected 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 within the action area. The action area is a portion of the Columbia Slough, including the streambed, streambank, water column, and adjacent riparian zone, 100 feet upstream and 100 feet downstream of the construction area at Columbia Slough mile 5.2.

2.2.2 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 adhere to the terms and conditions of the incidental take statement through enforceable terms added to the document authorizing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(a)(2) may lapse.

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. Ensure completion of a comprehensive monitoring and reporting program to confirm that this Opinion is meeting its objective of minimizing take from permitted activities.

2. Avoid or minimize incidental take from construction-related activities by applying permit conditions that require completion of construction and operation and maintenance actions with minimum harm to aquatic and riparian systems.

2.2.3 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.

1. To implement reasonable and prudent measure #1 (monitoring), the COE shall ensure that:

   a. Salvage notice. The following notice is included as a permit condition:

      > NOTICE. If a sick, injured or dead specimen of a threatened or endangered species is found, the finder must notify the Vancouver Field Office of NOAA Fisheries Law Enforcement at 360.418.4246. The finder must take care in handling of sick or injured specimens to ensure effective treatment, and in handling dead specimens to preserve biological material in the best possible condition for later analysis of cause of death. The finder also has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not disturbed unnecessarily.

   b. Written planning requirements. Before beginning any work below bankfull elevation,[2] the permittee will provide a copy of the written plans for site restoration and pollution and erosion control to the Oregon State Habitat Office of NOAA Fisheries at the following address. Plan requirements are described below.

[2] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such average bank height, scour lines and vegetation limits.

Director, Oregon State Habitat Office
Habitat Conservation Division
National Marine Fisheries Service
Attn: 2003/01146
525 NE Oregon Street
Portland, OR 97232

c. Implementation monitoring report required. The permittee submits an implementation monitoring report to the COE and to NOAA Fisheries, at the address below, within 120 days of completing all in-water work. The monitoring report will describe the permittee's success meeting his or her permit conditions.
   i. If the in-water work will not be completed by January 31 following the year during which consultation was completed, the permittee shall submit a report to the COE and to NOAA Fisheries by January 31 saying why the in-water work was not complete.
   ii. If the monitoring report or explanation of why work was not completed is not received by the COE and NOAA Fisheries by January 31, NOAA Fisheries may consider that a modification of the action that causes an effect on listed species not previously considered and causes the incidental take statement of the Opinion to expire.
   iii. Submit a copy of the monitoring report or explanation of why work was not completed to the Oregon State Habitat Office of NOAA Fisheries, at the address above.

d. Implementation monitoring report contents. Each 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 7-minute quadrangle map.
      (3) COE contact person.
      (4) Starting and ending dates for work completed.
   ii. Habitat conditions. Photos of habitat conditions at the project and any compensation site or sites, before, during, and after project completion.[3]
      (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. Project data.
      (1) Work cessation. Dates work ceased due to high flows, if any.

[3] 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.

(2) Fish screen. Evidence of compliance with NOAA Fisheries' fish screen criteria.

(3) Pollution control. A summary of pollution and erosion control inspections, including any erosion control failure, contaminant release, and correction effort.

(4) Pilings.

(a) Number and type of pilings removed, including the number of pilings (if any) that broke during removal.

(b) Number, type, and diameter of any pilings installed (*e.g.*, untreated wood, treated wood, hollow steel).

(c) Description of how pilings were installed and any sound attenuation measures used..

(5) Site preparation.

(a) Total cleared area – riparian and upland.

(b) Total new impervious area.

(6) Road construction, repairs and improvements. The justification for any new permanent road crossing design (*i.e.*, road realignment, full span bridge, streambed simulation, or no-slope design culvert).

(7) Site restoration. Photo or other documentation that site restoration performance standards were met.

e. Annual report on site restoration and compensatory mitigation monitoring. In addition to the 120-day implementation report, the permittee will submit an annual report to the COE and NOAA Fisheries by December 31 that includes the date of each visit to a restoration site, site conditions on that date, and any corrective action taken as a result of that visit. Reporting will continue from year to year until the COE certifies that site restoration or compensatory mitigation performance standards have been met.

f. Reinitiation contact. To reinitiate consultation, contact the Oregon State Habitat Office of NOAA Fisheries, at the address above.

2. To implement reasonable and prudent measure #2 (construction-related activities), the COE shall:

a. Minimum area. Construction impacts must be confined to the minimum area necessary to complete the project.

b. Timing of in-water work. Work below ordinary high water must be completed during the work window of June 15 to September 15, unless otherwise approved in writing by NOAA Fisheries.

c. Cessation of work. Project operations must cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage.

d. Fish passage. Passage must be provided for any adult or juvenile salmonid species present in the project area during construction, unless passage did not previously exist, or as otherwise approved in writing by NOAA Fisheries. After

construction, adult and juvenile passage must be provided for the life of the project.

e. Pollution and erosion control plan. A pollution and erosion control plan must be prepared and carried out to prevent pollution caused by surveying or construction operations. Submit a copy of this plan prior to construction.

i. Contents. The pollution and erosion control plan must contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.

(1) The name and address of the person responsible for accomplishment of the pollution and erosion control plan.

(2) Practices to prevent erosion and sedimentation associated with access roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations, staging areas, and roads being decommissioned.

(3) Practices to confine, remove and dispose of excess concrete, cement, grout, and other mortars or bonding agents, including measures for washout facilities.

(4) A description of any regulated or hazardous products or materials that will be used for the project, including procedures for inventory, storage, handling, and monitoring.

(5) A spill containment and control plan with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.

(6) 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. Monitor instream turbidity and inspect all erosion controls daily during the rainy season, weekly during the dry season, or more often as necessary, to ensure the erosion controls are working adequately.[4]

(1) If monitoring or inspection shows that the erosion controls are ineffective, immediately mobilize work crews to repair, replace, or reinforce controls as necessary.

(2) Remove sediment from erosion controls before it reaches 1/3 of the exposed height of the control.

[4] 'Working adequately' means that project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream of the turbidity causing activity.

f. Construction discharge water. All discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) must be treated as follows.

i. Water quality. Design, build, and maintain facilities to collect and treat all construction and drilling discharge water, using the best available technology applicable to site conditions, to remove debris, nutrients, sediment, petroleum products, metals, and other pollutants likely to be present.

ii. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities may not exceed 4 feet per second, and the maximum size of any aperture may not exceed one inch.

iii. Pollutants. Do not allow pollutants such as green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24-hours to contact any wetland or the 2-year floodplain.

iv. Drilling discharge. All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, must be completely isolated to prevent drilling fluids or other wastes from entering the stream.

(1) All drilling fluids and waste must be completely recovered then recycled or disposed to prevent entry into flowing water.

(2) Drilling fluids must be recycled using a tank instead of drill recovery/recycling pits, whenever feasible.

(3) When drilling is completed, try to remove the remaining drilling fluid from the sleeve (*e.g.*, by pumping) to reduce turbidity when the sleeve is removed.

g. Piling installation. Projects that require installation of pilings must follow these conditions.

i. Minimize the number and diameter of pilings, as feasible.

ii. Drive each piling as follows to minimize the use of force and resulting sound pressure.

(1) Pile driving in compliance with all other relevant terms and conditions may occur during the in-water work period without isolation of the in-water work area.

(2) When impact drivers will be used to install a pile, use the smallest driver and the minimum force necessary to complete the job. Whenever feasible, use a drop hammer or a hydraulic impact hammer, and set the drop height to the minimum necessary to drive the piling.

(3) When using an impact hammer to drive or proof steel piles, one of the following sound attenuation devices must be used to reduce sound pressure levels by 20 dB.

(a) Place a block of wood or other sound dampening material between the hammer and the piling being driven.

(b) If currents are 1.7 miles per hour or less, surround the piling being driven by an unconfined bubble curtain that

will distribute small air bubbles around 100% of the piling perimeter for the full depth of the water column.[5]

(c) If currents greater than 1.7 miles per hour, surround the piling being driven by a confined bubble curtain (*e.g.*, a bubble ring surrounded by a fabric or metal sleeve) that will distribute air bubbles around 100% of the piling perimeter for the full depth of the water column.

(d) Written approval of an alternative sound attenuation plan may be requested, provided the plan will maintain sound pressure levels below 150dB rms (re: 1 micro Pascal) for a minimum of 50% of the driver strikes, and peak sound pressure levels below 180 dB rms (re: 1 micro Pascal) for all strikes.

h. Piling removal. If a temporary or permanent piling will be removed, the following conditions apply.

i. Dislodge the piling with a vibratory hammer.

ii. Once loose, place the piling onto the construction barge or other appropriate dry storage site.

iii. If a treated wood piling breaks during removal, either remove the stump by breaking or cutting 3 feet below the sediment surface or push the stump in to that depth, then cover it with a cap of clean substrate appropriate for the site.

iv. Fill the holes left by each piling with clean, native sediments, whenever feasible.

i. Treated wood. If treated wood pilings will be removed, the following conditions apply.

i. Removal. Projects that require removal of treated wood must use the following precautions.

(1) Ensure that, to the extent feasible, no treated wood debris falls into the water. If treated wood debris does fall into the water, remove it immediately.

(2) Dispose of all treated wood debris removed during a project, including treated wood pilings, at an upland facility approved for hazardous materials of this classification. Do not leave a treated wood piling in the water or stacked on the streambank.

[5] For guidance on how to deploy an effective, economical bubble curtain, see, Longmuir, C. and T. Lively, Bubble Curtain Systems for Use During Marine Pile Driving, Fraser River Pile and Dredge LTD, 1830 River Drive, New Westminster, British Columbia, V3M 2A8, Canada. Recommended components include a high volume air compressor that can supply more than 100 pounds per square inch at 150 cubic feet per minute to a distribution manifold with 1/16 inch diameter air release holes spaced every 3/4 inch along its length. An additional distribution manifold is needed for each 35 feet of water depth.

j. Preconstruction activity. The following actions must be completed before significant[6] alteration of the project area.

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).[7]

(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.

k. Heavy Equipment. Use of heavy equipment is restricted as follows.

i. Choice of equipment. When heavy equipment will be used, the equipment selected must have the least adverse effects on the environment (*e.g.*, minimally-sized, low ground pressure equipment).

ii. Equipment operating area. Equipment will be operated from existing railroad tracks or the stream bank. No equipment will access the waterway below OHW.

iii. Vehicle and material staging. Store construction materials, and fuel, operate, maintain and store vehicles as follows.

(1) To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.

(2) Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage in a vehicle staging area placed 150 feet or more from any stream, waterbody, or wetland, unless otherwise approved in writing by NOAA Fisheries.

(3) Inspect all vehicles operated within 150 feet of any stream, waterbody or wetland daily for fluid leaks before leaving the vehicle staging area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by COE or NOAA Fisheries.

(4) Before operations begin and as often as necessary during operation, steam clean all equipment that will be used below

[6] 'Significant' means an effect can be meaningfully measured, detected or evaluated.

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

ordinary high water until all visible external oil, grease, mud, and other visible contaminates are removed.

(5) Diaper all stationary power equipment (*e.g.*, generators, cranes, stationary drilling equipment) operated within 150 feet of any stream, waterbody, or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or waterbody.

l. Site preparation. Native materials must be conserved on site for site restoration.

i. If possible, leave native materials where they are found.

ii. If materials are moved, damaged or destroyed, replace them with a functional equivalent during site restoration.

iii. Stockpile all large wood[8] taken from below ordinary high water and from within 150 feet of a stream, waterbody or wetland, native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site restoration.

iv. All large wood taken from the riparian zone must be placed back in the riparian zone or stream as part of site restoration.

m. Isolation of in-water work area and capture and release. Isolation of any in-water work areas and/or capture, release and handling of listed species is not authorized.

n. Earthwork. Any earthwork, including drilling, excavation, dredging, filling, and compacting, must be completed as quickly as possible.

i. Site stabilization. Stabilize all disturbed areas, including obliteration of temporary roads, following any break in work unless construction will resume within 4 days.

ii. Drilling and sampling. If drilling, boring or jacking is used, the following conditions apply.

(1) Isolate drilling operations in wetted stream channels using a steel pile, sleeve or other appropriate isolation method to prevent drilling fluids from contacting water.

(2) If it is necessary to drill through a bridge deck, use containment measures to prevent drilling debris from entering the channel.

(3) If directional drilling is used, the drill, bore, or jack hole must span the channel migration zone and any associated wetland.

(4) Sampling and directional drill recovery/recycling pits, and any associated waste or spoils must be completely isolated from surface waters, off-channel habitats and wetlands. All waste or spoils must be covered if precipitation is falling or imminent. All

[8] '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 channel 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).

drilling fluids and waste must be recovered and recycled or disposed to prevent entry into flowing water.

(5) If a drill boring conductor breaks and drilling fluid or waste is visible in water or a wetland, all drilling activity must cease pending written approval from NOAA Fisheries to resume drilling.

o. Site restoration plan. A site restoration plan must be prepared and carried out to ensure that all streambanks, soils, and vegetation disturbed by the project are cleaned up and restored as follows. Submit a copy of this plan prior to construction.

i. General considerations.

(1) Restoration goal. The goal of site restoration is renewal of habitat access, water quality, production of habitat elements (*e.g.*, large wood), channel conditions, flows, watershed conditions and other ecosystem processes that form and maintain productive fish habitats.

(2) Streambank shaping. Restore damaged streambanks to a natural slope, pattern and profile suitable for establishment of permanent woody vegetation, unless precluded by pre-project conditions (*e.g.*, a natural rock wall).

(3) Revegetation. Replant each area requiring revegetation before the first April 15 following construction. Use a diverse assemblage of species native to the project area or region, including grasses, forbs, shrubs and trees. Noxious or invasive species may not be used.

(4) Stockpiled materials. Use as much as possible of the large wood, native trees, native vegetation, topsoil, and native channel material that was stockpiled during site preparation.

(5) Pesticides. Take of ESA-listed species caused by any aspect of pesticide use is not included in the exemption to the ESA take prohibitions provided by this incidental take statement. Pesticide use must be evaluated in an individual consultation, although mechanical or other methods may be used to control weeds and unwanted vegetation.

(6) Fertilizer. Do not apply surface fertilizer within 50 feet of any stream channel.

(7) Fencing. Install fencing as necessary to prevent access to revegetated sites by livestock or unauthorized persons.

ii. Plan contents. Include each of the following elements.

(1) Responsible person. The name and address of the person responsible for meeting each component of the site restoration requirements, including providing and managing any financial assurances and monitoring necessary to ensure restoration success.

(2) Baseline information. This information may be obtained from existing sources (*e.g.*, land use plans, watershed analyses, subbasin plans), where available.
   (a) A functional assessment of adverse effects, *i.e.*, the location, extent and function of the riparian and aquatic resources that will be adversely affected by construction and operation of the project.
   (b) The location and extent of resources surrounding the restoration site, including historic and existing conditions.

(3) Goals and objectives. Restoration goals and objectives that describe the extent of site restoration necessary to offset adverse effects of the project, by aquatic resource type.

(4) Performance standards. Use these standards to help design the plan and to assess whether the restoration goal is met. While no single criterion is sufficient to measure success, the intent is that these features should be present within reasonable limits of natural and management variation.
   (a) Human and livestock disturbance, if any, is confined to small areas necessary for access or other special management situations.
   (b) Areas with signs of significant past erosion are completely stabilized and healed; bare soil spaces are small and well-dispersed.
   (c) Soil movement, such as active rills and soil deposition around plants or in small basins, is absent or slight and local.
   (d) Native woody and herbaceous vegetation, and germination microsites, are present and well distributed across the site.
   (e) Plants have normal, vigorous growth form, and a high probability of remaining vigorous, healthy and dominant over undesired competing vegetation.
   (f) Vegetation structure is resulting in rooting throughout the available soil profile.
   (g) Plant litter is well distributed and effective in protecting the soil with few or no litter dams present.
   (h) Few upland plants are in valley bottom locations, and a continuous corridor of shrubs and trees provide shade for the entire streambank.
   (i) Streambanks are stable, well vegetated, and protected at margins by roots that extend below baseflow elevation, or by coarse-grained alluvial debris.

(5) Work plan. Develop a work plan with sufficient detail to include a description of the following elements, as applicable.
   (a) Water supply source, if necessary.

(b) Boundaries for the restoration area.
(c) Restoration methods, timing, and sequence.
(d) Geomorphology and habitat features of stream or other open water.
(e) Site management and maintenance requirements, including a plan to control exotic invasive vegetation.
(f) Elevation and slope of the restoration area to ensure they conform with required elevation and hydrologic requirements of target plant species.
(g) Woody native vegetation appropriate to the restoration site.[9] This must be a diverse assemblage of species that are native to the project area or region, including grasses, forbs, shrubs and trees. This may include allowances for natural regeneration from an existing seed bank or planting.

(6) Five-year monitoring and maintenance plan.
(a) A schedule to visit the restoration site annually for 5 years or longer as necessary to confirm that the performance standards are achieved. Despite the initial 5-year planning period, site visits and monitoring must continue from year-to-year until the COE certifies that site restoration performance standards have been met.
(b) During each visit, inspect for and correct any factors that may prevent attainment of performance standards (*e.g.*, low plant survival, invasive species, wildlife damage, drought).
(c) Keep a written record to document the date of each visit, site conditions and any corrective actions taken.

3. MAGNUSON-STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT

3.1 Background

The 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)).

[9] Use references sites to select vegetation for the mitigation site whenever feasible. Historic reconstruction, vegetation models, or other ecologically-based methods may also be used as appropriate.

- 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 1.3 of this Opinion. The action area includes habitats that have been designated as EFH for various life-history stages of 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 will result in short-term adverse effects to a variety of habitat parameters. NOAA Fisheries believes that the proposed action will cause a minor, short-term degradation of anadromous salmonid habitat due to increases in turbidity and sound effects from pile driving. Minimization measures will be incorporated into the construction methods to reduce adverse impacts to EFH.

3.5 Conclusion

NOAA Fisheries concludes that the proposed action will adversely affect the EFH for 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 recommendations.

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)).

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