



**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-2023-02591**

March 20, 2025

Kelly O'Reilly  
Environmental Protection Specialist, Office of Environmental Compliance  
Maritime Administration, U.S. Department of Transportation  
1200 New Jersey Avenue SE  
Washington, D.C. 20590

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens  
Fishery Conservation and Management Act Essential Fish Habitat Response for the Port  
of Portland's Berth 315 Layberth Improvement Project

Dear Kelly O'Reilly:

This letter responds to your October 10, 2023, 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.

We reviewed the Maritime Administration's (MARAD'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. In our biological opinion below, we indicate what parts of your "Berth 315 Layberth Improvement Project Biological Assessment" we have incorporated by reference and where that information is being incorporated. We adopt by reference the following sections of the Biological Assessment (BA):

- Section 2 for the description of the proposed action
- Section 3 for the description of the action area
- Section 4 for species and habitat information
- Section 5 and 6 for the effects of the proposed action, and
- Section 7 for conservation measures

On October 10, 2023, NMFS received a request for concurrence that the proposed action may affect the following ESA-listed species:

- Chinook salmon (*Oncorhynchus tshawytscha*) and designated critical habitat
  - Lower Columbia River Evolutionarily Significant Unit (ESU)
  - Upper Willamette River ESU
- Coho salmon (*Oncorhynchus kisutch*) and designated critical habitat
  - Lower Columbia River ESU
- Steelhead trout (*Oncorhynchus mykiss*) and designated critical habitat

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- Lower Columbia River Distinct Population Segment (DPS)
- Upper Willamette River DPS

MARAD submitted an updated BA on November 27, 2024, which included more information on the sediment analysis and management plan as well as additional mitigation elements. Formal consultation under Section 7 of the ESA was initiated on November 27, 2024.

Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 Fed. Reg. 24268). We are applying the updated regulations to this consultation. The 2024 regulatory changes, like those from 2019, were intended to improve and clarify the consultation process, and, with one exception from 2024 (offsetting reasonable and prudent measures), were not intended to result in changes to the Services' existing practice in implementing section 7(a)(2) of the Act. 89 Fed. Reg. at 24268; 84 Fed. Reg. at 45015. We have considered the prior rules and affirm that the substantive analysis and conclusions articulated in this biological opinion and incidental take statement would not have been any different under the 2019 regulations or pre-2019 regulations.

MARAD is proposing to fund improvements to the Port of Portland's Berth 315 on Swan Island on the Willamette River in Portland, Oregon, for the purpose of creating layberthing for two MARAD ships. The project includes installation of in-water infrastructure and upland improvements. The project is located on the north/east bank of the Willamette River at approximately River Mile (RM) 8.7 within the Portland Harbor Superfund site. Proposed improvements include adding an approach trestle, three landing/work platforms, two new breasting dolphins, catwalks between the dolphins, three upland mooring structures, upland improvements, berth dredging and capping, and shoreline restoration/revegetation. Section 2 of the BA discusses the proposed action and is being adopted here. Additionally, Section 7 of the BA discusses conservation measures that MARAD will implement as part of the proposed action to minimize impacts on the ESA-listed species considered in this opinion and is being adopted here.

The proposed action includes measures to offset unavoidable impacts on aquatic habitats consisting of 1) purchasing mitigation bank credits from the Linnton Mill Restoration Site, 2) conducting native riparian plantings along the riverbank at the project site, and 3) removing 20 abandoned creosote treated timber piles at the University of Portland Mitigation Site. Table 1 includes a summary of in-water work proposed at Berth 315 and the University of Portland Mitigation Site.

**Table 1.** Summary of In-Water Work.

<b>Element</b>	<b>Quantity</b>
16” piles	8 (plus 6 piles above ordinary high water)
20” piles	20
24” piles	26
30” piles	4
Overwater coverage: <i>Active Channel Margin (ACM) zone</i>	0.02 acre (all grated)
Overwater coverage: <i>Shallow zone</i>	0.02 acre (all grated)
Overwater coverage: <i>Deep zone</i>	0.20 acre (solid and grated)
Overwater coverage total	0.24 acre.
Dredging	2.45 acres / up to 20,000 cubic yards
Sand layer	2.45 acres / up to 6,000 cubic yards
Remove an abandoned concrete deck panel and revegetate	0.013 acre / 25 cubic yards
Remove 18” creosote treated piles*	20

\* To occur at the University of Portland Greenway Mitigation Site. See description of work below.

## **BIOLOGICAL OPINION**

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 essential to the conservation of the species that create the conservation value of that habitat.

There are five ESA-listed species within the action area:

1. Upper Willamette River (UWR) Chinook salmon
2. Lower Columbia River (LCR) Chinook salmon
3. LCR coho salmon
4. UWR steelhead
5. LCR steelhead

Each of these five ESA-listed salmonid species also have designated critical habitat in the action area. Section 4 of the BA discusses the status of listed species and critical habitat in the action area and is being adopted here.

“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 action area in this case encompasses all areas where pile-proofing-related sound could be elevated above ambient noise

levels. Section 3.2 of the BA discusses the action area for the proposed action and is being adopted here.

The action area includes the only approved mitigation bank in the Portland Harbor Superfund Site, Linnton Mill. Linnton Mill serves as a dual-credit, 27-acre mitigation bank that can be used to offset Natural Resource Damages impacts as well as Clean Water Act credits. At full credit release, Linnton Mill will have restored off-channel habitat for juvenile ESA-listed salmon and steelhead.

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 that are contemporaneous with the consultation in process. The impacts to listed species or designated critical habitat from federal agency activities or existing federal agency facilities that are not within the agency’s discretion to modify are part of the environmental baseline (50 CFR 402.02).

One factor affecting the status of ESA-listed species considered in this opinion, and aquatic habitat at large, is climate change. Climate change is likely to play an increasingly important role in determining the abundance and distribution of ESA-listed species, and the conservation value of designated critical habitats, in the Pacific Northwest. These changes will not be spatially homogeneous across the Pacific Northwest. Major ecological realignments are already occurring in response to climate change (IPCC WGII, 2022). Long-term trends in warming have continued at global, national, and regional scales. Global surface temperatures in the last decade (2010s) were estimated to be 1.09 °C higher than the 1850-1900 baseline period, with larger increases over land ~1.6 °C compared to oceans ~0.88 (IPCC WGI, 2021). The vast majority of this warming has been attributed to anthropogenic releases of greenhouse gases (IPCC WGI, 2021). Globally, 2014-2018 were the 5 warmest years on record both on land and in the ocean (2018 was the 4<sup>th</sup> warmest) (NOAA NCEI 2022). Events such as the 2013-2016 marine heatwave (Jacox et al. 2019) have been attributed directly to anthropogenic warming in the annual special issue of Bulletin of the American Meteorological Society on extreme events (Herring et al. 2018). Global warming and anthropogenic loss of biodiversity represent profound threats to ecosystem functionality (IPCC WGII 2022). These two factors are often examined in isolation, but likely have interacting effects on ecosystem function. Updated projections of climate change are similar to or greater than previous projections (IPCC WGI, 2021). NMFS is increasingly confident in our projections of changes to freshwater and marine systems because every year brings stronger validation of previous predictions in both physical and biological realms. Retaining and restoring habitat complexity, access to climate refuges (both flow and temperature) and improving growth opportunity in both freshwater and marine environments are strongly advocated in the recent literature (Siegel and Crozier 2020).

Section 3.3 of the BA provides a detailed description of the environmental baseline and is being adopted here. In summary, the project location is in a highly modified industrial environment

within the designated Portland Harbor Superfund site, but it does provide habitat for migrating adult salmon and rearing juvenile salmon.

Conservation banks present a unique factual situation, and this warrants a particular approach to how they are addressed. Specifically, when NMFS is consulting on a proposed action that includes conservation bank credit purchases, it is likely that physical restoration work at the bank site has already occurred and/or that a section 7 consultation occurred at the time of bank establishment. A traditional reading of "environmental baseline," might suggest that the overall ecological benefits of the conservation bank actions, therefore, belong in the environmental baseline. However, under this reading, all proposed actions, whether or not they included proposed credit purchases, would benefit from the environmental 'lift' of the entire conservation bank because it would be factored into the environmental baseline. In addition, where proposed actions did include credit purchases, it would not be possible to attribute their benefits to the proposed action, without double counting. These consequences undermine the purposes of conservation banks and also do not reflect their unique circumstances. Specifically, conservation banks are established based on the expectation of future credit purchases. In addition, credit purchases as part of a proposed action will also be the subject of a future section 7 consultation. It is, therefore, appropriate to treat the beneficial effects of the bank as accruing incrementally at the time of specific credit purchases, not at the time of bank establishment or at the time of bank restoration work. Thus, for all projects within the service area of a conservation bank, only the benefits attributable to credits sold are relevant to the environmental baseline. Where a proposed action includes credit purchases, the benefits attributable to those credit purchases are considered effects of the action.

Linnton Mill Mitigation Bank has a service area that includes the action area considered in this opinion. This bank occurs within critical habitat for UWR Chinook salmon, LCR Chinook salmon, LCR coho salmon, UWR steelhead, and LCR steelhead. Established in 2021, the Linnton Mill Mitigation Bank is a 27-acre side-channel site along the Lower Willamette River.

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 in the action.

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Section 5 of the initiation package and 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. MARAD proposes to fund improvements to the Port of Portland's Berth 315 on Swan Island on the Willamette River in Portland, Oregon. The temporary and long-term effects of this proposed action are:

- Noise - Underwater sound from pile driving (temporary)
- Water quality diminishment – Generation of turbidity, resuspension of contaminants, and decreased dissolved oxygen during construction (temporary)

- Shade - Increase in overwater coverage within the nearshore environment (predation, disruption to migration – long-term)
- Shoreline and nearshore modifications – Disturbance of bottom sediments (forage – long-term)

“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). 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. Section 5.4 of the BA discusses cumulative effects and is being adopted here. In summary, in the reasonably foreseeable future, the U.S. Environmental Protection Agency (EPA) will implement its in-water remedy to clean up the Portland Harbor Superfund Site, which will be carried out by individual responsible parties. There are no other state or private actions anticipated in the action area that would contribute to the effects of this proposed action on ESA-listed species.

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 critical habitat, 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.

As described in section 4 of the BA, LCR Chinook salmon, UWR Chinook salmon, LCR coho salmon, LCR steelhead, and UWR steelhead may be present in the action area. All adult UWR Chinook salmon and UWR steelhead must migrate upstream through the action area to reach spawning habitat in the Upper Willamette River basin, and all juvenile UWR Chinook salmon and UWR steelhead must migrate downstream through the action area to reach the ocean. Therefore, individuals from all populations of these two species could potentially be affected by the proposed action. The LCR Chinook salmon, LCR steelhead, and LCR coho salmon individuals in the action area are likely to be from the Clackamas River populations and must also pass through the action area as juveniles and adults. Over the past several years, NMFS has engaged in various section 7 consultations on federal projects impacting these populations and their habitats, and those impacts have been considered in this opinion as part of the environmental baseline.

The UWR Chinook salmon ESU is at “moderate” extinction risk, with a declining viability trend. The UWR steelhead DPS is at “moderate-to-high” extinction risk, with a declining viability trend. The LCR Chinook salmon ESU remains at a “moderate” risk of extinction, though their viability has increased somewhat since the last status review. The LCR coho salmon ESU remains at a “moderate” risk of extinction, and their viability is unchanged from the prior status review.

The LCR steelhead DPS is considered to be at “moderate” risk of extinction, and the viability is largely unchanged from the prior review. The Clackamas River population of LCR steelhead is identified as a primary population. To meet viability criteria for this DPS, representative populations, such as the Clackamas River population, need to achieve viability criteria or be maintained (Ford 2022).

When reviewing the effects described in the BA, we expect that some juveniles and adults of the ESA-listed species considered in this opinion could be exposed to underwater noise, degraded water quality conditions, diminished prey availability, obstructions to migration, and predation resulting from the modification of the existing layberth facility and the construction-related impacts associated with dredging, pile driving, and pile removal. We expect that these effects will result in responses ranging from behavioral changes that reduce fitness and increase the risk of injury or death, to actual injury or death. We do not anticipate that the effects of the proposed action alone would be measurable at a population level for UWR Chinook salmon, LCR Chinook salmon, LCR coho salmon, UWR steelhead, or LCR steelhead.

The value of critical habitat for these species in the Lower Willamette River is limited by poor water quality, altered hydrology, lack of floodplain connectivity and shallow-water habitat, and lack of complex habitat for forage and cover. The action area is in an urban setting where the habitat has been degraded because of past land-use practices including stormwater runoff and industrial and urban development. Despite this, the critical habitat in the action area has a high conservation value for LCR Chinook salmon, LCR steelhead, LCR coho salmon, UWR Chinook salmon, and UWR steelhead because of its critical role as a migration corridor (NMFS 2016).

The proposed action will also have an effect on the physical and biological features (PBFs) of critical habitat for the salmon and steelhead species considered in this opinion. Impacts on the water quality, prey availability, and migration PBFs related to dredging, pile driving (short-term), and over-water structures (long-term) are limited in scope but may diminish the value of critical habitat. However, impacts from mitigation offsets will improve critical habitat in the Lower Willamette River over the long-term.

The environmental baseline is such that individual ESA-listed salmonids in the action area are exposed to reduced water quality, lack of suitable riparian and aquatic habitat, and restricted movement due to developed urban areas and land-use practices. These stressors, as well as those from climate change, already exist and we consider these factors with the addition of any adverse effects produced by the proposed action.

With implementation of conservation measures included as part of the proposed action we do not anticipate that critical habitat values will be reduced in a manner that impairs the conservation value of the habitat. Additionally, NMFS examined the effects of the proposed action on each population of LCR Chinook salmon, LCR steelhead, LCR coho salmon, UWR Chinook salmon, and UWR steelhead with potential to use the action area. The proposed action is likely to result in adverse effects on individual fish exposed to effects of the action discussed above; however, these adverse effects are not likely to translate into detectable population-level effects. Therefore, these adverse effects are, in turn, not likely to affect the overall viability of the species considered in this opinion.

The only cumulative effects considered in this opinion are those associated with the implementation of EPA’s in-water remedy to clean up the Portland Harbor Superfund Site, which will be carried out by individual responsible parties and will provide long-term benefits to the Lower Willamette River.

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 UWR Chinook salmon, LCR Chinook salmon, LCR coho salmon, UWR steelhead, or LCR steelhead or destroy or adversely modify their designated critical habitat.

## **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). “Harass” is further defined by guidance as to “create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.” “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 ITS.

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

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

1. Take in the form of injury, death, or harm from noise during vibratory and impact pile driving. The extent of take for hydroacoustic effects is a maximum of eight piles driven in one day. This surrogate indicator of take is both easily observable and is causally linked to incidental take by hydroacoustic impacts because the amount of take increases incrementally with each pile strike, and hydroacoustic impacts return to baseline overnight<sup>1</sup>.
2. Take in the form of harm, injury, or death as a result of exposure to diminished water quality from the generation of turbidity and the resuspension of contaminated sediments during construction. The extent of take is the 300-foot mixing zone around project

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<sup>1</sup> The NOAA Fisheries Stationary Model is available for download at the WSDOT BA Guidance website <http://www.wsdot.wa.gov/Environment/Biology/BA/BAGuidance.htm#Noise>



activities where turbidity is expected to be elevated above background levels. This metric is causally related to take because a larger mixing zone would increase the risk of injury for fish occupying the project area.

3. Take in the form of harm of juvenile salmonids from piscivorous fish utilizing shade cast by the layberth facility. The extent of take is the size of the overwater structure (0.24 acre). This metric is easily observable and causally related to take because a larger area of overwater coverage would increase the suitability of the area to piscivorous fish and increase the risk of predation.
4. Take in the form of harm associated with diminished forage opportunities and subsequent reductions in fitness among juveniles are likely when prey availability is decreased and competition increased for prey resources. The extent of take is, therefore, measured by the 2.45 acres where dredging will remove substrate and the benthic prey communities. If the footprint of the dredge prism extends beyond the area described in the proposed action, take will be exceeded.

### **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” refer to those actions the Director considers necessary or appropriate to minimize the impact of the incidental take on the species (50 CFR 402.02). MARAD shall require the following measures during implementation of the proposed action:

1. Minimize incidental take associated with project construction by ensuring that all BMPs described in the proposed action and this opinion are implemented and reported, as appropriate.
2. Ensure completion of a monitoring and reporting program to confirm that the take exemption for the proposed action is not exceeded and the terms and conditions in this incidental take statement are effective in minimizing incidental take. The report will be submitted to NMFS no later than 60 days after the completion of construction.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, the federal action agency must comply (or must ensure that any applicant complies) with the following terms and conditions. MARAD 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. Provide a post-project “as built” report to [projectreports.wcr@noaa.gov](mailto:projectreports.wcr@noaa.gov) that indicates
  - a. The number of strikes per pile, the number of piles installed each day, the type of piles installed, the time between pile installation sessions, the total days of pile driving, the type and use of sound attenuation device, and type of driving hammer used.
  - b. The dates of initiation and completion of pile installation and extraction activities, the dates of any exceedances of the 300-foot turbidity compliance boundary, and what measures were performed to bring the project back into compliance.
  - c. Completed dimensions of the dredge area to ensure that the area of substrate removal does not exceed 2.45 acres.
  - d. Completed dimensions of the structures to ensure that overwater shade does not exceed 0.24 acre.

### **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).

To offset adverse effects of the proposed action on critical habitat (decreased forage, migration, and water quality), MARAD shall look for opportunities to increase and restore off-channel habitat within the Willamette River.

### **Reinitiation of Consultation**

Under 50 CFR 402.16(a): “Reinitiation of consultation is required and shall be requested by the federal agency where discretionary federal involvement or control over the action has been retained or is authorized by law and: (1) If the amount or extent of taking specified in the incidental take statement is exceeded; (2) If new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) If 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 the biological opinion or written concurrence; or (4) If a new species is listed or critical habitat designated that may be affected by the identified action.”

### **ESSENTIAL FISH HABITAT RESPONSE**

Thank you also for your request for essential fish habitat (EFH) consultation. NMFS reviewed the proposed action for potential effects on EFH pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultation.

We have concluded that the action would adversely affect EFH designated under the Pacific Coast Salmon Fishery Management Plan (PFMC 2014).

### **Magnuson-Stevens Fishery Conservation and Management Act**

Section 305(b) of the MSA directs federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity", and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.905(b)).

### **EFH Affected by the Proposed Action**

The proposed project occurs within EFH for various federally managed fish species within the Pacific Coast Salmon Fishery Management Plan (PFMC 2014)

### **Adverse Effects on EFH**

NMFS determined the proposed action would adversely affect EFH as follows:

- Physical alteration of shallow-water habitat
- Reduced forage from removal and burial of benthic organisms
- Degraded water quality from temporary turbidity plumes and increased suspension of contaminated sediment

Because the applicant has included measures to minimize effects of the action, no further recommendations are being provided. This concludes the EFH consultation.

### **Supplemental Consultation**

MARAD must reinitiate EFH consultation with NMFS if the proposed action is substantially revised in a way that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations (50 CFR 600. 920(1)).

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 is on file at the Oregon Washington Coastal Office in Portland, Oregon.

Please direct questions regarding this letter to Annie Birnie, ESA Consultation Biologist, in the Oregon Washington Coastal Office at 503-230-5407, or [annie.birnie@noaa.gov](mailto:annie.birnie@noaa.gov).

Sincerely,

A handwritten signature in blue ink that reads "Kathleen Wells". The signature is written in a cursive, flowing style.

Kathleen Wells  
Assistant Regional Administrator  
Oregon Washington Coastal Office

cc: Leanne Roulson, Salus Resources, Inc.

## REFERENCES

- Ford, M. J. 2022. Biological Viability Assessment Update for Pacific Salmon and Steelhead Listed under the Endangered Species Act: Pacific Northwest. NOAA Technical Memorandum NMFS-NWFSC-171. Rockville, U.S. National Oceanic and Atmospheric Administration (NOAA): 1.
- Herring, S. C., Christidis, N., Hoell, A., Kossin, J. P., Schreck, C. J., and Stott, P. A. 2018. Explaining Extreme Events of 2016 from a Climate Perspective. *Bulletin of the American Meteorological Society.*, 99(1), S1–S157. <https://doi.org/10.1175/BAMS-ExplainingExtremeEvents2016.1>
- Intergovernmental Panel on Climate Change (IPCC) Working Group I (WGI). 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. V. Masson-Delmotte, P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou editor. Cambridge University Press (<https://www.ipcc.ch/report/ar6/wg1/#FullReport>).
- IPCC Working Group II (WGII). 2022. Climate Change 2022: Impacts, Adaptation and Vulnerability: Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. H.O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, and B. Rama (eds.) Cambridge University Press ([https://report.ipcc.ch/ar6wg2/pdf/IPCC\\_AR6\\_WGII\\_FinalDraft\\_FullReport.pdf](https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_FinalDraft_FullReport.pdf)).
- Jacox, M. G., Tommasi, D., Alexander, M. A., Hervieux, G., and Stock, C. A. 2019. Predicting the Evolution of the 2014–2016 California Current System Marine Heatwave from an Ensemble of Coupled Global Climate Forecasts. *Frontiers in Marine Science.*, 6. <https://doi.org/10.3389/fmars.2019.00497>
- NMFS. 2016. Endangered Species Act Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the U.S. Coast Guard Maintenance Dredging Project on the Willamette River (HUC 170900120202), Multnomah County, Oregon (Corps No.: NWP-2013-172).
- NOAA National Centers for Environmental Information (NCEI), State of the Climate: Global Climate Report for Annual 2021, published online January 2022, retrieved on February 28, 2022 from <https://www.ncdc.noaa.gov/sotc/global/202113>.
- PFMC (Pacific Fishery Management Council). 2014. Appendix A to the Pacific Coast Salmon Fishery Management Plan, as modified by Amendment 18. Identification and description of essential fish habitat, adverse impacts, and recommended conservation measures for salmon.

Siegel, J., and L. Crozier. 2020. Impacts of Climate Change on Salmon of the Pacific Northwest: A review of the scientific literature published in 2019. National Marine Fisheries Service, Northwest Fisheries Science Center, Fish Ecology Division.  
<https://doi.org/10.25923/jke5-c307>