UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
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Refer to NMFS No:
WCRO-2025-01789

May 20, 2026

Science Kilner
Regional Environmental Officer
U.S. Department of Homeland Security
FEMA Region 1010
130-228th Street, SW
Bothell, Washington 98021-8627

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Legislative Pre-Disaster Mitigation (LPDM-WA2022001) North Shore Levee Project, Cities of Hoquiam and Aberdeen, Grays Harbor County, Washington (HUCs 17100104, 17100105)

Dear Ms. Kilner:

This letter responds to your June 18, 2025, request for initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) for the Legislative Pre-Disaster Mitigation North Shore Levee Project for the cities of Hoquiam and Aberdeen in Grays Harbor County, Washington.

We reviewed the Federal Emergency Management Agency's (FEMA'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 documents we have incorporated by reference and where that information is being incorporated.

We adopt by reference the following sections of the biological assessment (BA) (FEMA 2025):

- Proposed Action: Section 1: Elements of the Proposed Action (pp. 20–75) and Section 2: Consequences of the Proposed Action (p. 76) for the description of the proposed action
- Action Area section (pp. 77–82) for the description of the action area
- Environmental Setting section (pp. 83–119) for the description of the environmental baseline
- Effects of the Proposed Action (pp. 120–162) for effects of the proposed action

We note where we have supplemented information from the BA with our own data and analysis.

FEMA (2025) describes their 'not likely to adversely affect' (NLAA) determinations for Southern Resident killer whale (SRKW) and their designated critical habitat. NMFS concurs

with these determinations and the rationales described on pages 144-146 and 161-162 (FEMA 2025).

FEMA (2025) determined that the proposed action would likely adversely affect (LAA) Washington Coast Chinook salmon (petitioned for ESA listing on July 17, 2023) if this species were to become listed under the ESA. On February 19, 2026, NMFS announced that the 12-month finding determined that the Evolutionary Significant Unit (ESU) was not in danger of extinction or to become so within the foreseeable future. Thus, ESA consultation was not conducted on this species.

FEMA (2025) determined that the proposed action would be NLAA for Olympic Peninsula steelhead (petitioned for ESA listing in 2022) if this species were to become listed under the ESA. On January 14, 2026, NMFS announced that the 12-month finding determined that the distinct population segment (DPS) was not in danger of extinction or to become so within the foreseeable future. Thus, ESA consultation was not conducted on this species.

We received the initial consultation request on June 18, 2025. Consultation was initiated on September 5, 2025.

On September 12, 2025, FEMA recalculated the number of strikes per pile. Further, in a technical memo, dated February 13, 2026, FEMA updated the anticipated number of strikes per pile for 30-inch piles (1.8 piles per day,120 strikes per pile) and sheet piles (50 sheets per day, 60 strikes per pile). The memo concludes that the effects to species as identified in the BA (FEMA 2025) remain unchanged as a result of the pile installation update.

On March 30, 2026, in Center for Biological Diversity v. Burgum, No. 24-cv-04651 (N.D. Cal.), the U.S. District Court for the Northern District of California vacated aspects of four provisions from the 50 CFR part 402 regulations governing interagency consultation under section 7 of the Endangered Species Act and reinstated the provisions that were previously in effect. Consistent with the Court's ruling, these are the governing provisions for this consultation:

> "*Destruction or adverse modification* means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features." (50 CFR 402.02 (2018)).
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> "*Effects of the action*[1] refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or

[1] This definition includes the second sentence of the definition of "effects of the action." That sentence provided the definition of "environmental baseline" in effect as of 2018. In the 2019 rule amending the 50 CFR part 402 regulations, the Services established "environmental baseline" as a stand alone definition. 84 Fed. Reg. 44976, 45016 (August 27, 2019). In the 2024 rule, the Services made minor revisions to the "environmental baseline" definition. 89 Fed. Reg. 24268, 24298 (April 5, 2024). The Court's ruling did not touch upon that definition of "environmental baseline," and it therefore remains valid. The definition is also fully consistent with the definition of "effects of the action" from 2018.

> interdependent with that action, that will be added to the environmental baseline. 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 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration."[1] (50 CFR 402.02 (2018)).
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> 50 CFR 402.14(g)(8): "In formulating its biological opinion, any reasonable and prudent alternatives, and any reasonable and prudent measures, the Service will use the best scientific and commercial data available and will give appropriate consideration to any beneficial actions taken by the Federal agency or applicant, including any actions taken prior to the initiation of consultation." (50 CFR 402.14(g)(8) (2018)).
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> 50 CFR 402.16(a): "(a) Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service, where discretionary Federal involvement or control over the action has been retained or is authorized by law and . . . ." (50 CFR 402.16(a) (2023)).

Some of the information and analyses considered in this document were prepared under the version of the 50 CFR part 402 regulations in effect prior to the Court's order. We have reviewed the information and analyses and confirm that the content of that information and those analyses, including the identification and analyses of effects, would be the same under either version of the applicable regulations.

FEMA proposes to fund the city of Hoquiam and Aberdeen's construction and improvement of 4.16 miles of levee, of which approximately 0.51 miles would replace existing levee structures (FEMA 2025, pp. 20-21). All proposed in-water work would occur August 1 through January 15. A detailed description of the proposed action is included in FEMA's BA and is hereby incorporated by reference.

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 discussed the function of the PBFs essential to the conservation of the species that create the conservation value of that habitat.

One factor affecting the status of ESA-listed species considered in this opinion, and aquatic animals and their habitats at large, is exposure to increasing environmental variation due to shifts in average weather conditions. Increasing environmental variation is likely to play a role in

determining the abundance and distribution of ESA-listed species, and the conservation value of their designated critical habitats, in the Pacific Northwest.

These shifts will not be spatially homogeneous across the Pacific Northwest. There is a large and growing body of literature on past, present, and future impacts of increasing environmental variation on sea-level rise, frequency of severe weather events, and changes in air and water temperatures. Major ecological realignments are already occurring in response to these shifts (IPCC WGII 2022). Long-term trends in warming have continued at global, national, and regional scales. The 10 warmest years in the historical record (1890-2023) have all occurred in the past decade, with NOAA (2025), NASA (2025), and the World Meteorological Organization (2025) stating 2024 was the world's warmest year on record.

Increasing temperatures and the potential 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 increasing temperature are similar to or greater than previous projections (IPCC WGI 2021). Retaining and restoring habitat complexity, access to flow and cold-water refugia, and improving growth opportunities in both freshwater and marine environments are strongly advocated in the recent literature (Siegel and Crozier 2019, 2020).

Increasing environmental variability because of shifts in average weather conditions continues to adversely impact critical habitat, creating limiting factors and threats to the recovery of the ESA-listed species considered in this opinion. Shifts in average weather conditions will likely result in an increase in stream temperature and a decrease in summer flow. NMFS assumes that the environmental baseline is not meeting all of the biological requirements of individuals of all species considered in this opinion. This is due to one or more impaired aquatic habitat functions related to any of the habitat factors limiting the recovery of the species in that area. Non-federal plans to address increasing environmental variability are largely unknown but may have localized benefits that extend to ESA-listed species and designated critical habitat within the Pacific Northwest as a whole. When these influences are considered collectively, we expect trends in habitat quality to remain flat or degrade gradually over time. Likewise, we also expect the quality and function of the physical or biological features (PBFs) of critical habitat to remain flat or gradually decline over time.

FEMA preliminarily determined the following species would be adversely affected by the proposed action: Green sturgeon and eulachon. NMFS concurs with FEMA's determination for these species and has additionally determined that Lower Columbia River (LCR) Chinook salmon (*Oncorhynchus tshawytscha*), Columbia River (CR) chum salmon (*O. keta*), and Upper Willamette River (UWR) Chinook salmon would be adversely affected. Each of the listed salmonids have critical habitat designated along the coast of the Pacific Ocean. Green sturgeon has critical habitat designated in Grays Harbor. Eulachon critical habitat has not been designated in the action area. Tables 1 and 2 below provide the current status of affected species and critical habitat.

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	NMFS 2022a; Ford 2022	This ESU comprises 32 independent populations. Relative to baseline VSP levels identified in the recovery plan (Dornbusch 2013), 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; Spring-run Chinook salmon populations in this ESU are generally unchanged; most of the populations are at a "high" or "very high" risk due to low abundances and the high proportion of hatchery-origin fish spawning naturally. Many of the populations in this ESU remain at "high risk" with low natural-origin abundance levels. Overall, we conclude that the viability of the Lower Columbia River Chinook salmon ESU has increased somewhat since 2016, although the ESU remains at "moderate" risk of extinction.	● Reduced access to spawning and rearing habitat ● Hatchery-related effects ● Harvest-related effects on fall Chinook salmon ● An altered flow regime and Columbia River plume ● Reduced access to off-channel rearing habitat ● Reduced productivity resulting from sediment and nutrient-related changes in the estuary ● Contaminants
Upper Willamette River Chinook salmon	Threatened 6/28/05	NMFS 2011	NMFS 2024; Ford 2022	This ESU comprises seven populations. Abundance levels for all but Clackamas River DIP remain well below their recovery goals. Overall, there has likely been a declining trend in the viability of the Upper Willamette River Chinook salmon ESU since the last review. The magnitude of this change is not sufficient to suggest a change in risk category, however, so the Upper Willamette River Chinook salmon ESU remains at "moderate" risk of extinction.	● Degraded freshwater habitat ● Degraded water quality ● Increased disease incidence ● Altered stream flows ● Reduced access to spawning and rearing habitats ● Altered food web due to reduced inputs of microdetritus ● Predation by native and non-native species, including hatchery fish ● Competition related to introduced salmon and steelhead ● Altered population traits due to fisheries and bycatch

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	NMFS 2022a; Ford 2022	This species has 17 populations divided into 3 MPGs. 3 populations exceed the recovery goals established in the recovery plan (Dornbusch 2013). The remaining populations have unknown abundances. Abundances for these populations are assumed to be at or near zero. The viability of this ESU is relatively unchanged since the last review (moderate to high risk), and the improvements in some populations do not warrant a change in risk category, especially given the uncertainty regarding climatic effects in the near future.	● Degraded estuarine and nearshore marine habitat ● Degraded freshwater habitat ● Degraded stream flow as a result of hydropower and water supply operations ● Reduced water quality ● Current or potential predation ● An altered flow regime and Columbia River plume ● Reduced access to off-channel rearing habitat in the lower Columbia River ● Reduced productivity resulting from sediment and nutrient-related changes in the estuary ● Juvenile fish wake strandings ● Contaminants
Southern DPS of green sturgeon	Threatened 4/7/06	NMFS 2018	NMFS 2021	The Sacramento River contains the only known green sturgeon spawning population in this DPS. The current estimate of spawning adult abundance is between 824-1,872 individuals. Telemetry data and genetic analyses suggest that Southern DPS green sturgeon generally occur from Graves Harbor, Alaska to Monterey Bay, California and, within this range, most frequently occur in coastal waters of Washington, Oregon, and Vancouver Island and near San Francisco and Monterey bays. Within the nearshore marine environment, tagging and fisheries data indicate that Northern and Southern DPS green sturgeon prefer marine waters of less than a depth of 110 meters.	● Reduction of its spawning area to a single known population ● Lack of water quantity ● Poor water quality ● Poaching

Species	Listing Classification and Date	Recovery Plan Reference	Most Recent Status Review	Status Summary	Limiting Factors
Southern DPS of eulachon	Threatened 3/18/10	NMFS 2017	NMFS 2022b	The Southern DPS of eulachon includes all naturally-spawned populations that occur in rivers south of the Nass River in British Columbia to the Mad River in California. Sub populations for this species include the Fraser River, Columbia River, British Columbia, and the Klamath River. In the early 1990s, there was an abrupt decline in the abundance of eulachon returning to the Columbia River. Despite a brief period of improved returns in 2001-2003, the returns and associated commercial landings eventually declined to the low levels observed in the mid-1990s. Although eulachon abundance in monitored rivers has generally improved, especially in the 2013-2015 return years, recent poor ocean conditions and the likelihood that these conditions will persist into the near future suggest that population declines may be widespread in the upcoming return years.	● Changes in ocean conditions due to environmental variation, particularly in the southern portion of the species' range where ocean warming trends may be the most pronounced and may alter prey, spawning, and rearing success ● Environmental variation changes to freshwater habitats ● Bycatch of eulachon in commercial fisheries ● Adverse effects related to dams and water diversions ● Water quality ● Shoreline construction ● Over harvest ● Predation

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

Species	Designation Date and Federal Register Citation	Critical Habitat Status Summary
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 PCEs for salmon are in fair-to-poor or fair-to-good condition (NOAA 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 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 PCEs 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 rated conservation value of HUC5 watersheds as high for 22 watersheds, medium for 16 watersheds, and low for 18 watersheds.
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 PCEs for salmon are in fair-to-poor or fair-to-good condition (NOAA 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.
Southern DPS of green sturgeon	10/09/09, 74 FR 52300	Critical habitat has been designated in coastal U.S. marine waters within 60 fathoms depth from Monterey Bay, California (including Monterey Bay), north to Cape Flattery, Washington, including the Strait of Juan de Fuca, Washington, to its United States boundary; the Sacramento River, lower Feather River, and lower Yuba River in California; the Sacramento-San Joaquin Delta and Suisun, San Pablo, and San Francisco bays in California; tidally influenced areas of the Columbia River estuary from the mouth upstream to river mile 46; and certain coastal bays and estuaries in California (Humboldt Bay), Oregon (Coos Bay, Winchester Bay, Yaquina Bay, and Nehalem Bay), and Washington (Willapa Bay and Grays Harbor), including, but not limited to, areas upstream to the head of tide in various streams that drain into the bays. Several activities threaten the PBFs in coastal bays and estuaries and need special management considerations or protection. The application of pesticides, activities that disturb bottom substrates/ adversely affect prey resources/ degrade water quality through re-suspension of contaminated sediments, commercial shipping and activities that discharge contaminants and result in bioaccumulation of contaminants in green sturgeon; disposal of dredged materials that bury prey resources; and bottom trawl fisheries that disturb the bottom/prey resources for green sturgeon.

"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 aquatic action area is described in the "Action Area" chapter of the BA on pages 77-78 and shown in detail in BA Figure 15 on page 82 (FEMA 2025). NMFS concurs with FEMA's determination that the action area extends from the project sites to a one-mile radial arc beyond the mouth of Grays Harbor into the Pacific Ocean, where contaminants would become so diffuse that detectable levels of chemical constituents would not be attributed directly to the proposed action, but rather considered a cumulative contribution by all inputs, including from the proposed action, and the Chehalis River basin.

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).

The BA contains the following descriptions of specific environmental baseline conditions, which we incorporate here by reference:

- Pages 86-87 describe existing wetland habitats
- Pages 88-91 describe existing aquatic habitats, which include Grays Harbor, Hoquiam River, Wishkah River, Charley Creek, and Ditch 1
- Pages 92-94 describe existing floodplain habitats

We supplement the BA's description of the environmental baseline (FEMA 2025) with the following information.

Grays Harbor is an estuary, fed by the Chehalis River and five smaller rivers, located on the southwest Pacific coast of Washington state about 45 miles (72 kilometers) north of the mouth of the Columbia River. It is approximately 15 miles long and 13 miles wide. The city of Aberdeen at the mouth of the Chehalis River has a population of 16,654. The city of Hoquiam along the northwest Grays Harbor Bayshore has a population of 8,600. Both cities have slight negative population growth, although the Washington Department of Commerce projects a stable to slightly increasing human population growth (WDOC 2024).

The Port of Grays Harbor is the largest coastal shipping port north of California and has become one of the largest centers for the shipment of automobiles and grains to China and Korea. The Port of Grays Harbor includes four terminals that serve an average of approximately 84 ocean-going vessels per year. FEMA regularly dredges the navigation channel and turning basin in the action area to maintain a bottom depth of -36 feet mean lower low water (MLLW) at the site and is currently deepening the channel to the fully authorized depth of -38 feet MLLW. Before 1989, sludge and effluent discharged by pulp mills contaminated sediments in Grays Harbor with

dioxin. The Washington Department of Ecology (Ecology) developed a dioxin total maximum daily load for Grays Harbor and the EPA approved the total maximum daily load in June 1992.

Grays Harbor is critical habitat for the sDPS green sturgeon. In summer months, subadult and adult green sturgeon aggregate in Grays Harbor to forage (Lindley et al. 2011). Grays Harbor is not critical habitat for the sDPS of Pacific eulachon. Historically, eulachon spawning was common in the tributaries of Grays Harbor but they now only rarely migrate to and spawn in the sloughs of the Chehalis River estuary or the Chehalis system (NMFS 2017). Grays Harbor is also not critical habitat for ESA-listed salmon. Most of the salmon in Grays Harbor are unlisted fish from the rivers that drain into Grays Harbor or unlisted fish produced in Willapa Bay or along the Washington Coast. However, some of the salmon in Grays Harbor are smolts from the Columbia River that follow the Columbia River plume into Grays Harbor during downwelling winds (Banas et al. 2004). The most likely out of basin salmon to use Grays Harbor are ocean-type Columbia River Chinook salmon. Genetic analysis of 161 Chinook salmon caught in the central estuary and South Bay showed that 1.2 percent or about 2 Chinook salmon per hectare come from the Columbia River (Sandell et al. 2014). The nearshore areas of the Washington coast are known migration corridors for ocean type Chinook and chum salmon.

Effects of the Action

Under the ESA, "effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. 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 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration" (50 CFR 402.02 (2018)).

The BA provides a detailed discussion and comprehensive assessment of the effects of the proposed action on pages 120-152 (FEMA 2025), which is adopted here (50 CFR 402.14(h)(3)). NMFS has evaluated the effects analysis included in the BA and after our independent, science-based evaluation, determined it meets our regulatory and scientific standards. NMFS supplements the FEMA effects assessment with additional information as described below.

<u>Effects on Species</u>
Effects of the proposed action would include short-term (generally, construction-related effects), and enduring effects. Each of these effects has the potential to negatively impact individual fish and designated critical habitat. All populations that would be exposed to effects of the proposed action are important for species recovery. The proposed action would also provide some enduring benefits to listed species, including the enhancements to floodplain wetlands, and dock and pile removal.

Short-term effects of the proposed action include: 1) underwater noise from the pile-driving installation of combi-wall segments of the levee structure and installation of steel piles to support outfall headwalls; and 2) turbidity resulting from pile driving, scour protection, outfall modifications, and structure removal. Eulachon and green sturgeon would be exposed to both noise and turbidity effects. LCR and UWR Chinook salmon and CR chum salmon would be exposed to noise effects. Eulachon spawning occurs in tributaries to Grays Harbor, typically between December and April (Gustafson et al. 2016), while juveniles may reside in the estuary up to eight weeks before migrating to the ocean (Hay and McCarter 2000). Green sturgeon adults and subadults are likely to be present from mid-summer through early autumn (NMFS 2021). LCR and UWR Chinook salmon and chum salmon are likely to be present at the confluence of Grays Harbor and the Pacific Ocean when pile-driving noise would occur in August and early September (Sandell et al. 2014).

Underwater Noise

FEMA (2025, pp. 123-124) determined distances and thresholds of physical injury and responses to in-water impact and vibratory pile driving. Elevated sound pressure during vibratory pile driving would create short-term behavioral responses to eulachon and green sturgeon. Although no specific studies evaluate the effects of vibratory driving on salmonids, NMFS extrapolates from other studies to determine that vibratory pile driving can result in noise levels sufficient to alter normal behavioral patterns of fish. These behavioral changes may be expressed in predator avoidance responses such as those seen when fish encounter boat noise (van der Knaap et al. 2022). Although short-term behavioral responses are anticipated from vibratory pile driving, harm is unlikely to occur to individual green sturgeon, eulachon, or juvenile salmonids.

Unlike vibratory pile driving, impact driving can cause harm to aquatic species. Eulachon are unlikely to be present during the early portion of the in-water work window. However, adult eulachon are likely to be present within the action area between late November and January and would be susceptible to elevated in-water noise from impact driving. Juvenile salmonids would be further away from the noise levels where lethal harm would occur. However, juvenile salmon within the action area but not close enough for immediate lethal harm may experience sublethal effects from impact pile driving, including acoustic masking (Codarin et al., 2009), startle responses and altered swimming (Neo et al., 2014), abandonment or avoidance of the area of acoustic effect (Mueller, 1980; Picciulin et al., 2010; Sebastianutto et al., 2011) and increased vulnerability to predators (Simpson et al., 2016). These startle responses from impact driving would harm some individual juvenile salmonids but would not produce population level impacts. Adult and subadult green sturgeon and adult eulachon are likely to be present within the project vicinity where harm would occur from impact pile driving.

Turbidity

We anticipate small, temporary reductions in water quality near the piles and extending up to 300 feet upstream or downstream, depending on tidal influence. Adult eulachon are likely to be present during the later periods of the IWWW. Turbidity would not extend to the Grays Harbor confluence with the Pacific Ocean to affect ESA-listed juvenile salmonids. Some individual green sturgeon would be present during construction and pile activities and thus exposed to elevated turbidity. We anticipate very minor effects to green sturgeon as they are often

associated with turbid conditions on the benthos where similar species, Atlantic (*Acipenser oxyrinchus oxyrinchus)* and shortnose (*A. brevirostrum)* sturgeon, show little to no obvious turbidity effects (Johnson 2018). Adult eulachon are mobile and are likely to avoid areas with elevated turbidity. Nevertheless, some individuals are likely to be harmed by elevated turbidity adjacent to pile removals and installation.

Contaminants
Short-term construction impacts are likely to produce contaminants. Green sturgeon are susceptible to contaminants, particularly because their foraging behaviors put them in prolonged contact with sediments and prey that may be contaminated. The lengthy exposure of green sturgeon to contaminated sediment makes adults vulnerable to bioaccumulation and biomagnification of toxins (Rodgers et al. 2019). The removal of creosote piles in the proposed action may provide long-term benefit by reducing overall contaminants from Grays Harbor, but the short-term concentration of PAHs and other contaminants would likely increase. Nevertheless, the short duration of the exposure to contaminants from pile removal and the low numbers of green sturgeon in the action area would not result in harm to adult or subadult green sturgeon.

Enduring effects of the proposed action would include: 1) loss of aquatic habitat resulting from the new levee infrastructure and scour protection below the high tide line; 2) loss and degradation of floodplain habitat from levee installation; and 3) decreased water quality from stormwater runoff. The proposed mitigation to restore approximately 7.9 acres of off-site wetland and floodplain habitat (FEMA 2025, pp. 63-68, 137-138), and the removal of 317 to 385 creosote piles throughout the action area (FEMA 2025, p. 67), would increase available rearing areas for juvenile salmonids, remove migratory obstacles, and improve sediment and water quality.

Loss of Aquatic Habitat
FEMA (2025) describes the adverse effects of aquatic habitat loss due to levee and scour protection installation. Generally, the levee work would armor streambanks and shorelines, thus reducing prey availability, reducing cover and refugia for rearing and migrating fish, and deflecting river energy back to the rivers. The BA accurately describes the effects of lost aquatic habitat on ESA listed species on pages 128-130 and 151-152 (FEMA 2025) and is adopted here by reference. The loss of aquatic habitat is likely to harm eulachon by reducing prey and refugia from predators. It is likely to harm green sturgeon by reducing prey availability.

Loss of Floodplain Habitat
The primary function of levees is to prevent floodwater from encroaching onto the floodplain. Levees increase conveyance velocity and inhibit erosion and lateral estuary and channel migration. Each of these prevents habitat forming processes, and limits floodplain connectivity. The BA accurately describes the effects of lost floodplain habitat on ESA listed species on pages 130-132 (FEMA 2025) and is adopted here by reference. The loss of aquatic habitat is likely to harm eulachon by reducing prey and refugia from predators. It is likely to harm green sturgeon by reducing prey availability.

Stormwater Runoff

FEMA (2025, pp. 47-53; 134-137; 152-156) details stormwater runoff and treatment. The proposed action includes new and replaced PGIS, which would perpetuate existing conditions of stormwater discharge to aquatic habitat. The project includes approximately 13,015 square feet (0.30 acres) of new PGIS and 108,183 square feet (2.48 acres) of replaced PGIS. Despite partial treatment, not all contaminants would be successfully removed. FEMA (2025) describes the effects of stormwater runoff to ESA-listed species found in the action area and is adopted here by reference. In summary, stormwater is likely to adversely affect LCR and UWR Chinook salmon, chum salmon, eulachon, and green sturgeon.

Effects on Critical Habitat

FEMA (2025, pp. 142-146; pp. 157-162) addresses effects on critical habitat. Primary PBFs of critical habitat for all affected species in this consultation (except eulachon) that would be affected by the proposed action include food resources and water quality, with the addition of water depth for green sturgeon. These features of critical habitat would be diminished in the form of lost foraging opportunities for subadult and adult fish as well as chronic direct and/or trophic exposure of individuals to contaminants from stormwater runoff. The current floodplain area surrounding the project is largely industrial and has limited high-quality habitat. However, what remains of intact floodplain will be increasingly impaired by construction and the long-term life of the project. The effects on critical habitat are expected to occur throughout the life of the levee structure. The BA accurately describes the effects on green sturgeon critical habitat from the proposed action (FEMA 2025, pages 142-144) and is adopted here by reference. Critical habitat has not been designated in the action area for eulachon. The BA inaccurately identifies critical habitat for LCR and UWR Chinook salmon and CR chum salmon as outside of the action area. As nearshore rearing and migration corridor are within the one-mile radial arc of the Grays Harbor confluence, the action area is within critical habitat for these species. Water quality degradation from contaminants will impair critical habitat for LCR and UWR Chinook salmon and CR chum salmon.

Mitigation Measures

FEMA has limited opportunity for onsite mitigation and therefore has selected and offsite mitigation area to offset the adverse effects of the proposed action on wetlands, aquatic, and floodplain habitat. The mitigation site was formerly used for dredge spoils and a gravel pit. It has since revegetated as shrub and forest habitat, with a raised levee along the left bank of Charley Creek. It contains approximately 58 acres of modified floodplain that does not provide functional floodplain habitat. The City of Aberdeen owns the two parcels at the mitigation site and conversion of the parcels for project mitigation is considered part of the Proposed Action. The mitigation site is currently undeveloped land with emergent and scrub-shrub wetlands and areas of fill material.

The selected off-site mitigation site would provide compensatory mitigation for permanent and temporary wetland impacts and compensation for lost floodplain and stream habitat. Habitats would be re-established through the removal of fill materials, excavation of new stream channels, removal of embankments/dikes along the shoreline of the river, and rehabilitation of wetlands. These actions would restore high-quality habitat for aquatic and terrestrial species by reengaging the floodplain and increasing available rearing areas for juvenile salmonids.

"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. Cumulative effects are addressed in the BA on page 152 and are incorporated by reference here (FEMA 2025). Grays Harbor and the city of Hoquiam have been heavily developed for more than a century. The proposed action may induce additional adverse effects to green sturgeon and their critical habitat as well as eulachon presence by increasing the likelihood of further development within the action area in response to lower flood insurance rates and increased flood protection. Such development would likely decrease the quality and quantity of green sturgeon and eulachon foraging habitat in the Hoquiam and Wishkah Rivers, and Grays Harbor.

Some continuing non-federal activities are reasonably certain to contribute to environmental variation effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by this variation that are properly part of the environmental baseline vs. cumulative effects. However, it is reasonably certain that over the life of the project, environmental variation effects such as modified water temperatures and altered hydrography will all exert more influence on the habitat quality and related carrying capacity. NMFS expects state and private activities near and upriver from the proposed action will contribute to cumulative effects in the action area. All such future non-federal actions within the watershed will cause long-lasting environmental perturbations and will continue to harm ESA-listed species and their critical habitats. Especially relevant effects include loss or degradation of nearshore habitats, pocket estuaries, estuarine rearing habitats, wetlands, floodplains, riparian areas, and water quality.

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 for the conservation of the species.

Individual LCR and UWR Chinook salmon and CR chum salmon are likely to be affected by the enduring effects of stormwater and the short-term effects of noise from the proposed action. These consequences would be certain to affect some individuals from each NMFS-listed species that intersect with the action area. Each of these species is made of many individual populations which may be affected by the proposed action as they migrate through the action area. The effects on any one population cannot be determined; however, given the disbursement of stormwater runoff and short-term noise in the portion of the action area where these species might be found, it is unlikely any one population would be harmed to the extent that it would adversely influence overall recovery of the species.

Green sturgeon and eulachon are likely to be affected by the enduring effects of aquatic and floodplain habitat loss and stormwater contaminants, and the short-term effects of noise associated with construction activities. Green sturgeon spawn in the Sacramento River and forage in coastal estuaries, including Grays Harbor, during summer and early fall. Eulachon utilize the Grays Harbor ecosystem for both rearing and migration. Green sturgeon and eulachon may be exposed to sound pressure from pile-driving and during the in-water work window of the proposed action, as well as diminished and degraded aquatic and floodplain habitat within and around the project site during the lifetime of the structures. However, their relatively low abundance in Grays Harbor indicates that there is a very low risk to the species from the proposed action.

The proposed action would adversely affect PBFs of critical habitat for LCR and UWR Chinook salmon, chum salmon, and green sturgeon. Impacts from degraded water quality, reduced prey, and passage through migration corridors from stormwater inputs will impair critical habitat for these species. Although summer foraging is critical to the life history of green sturgeon, the amount of lost forage is a very small fraction of the total green sturgeon forage supply in Grays Harbor. Water quality impairments through stormwater are likely to contain persistent harmful pollutants. As a result, the conservation value of the action area is further degraded from the environmental baseline.

We can reasonably anticipate the proposed action would facilitate new development within the action area that would likely add to stormwater discharges to Grays Harbor, thereby further degrading water quality, unless measures are implemented to reduce the pollutants and hydrological aspects of the runoff. The volume of stormwater that would be discharged as a result of the proposed action is very small in comparison to the volume of receiving waters, and the impact of pollutants and contaminants in that discharge are also very small when compared to the adverse effects caused by the contaminants in all historical or existing stormwater discharges. Nonetheless, this discharge would incrementally contribute to pollutant levels at the embayment scale owing to the sustained, long-term, and chronic nature of stormwater discharges and the compounding effects of environmental processes that affect the fate and transport of those pollutants.

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 LCR and UWR Chinook salmon, CR chum salmon, green sturgeon, or eulachon, 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 incidental take statement.

Amount or Extent of Take

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

- Incidental take in the form of harassment, injury, or death from underwater sound pressure (noise) generated during impact pile driving;
- Incidental take in the form of harm from exposure to increased turbidity during pile-driving, pile removal, scour protection, outfall modifications, and structure removal;
- Incidental take in the form of harm from diminished benthic prey/forage availability from aquatic and floodplain habitat loss; and
- Incidental take in the form of harm from contaminants in stormwater runoff.

We cannot predict with meaningful accuracy the number of individuals affected that are reasonably certain to be injured or killed by exposure to any of these stressors. The distribution and abundance of each species that occur within the action area can be affected by habitat quality, competition, and predation. They can also be affected by the interaction of processes that influence genetic, population, and environmental characteristics. These biotic and environmental processes interact in ways that may be random or directional and may operate across broader temporal and spatial scales than are affected by the proposed action. Additionally, NMFS is not aware of any device or practicable technique that would yield reliable counts of individuals that may experience these impacts. In such circumstances, we use the causal link established between the activity and the likely extent and duration of changes in habitat conditions to describe the extent of take as a numerical level of habitat disturbance. The most appropriate surrogates for take are parameters related to the proposed action that are directly related to the magnitude of the expected take.

Take in the form of harm of ESA-listed juvenile salmonids, eulachon, and green sturgeon from pile-driving noise. For incidental take from impact pile driving, the number of pile strikes per day is proportional to the amount of take because each pile strike creates sound that could harass, injure, or kill fish. The risk and total number of fish exposed to harmful noise increases as more pile strikes occur. Therefore, the extent of take for noise from in-water impact pile driving is 216 pile strikes per day for 30-inch steel piles, and 3,000 strikes per day for sheet piles. This surrogate serves as an effective re-initiation trigger because the number of pile strikes can be monitored on a continuous basis.

Take in the form of harm of ESA-listed eulachon from turbidity. For incidental take in the form of harm, injury, or death as a result of exposure to increased turbidity, the best available indicator for the extent of take is an increase in visible suspended sediment in the water column. Therefore, the extent of take would be exceeded if the turbidity nephelometric turbidity units (NTUs) measured 300 feet downstream (ebb tide) or upstream (flood tide) of in-water work exceeds 10 NTUs over background when the background is 50 NTUs or less or a 20 percent increase in turbidity when the background turbidity is more than 50 NTUs. This surrogate serves as an effective re-initiation trigger because ongoing turbidity monitoring would be conducted to evaluate if the incidental take threshold is exceeded.

Take in the form of harm of ESA-listed green sturgeon from diminished prey resulting from lost aquatic and floodplain habitat. For incidental take in the form of harm from diminished forage opportunities and subsequent reductions in fitness, the best available indicator is one that best describes the area of riprap installed. The area of riprap proposed for placement is 76,324 square feet. Take would be exceeded if this area is exceeded or if the footprint of the riprap placement extends beyond the areas and locations described in the proposed action. This indicator is appropriate because it is directly related to the magnitude of incidental take caused by riprap placement and functions as a meaningful reinitiation trigger because FEMA can monitor compliance in real time.

Take in the form of harm of ESA-listed juvenile salmonids, eulachon, and green sturgeon from increased contaminants resulting from stormwater. For incidental take in the form of harm from pollutants in stormwater runoff, the best available surrogate is the amount of PGIS. The amount of PGIS is appropriate because as PGIS increases, the potential for and intensity of stormwater-pollutant-related effects to affected species increases. If the area of PGIS exceeds 13,400 square feet of new PGIS or 111,400 square feet of replaced PGIS, the take limit is exceeded. This surrogate serves as an effective re-initiation trigger since the area of the PGIS can be observed on a continuous basis.

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). FEMA shall require the following measures during implementation of the proposed action:

1. Minimize noise-related effects;
2. Minimize stormwater effects to in-stream and marine habitats;
3. Implement a monitoring plan to confirm that incidental take from the proposed action is not exceeded.

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 or contractor complies) with the following terms and conditions. FEMA 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. FEMA shall implement or require the applicant to implement the following terms and conditions:

The following terms and conditions implement reasonable and prudent measure 1:

1. Ensure that piles do not exceed the number or size described in the BA (FEMA 2025)
2. Ensure that in-water impact pile driving includes ramp-up procedures by providing an initial set of strikes from the impact hammer at 20-40 percent energy for each pile driven by an impact hammer. Each strike shall be followed by no less than a 30-second delay period. This procedure shall be conducted a total of three times before full impact driving begins.
3. Ensure that pile installation and proofing occurs during the in-water work window of August 1 to January 15.

The following terms and conditions implement reasonable and prudent measure 2:

1. Ensure that the amount of new PGIS does not exceed 13,400 square feet.
2. Ensure that the amount of replaced PGIS does not exceed 111,400 square feet.

The following terms and conditions implement reasonable and prudent measure 3:

1. FEMA or the permit applicant shall report all monitoring items, to include at minimum the following:
    a. The days of in-water work
    b. The dimensions, type, and number of piles installed
    c. The number of pile driving strikes (impact proofing and the number of impact hammer strikes)
    d. The final total area of new and replaced PGIS
    e. The final total area of installed riprap
    f. The number of creosote piles removed
    g. The final area of restored wetland and floodplain
    h. Any observed injured or dead fish during pile driving
    i. The results of turbidity monitoring
2. Within 90 days of project completion, submit monitoring documents to projectreports.wcr@noaa.gov including “Attn: WCRO-2025-01789” within the subject line.

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). FEMA should:

1. Construct additional stormwater treatment facilities or best management practices to provide treatment of any untreated PGIS in the project area
2. Employ adaptive management of stormwater treatment to address any lack of treatment effectiveness, new science, or contaminants of emerging concern
3. Construct proactive stormwater treatment facilities elsewhere in the watershed where treatment is absent or inadequate to improve water quality in the action area
4. Ensure replanted vegetation in temporarily disturbed areas, proposed wetlands, and bioswales includes a variety of native plants that will increase their function to better filter runoff
5. Routinely require setback, removal, soft armor, and/or other design elements, to increase habitat values of ESA listed salmonids when levee repair and bank stabilization actions are proposed
6. Remove unnecessary overwater structures (e.g., docks, piers, piles) within the scope and project area of the project.

Reinitiation of Consultation

Under 50 CFR 402.16(a): "Reinitiation of consultation is required and shall be requested by the federal agency or by the Service 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 Fishery Management Council's (PFMC's) Pacific Coast Groundfish Fishery Management Plan (FMP) (PFMC 2024a), Coastal Pelagic Species FMP (PFMC 2024b), and Pacific Coast Salmon FMP (PFMC 2024c). Conservation recommendations are listed below.

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, Pacific Coast Groundfish, and Coastal Pelagic Species FMPs.

In addition, the project occurs within, or in the vicinity of an estuary, seagrass beds, and Washington state waters from the 3-nautical-mile boundary of the territorial sea shoreward to mean higher high waters, which are designated as habitat areas of particular concern (HAPCs) for various federally managed fish species within the Pacific Coast Salmon and Pacific Coast Groundfish FMPs. HAPCs are described in the regulations as subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPCs are not afforded any additional regulatory protection under the MSA; however, federal projects with potential adverse impacts on HAPCs will be more carefully scrutinized during the consultation process.

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

- Loss of approximately 1.5 acres of floodplain from construction of the levee, which adversely affects Pacific Coast Salmon EFH and designated HAPCs
- Stormwater runoff (i.e., pollution) from 13,400 square feet of new PGIS and 111,400 square feet of replaced PGIS, which adversely affects Pacific Coast Salmon EFH, Coastal Pelagic EFH, Groundfish EFH, and designated HAPCs
- Decreased nearshore estuarine habitat along the marine shoreline, which adversely affects Pacific Coast Salmon EFH, Coastal Pelagic EFH, Groundfish EFH, and designated HAPCs

EFH Conservation Recommendations
NMFS determined that the following conservation recommendations are necessary to avoid, minimize, mitigate, or otherwise offset the adverse effects of the proposed action on EFH.

- Consider additional stormwater treatment facilities or best management practices to provide infiltration treatment of runoff from all existing, new, and replaced PGIS and any remaining untreated PGIS in the project area.
- Employ adaptive management of stormwater treatment to address any lack of treatment effectiveness, new science, or contaminants of emerging concern.
- Construct proactive stormwater treatment facilities elsewhere in the watershed where treatment is absent or inadequate to improve water quality in the action area.
- Acquire land or otherwise restore marine nearshore habitat, which may offset habitat loss and increase survival and productivity of juvenile EFH salmonids, coastal pelagic, and groundfish species. Habitat restoration options may include:
    - Removing creosote piles from the project site and throughout Grays Harbor
    - Creating shallow nearshore habitat where hard armoring (e.g., sheet piles) exist or are proposed
    - Planting eelgrass where nearshore habitat is suitable, which may improve productivity and survival of juvenile EFH salmonids, coastal pelagic, and groundfish species
    - Decreasing the number of stormwater outfalls by creating stormwater retention and bioinfiltration areas, which may increase the survival of EFH salmonids, particularly coho salmon

Statutory Response Requirement

As required by section 305(b)(4)(B) of the MSA, FEMA must provide a detailed response in writing to NMFS within 30 days after receiving an EFH conservation recommendation. Such a response must be provided at least 10 days prior to final approval of the action if the response is inconsistent with any of NMFS' EFH conservation recommendations unless NMFS and the federal agency have agreed to use alternative time frames for the federal agency response. The response must include a description of the measures proposed by the agency for avoiding, minimizing, mitigating, or otherwise offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations, the federal agency must explain its reasons for not following the recommendations, including the scientific justification for any disagreements with NMFS over the anticipated effects of the action and the measures needed to avoid, minimize, mitigate, or offset such effects (50 CFR 600.920(k)(1)).

Supplemental Consultation

FEMA 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(l)).

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/welcome. A complete record of this consultation is on file at the Oregon and Washington Coastal Office.

Please direct questions regarding this letter to Curtis McFeron in the Lower Columbia Washington Coast Branch of the Oregon Washington Coastal Office at curtis.mcferon@noaa.gov.

Sincerely,

Kathleen Wells
Assistant Regional Administrator
Oregon Washington Coastal Office

cc: Christopher Eck, FEMA

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