



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
West Coast Region  
501 West Ocean Boulevard, Suite 4200  
Long Beach, California 90802

December 4, 2025      Refer to NMFS No: WCRO-2025-01452

Kelsey Lamer, NEPA Program Manager  
Department of the Army  
Military Ocean Terminal Concord (MOTCO)  
Department of Public Works  
410 Norman Avenue, Bldg 635  
Concord, California 94520-1142

Re: Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Military Ocean Terminal Concord (MOTCO) Waterborne Security Barrier (WSB) Test Section Project

Dear Kelsey Lamer:

This letter responds to your April 24, 2025, request for initiation of consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) and Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for the subject action. We reviewed the Army'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 document(s) we have incorporated by reference and where that information is being incorporated.

The Army requested, via letter dated April 24, 2024, formal consultation for the proposed MOTCO Waterborne Security Barrier (WSB) Test Section Project, and included the Biological Assessment (BA), titled Military Ocean Terminal Concord (MOTCO) Waterborne Security Barrier Test Section, Contra Costa County, California, prepared by the U.S. Army Corps of Engineers, San Francisco District, Navigation & Operations Section, Environmental Services Branch, April 22, 2025 with that request. With this request, the Army also specified a contact at the U.S. Army Corps of Engineers (Corps) for additional information. On June 30, 2025 NMFS requested, from the Corps, water depth in the Project area, and two reports referenced in the document: Mulvey *et al.* 2024 and Smith 2025; NMFS also provided the web page for information regarding potential impacts under the Marine Mammal Project Act. The Corps provided the additional documents and information on June 30, 2025 and on July 3, 2025, respectively. NMFS requested additional clarification of the Army's effects determination for salmonid species from the Corps on July 24, 2025, and the Corps provided the information on the same day. NMFS initiated consultation on July 24, 2025, but consultation was held in abeyance for 43 days due to a lapse in appropriations and resulting government shutdown. Consultation resumed on November 13, 2025.



Updates to the regulations governing interagency consultation (50 CFR part 402) were effective on May 6, 2024 (89 FR 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 ESA (89 FR 24268; 84 FR 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.

The Army proposes to install, operate, and maintain a test section of a WSB adjacent to the newly expanded Restricted Area boundary for MOTCO (33 CFR Part 334.1110). MOTCO is an Army Military Surface Deployment and Distribution Command trans-shipment facility located in Suisun Bay in Contra Costa County, California (Latitude: 38.06003, Longitude: -122.0369). The purpose of the proposed test section is to evaluate the barrier technology and technique, and provide data to inform the potential future design and configuration of a WSB in a full build-out scenario, which may be deployed to prevent unwanted vessel traffic from approaching the MOTCO shoreline; section 1.1. of the BA describes the Project need in detail. The proposed WSB test section, WSB-M, is a modular floating barrier held in place with moorings, and would be approximately 1,508 feet long. The WSB-M would be located approximately 1500-2000 feet offshore from the MOTCO shoreline, and would take approximately four days to install; testing of the WSB-M would be conducted for approximately two years. A description of the WSB-M modules, moorings, construction and maintenance activities is described in BA Sections 2.1-2.3, and the conservation measures including the work window and biological monitoring is provided in BA Section 2.4. The potential future full build-out scenario is not included in this consultation.

## BIOLOGICAL OPINION

This opinion analyzes impacts of the Project on juvenile endangered Sacramento winter-run Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionary Significant Unit (ESU) and their critical habitat, threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*) ESU, threatened Central Valley (CV) steelhead (*O. mykiss*) Distinct Population Segment (DPS), and threatened Central California Coast (CCC) steelhead (*O. mykiss*) DPS.

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 (PBF<sup>1</sup>s) essential to the conservation of the species that create the conservation value of that habitat. Section 3.3 of the BA provides a description of the range, life cycle, forage diet, threats and stressors to

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<sup>1</sup> The designation of critical habitat for CCC steelhead and the Southern DPS of green sturgeon uses the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analysis, whether the original designation identified primary constituent elements, physical or biological features, or essential features. In this letter of concurrence, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

Sacramento winter-run, their critical habitat (PBFs are listed on page 27 of the BA) and Central Valley spring-run Chinook salmon, and Section 3.4 provides a description of the range, life cycle, forage diet, threats and stressors to CV and CCC steelhead; we have adopted that information here. In addition, as a supplement to the information adopted in the BA, NMFS provides information on the current status of the species in the paragraphs below.

The Sacramento River winter-run Chinook salmon ESU has been completely displaced from its historical spawning habitat by the construction of Shasta and Keswick dams. Since the 2016 5-year review, the biological status of the population has declined, due in large part to hatchery influence (NMFS 2024). Based on the Lindley *et al.* (2007) criteria, which establishes areas to measure species status, the population is currently at high extinction risk. High extinction risk for the population was triggered by the hatchery influence criterion; although hatchery influence was declining at the time of the review, it remains at a level above low or moderate extinction risk. Several listing factors that have contributed to the overall population decline have been reduced by regulatory actions, and these efforts have likely contributed to recent trends in increased abundance (NMFS 2024). Despite this trend, factors such as drought, poor ocean conditions, and the above-mentioned hatchery influence continue to impact the population and contribute to extinction risk.

Historically, the predominant salmon run in the Central Valley was the spring-run Chinook salmon, however extensive construction of dams through the Sacramento-San Joaquin Basin has reduced the run to only a small portion of its historical distribution. According to the NMFS 5-year species status review (NMFS 2016), the status of the CV spring-run Chinook salmon ESU, until 2015, has improved since the 2010 status review. The improved status is due to extensive restoration, and increases in spatial structure with historically extirpated populations (Battle and Clear creeks) trending in the positive direction. However, more recent declines of many of the dependent and independent populations, high pre-spawn and egg mortality during the 2012 to 2016 drought, and uncertain juvenile survival during the drought are likely increasing the ESU's extinction risk. Escapement data show a continued overall decline in adult returns from 2014 through 2020 (CDFW 2021).

CCV steelhead historically were well-distributed throughout the Sacramento and San Joaquin rivers (Busby *et al.* 1996), and although they remain widely distributed, the majority of their spawning grounds are now above impassable dams. The viability of the CCV steelhead DPS appears to have slightly improved since the 2010 and 2015 viability assessments, driven primarily by an increase in adult returns to hatcheries (NMFS 2024). The lack of improved natural production, low natural population abundance, and large hatchery influence are a cause for concern (NMFS 2024).

Historically, approximately 70 populations of steelhead existed in the CCC steelhead DPS (Spence *et al.* 2008, Spence *et al.* 2012). Many of these populations (about 37) were independent, or potentially independent, meaning they had a high likelihood of surviving for 100 years absent anthropogenic impacts (Bjorkstedt *et al.* 2005). The remaining populations were dependent upon immigration from nearby CCC steelhead DPS populations to ensure their viability (McElhany *et al.* 2000, Bjorkstedt *et al.* 2005). While historical and present data on abundance are limited, CCC steelhead numbers are substantially reduced from historical levels. A total of 94,000 adult steelhead were estimated to spawn in the rivers of this DPS in the mid-

1960s, including 50,000 fish in the Russian River, which is considered the largest population within the DPS (Busby *et al.* 1996). Recent estimates for steelhead abundance in the Russian River watershed (combined natural and hatchery-origin) range from approximately 800-2,000 over three years (NMFS 2024). In San Francisco Bay streams, reduced population sizes and fragmented habitat condition has likely also depressed genetic diversity in these populations. The most recent status update concludes that the risk to the persistence of the CCC steelhead DPS has not significantly changed since the previous review (NMFS 2024). NMFS concluded that the CCC steelhead DPS shall remain listed as threatened.

Finally, we examined the likely effects on any listed species and critical habitats that your agency made “not likely to adversely affect” determinations for. Our conclusions regarding the effects of the action on North American green sturgeon and their critical habitat is presented below under the heading: NLAA determinations.

“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). Section 1.2, pages 5-7, of the BA describes the 506-acre action area. The action area includes the approximately 18,096 square foot area of the WSB-M structure itself, and an area extending approximately 2,000 feet from all sides of WSB-M structure to account for shading and potential effects to fish behavior.

The “environmental baseline” refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed federal projects in the action area that have already undergone formal or early section 7 consultations, and the impact of State or private actions which are contemporaneous with the consultation in process. The 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). Section 4 of the BA, pages 37-40 describe the environmental baseline in part and are incorporated by reference here. In addition, as a supplement to the information adopted in the BA, NMFS provides additional information in the following paragraphs below.

Adult salmonids migrate from the Pacific Ocean through the San Francisco Bay as they seek the upstream spawning grounds of their natal streams. During the course of their downstream migration, juvenile listed salmon and steelhead may utilize estuarine waters for seasonal rearing, but available information suggests that fish are actively migrating and currently they do not reside for extended periods in San Francisco Bay (Hearn *et al.* 2010). Historically, the tidal marshes of the Bay provided a highly productive estuarine environment for juvenile anadromous salmonids. However, loss of habitat, changes in prey communities, and water-flow alterations and reductions have degraded habitat and likely limit the ability of the Bay to support juvenile rearing. MacFarlane and Norton (2002) found that fall-run Chinook experienced little growth, depleted condition, and no accumulation of lipid energy reserves during the relatively limited time the fish spent transiting the 40-mile length of the estuary. Sandstrom *et al.* (2013) found that CCC steelhead smolts emigrated more slowly through the Napa River, than San Pablo or Suisun Bays, and they were not observed in recently restored off-channel habitat. Although juvenile salmon may spend less time in the estuary, they remain susceptible to predation from native

and non-native predators during downstream migration. Habitat alteration and non-native piscivorous predation present a combined threat to juvenile salmonids. Migrating juvenile salmonids become disoriented when encountering overwater structures – behaviors range from juvenile salmonids splitting into groups to avoidance of travel through shaded habitat (Kemp *et al.* 2005, Rondorf *et al.* 2010) which may cause them to alter their migratory path. Piscivorous predation may increase near shaded habitat as predators utilizing shade may have a greater visual advantage due to the physical properties of light transmission in water and the physical attributes of the vertebrate eye, i.e., the overwater shading acts as a sunshade (Helfman 1981).

Features of designated critical habitat for winter-run Chinook salmon in the action area essential for their conservation are habitat areas and adequate prey that are uncontaminated. These PBFs of designated critical habitat within the action area are degraded and limited. Habitat degradation in the action area is primarily due to altered and diminished freshwater inflow, shoreline development, shoreline stabilization, non-native invasive species, discharge and accumulation of contaminants, loss of tidal wetlands, and periodic dredging for navigation.

Over the long-term, environmental variation may impact habitat conditions. California could be subject to higher average summer air temperatures and lower total precipitation levels. Reductions in the amount of snowfall and rainfall would reduce stream flow levels in Northern and Central Coastal rivers. Estuaries may also experience changes in productivity due to changes in freshwater flows, nutrient cycling, and sediment amounts – all of which contribute to the function of winter-run Chinook critical habitat.

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 biological assessment provides a detailed discussion and comprehensive assessment of the effects of the proposed action in Section 5, pages 41-45, and is adopted here (50 CFR 402.14(h)(3)). NMFS has provided additional analysis of the overwater shading and predation impacts below. The Army proposes to authorize the construction of the 18,096 square foot MOTCO WSB-M test section. The effects of this proposed action are:

- increased turbidity and benthic disturbance;
- changes in water velocity;
- altered migratory habitat; and
- increased predation of migrating ESA-listed salmonids.

The Sacramento River winter-run and Central Valley spring-run populations of Chinook salmon and the CV and CCC populations of steelhead will be affected by the proposed action through minor, temporary and localized increases in turbidity and benthic disturbance by the placement of the WSB-M moorings. Placement of these moorings is anticipated to take approximately four days, and this minor disturbance is not expected to result in any persistent increase in turbidity. Although the moorings will disturb the benthic habitat (approximately 124 square feet per

anchor) within the action area, the loss of habitat is very small when compared to the available foraging habitat within Suisun Bay and the larger San Francisco Bay Estuary. These minor disturbances are not expected to be realized by salmonids as they migrate through the action area.

Large structures have the capacity to result in hydraulic impacts such changes in water velocity or turbulence (Smith *et al.* 2025, Uksul *et al.* 2025). Pre-project modeling results (Smith *et al.* 2025) indicate that the WSB-M impacts on hydrology in the action area would not result in statistically significant differences in fish swimming velocity or distance traveled compared to without-project conditions, thus similar to the minor disturbances due to placement of the WSB-M moorings, the effects of the structure on water velocity or turbulence during salmonid migration are expected to be minor.

Overwater structures, such as docks and piers, are known to increase shading, which can reduce growth of submerged aquatic vegetation, decrease primary productivity, alter predator-prey interactions, change invertebrate assemblages, and reduce the density of benthic invertebrates (Helfman 1981, Glasby 1999, Struck *et al.* 2004, Stutes *et al.* 2006); all of which may lead to an overall reduction in the quality of fish habitat. As described in Helfman (1981), Rondorf *et al.* (2010), and in Section 5.3 of the BA, shade and physical structures are known to attract piscivorous predators, and fish predation may increase at these sites. Low light decreases visual cues for juvenile salmonids, thus they may also avoid shaded habitat which may leave them more vulnerable to predation, i.e., avoiding shaded habitat for deeper water may expose juveniles to predators (Sabal *et al.* 2021). Thus, shade presents the risk of both increased predation by increasing predator habitat and increased vulnerability as juvenile salmonids avoid the shaded habitat (Simenstad *et al.* 1999). The combined effects of habitat modification and non-native predators can also exacerbate the mortality of native juvenile salmon during the emigration (Sabal *et al.* 2016). Pre-project fish monitoring indicates that juvenile salmonids do pass through the action area. Striped bass (*Morone saxatilis*), a known predator of juvenile Chinook salmon, are found within the action area (Young *et al.* 2022) and are known as opportunistic predators that may utilize both shaded and open water habitat for foraging (Nobriga and Feyrer 2007). Because the new structure will increase shading by 18,096 square feet, increased predation is expected to result from either increased use of the shaded area as predator habitat or increased avoidance of the shaded areas by juvenile salmonids. Adult salmonids are less vulnerable to increased predation due to their larger size and ability to avoid predators utilizing shaded habitat. The Project is relatively small compared to the overall size of migratory habitat, thus we expect that predation would only affect a small proportion of the overall number of juvenile salmonids migrating in any given year and over the approximately two-year life of the project.

The proposed project monitoring is intended to further understand how the WSB-M affects or alters predator/juvenile salmonid interactions. As described in Section 4, of the BA, and Mulvey *et al.* 2024, there are ongoing non-USACE studies, unrelated to this project, utilizing acoustic telemetry to track outmigration of juvenile Chinook salmon and steelhead. This project will utilize the existing studies acoustic receiver gate arrays and deploy additional receivers upstream and downstream of the proposed MOTCO WSB-M. The deployment of the additional receivers does not include actions that would result in disturbance to ESA-listed salmonids or their habitat.

Thus, implementation of MOTCO WSB-M monitoring will not result in the disturbance, capture, handling, injury, or mortality of ESA-listed 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. Section 6 of the BA discusses cumulative effects; any future state or private activities would involve federal action because the action area occurs entirely within Suisun Bay, requiring federal permits under sections 401 or 404 of the Clean Water Act (33 U.S.C. §1251 et seq. (1972)) or section 10 of the Rivers and Harbor Act of 1899 (33 U.S.C. §403). There are no 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. The future full build-out of the project would be located within federal lands, e.g., MOTCO property; however, this future action would require a separate consultation pursuant to section 7 of the ESA and is therefore not considered in this section or elsewhere in this consultation.

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 above, installation of the WSB-M would result in temporary, short-term, minor increases in turbidity and benthic disturbance which, due to their minimal spatial and temporal impact, are not likely to result in harm or take of juvenile salmonids. Post-construction, the WSB-M will alter hydraulic conditions and increase overwater shading, however, the Project-related changes to hydrological conditions are not expected to impair habitat or result in conditions that would cause harm to salmonids. The Project-related increase in overwater shading will provide increased habitat for known predators of juvenile salmonids, and is expected to result in take in the form of predation of a small proportion of the overall number of juvenile salmonids migrating in any given year and over the life of the project. The proposed biological monitoring is intended to provide additional information on the occurrence of increased predation.

California could be subject to future changing environmental conditions, and these conditions may overlap in both space and time with the proposed WSB-M. These changes in environmental conditions will likely materialize as moderate changes within the action area, and may place further stress on juvenile salmonids. The effects of the proposed action combined with moderate environmental variation may result in conditions similar to those produced by natural ocean-atmospheric variations and annual variations. The species are expected to persist throughout these phenomena even when concurrently exposed to the effects of this project.

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 endangered Sacramento winter-run Chinook salmon (*O. tshawytscha*) ESU, threatened Central Valley spring-run Chinook salmon (*O. tshawytscha*) ESU, threatened CV steelhead (*O. mykiss*) DPS and threatened CCC steelhead (*O. mykiss*) DPS, or adversely modify Sacramento winter-run Chinook salmon 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 of juvenile endangered Sacramento winter-run Chinook salmon ESU, threatened juvenile Central Valley spring-run Chinook salmon ESU, threatened juvenile CV steelhead DPS and threatened juvenile CCC steelhead DPS is reasonably certain to occur due to juveniles being injured and killed by predation. It is difficult if not impossible to predict and/or observe the number of fish harmed, injured, and/or killed from predation at this location. Therefore, NMFS uses surrogate measures for incidental take associated with predation. The surrogates are causally linked to the take pathway and is a readily measured indicator of the potential for and intensity of adverse impacts to ESA-listed species. For this action, the area of shaded habitat caused by the construction and size of the WSB-M is the best surrogate measure pursuant to 50 CFR 402.14(i)(1)(i) for incidental take associated with Project implementation. This shaded area provides new habitat and ambush points for visual predators, and therefore, the amount of take from predation is expected to be directly related to the amount of new shaded area created. Therefore, NMFS will consider take exceeded if the WSB-M exceeds the proposed size, 18,096 square feet or 0.412 acres, during installation or modifications during the test period. Although the surrogate is largely coextensive with the proposed action, it nevertheless functions as an effective reinitiation trigger because it is readily observable.



## **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 endangered Sacramento winter-run Chinook salmon ESU, threatened Central Valley spring-run Chinook salmon ESU, threatened CV steelhead DPS and threatened CCC steelhead DPS or destruction or adverse modification of endangered Sacramento winter-run Chinook salmon ESU 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).

1. Provide post-construction notification verifying the size of the WSB-M and location.

## **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. The Army or the Corps 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. The following terms and conditions implement reasonable and prudent measure 1:
  - a. The Army or the Corps shall develop and submit to NMFS a post-construction report, no later than 60 days following construction which includes the final size (area) of the WSB-M and location (latitude/longitude in decimal degrees).

## **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). NMFS encourages the incorporation of nature-based solutions to shoreline stabilization throughout the MOTCO facility to contribute to improved habitat connectivity and increased sediment retention to combat wetland subsidence in Suisun Bay. Improved tidal wetland habitat and connectivity in the action area could minimize the increased risk of predation by providing additional off-channel habitat for juvenile salmonids during their migration.

## **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.”

## **NLAA DETERMINATIONS**

We reviewed the Army’s consultation request document and related materials. Based on our knowledge, expertise, and your action agency’s materials, we concur with the action agency’s conclusions that the proposed action is not likely to adversely affect the North American green sturgeon and their critical habitat. Impacts to green sturgeon critical habitat in the form of benthic disturbance and increased turbidity is expected to be temporary and limited in scope such that impacts are expected to be insignificant. Because of their larger body size, and low number of known predators in the action area, the likelihood of increased predation on both juvenile and adult green sturgeon is expected to be discountable.

## **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, Pacific Coast Groundfish and Coastal Pelagic Species Fishery Management Plans (FMPs).

## **MAGNUSON-STEVENSON 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 Fishery Management Plans (FMPs). In addition, the project occurs within, or in the vicinity of estuary HAPC, which is designated as a habitat area of particular concern (HAPC) for various federally managed fish species within the Pacific Coast Salmon and Pacific Coast Groundfish FMPs. HAPC are described in the regulations as subsets of EFH which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Designated HAPC are not afforded any additional regulatory protection under the MSA; however, federal projects with potential adverse impacts on HAPC will be more carefully scrutinized during the consultation process.

### **Adverse Effects on EFH**

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

1. Temporary impacts of increased turbidity during WSB-M installation which may impact fish species managed under all of the above FMPs;
2. Benthic disturbance resulting in the displacement, disturbance, injury or loss of benthic invertebrates that are forage species for fish managed under the Pacific Coast Groundfish FMP; and
3. Increased overwater shading that may result in degradation of EFH for fish managed under all of the above FMPs, and increased risk of predation for fish managed under the Pacific Coast Salmon FMP.

The temporary impacts associated with increased turbidity during the installation of the anchors to secure the WSB-M at the proposed location are not expected to result in long-term affects to EFH. Installation of the WSB-M is expected to take approximately 4 days, and it is expected that the amount of increased turbidity associated with installation will not persist more than 1-2 tidal cycles following placement of the anchors.

Disturbance of benthic habitat is expected to occur during placement of the WSB-M anchors and potentially persist as the anchor chains move with the tidal cycle, which may result in ongoing disturbance to the benthic invertebrate community which are a source of forage for fish species managed under the Pacific Coast Groundfish FMP. These impacts are expected to be relatively minor when considering the size of the anchor (6 anchors, 124 square feet each) compared to the shallow water forage opportunities throughout Suisun Bay.

Impacts of persistent shading may result in the overall reduction in the quality of EFH. As noted above in the ESA section, light reduction decreases the amount of energy available for primary

production, e.g., photosynthesis by phytoplankton, benthic algae, and attached microalgae, and alters food web interactions and assemblages (Struck *et al* 2004, Stutes *et al.* 2006), and implementation of this project will result in approximately 0.42 acres of shading from WSB-M. This increased shading will contribute to the overall degradation of EFH, however, the amount of increased shading is relatively small when compared to the overall habitat in Suisun Bay (approximately 36,000 acres). Thus, NMFS has no additional conservation recommendations to provide at this time. This concludes EFH consultation.

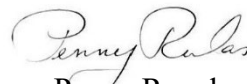
### Supplemental Consultation

The Army 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 North-Central California Office in Santa Rosa, California.

Please direct questions regarding this letter to Sara Azat, 707-575-6067 or via email at [sara.azat@noaa.gov](mailto:sara.azat@noaa.gov) if you have any questions concerning this consultation, or if you require additional information.

Sincerely,



Penny Ruvelas  
Assistant Regional Administrator  
California Coastal Office

cc: Elizabeth Campbell, USACE, [elizabeth.a.campbell@usace.army.mil](mailto:elizabeth.a.campbell@usace.army.mil)  
Copy to e-file FRN 151422WCR2025SR00133

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