



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
West Coast Region  
1201 NE Lloyd Boulevard, Suite 1100  
PORTLAND, OR 97232-1274

**Refer to NMFS No:**  
**WCRO-2021-00709**

December 2, 2021

Jacalen Printz  
Chief, Regulatory Division  
Dep't of Army, Corps of Engineers  
P.O. Box 3755  
Seattle, Washington 98124-3755

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Clearwater Moorage Upgrade; COE # NWS-2020-586 Columbia River, Coal Creek Slough, Longview, Washington, HUC 170800030701.

Dear Ms. Printz:

This letter responds to your April 1, 2021, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the subject action. Your request qualified for our expedited review and analysis because it met our screening criteria and contained all required information on, and analysis of, your proposed action and its potential effects to listed species and designated critical habitat.

Thank you, also, for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)) for this action.

We reviewed the U.S. Army Corps of Engineers' (COE's) consultation request and related initiation package. Where relevant, we have adopted the information and analyses you have provided and/or referenced but only after our independent, science-based evaluation confirmed they meet our regulatory and scientific standards.

Specifically, we are incorporating by reference the following sections:

- Section 1.1 Background and Project Purpose
- Section 2 Environmental Baseline
- Section 3 Proposed Action
- Section 4.2 Aquatic Portion of the Action Area
- Section 5 Status/Presence of Federally Listed Species and Designated Critical Habitat in the Action Area
- Section 6 Effects of the Proposed Action
- Section 7 Cumulative Effects,
- Section 8 Effects Determinations; and
- Section 10 References

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We supplement these sections with additional information and analyses where necessary to articulate the rationale for our jeopardy and adverse modification analyses, and to support our conclusions that the proposed action will not jeopardize or adversely modify designated critical habitats of the NMFS jurisdictional species considered herein.

NMFS relied on the COE's consultation request and related initiation package prepared by the applicant, Clearwater LLC, the Memorandum for the Services submitted by the COE, and an exchange of information occurring electronically between the COE project manager, Evan Carnes, and the NMFS consulting staff member, Scott Anderson, including a revision of the Not Likely to Adversely Affect (NLAA) determinations for designated critical habitat to Likely to Adversely Affect (LAA), on May 13, 2021.

The proposed action is described at BA page 3, which describes piles to be removed and re-installed, removal of an old dock and installation of a new dock, installation methods, minimization measures, and project timing. Two steel pilings (one 12-inch diameter and one 16-inch diameter) would be removed and reinstalled approximately 5 feet from their existing locations to facilitate effective moorage operations. An existing 25-foot long, 4-foot wide (100 square foot [sf]) steel ramp, 234-sf floating dock, and two 12-inch diameter steel support pilings would be removed by a marine barge/crane and disposed of at an upland facility. Work to remove and relocate piles would be conducted with a vibratory hammer from a barge. A new five-foot wide, 45-foot long, fully grated ramp and a new 10- by 10-foot floating dock would be installed with a marine barge/crane. The new dock and ramp would utilize existing piles. Vibratory pile driving would occur in one day. The project will result in a 9 sf decrease in overwater coverage, and permanent removal of two, sixteen-inch wood piles.

The proposed action also includes the installation of a new, 174-foot long sheet-pile bulkhead. The new bulkhead would be placed entirely above the ordinary high water line (OHWL), thus would not require in-water work.

The proposed action construction would occur during the November 1 through February 28 work window.

We examined the status of each species that would be adversely affected by the proposed action to inform the description of the species' "reproduction, numbers, or distribution" as described in 50 CFR 402.02. We also examined the condition of critical habitat throughout the designated area and discuss the function of the physical or biological features (PBFs) essential to the conservation of the species that create the conservation value of that habitat. The BA described the status of the species and critical habitats that occur in the action area beginning on Page 9, which we adopt in its entirety, and supplement with information in Tables 1 and 2, below. The BA also provided a determination of effects of the action on those species and critical habitats, at section 8. We do not agree with all of the determinations on page 11; therefore, based on species presence information (Attachment 1) we again supplement that section with the information in Tables 1 and 2, below.<sup>1</sup> NMFS includes in this table one additional species (Upper Willamette

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<sup>1</sup> The BA's effect determination was "not likely to adversely affect" for all critical habitats, however the COE and NMFS agreed on the record that new permanent effects from this project in essential fish habitat and designated critical habitat are adverse despite the limited physical scale of this habitat alteration.

River Chinook salmon) which the BA identified as not likely to be adversely affected, but which NMFS considers likely to be adversely affected.

Table 1 provides a summary of listing and recovery plan information, status summaries and limiting factors for the species addressed in this biological opinion. More information can be found in recovery plans and status reviews for these species at <https://www.fisheries.noaa.gov/national/endangered-species-conservation/recovery-species-under-endangered-species-act>. Additional information (e.g., abundance estimates) that has become available since the latest status reviews and technical support documents also comprises the best scientific and commercial data available and has also been summarized in the following sections.

Acronyms appearing in the table include DPS (Distinct Population Segment), ESU (Evolutionarily Significant Unit), ICTRT (Interior Columbia Technical Recovery Team), MPG (Multiple Population Grouping), NWFSC (Northwest Fisheries Science Center), TRT (Technical Recovery Team), and VSP (Viable Salmonid Population).

Table 2 summarizes the status of designated critical of these species, briefly presenting the condition and trends of the essential PBFs of that habitat throughout the designated areas. These features are essential to the conservation of the ESA-listed species because they support one or more of the species' life stages (e.g., sites with conditions that support spawning, rearing, migration and foraging).

**Table 1** Listing classification and date, recovery plan reference, most recent status review, status summary, and limiting factors for each species considered in this opinion.

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Lower Columbia River Chinook salmon	Threatened 6/28/05	NMFS 2013	NWFSC 2015	This ESU comprises 32 independent populations. Twenty-seven populations are at very high risk, 2 populations are at high risk, one population is at moderate risk, and 2 populations are at very low risk. Overall, there was little change since the last status review in the biological status of this ESU, although there are some positive trends. The 2015 status review noted increases in abundance were about 70% of the fall-run populations and decreases in hatchery contribution were noted for several populations. Relative to baseline VSP levels identified in the recovery plan, there has been an overall improvement in the status of a number of fall-run populations, although most are still far from the recovery plan goals.	<ul style="list-style-type: none"> <li>• Reduced access to spawning and rearing habitat</li> <li>• Hatchery-related effects</li> <li>• Harvest-related effects on fall Chinook salmon</li> <li>• An altered flow regime and Columbia River plume</li> <li>• Reduced access to off-channel rearing habitat</li> <li>• Reduced productivity resulting from sediment and nutrient-related changes in the estuary</li> <li>• Contaminant</li> </ul>
Upper Columbia River spring-run Chinook salmon	Endangered 6/28/05	Upper Columbia Salmon Recovery Board 2007	NWFSC 2015	This ESU comprises four independent populations. Three are at high risk and one is functionally extirpated. Current estimates of natural origin spawner abundance increased relative to the levels observed in the prior review for all three extant populations, and productivities were higher for the Wenatchee and Entiat populations and unchanged for the Methow population. However, abundance and productivity remained well below the viable thresholds called for in the Upper Columbia Recovery Plan for all three populations.	<ul style="list-style-type: none"> <li>• Effects related to hydropower system in the mainstem Columbia River</li> <li>• Degraded freshwater habitat</li> <li>• Degraded estuarine and nearshore marine habitat</li> <li>• Hatchery-related effects</li> <li>• Persistence of non-native (exotic) fish species</li> <li>• Harvest in Columbia River fisheries</li> </ul>
Snake River spring/summer-run Chinook salmon	Threatened 6/28/05	NMFS 2017a	NWFSC 2015	This ESU comprises 28 extant and four extirpated populations. All except one extant population (Chamberlin Creek) are at high risk. Recent estimates of natural-origin and total (natural- plus hatchery-origin) spawners show substantial downward trends in abundance for most of the populations when compared to the 2009 to 2013 period, which informed the 2015	<ul style="list-style-type: none"> <li>• Degraded freshwater habitat</li> <li>• Effects related to the hydropower system in the mainstem Columbia River,</li> <li>• Altered flows and degraded water quality</li> <li>• Harvest-related effects</li> <li>• Predation</li> </ul>

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Upper Willamette River Chinook salmon	Threatened 6/28/05	NMFS 2011	NWFSC 2015	<p>status review. These declines may be the result of relatively low ocean survivals in recent years. This ESU comprises seven populations. Five populations are at very high risk, one population is at moderate risk (Clackamas River) and one population is at low risk (McKenzie River). Information available for the 2015 status review indicates the fraction of hatchery origin fish in all populations remains high (even in Clackamas and McKenzie populations). The proportion of natural origin spawners improved in the North and South Santiam basins, but is still well below identified recovery goals. Abundance levels for five of the seven populations remain well below their recovery goals. Of these, the Calapooia River may be functionally extinct and the Molalla River remains critically low. Abundances in the North and South Santiam rivers experienced declines since 2015. The Clackamas and McKenzie populations have previously been viewed as natural population strongholds, but have both experienced declines in abundance despite having access to much of their historical spawning habitat. Overall, the ESU was determined to be at moderate risk.</p> <p>This ESU has one extant population. Historically, large populations of fall Chinook salmon spawned in the Snake River upstream of the Hells Canyon Dam complex. The extant population is at moderate risk for both diversity and spatial structure and abundance and productivity. The overall viability rating for this population is ‘viable.’ Overall, the status of Snake River fall Chinook salmon has clearly improved compared to the time of listing and compared to prior status reviews. The single extant population in the ESU is currently meeting the criteria for a rating of ‘viable’ developed by the ICTRT, but the ESU as a whole is not meeting the recovery goals</p>	<ul style="list-style-type: none"> <li>• Degraded freshwater habitat</li> <li>• Degraded water quality</li> <li>• Increased disease incidence</li> <li>• Altered stream flows</li> <li>• Reduced access to spawning and rearing habitats</li> <li>• Altered food web due to reduced inputs of microdetritus</li> <li>• Predation by native and non-native species, including hatchery fish</li> <li>• Competition related to introduced salmon and steelhead</li> <li>• Altered population traits due to fisheries and bycatch</li> </ul>
Snake River fall-run Chinook salmon	Threatened 6/28/05	NMFS 2017b	NWFSC 2015	<p>This ESU has one extant population. Historically, large populations of fall Chinook salmon spawned in the Snake River upstream of the Hells Canyon Dam complex. The extant population is at moderate risk for both diversity and spatial structure and abundance and productivity. The overall viability rating for this population is ‘viable.’ Overall, the status of Snake River fall Chinook salmon has clearly improved compared to the time of listing and compared to prior status reviews. The single extant population in the ESU is currently meeting the criteria for a rating of ‘viable’ developed by the ICTRT, but the ESU as a whole is not meeting the recovery goals</p>	<ul style="list-style-type: none"> <li>• Degraded floodplain connectivity and function</li> <li>• Harvest-related effects</li> <li>• Loss of access to historical habitat above Hells Canyon and other Snake River dams</li> <li>• Impacts from mainstem Columbia River and Snake River hydropower systems</li> <li>• Hatchery-related effects</li> <li>• Degraded estuarine and nearshore habitat.</li> </ul>

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Columbia River chum salmon	Threatened 6/28/05	NMFS 2013	NWFS 2015	<p>described in the recovery plan for the species, which require the single population to be “highly viable with high certainty” and/or will require reintroduction of a viable population above the Hells Canyon Dam complex.</p> <p>Overall, the status of most chum salmon populations is unchanged from the baseline VSP scores estimated in the recovery plan. A total of 3 of 17 populations are at or near their recovery viability goals, although under the recovery plan scenario these populations have very low recovery goals of 0. The remaining populations generally require a higher level of viability and most require substantial improvements to reach their viability goals. Even with the improvements observed during the last five years, the majority of populations in this ESU remain at a high or very high risk category and considerable progress remains to be made to achieve the recovery goals.</p>	<ul style="list-style-type: none"> <li>• Degraded estuarine and nearshore marine habitat</li> <li>• Degraded freshwater habitat</li> <li>• Degraded stream flow as a result of hydropower and water supply operations</li> <li>• Reduced water quality</li> <li>• Current or potential predation</li> <li>• An altered flow regime and Columbia River plume</li> <li>• Reduced access to off-channel rearing habitat in the lower Columbia River</li> <li>• Reduced productivity resulting from sediment and nutrient-related changes in the estuary</li> <li>• Juvenile fish wake strandings</li> <li>• Contaminants</li> </ul>
Lower Columbia River coho salmon	Threatened 6/28/05	NMFS 2013	NWFS 2015	<p>Of the 24 populations that make up this ESU, 21 populations are at very high risk, 1 population is at high risk, and 2 populations are at moderate risk. Recent recovery efforts may have contributed to the observed natural production, but in the absence of longer term data sets it is not possible to parse out these effects. Populations with longer term data sets exhibit stable or slightly positive abundance trends. Some trap and haul programs appear to be operating at or near replacement, although other programs still are far from that threshold and require supplementation with additional hatchery-origin spawners. Initiation of or improvement in the downstream juvenile facilities at Cowlitz Falls, Merwin, and North Fork Dam are likely to further improve the status of the associated upstream populations. While these and other recovery efforts have likely</p>	<ul style="list-style-type: none"> <li>• Degraded estuarine and near-shore marine habitat</li> <li>• Fish passage barriers</li> <li>• Degraded freshwater habitat: Hatchery-related effects</li> <li>• Harvest-related effects</li> <li>• An altered flow regime and Columbia River plume</li> <li>• Reduced access to off-channel rearing habitat in the lower Columbia River</li> <li>• Reduced productivity resulting from sediment and nutrient-related changes in the estuary</li> <li>• Juvenile fish wake strandings</li> <li>• Contaminants</li> </ul>

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Snake River sockeye salmon	Endangered 6/28/05	NMFS 2015	NWFSC 2015	<p>improved the status of a number of coho salmon populations, abundances are still at low levels and the majority of the populations remain at moderate or high risk. For the Lower Columbia River region land development and increasing human population pressures will likely continue to degrade habitat, especially in lowland areas. Populations in this ESU generally improved, especially in the 2013/14 and 2014/15 return years, recent poor ocean conditions contributed to more recent declines in abundance..</p> <p>This single population ESU is at very high risk dues to small population size. There is high risk across all four basic risk measures. Although the captive brood program has been successful in providing substantial numbers of hatchery produced fish for use in supplementation efforts, substantial increases in survival rates across all life history stages must occur to re-establish sustainable natural production In terms of natural production, the Snake River Sockeye ESU remains at extremely high risk although there has been substantial progress on the first phase of the proposed recovery approach – developing a hatchery based program to amplify and conserve the stock to facilitate reintroductions. Adult returns to the Sawtooth Basin crashed in 205 and natural returns have remained low.</p>	<ul style="list-style-type: none"> <li>• Effects related to the hydropower system in the mainstem Columbia River</li> <li>• Reduced water quality and elevated temperatures in the Salmon River</li> <li>• Water quantity</li> <li>• Predation</li> </ul>
Upper Columbia River steelhead	Threatened 1/5/06	Upper Columbia Salmon Recovery Board 2007	NWFSC 2015	<p>This DPS comprises four independent populations. Three populations are at high risk of extinction while 1 population is at moderate risk. Upper Columbia River steelhead populations have increased relative to the low levels observed in the 1990s, but natural origin abundance and productivity remain well below viability thresholds for three out of the four populations. Since the 2015 status review, total and natural-origin spawner abundance have declined substantially. In 2015, DPS status was at high risk driven by low abundance and</p>	<ul style="list-style-type: none"> <li>• Adverse effects related to the mainstem Columbia River hydropower system</li> <li>• Impaired tributary fish passage</li> <li>• Degraded floodplain connectivity and function, channel structure and complexity, riparian areas, large woody debris recruitment, stream flow, and water quality</li> <li>• Hatchery-related effects</li> <li>• Predation and competition</li> <li>• Harvest-related effects</li> </ul>

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Lower Columbia River steelhead	Threatened 1/5/06	NMFS 2013	NWFSC 2015	<p>productivity relative to viability objectives and diversity concerns.</p> <p>This DPS comprises 23 historical populations, 17 winter-run populations and six summer-run populations. Nine populations are at very high risk, 7 populations are at high risk, 6 populations are at moderate risk, and 1 population is at low risk. The majority of winter-run steelhead populations in this DPS continue to persist at low abundances. Hatchery interactions remain a concern in select basins, but the overall situation is somewhat improved compared to prior reviews. Summer-run steelhead populations were similarly stable, but at low abundance levels. The decline in the Wind River summer-run population is a source of concern, given that this population has been considered one of the healthiest of the summer-runs. Passage programs in the Cowlitz and Lewis basins have the potential to provide considerable improvements in abundance and spatial structure, but have not produced self-sustaining populations to date. Even with modest improvements in the status of several winter-run DIPs, none of the populations appear to be at fully viable status, and similarly none of the MPGs meet the criteria for viability.</p>	<ul style="list-style-type: none"> <li>• Degraded estuarine and nearshore marine habitat</li> <li>• Degraded freshwater habitat</li> <li>• Reduced access to spawning and rearing habitat</li> <li>• Avian and marine mammal predation</li> <li>• Hatchery-related effects</li> <li>• An altered flow regime and Columbia River plume</li> <li>• Reduced access to off-channel rearing habitat in the lower Columbia River</li> <li>• Reduced productivity resulting from sediment and nutrient-related changes in the estuary</li> <li>• Juvenile fish wake strandings</li> <li>• Contaminants</li> </ul>
Upper Willamette River steelhead	Threatened 1/5/06	NMFS 2011	NWFSC 2015	<p>This DPS has four demographically independent populations. Three populations are at low risk and one population is at moderate risk. Declines in abundance noted in the last status review continued through the period from 2010-2015 and low abundances have persisted in recent years. The causes of these declines are not well understood, although much accessible habitat is degraded and under continued development pressure. The elimination of winter-run hatchery release in the basin reduces hatchery threats, but non-native summer steelhead hatchery releases are still a concern for species diversity and a source of competition for the DPS. While the</p>	<ul style="list-style-type: none"> <li>• Degraded freshwater habitat</li> <li>• Degraded water quality</li> <li>• Increased disease incidence</li> <li>• Altered stream flows</li> <li>• Reduced access to spawning and rearing habitats due to impaired passage at dams</li> <li>• Altered food web due to changes in inputs of microdetritus</li> <li>• Predation by native and non-native species, including hatchery fish and pinnipeds</li> <li>• Competition related to introduced salmon and steelhead</li> <li>• Altered population traits due to interbreeding with hatchery origin fish</li> </ul>



Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Middle Columbia River steelhead	Threatened 1/5/06	NMFS 2009b	NWFSC 2015	<p>collective risk to the persistence of the DPS has not changed significantly in recent years, continued declines and potential negative impacts from climate change may cause increased risk in the near future.</p> <p>This DPS comprises 17 extant populations. The DPS does not currently include steelhead that are designated as part of an experimental population above the Pelton Round Butte Hydroelectric Project. The DPS did not meet the viability criteria in the MCR steelhead recovery plan in 2015 and this remains the case as a result of declines in abundance. In general, the majority of population level viability ratings remained unchanged from prior reviews for each major population group within the DPS.</p>	<ul style="list-style-type: none"> <li>• Degraded freshwater habitat</li> <li>• Mainstem Columbia River hydropower-related impacts</li> <li>• Degraded estuarine and nearshore marine habitat</li> <li>• Hatchery-related effects</li> <li>• Harvest-related effects</li> <li>• Effects of predation, competition, and disease</li> </ul>
Snake River basin steelhead	Threatened 1/5/06	NMFS 2017a	NWFSC 2015	<p>This DPS comprises 24 populations. Two populations are at high risk, 15 populations are rated as maintained, 3 populations are rated between high risk and maintained, 2 populations are at moderate risk, 1 population is viable, and 1 population is highly viable. Four out of the five MPGs are not meeting the specific objectives in the draft recovery plan based on the updated status information available for this review, and the status of many individual populations remains uncertain. A great deal of uncertainty still remains regarding the relative proportion of hatchery fish in natural spawning areas near major hatchery release sites within individual populations. Since the 2015, abundance has declined steadily.</p>	<ul style="list-style-type: none"> <li>• Adverse effects related to the mainstem Columbia River hydropower system</li> <li>• Impaired tributary fish passage</li> <li>• Degraded freshwater habitat</li> <li>• Increased water temperature</li> <li>• Harvest-related effects, particularly for B-run steelhead</li> <li>• Predation</li> <li>• Genetic diversity effects from out-of-population hatchery releases</li> </ul>

**Table 2.** Critical habitat, designation date, federal register citation, and status summary for critical habitat considered in this biological opinion.

<b>Designated Critical Habitat</b>	<b>Designation Date and Federal Register Citation</b>	<b>Critical Habitat Status Summary</b>
Lower Columbia River Chinook salmon	9/02/05 70 FR 52630	Critical habitat encompasses 10 subbasins in Oregon and Washington containing 47 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some, or high potential for improvement. We rated conservation value of HUC5 watersheds as high for 30 watersheds, medium for 13 watersheds, and low for four watersheds.
Upper Columbia River spring-run Chinook salmon	9/02/05 70 FR 52630	Critical habitat encompasses four subbasins in Washington containing 15 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some, or high, potential for improvement. We rated conservation value of HUC5 watersheds as high for 10 watersheds, and medium for five watersheds. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Snake River spring/summer-run Chinook salmon	10/25/99 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers, and all tributaries of the Snake and Salmon rivers (except the Clearwater River) presently or historically accessible to this ESU (except reaches above impassable natural falls and Hells Canyon Dam). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Upper Willamette River Chinook salmon	9/02/05 70 FR 52630	Critical habitat encompasses 10 subbasins in Oregon containing 56 occupied watersheds, as well as the lower Willamette/Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition. However, most of these watersheds have some, or high, potential for improvement. Watersheds are in good to excellent condition with no potential for improvement only in the upper McKenzie River and its tributaries (NMFS 2005). We rated conservation value of HUC5 watersheds as high for 22 watersheds, medium for 16 watersheds, and low for 18 watersheds.
Snake River fall-run Chinook salmon	10/25/99 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers, and all tributaries of the Snake and Salmon rivers presently or historically accessible to this ESU (except reaches above impassable natural falls, and Dworshak and Hells Canyon dams). Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Columbia River chum salmon	9/02/05 70 FR 52630	Critical habitat encompasses six subbasins in Oregon and Washington containing 19 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of HUC5 watersheds as high for 16 watersheds, and medium for three watersheds.

Designated Critical Habitat	Designation Date and Federal Register Citation	Critical Habitat Status Summary
Lower Columbia River coho salmon	2/24/16 81 FR 9252	Critical habitat encompasses 10 subbasins in Oregon and Washington containing 55 occupied watersheds, as well as the lower Columbia River and estuary rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of HUC5 watersheds as high for 34 watersheds, medium for 18 watersheds, and low for three watersheds.
Snake River sockeye salmon	10/25/99 64 FR 57399	Critical habitat consists of river reaches of the Columbia, Snake, and Salmon rivers; Alturas Lake Creek; Valley Creek; and Stanley, Redfish, Yellow Belly, Pettit and Alturas lakes (including their inlet and outlet creeks). Water quality in all five lakes generally is adequate for juvenile sockeye salmon, although zooplankton numbers vary considerably. Some reaches of the Salmon River and tributaries exhibit temporary elevated water temperatures and sediment loads that could restrict sockeye salmon production and survival (NMFS 2015b). Migratory habitat quality in the lower Snake River and Columbia River has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.
Upper Columbia River steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 10 subbasins in Washington containing 31 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of HUC5 watersheds as high for 20 watersheds, medium for eight watersheds, and low for three watersheds.
Lower Columbia River steelhead	9/02/05 70 FR 52630	Critical habitat encompasses nine subbasins in Oregon and Washington containing 41 occupied watersheds, as well as the lower Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of HUC5 watersheds as high for 28 watersheds, medium for 11 watersheds, and low for two watersheds.
Upper Willamette River steelhead	9/02/05 70 FR 52630	Critical habitat encompasses seven subbasins in Oregon containing 34 occupied watersheds, as well as the lower Willamette/Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. Watersheds are in good to excellent condition with no potential for improvement only in the upper McKenzie River and its tributaries (NMFS 2005). We rated conservation value of HUC5 watersheds as high for 25 watersheds, medium for 6 watersheds, and low for 3 watersheds.
Middle Columbia River steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 15 subbasins in Oregon and Washington containing 111 occupied watersheds, as well as the Columbia River rearing/migration corridor. Most HUC5 watersheds with PBFs for salmon are in fair-to-poor or fair-to-good condition (NMFS 2005). However, most of these watersheds have some or a high potential for improvement. We rated conservation value of occupied HUC5 watersheds as high for 80 watersheds, medium for 24 watersheds, and low for 9 watersheds.
Snake River basin steelhead	9/02/05 70 FR 52630	Critical habitat encompasses 25 subbasins in Oregon, Washington, and Idaho. Habitat quality in tributary streams varies from excellent in wilderness and roadless areas, to poor in areas subject to heavy agricultural and urban development (Wissmar et al. 1994). Reduced summer stream flows, impaired water quality, and reduced habitat complexity are common problems. Migratory habitat quality in this area has been severely affected by the development and operation of the dams and reservoirs of the Federal Columbia River Power System.

“Action area” means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). The BA provides a description of the action area (Section 7), which is adopted here. The action area is identified by the furthest reaching of the physical effects, in this case sound pressure waves generated during vibratory pile driving. These effects are expected to impact an area approximately 1,500 feet upstream and 1,500 feet downstream from the pile installation site on Coal Creek Slough

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02). The BA provides a discussion of the environmental baseline (Section 2.2), which is adopted here. In summary, the action area is a tidally influenced riverine environment that has been and continues to be degraded by numerous anthropogenic influences. Shoreline modifications that were made to develop the dock and adjacent industrial area decreased the extent of shallow water habitat which is critical for juvenile salmonids and their prey. Other degraded features of habitat in the action area include water quality, riparian cover, in-water structures (impaired safety of passage), ambient noise, and bank conditions. Thirteen ESA-listed species (described later in this document) utilize the action area for juvenile and adult migration; five of those species also use the area for juvenile rearing. Many of the populations utilizing the area for rearing and/or migration require substantial improvements in their abundance and productivity in order for the species to recover.

As previously mentioned, thirteen ESA-listed species utilize the action area. The life stages present that could be adversely affected include juveniles of the species and populations discussed below. Information about which populations are present in the action area, coupled with information about how individuals use the action area (e.g., migration, rearing, etc.) is described below.

**Lower Columbia River** species whose populations have natal origins upstream of the action area are those most likely to be exposed to the effects of the proposed action. These are:

- *Chinook* – relatively abundant adult migration and holding, relatively abundant juvenile rearing, and relatively abundant migrating juveniles from Upper Cowlitz, Lower Cowlitz, Coweeman, Cispus, Tilton, Toutle, Kalama, Lewis, Washougal, Sandy, White Salmon, Salmon, Clackamas, Scappoose, Hood, Upper Gorge Tributaries, and Lower Gorge Tributaries populations.
- *Chum* – peak occurrence of adult migrating and holding from Clatskanie, Clackamas, Scappoose, Cowlitz, Kalama, Lewis, Salmon Washougal, Sandy, Clackamas, Lower Gorge Tributaries and Upper Gorge Tributaries populations.

- *Coho* – peak occurrence of adult migrating and holding, and relatively abundant juvenile rearing from Scappoose, Clackamas, Lower Cowlitz, Tilton, Upper Cowlitz, Salmon, Washougal, Sandy, Clackamas, Cispus, Toutle, Coweeman, Kalama, Lewis (North and East Forks), Coweeman, Gorge Tributaries, Upper Gorge Tributaries, and Hood River populations.
- *Steelhead* – relatively abundant juvenile rearing, and juvenile migration from all populations.

#### **Mid-Columbia River**

- *Steelhead* – juvenile migration from all populations.

#### **Upper Columbia River**

- *Chinook* – relatively abundant juvenile migration from all populations.
- *Steelhead* – juvenile migration from all populations

#### **Snake River**

- *Spring/Summer Chinook* – juvenile migration from all populations
- *Fall Chinook* – relatively abundant juvenile rearing and juvenile migration from all populations<sup>2</sup>
- *Steelhead* – juvenile migration from all populations
- *Sockeye* – juvenile migration from all populations

#### **Upper Willamette River**

- *Chinook* – juvenile rearing and juvenile migration from all populations
- *Steelhead* – juvenile migration from all populations

Individual fish that rear in the action area have the greatest potential for being negatively impacted by the proposed action. Rearing is expected only among the above identified populations of the following five species:

1. Lower Columbia River Chinook,
2. Snake River Fall Chinook,
3. Lower Columbia coho,
4. Lower Columbia steelhead, and
5. Upper Willamette River Chinook.

Under the ESA, “effects of the action” are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved

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<sup>2</sup> The Snake River fall Chinook ESU is comprised of a single extant natural-origin population (Lower Snake River) and one extirpated population (Middle Snake River).

in the action (see 50 CFR 402.17). In our analysis, which describes the effects of the proposed action, we considered 50 CFR 402.17(a) and (b).

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Section 6, and that is adopted here (50 CFR 402.14(h)(3)). NMFS has evaluated this section and after our independent, science-based evaluation, determined it meets our regulatory and scientific standards. The BA describes the effects of the proposed action as:

- Underwater sound and turbidity from vibratory pile driving;
- Diminishment of critical habitat quality through the placement of a bulkhead and overwater structures.

The effects described above were evaluated for their consequences on PBFs of designated critical habitat and on listed species that occur in the action area. For example, we considered the potential for: (1) shade cast by new overwater structure to increase predation risk and modify benthic conditions; and (2) pile driving to increase suspended sediment, diminishing water quality.

The effects on features of critical habitat including reduction in benthic prey communities and predation will be small (325 sf) in area but will remain for the life of the structure. Placement of the 174-foot bulkhead above the OHWL will impede overhanging vegetation for the life of the structure. We adopt the BAs contents on effects along with supplemented information in Tables 1 and 2 below.

***Effects Associated with Structure Presence.*** Many individuals from all cohorts from the populations listed above could be briefly exposed to increased predation as a result of the small habitat alteration for the foreseeable future. This is because piscivorous fish rely on the velocity shadow of the piles and overwater structure, which will persist over the lifetime of the structure. At most, a few juveniles from each species could die each year as a result of the predation indirectly caused by the proposed action. This predation could occur among any of the populations that migrate or rear in the action area, but is most likely to occur among the smallest rearing or migrating fish. Because annual loss of individuals is expected to occur at higher levels among the smallest rearing or migrating fish, we expect that predation will occur very infrequently among larger juveniles, including Mid-Columbia steelhead, Upper Columbia species, and Snake River species. Conversely, Lower Columbia River species and Upper Willamette River Chinook are more susceptible to predation given their smaller size. Lower Columbia River chum salmon from the listed populations are typically the smallest and could experience more frequent predation than other Lower Columbia species/populations. Chum salmon juvenile migration is very rapid, so despite their relative risk based on size, the period of exposure to increased predation remains brief. Regardless of species or population, the incidence of predation over time at the overwater structure is unlikely to be sufficient to diminish any of the four viability parameters in an appreciable way.

Regarding critical habitat, the PBFs thereof, and the conservation role of the action area, the BA indicates that all effects of permanent placement of the two piles, bulkhead, and overwater

structure is likely to adversely affect critical habitat. We agree that the effects are of a character that would result in temporary changes in water quality, and have long-term effects on substrate, benthic prey, predation/passage effects, and overhanging vegetation. Shade cast by the overwater structure and piles would permanently create a loss of habitat quality. The structure and piles will create an additional, incremental but chronic, site for predation/passage risk for all future cohorts of all of the populations mentioned on pages 10 and 11 of this document. Installation of the piles and overwater structure will also shade benthic habitat which supports forage for migrating and rearing juvenile salmonids. Installation of the bulkhead inhibits riparian vegetation growth, creating a long-term degradation of overhanging vegetation. Though the increment of diminishment to critical habitat is quite small physically, given the duration of the diminishment, and the aggregating nature of individual small detriments over time, we consider the effect of the presence of the bulkhead, two piles and the 5-foot wide, 45-foot long, fully grated ramp and a new 10-by 10-foot floating dock to be adverse to rearing and migration PBFs of the designated critical habitat in the action area.

***Effects Associated with Construction Activities.*** The BA also presents the potential for behavioral effects among listed fish from vibratory pile driving. We incorporate this discussion by reference and summarize it here. The proposed vibratory pile driving is expected take about 4 total hours, but may occur over one or two days between November 1 and February 28 (2 hours each day). For species presence during the work window, we refer to the information produced by NMFS Northwest Fisheries Science Center in 2013, which is available as Attachment 1 to this document. Based on their migration and/or timing of rearing, juveniles of the following species may be affected by construction activities: Lower Columbia Chinook, Upper Columbia Chinook Snake River fall Chinook, Lower Columbia steelhead, Lower Columbia coho, Upper Willamette River steelhead, and Upper Willamette River Chinook. Adults of these species, and both adults and juveniles of the remaining species identified above will not be exposed to construction effects based on the timing of their presence in the action area.

Some individual fish from the list above are likely to be exposed to the temporary effects of the proposed action (turbidity and elevated noise). Associated effects on species (such as behavioral response and displacement), will be small and brief in duration. Vibratory pile driving 16-inch steel piles creates noise less than 182 dB<sub>SE</sub>, which is below the thresholds for onset of physical injury, but within the 150dB range that could incur short-term disruption of rearing of upstream and downstream fish passage of salmonids. However, the short duration (4 hours) and low intensity of vibratory pile installation and removal will result in negligible effects on individual fish. We do not expect these construction-related effects to rise to the level of harm.

Vibratory pile driving and removal creates a small plume of suspended sediment at the interface between the pile and the substrate. Concentration depends on the sediment size composition but is generally less than 100 milligrams per liter (Weston Solutions, 2006). Wilber and Clark (2001) show that exposure of salmonids to 10-100 milligrams per liter of suspended sediment for less than 2 hours will result in behavioral effects such as reduced visual acuity and altered swimming either toward or away from suspended sediment. The effect of pile driving suspended sediment on juvenile salmonids is minor because the size and duration of the suspended sediment plumes are an easily avoidable, extremely small fraction of the rearing habitat and rearing time of fish in the LCR.

The exposure to all construction effects (i.e., noise from vibratory pile driving as well as increased suspended sediments) is expected to cause only minor responses among exposed fish. This is because the duration and/or intensity of exposure will be insufficient to cause injury, and any behavioral responses will be brief, lasting only a few hours at most.

“Cumulative effects” are 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 (50 CFR 402.02 and 402.17(a)). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA. The BA at part 7 briefly describes non-federal cumulative effects that are likely to occur in the action area. We adopt that section here, and include the following additional information. Along with the BA’s description of ongoing and increasing uses in the Columbia River (navigation, shoreline degradation, climate change, land based degradation, and concurrent restoration actions), we note that water quality degradation via non-point sources/stormwater runoff from upland sources throughout the entire Columbia River drainage are likely to increase as human population grows over time in both Washington and Oregon, and that increasing pollutant load will be seen in the action area over time. The long term implication is that habitat conditions in the action area are likely to experience incremental but chronic diminishments from cumulative non-federal effects.

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the environmental baseline and the cumulative effects, taking into account the status of the species and designated critical habitats, to formulate the agency’s biological opinion as to whether the proposed action is likely to: (1) reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminish the value of designated or proposed critical habitat as a whole for the conservation of the species.

The status of all the listed species that are likely to be exposed to effects of the proposed action is threatened, except for Upper Columbia River Spring Chinook salmon and Snake River sockeye, which are endangered. Many of the component populations from these species that are likely to be exposed are performing poorly (viability parameters are low). The poor performance is largely due to limiting habitat factors, i.e., less available habitat than historic levels, and the remaining habitat has many degraded features. These limiting factors are prevalent throughout the habitat range, even where designated critical habitat has high conservation value, because that value is largely due to the essential conservation role that the area serves (e.g., spawning, rearing, or migration). Just as habitat is degraded across much of the designated area, it is quite degraded in the action area by anthropogenic modifications.

In this context we add the effects of the proposed action, both on species, and on critical habitat, and consider cumulative effects, to determine whether or not the action will jeopardize listed species or adversely modify designated critical habitat.

Because habitat conditions are poor in the action area, we do not expect high numbers of rearing fish from any population to be present for extended periods, and even fewer to be located



specifically within the radius where sound levels are elevated. This, coupled with the fact that sound levels associated with vibratory pile driving are low, we do not expect any injury or mortality of individuals. Similarly, the increment of additional predation that is likely to occur as an indirect consequence of the structure, though chronic and likely to affect many individuals over the projected lifetime that the structure remains in place, is again constrained by the fact that juvenile rearing is not likely to be in large numbers, and migrating fish typically pass by the area without lingering, so that numbers consumed are unlikely to be high, or to influence any particular species uniquely. Taken together, the short- and long-term reductions in population abundance as a result of predation are unlikely to appreciably alter the remaining viability parameters, regardless of which population we evaluate.

Similarly, most of the effects on critical habitat are adverse but brief enough that the PBFs (e.g., water quality) quickly regain their baseline level of function for the conservation role they are designated (rearing or migration). The exception is the chronic increment of predation risk and loss of forage, which is adverse, and is a slight further degradation of the migration and rearing value of the habitat. When we project that increment over time, we cannot discern, even when cumulative effects are considered, that the conservation role of the critical habitat is so significantly modified that it would preclude rearing entirely nor would it severely limit juvenile migration. Accordingly, we do not consider the action's effects sufficient to reach the adverse modification or destruction threshold for critical habitat.

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, the effects of other activities caused by the proposed action, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of

1. Lower Columbia Chinook
2. Upper Columbia Chinook,
3. Snake River Spring/Summer Chinook,
4. Snake River Fall Chinook
5. Upper Willamette River Chinook
6. Lower Columbia steelhead,
7. Mid Columbia River steelhead
8. Upper Columbia River
9. Snake River Steelhead
10. Upper Willamette River steelhead
11. Lower Columbia River coho
12. Columbia River chum
13. Snake River sockeye

or destroy or adversely modify their designated critical habitats.

## INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). "Incidental take" is defined by regulation 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). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this incidental take statement (ITS).

### **Amount or Extent of Take**

In the biological opinion, NMFS determined that incidental take is reasonably certain to occur as follows:

Harm resulting in injury or death associated with the presence of structure in and over salmonid rearing and migration habitat for the foreseeable future.

Take resulting from habitat disruptions cannot be predicted or easily documented by observation for a variety of reasons, including uncertainty in abundance of fish present at any given time, the variability of presence over time, and the unobservable nature of some harm, including consumption by piscivores. In these circumstances, we rely on an "extent of take" which is an observable measure causally linked to the form of take, and which can be monitored for compliance and as a re-initiation trigger. For this consultation, take in the form of harm, including injury or death from predation, is expected to occur at a low intensity for the life of the structure. The extent of take is

The harm associated with installation of 2 piles and the presence of 325 sf of overwater structure.

Take will be considered to be exceeded if more overwater structure or larger piles are installed because that would increase the area for predatory species to rely on these structures for advantage in targeting juvenile rearing and migrating salmonids for consumption.

### **Effect of the Take**

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

## **Reasonable and Prudent Measures**

“Reasonable and prudent measures” are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

The COE or the applicant shall apply the following reasonable and prudent measure to ensure that take is minimized.

1. Ensure the completion of a reporting program for the completed structure to confirm that the take exemption for the proposed action is not exceeded, and that the terms and conditions in this incidental take statement are effective in minimizing incidental take.

## **Terms and Conditions**

1. Overwater structure. Report completed dimensions of the structure to ensure it does not exceed 325 sf of overwater coverage or include additional piles.

The terms and conditions described below are non-discretionary, and the COE or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). The COE or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1. A report should be provided to:  
[projectreports.wcr@noaa.gov](mailto:projectreports.wcr@noaa.gov) and should be labeled with the NMFS tracking number WCRO-2021-00709 with attention to Scott Anderson, Washington Coast Lower Columbia Branch.

## **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. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

The COE should incorporate offsetting mitigation as conditions for all in-water permits authorized under its Section 404 authority, to protect and restore the biological integrity of the nation’s waters.

### **“Not Likely to Adversely Affect” Determinations**

The COE concluded the proposed action was NLAA eulachon (southern DPS) and North American green sturgeon (southern DPS) and that it was NLAA eulachon designated critical habitat. NMFS concurs with these determinations for the reasons described below.

Eulachon migration in the Lower Columbia River does not overlap the in-water work window; therefore, the exposure of these species to construction effects of the proposed action is discountable. Eulachon are not expected in Coal Creek Slough because spawning does not occur in Coal Creek slough, so no adults would migrate into the area where the dock is present. Larval eulachon migrate by drifting, and the presence of this structure would not impede that if they drifted into this location.

Green sturgeon are present in the Columbia River as adults and subadults late spring through summer; therefore, exposure to construction effects (which will occur sometime between November 1 and February 28) is discountable. When present, adult and subadult green sturgeon are expected to be in the main channel of the Columbia River rather than the adjacent sloughs; therefore, exposure to the presence of the structure is also discountable.

### **Eulachon Designated Critical Habitat**

The PBFs of eulachon designated critical habitat include: (1) freshwater spawning and incubation sites with water flow, quality and temperature conditions, and substrate supporting spawning and incubation; (2) freshwater and estuarine migration corridors free of obstruction and with water flow, quality and temperature conditions supporting larval and adult mobility, and with abundant prey items; and (3) nearshore and offshore marine foraging habitat with water quality and available prey, supporting juveniles and adult survival (76 FR 515).

Because eulachon are not known to spawn in the slough, the proposed action will have no effect on spawning and incubation. The project will also have negligible effects on water flow, water quality, temperature, migration corridors, and nearshore foraging. The proposed project will result in a 9 sf decrease in overwater structure. Effects on critical habitat for eulachon are insignificant.

### **Reinitiation of Consultation**

Reinitiation of consultation is required and shall be requested by the COE or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) the amount or extent of incidental taking specified in the ITS is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or if (4) a new species is listed or critical habitat designated that may be affected by the identified action.

## ESSENTIAL FISH HABITAT

NMFS also reviewed the proposed action for potential effects on essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was conducted pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

The action will adversely affect EFH for Pacific Salmon (Chinook and coho salmon). Short term adverse effects will include diminished water quality, substrate, prey, migratory and rearing habitat value during construction. Long-term effects are the reduction in freshwater rearing habitat because the new artificial structure benefits piscivores.

We have no conservation recommendations that would reduce these adverse effects.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The biological opinion will be available through NOAA Institutional Repository <https://repository.library.noaa.gov/> A complete record of this consultation, including a copy of the BA, is on file at the Washington Coast Lower Columbia Branch office in Lacey, Washington.

Please direct questions regarding this letter to Scott Anderson in the Washington Coast Lower Columbia Branch, at [scott.anderson@noaa.gov](mailto:scott.anderson@noaa.gov), or by telephone at (360) 528-0864.

Sincerely,



Kim W. Kratz, Ph.D  
Assistant Regional Administrator  
Oregon Washington Coastal Office

cc: Evan Carnes

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### ATTACHMENT 1 Species Presence Table

**Table 3.** Presence of ESA-listed fish species in the Lower Columbia River by life stage, NMFS’ Northwest Fisheries Science Center, and NMFS’ Protected Resources Division. Work Window depicted by orange highlight.

Species	Life Stage	=present				= relatively abundant				= peak occurrence							
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep							
Southern DPS	Adult migr. & holding <sup>1,2</sup>																
	Adult spawning <sup>2</sup>																
	Egg incubation <sup>3</sup>																
	Larvae emigration																
Southern	Juvenile rearing <sup>2</sup>																
Lower Columbia	Adult migr. & holding																
	Adult spawning																
	Eggs & pre-emergence																
	Juvenile rearing																
	Juvenile emigration																
Upper Columbia	Adult migr. & holding																
	Adult spawning																
	Eggs & pre-emergence																
	Juvenile rearing																
	Juvenile emigration																
Upper Willamette	Adult migr. & holding																
	Adult spawning																
	Eggs & pre-emergence																
	Juvenile rearing																
	Juvenile emigration																
Snake River -	Adult migr. & holding																
	Adult spawning																
	Eggs & pre-emergence																
	Juvenile rearing																
	Juvenile emigration																
Snake River - Fall	Adult migr. & holding																
	Adult spawning																
	Eggs & pre-emergence																
	Juvenile rearing																

		=present				= relatively abundant				= peak occurrence				
Species	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep				
	Juvenile emigration													
Columbia River	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration <sup>4</sup>													
Lower Columbia	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
Snake River	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
Lower Columbia	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
Middle Columbia	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
Upper Columbia	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
Upper Willamette	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													



		=present				= relatively abundant				= peak occurrence				
Species	Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep				
Snake River	Adult migr. & holding													
	Adult spawning													
	Eggs & pre-emergence													
	Juvenile rearing													
	Juvenile emigration													
<sup>1</sup> Eulachon Status Review Update, 20 January 2010. Available at: <a href="http://www.nwr.noaa.gov/Other-Marine-Species/upload/eulachon-review-update.pdf">http://www.nwr.noaa.gov/Other-Marine-Species/upload/eulachon-review-update.pdf</a>														
<sup>2</sup> Personal communication. Conversation between WDFW (Brad James, Olaf Langness, and Steve West), ODFW (Tom Rien), and NMFS (Rob Markle, Bridgette Lohrman) regarding green sturgeon and eulachon presence in the Columbia River. June 23, 2009.														
<sup>3</sup> Eulachon egg incubation estimated relative to spawning timing and 20 to 40 day incubation period.														
<sup>4</sup> Carter et al. 2009 (Seasonal juvenile salmonid presence and migratory behavior in the lower Columbia River).														