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 90802-4213

October 10, 2024

Refer to NMFS No:
WCRO-2024-00823

Jodi Clifford
Chief, Planning Division
U.S. Army Corps of Engineers
915 Wilshire Boulevard, Suite 1109
Los Angeles, California 90802-4221

Re: Endangered Species Act Section 7(a)(2) Biological and Conference Opinion and Magnuson–Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Lower Newport Bay Federal Maintenance Dredging Project

Dear Ms. Clifford:

Thank you for your letter of March 28, 2024 requesting initiation of informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) and supplemental consultation on effects to essential fish habitat (EFH) pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (implementing regulations at 50 CFR 600.920) for the Lower Newport Bay Maintenance Dredging Project. In addition, we received a Biological Evaluation to support theses consultations, along with a request for conference consultation under the ESA on proposed critical habitat for East Pacific Distinct Population Segment (DPS) of green sea turtles.

The attached biological and conference opinion analyzes the potential impacts of the Lower Newport Bay Federal Maintenance Dredging Project on ESA-listed species and proposed critical habitat for the East Pacific DPS of green sea turtles. We concur with the USACE determinations that the proposed action is not likely to adversely affect the East Pacific Distinct Population Segment (DPS) of green sea turtles, leatherback turtles, the North Pacific Ocean DPS of loggerhead turtles, olive ridley turtles, hawksbill turtles, blue whales, fin whales, Western North Pacific DPS of gray whales, humpback whales, sperm whales, sei whales, and Guadalupe fur seals. In addition, while the USACE determined the proposed action is not likely to destroy or adversely modify proposed critical habitat for the East Pacific DPS of green sea turtle, they elected to request a conference with NMFS for the proposed critical habitat for the East Pacific DPS of green sea although it was not required.

We determined that the proposed critical habitat is likely to be adversely affected through impacts to physical and biological features considered essential to the conservation of East Pacific DPS green sea turtles resulting from dredging and placement of sediments, and mooring activities that will remove and bury benthic habitat containing eelgrass, invertebrates, and algae. As a result of this consultation, NMFS PRD concludes that the proposed action is not likely to destroy or adversely modify the proposed critical habitat designation for East Pacific DPS green sea turtles.

Following the final designation of critical habitat for East Pacific DPS green sea turtles, this conference opinion on the effects of the proposed action may be adopted as a biological opinion if no significant changes to the action are made and no new information comes to light that would alter the contents, analyses, or conclusions of this opinion.

Please contact Bryant Chesney in the Long Beach office at Bryant.chesney@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Chris Yates
Assistant Regional Administrator for
Protected Resources

Enclosure

cc: 151422WCR2024PR00181

Lower Newport Bay Federal Maintenance Dredging Project

NMFS Consultation Number: 2024-00823

Action Agency: U.S. Army Corps of Engineers

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	If likely to adversely affect, Is Action Likely to Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	If likely to adversely affect, is Action Likely to Destroy or Adversely Modify Critical Habitat?
Example:					
Green sea turtle (*Chelonia mydas*)	Threatened	No	No	Yes (proposed)	No (proposed)
Leatherback turtle (*Dermochelys coriacea*)	Endangered	No	No	No	No
Loggerhead turtle (*Caretta caretta*)	Endangered	No	No	N/A	N/A
Olive ridley turtle (*Lepidochelys olivacea*)	Endangered – Mexico, Threatened – all others	No	No	N/A	N/A
Blue whale (*Balenoptera musculus*)	Endangered	No	No	N/A	N/A
Fin whale (*Balaenoptera physalus*)	Endangered	No	No	N/A	N/A
Gray whale (*Eschrichtius robustus*)	Endangered	No	No	N/A	N/A
Humpback whale Central America and Mexico DPS (*Megaptera novaeangliae*)	Endangered – Central America DPS, Threatened – Mexico DPS	No	No	No	No
Sperm whale (*Physeter macrocephalus*)	Endangered	No	No	N/A	N/A
Sei whale (*Balaenoptera borealis*)	Endangered	No	No	N/A	N/A
Guadalupe fur seal (*Arctocephalus townsendi*)	Threatened	No	No	N/A	N/A

Fishery Management Plan That Identifies EFH in the Project Area	Does Action Have an Adverse Effect on EFH?	Are EFH Conservation Recommendations Provided?
Pacific Coast Groundfish	Yes	No
Coastal Pelagic Species	Yes	No

Consultation Conducted By: National Marine Fisheries Service, West Coast Region

Issued By: _____

Chris Yates
Assistant Regional Administrator for Protected Resources
West Coast Region
National Marine Fisheries Service

Date: October 10, 2024

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1. INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3, below.

1.1. Background

The National Marine Fisheries Service (NMFS) prepared the conference biological opinion (opinion) in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended, and implementing regulations at 50 CFR part 402.

We also completed an essential fish habitat (EFH) consultation on the proposed action, in accordance with section 305(b)(2) of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1801 et seq.) and implementing regulations at 50 CFR part 600.

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. A complete record of this consultation is on file at the Long Beach, California office.

1.2. Consultation History

In response to the U.S. Army Corps of Engineers' (USACE) 2022 Draft Environmental Assessment for Lower Newport Bay maintenance dredging, NMFS provided comments on April 13, 2022, pursuant to MSA, ESA, and Marine Mammal Protection Act (MMPA). We described previous EFH consultation outcomes from 2011 and 2020, and our ongoing concerns with the USACE's eelgrass monitoring and mitigation approach associated with maintenance dredging in Newport Bay. We also provided five EFH conservation recommendations for the proposed project. The USACE rejected four of the five EFH conservation recommendations in their May 13, 2022, response letter. Two recommendations involving eelgrass and light monitoring were rejected because the USACE concluded that eelgrass does not occur within or adjacent to any of the federal channels to be dredged, indicating their determination was based upon eelgrass surveys conducted by the City of Newport Beach in 2020 and previous experience with eelgrass in the Lower Newport Bay during prior maintenance dredging events. In contrast to the USACE's conclusion, NMFS notes that the eelgrass surveys conducted by the City of Newport Beach in 2020 showed eelgrass adjacent to the federal channel, and that this 2020 survey effort did not include survey coverage of the upper portions of the federal channel. Two other conservation recommendations to address shortcomings of the USACE's proposed eelgrass mitigation plan were rejected because the USACE expected that their eelgrass mitigation program would fully mitigate eelgrass impacts. The Final EA included an environmental commitment that eelgrass surveys would be conducted in all federal channel areas proposed to be dredged prior to the start of construction.

On June 13, 2023, USACE provided a letter indicating new information was available that warranted EFH consultation reinitiation. Specifically, eelgrass was observed within and adjacent to the federal channels to be dredged during Caulerpa surveys conducted in 2022. The USACE subsequently conducted a pre-construction eelgrass survey in October 2022, and provided the associated report in support of the EFH consultation reinitiation request. The USACE also provided the eelgrass mitigation and monitoring plan, and eelgrass mitigation transplant report, for impacts incurred from the 2021 dredging event. In addition, the USACE indicated that the project duration has increased to 100 days. In response to the USACE's EFH consultation reinitiation request, NMFS provided comments and EFH conservation recommendations. The USACE responded on May 3, 2023, with limited acceptance of our EFH conservation recommendations asserting that additional water quality monitoring was unnecessary to evaluate impacts to eelgrass habitat, and committing only to the 2022 eelgrass mitigation site previously established in the Newport Bay Entrance Channel.

On March 28, 2024, NMFS received USACE Planning Division's request to initiate informal consultation under section 7(a)(2) of the ESA and initiate supplemental EFH consultation in accordance with 50 CFR 600.920(l) for the Lower Newport Bay Maintenance Dredging Project. In addition, we received a Biological Evaluation to support the consultation request. On April 10, 2024, we received USACE Regulatory Division's request to initiate informal ESA and a supplemental EFH consultation for the City of Newport Beach's Confined Aquatic Disposal (CAD) and Nearshore Replenishment Project. Given the interrelationship between the two proposed actions, NMFS convened an interagency conference call on April 11, 2024, to discuss the most appropriate procedural approach for handling the consultation requests from both the USACE Regulatory and Planning Divisions. NMFS subsequently followed up on April 22, 2024, affirming our intention to address both the Regulatory and Planning actions in one consultation response, and posed a few information requests regarding the maintenance dredging action. A subsequent information request to support the CAD consultation was provided on April 29, 2024. USACE staff followed up on the information requests via multiple emails, and NMFS determined that sufficient information had been provided to initiate ESA consultation on May 6, 2024.

USACE and NMFS staff conversed on June 4 and 6, 2024, to discuss the most appropriate process for addressing effects to proposed critical habitat, and how to most efficiently address the proposed action once critical habitat was finalized. NMFS anticipated the potential for adverse effects to proposed critical habitat, and advised that a formal conference may be most appropriate to facilitate a streamlined consultation review once the critical habitat designation process was finalized, even though conference was not required. On June 13, 2024, the USACE confirmed their agreement to pursue a formal conference, and to use May 6, 2024, as the consultation initiation date.

On July 11, 2024, USACE staff emailed NMFS staff indicating that the proposed action was being re-evaluated, and requested a conference call to discuss the consultation approach. NMFS and USACE staff convened a conference call on July 17, 2024, and discussed a disposal alternative that did not include the City's proposed CAD. Instead, the dredged material unsuitable for ocean disposal was being proposed for use as fill material as part of the Port of Long Beach's (POLB) Pier G Slip Fill project.

On August 15, 2024, we received a modified informal consultation and conference initiation request based on the revised action and action area, consistent with the July 2024 conference call discussion. NMFS staff reviewed the modified consultation request and provided a few information requests on August 27, 2024, which were resolved by USACE staff via email communication on August 28 and September 3, 2024.

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

1.3. Proposed Federal Action

Under the ESA, "action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by federal agencies (see 50 CFR 402.02). Under the MSA, "federal action" means any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by a federal agency (see 50 CFR 600.910). The USACE, as part of its Operations and Maintenance Program, is proposing to perform maintenance dredging in the Harbor Island Reach, Lido Island Reach, Yacht Anchorage, Turning Basin, Newport Channel, and a small portion of the Entrance Channel in Lower Newport Bay to re-establish authorized channel depths.

The proposed action would dredge approximately 935,000 cubic yards (CY) of sediment from the Harbor Island Reach, Lido Island Reach, Yacht Anchorage, Turning Basin, and Newport Channel federal channels (a total of approximately 118.4 acres). Of this volume, approximately 810,000 CY would be disposed of at the U.S. Environmental Protection Agency (USEPA)-designated LA-3 Ocean Dredged Material Disposal Site (ODMDS). Approximately 125,000 CY of material, determined unsuitable for ocean disposal, would be placed within the Port of Long Beach Pier G Slip Fill.

Dredging would be performed by clamshell dredge or a barge-mounted excavator. Dredged material transport and disposal would be in 2-3 split-hull scows. Two tugboats will be used to tend the dredge barge and for towing the scow to the placement/disposal site. A crew boat for the transfer of crew and supplies would also be used during dredging. Temporary mooring areas in Newport Bay adjacent to the federal channel (a total of approximately 1.3 acres) are also proposed, but would only be used one at a time for mooring of barges should dredging be stopped for weather-related or equipment issues. Dredging would be conducted six days per week. Construction activities associated with dredging in Lower Newport Bay would take approximately 100 weeks. Dredging activities shall be restricted to the hours of 7:00 a.m. to 6:30 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturday. Dredging was originally anticipated to commence in 2023, but will likely begin sometime in early 2025.

Proposed conservation measures

A. A monitoring and avoidance plan would be prepared, in coordination with the NMFS, to avoid and minimize potential effects to green sea turtles. The monitoring and avoidance plan would include the following measures:

1. The contractor will implement an Environmental Protection Plan that will include a green sea turtle Monitoring and Avoidance Plan and an employee training program on sea turtle observation protocols, avoidance, and minimization measures. The training program will be conducted by a qualified Biological Monitor, and a record kept of dates of training, names, and positions of attending employees, and an outline of the training presentation.
2. A qualified Biological Monitor will be stationed on the dredge (either the clamshell dredge or the barge-mounted excavator depending on which is used) to monitor project activities. The qualified Biological Monitor will be trained in how to conduct visual monitoring and in the identification of sea turtles.
3. Dredging activities shall be restricted to the hours of: Monday through Friday 7:00 a.m. to 6:30 p.m.; Saturday 8:00 a.m. to 6:00 p.m. Dredging activities on Sunday and Holidays are not permitted. Dredging at certain times of the year could occur after sunset for a brief period (e.g., in late fall, winter, and early spring); in those circumstances lighting would be provided to the Biological Monitor to facilitate observations.
4. During dredging, a 100-ft. (visually estimated) monitoring zone around the dredge shall be implemented. Sea turtle visual monitoring is not proposed for the transportation of material between dredging and disposal sites.
5. Visual monitoring of the monitoring zone (visually estimated) shall commence at least 15 minutes prior to the beginning of in-water construction activities, and after each break of more than 30 minutes. If a sea turtle is observed within the monitoring zone, all in-water project activities shall cease as soon as practicable, in consideration of worker safety. Project activities shall not commence or continue until the sea turtle has either been observed having left the monitoring zone voluntarily, or at least 15 minutes have passed since the last sighting whereby it is assumed the sea turtle has voluntarily left the monitoring zone.
6. Operation of the tug will include avoidance of all sea turtles and marine mammals sighted by the crew during transit. A special biological monitor or lookout for sea turtles and marine mammals is not proposed for use on the tug.
7. The qualified Biological Monitor shall maintain a written log containing all observations of sea turtles including:
   a) Observer name and title;
   b) Type of activity (dredging, etc.);
   c) Date and time animal first observed (for each observation);
   d) Date and time observation ended (for each observation), including if the sea turtle was observed exiting the monitoring zone or was assumed to have exited following a 15-minute period of no observation;

e) Location of observer (latitude/longitude), direction of sea turtle in relation to the observer, and estimated distance to sea turtle;
f) Nature and duration of equipment shutdown

8. The sea turtle observation log shall be provided by the qualified Biological Monitor to the USACE within 10 days after completion of construction.

9. Any observations involving potential take of sea turtle shall be reported to the USACE within 10 minutes of the incident and to the NMFS stranding coordinator immediately thereafter.

10. The qualified Biological Monitor will be trained in how to conduct visual monitoring and in the identification of sea turtles.

B. The USACE will prepare and implement a Water Quality Monitoring Plan, which would include measures for monitoring and controlling turbidity to minimize potential impacts to the aquatic environment. Four stations would be established at the dredge sites, and three established at the POLB Pier G Slip Fill Site, monitoring turbidity in two forms: light transmission (transmissivity) and NTU (Nephelometric Turbidity Unit). Stations would be established relative to the dredge or placement location. These stations would be monitored weekly throughout the entire dredge period. If turbidity limits are exceeded, measures, such as first slowing down the dredging operation and then adding turbidity curtains, if needed, would be implemented to reduce turbidity to acceptable levels. Monitoring of placement in the POLB Pier G Slip Fill Site would take place in accordance with the USACE Department of the Army permit, which include compliance with conditions imposed by the Los Angeles Regional Water Quality Control Board.

   Maintenance dredging operations in the federal channels would be modified to reduce turbidity if the difference in percent light transmittance is 40% or greater between the compliance station 300 feet down current of the placement (Dredge Site Station C) and the control station (Dredge Site Station D); or where natural turbidity is between 0 and 50 NTU (based on the control station), increases shall not exceed 20%. Where natural turbidity is between 50 and 100 NTU, increases shall not exceed 10 NTU. Where turbidity is greater than 100 NTU, increases shall not exceed 10%. Dredging operations would also be modified if dissolved oxygen levels dropped below 5 mg/l (unless background readings indicate low dissolved oxygen concentrations bay wide) as the result of dredging operations.

   Sediment placement operations in the POLB Pier G Slip Fill Site would be modified to reduce turbidity if the difference in % light transmittance between stations B and C for the near surface (1 meter below the surface), mid-water (averaged values throughout the water column, excluding the near surface and bottom), or bottom (1 meter above the bottom) is 30% or greater. Placement operations would also be modified if dissolved oxygen levels dropped below 5 mg/l (unless background readings indicate low dissolved oxygen concentrations port wide) as the result of dredging operations.

C. The above monitoring would require preparation of monitoring plans that would be provided to NMFS for review and comment prior to the start of dredging.

D. Eelgrass losses resulting from the proposed action will be identified, evaluated, and mitigated in accordance with the California Eelgrass Mitigation Policy (CEMP). Eelgrass surveys will be conducted of the federal navigation channels to be dredged and the 100-ft. buffer along the dredge perimeter within Lower Newport Bay, prior to the start of dredging and again after completion of dredging. Surveys would be used to identify losses due to the proposed action and to quantify any mitigation requirements.

E. Pre-construction surveys for algae in the genus *Caulerpa* would be conducted at the dredge and mooring sites. The surveys would adhere to the more stringent survey level requirements for an infected system until it has been re-designated as a "*Caulerpa*-Free System." Proposed survey requirements were established following discussions with the Southern California *Caulerpa* Action Team (SCCAT), including deviations from the protocols as allowed under provisions of the *Caulerpa* Control Protocol (NMFS, 2021). Protocols included a mix of vessel-based and diver surveys of the federal channels only. A proposed survey methodology will be refined based on conditions for *Caulerpa* spp. in the bay at the time dredging is scheduled, would comply with the version of the *Caulerpa* Control Protocol in effect, and would be coordinated with the SCCAT. In the event that *Caulerpa* spp. are detected, maintenance dredging in the immediate area would be delayed until such time as the infestation has been isolated, treated and the risk of spread from the proposed action eliminated. Surveys would establish that the dredge areas are, and remain, *Caulerpa*-free to minimize the risk of transporting *Caulerpa* spp. off site. If Lower Newport Bay is declared *Caulerpa*-free prior to the scheduled start of dredging, survey requirements would be reduced to a single, reconnaissance level survey.

We considered, under the ESA, whether or not the proposed action would cause any other activities, and determined that a consequence of dredging the Yacht Anchorage area is the temporary relocation and subsequent redevelopment of the mooring facility. We generally evaluate the effects of the temporary relocation and mooring activities here, and anticipate a separate interagency consultation with USACE Regulatory to specifically address the redevelopment of the mooring facility after dredging has been completed.

2. ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species or to adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, federal action agencies consult with NMFS, and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provide an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

The USACE determined the proposed action is not likely to adversely affect the East Pacific Distinct Population Segment (DPS) of green sea turtles, leatherback turtles, the North Pacific

Ocean DPS of loggerhead turtles, olive ridley turtles, hawksbill turtles, blue whales, fin whales, Western North Pacific DPS of gray whales, humpback whales, sperm whales, sei whales, and Guadalupe fur seals. Our concurrence is documented in the "Not Likely to Adversely Affect" Determinations section (Section 2.13). In addition, the USACE has determined the proposed action is not likely to destroy or adversely modify proposed critical habitat for the East Pacific DPS of green sea turtle, but elected to conference with NMFS for the proposed critical habitat for the East Pacific DPS of green sea turtle to streamline the environmental review when critical habitat designation is finalized, and minimize the chance of needing to re-initiate consultation with NMFS.

2.1. Analytical Approach

This biological opinion includes both a jeopardy analysis and an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "jeopardize the continued existence of" a listed species, which is "to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species. This biological opinion also relies on the regulatory definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species" (50 CFR 402.02).

The ESA Section 7 implementing regulations define effects of the action using the term "consequences" (50 CFR 402.02). As explained in the preamble to the final rule revising the definition and adding this term (84 FR 44976, 44977; August 27, 2019), that revision does not change the scope of our analysis, and in this opinion we use the terms "effects" and "consequences" interchangeably.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Evaluate the rangewide status of the species and proposed critical habitat expected to be adversely affected by the proposed action.
- Evaluate the environmental baseline of the species and proposed critical habitat.
- Evaluate the effects of the proposed action on species and their proposed critical habitat using an exposure–response approach.
- Evaluate cumulative effects.
- In the integration and synthesis, add the effects of the action and cumulative effects to the environmental baseline, and, in light of the status of the species and proposed critical habitat, analyze whether the proposed action is likely to: (1) directly or indirectly reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species; or (2) directly or indirectly result in an alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.
- If necessary, suggest a reasonable and prudent alternative to the proposed action.

2.2. Rangewide Status of the Species and Proposed Critical Habitat

This opinion examines the status of the East Pacific DPS of green sea turtles and proposed critical habitat that are likely to be affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' "reproduction, numbers, or distribution" for the jeopardy analysis. The opinion also examines the condition of proposed critical habitat, evaluates the conservation value of the coastal and marine environments that make up the proposed critical habitat, and discusses the function of the PBFs that are essential for the species' conservation.

In 2016, NMFS finalized new listings for 11 green sea turtle DPSs, including listing the East Pacific DPS as threatened (81 FR 20057). The East Pacific DPS includes turtles that nest on the coast of Mexico which were historically listed under the ESA as endangered. All of the green turtles DPSs were listed as threatened, with the exception of the Central South Pacific DPS, Central West Pacific DPS, and the Mediterranean DPS, which were listed as endangered (Seminoff *et al.* 2015).[1] Recently the IUCN assessed the East Pacific regional management unit of green sea turtles as "vulnerable," which was downlisted from a previous "endangered" status (Seminoff and Glass 2020).

Green turtles are found throughout the world, occurring primarily in tropical, and to a lesser extent, subtropical and temperate waters and especially near the 64° F (18° C) isotherm (Seminoff and Wallace 2012). The species occurs in five major regions: the Pacific Ocean, Atlantic Ocean, Indian Ocean, Caribbean Sea, and Mediterranean Sea. Molecular genetic techniques have helped researchers gain insight into the distribution and ecology of migrating and nesting green turtles. Throughout the Pacific, nesting assemblages are grouped into two distinct regional areas: 1) western Pacific and South Pacific islands, and 2) eastern Pacific and central Pacific, including the rookery at French Frigate Shoals, Hawaii. In the eastern Pacific, green turtles forage coastally from the U.S. West Coast (42°N) in the north, offshore in waters up to 1,000 miles from the coast and south to central Chile (40°S). The northern and southern boundaries of this DPS extend from the aforementioned locations in the U.S. and Chile to 143°W and 96°W, respectively (Seminoff *et al.* 2015). Green sea turtles in the east Pacific are migratory as adults, conducting reproductive migrations every three years on average between their natal nesting sites and foraging areas. Individuals show fidelity to foraging areas, often returning to the same areas after successive nesting seasons. In neritic foraging areas, green turtles in the eastern Pacific are omnivorous, consuming marine algae, seagrass, mangrove parts and invertebrates. Green turtles in the wild are estimated to attain maturity at 15-50 years (Avens and Snover 2013), with East Pacific green turtles averaging 30 years to maturity.

Population Status and Trends: NMFS and USFWS (2007) provided population estimates and trend status for 46 green turtle nesting sites around the world. Of these, twelve sites had increasing populations (based upon an increase in the number of nests over 20 or more years

[1] The 2015 biological status report that was used to support the recent listing activities (Seminoff *et al.* 2015) can be found at: https://repository.library.noaa.gov/view/noaa/4922

ago), four sites had decreasing populations, and ten sites were considered stable. For twenty sites there are insufficient data to make a trend determination or the most recently available information is too old (15 years or older). A complete review of the most current information on green sea turtles is available in the 2015 Status Review (Seminoff *et al.* 2015). The most recent IUCN assessment of the East Pacific population of green turtles was conducted in 2020 (Seminoff and Glass 2020).

Green turtles that may be found within the action area likely originate from the eastern Pacific Ocean area, and based on genetic analyses and satellite tracking of sea turtles foraging in San Diego Bay, likely originate from nesting sites in the Revillagigedo Archipelago and the coast of Michoacán, Mexico (Dutton *et al*. 2019). Green turtles in the eastern Pacific were historically considered one of the most depleted populations of green turtles in the world. The primary green turtle nesting grounds in the eastern Pacific are located in Michoacán, Mexico (Colola Beach (~74.4 percent of nesting in the state) and Maruata (24.1 percent of nesting in the state), and the Galapagos Islands, Ecuador (NMFS and USFWS 1998) which comprise approximately 71 percent of all nesting females, and linkages between these nesting sites and foraging areas from northwestern Mexico to Peru have been established via flipper tag recoveries and satellite telemetry (Seminoff and Glass 2020). Here, green turtles were widespread and abundant prior to commercial exploitation and uncontrolled subsistence harvest of nesters and eggs. Sporadic nesting occurs on the Pacific coast of Costa Rica. While shallow genetic substructure has been observed in East Pacific green turtles, manifesting as slight morphological differences, Dutton *et al.* (2014) suggest that green turtles from the Revillagigedos Archipelago are rooted in the broad eastern Pacific genetic clade.

The primary nesting beaches located in southern Mexico have been characterized by a substantial increase in annual nesting activity (Delgado-Trejo & Alvarado-Díaz 2012, Seminoff *et al.* 2015), which corresponds to an increase in green turtle abundance at foraging areas throughout this population range. Also, information has been suggesting steady increasing in nesting at the main nesting sites in Michoacan, Mexico (Colola Beach), and in the Galapagos Islands since the 1990s (Delgado and Nichols 2005; Senko *et al.* 2011), although at some of these sites, they are still lower than past annual number of deposited clutches. Colola Beach is the most important green turtle nesting area in the eastern Pacific; it accounts for approximately 74 percent of total nesting in Michoacán and has the longest time series of monitoring data since 1981. Nesting trends at Colola (25,008 clutches/year based on data from 2015-2018) is 52 percent less than the past three generations ago (early 1980s; 51,781 clutches per year), while at Galapagos, albeit a smaller population, the mean annual number of deposited clutches increased by 70 percent (from 3,082 to 5,233 clutches per year) since the late 1970s to early 1980s (Seminoff and Glass 2020).

As mentioned above, most green turtles found off the U.S. West Coast and in the action area likely originate from the Revillagigedos Archipelago and the coast of Michoacán, Mexico. The most recent survey (2008) from Revillagigedos estimated that as many as 500 nests were laid over a 4-week period, which the most recent status review (Seminoff *et al.* 2015) used to estimate nester abundance at 500 females. Green sea turtle nesting in the eastern Pacific has increased steadily since the early 1980s, which is likely due to increased protection at nesting beaches, minimized threats to sea turtles in foraging areas, and advances in sea turtle fisheries

bycatch reduction throughout the region. Seminoff *et al.* (2015) estimated the total abundance of mature females in the East Pacific DPS to be at least 20,062 females. Based on recent nesting beach monitoring efforts, through 2022/2023, the current adult female nester population for Colola, Michoacán is estimated to be 100,000 to 105,000 nesting females. At Maruata, a secondary nesting beach in Michoacán, researchers recently estimate there are between 4,000 and 6,000 nesting females (C. Delgado Trejo, Instituto de Investigaciones sobre los Recursos Nationale, personal communication, November, 2023).

Three resident foraging populations of green sea turtles are known to occur in southern California nearshore waters. Green turtles have been sighted in San Diego Bay (SDB) since the mid-1800s (Stinson 1984, Benson and Dutton 2012). The SDB has been identified as an important foraging area for the East Pacific DPS of green turtles along the U.S. West Coast, with the shallow waters providing valuable food resources such as seagrasses, mobile and sessile invertebrates, and marine algae (Lemons *et al.* 2011). While most of the SDB's green turtles are year-round residents, some adults leave SDB to migrate southward toward their breeding grounds in Michoacán, Mexico, and at the Revillagigedos Islands, offshore central Mexico (Seminoff *et al.* 2015). For example, four adults have been tracked swimming north off SDB and migrating south to waters off Mexico nesting beaches (Dutton *et al.* 2019; SWFSC unpublished data). There is also a population of green sea turtles in the San Gabriel River and surrounding coastal areas in the vicinity of Cities of Long Beach, Seal Beach, and Huntington Beach, California (Lawson *et al.* 2011; Crear *et al.* 2016; Crear *et al.* 2017; Hanna *et al.* 2020; Massey *et al.* 2023). Seasonal shifts in movement and distribution of green turtles in the Long Beach/Seal Beach area show that green turtles in the San Gabriel River (SGR) use warm effluent from two power plants as a thermal refuge, although the river sustains juveniles and adults year-round (Crear *et al.* 2016). Hanna *et al.* (2023) have observed increased use of Seal Beach National Wildlife Refuge and adjacent shallow water habitat areas, and suggested the number of green turtles in the refuge will likely increase over time and their spatial distribution may expand. In addition, a small resident foraging population has been documented at La Jolla Shores (Hanna *et al.* 2021).

Threats: Major threats to green sea turtles worldwide, which can be found in the most recent status review (Seminoff *et al.* 2015), include: coastal development and loss of nesting and foraging habitat; incidental capture by fisheries; and the harvest of eggs, sub-adults and adults. Destruction, alteration, and/or degradation of nesting and near shore foraging habitat is occurring throughout the range of green turtles. These problems are particularly acute in areas with substantial or growing coastal development, beach armoring, beachfront lighting, and recreational use of beaches. In addition to damage to the nesting beaches, pollution and impacts to foraging habitat is a concern. Pollution run-off can degrade seagrass beds that are the primary forage of green turtles. The majority of turtles in coastal areas spend their time at depths less than 5 m below the surface (Schofield *et al.* 2007; Hazel *et al.* 2009), and hence are more vulnerable to vessel strikes. Collisions with boats are known to cause significant numbers of mortality every year (NMFS and USFWS 2007; Seminoff *et al.* 2015). Marine debris is also a source of concern for green sea turtles, especially given their presence in nearshore coastal and estuarine habitats. In southern California, green turtles forage in urbanized environments and therefore are more exposed to anthropogenic contaminants and pollutants. Sea turtles captured in Seal Beach and SDB were found to have higher trace metal concentrations (e.g., selenium and cadmium) than

green turtles that inhabit other non-urbanized areas in southern California (Barraza *et al.* 2019). A related study found that green sea turtles foraging in SDB had significantly higher concentrations of total polychlorinated biphenyls (PCBs) than turtles in Seal Beach, and that these non-dioxin-like PCB congeners may be associated with neurotoxicity (Barraza *et al.* 2020).

The bycatch of green sea turtles, especially in coastal fisheries, is a serious problem in the Pacific because many of the small-scale artisanal gillnet, setnet, and longline coastal fisheries throughout the Pacific are not well regulated. These are the fisheries that are active in areas with the highest densities of green turtles (NMFS and USFWS 2007). In the northern portions of the East Pacific DPS, bycatch in fisheries has been less well-documented. However, along the Baja California Peninsula (Mexico), hundreds of green turtles were reported stranded (suspected bycatch) in Bahia Magdalena (Koch *et al.* 2006). In Baja California Sur, Mexico, from 2006-2009, small-scale gillnet fisheries caused massive green sea turtle mortality at Laguna San Ignacio, where an estimated 1,000 turtle were captured each year in a fishery targeting guitar fish (Mancini *et al.* 2012). Bycatch of green turtles has also been reported in Peru and Chile. While the problem persists, innovative bycatch reduction techniques and monitoring approaches have likely reduced bycatch of all sea turtle species. The meat and eggs of green turtles has long been favored throughout much of the world that has interacted with this species. As late as the mid-1970s, upwards of 80,000 eggs were harvested every night during nesting season in Michoacán (Clifton *et al.* 1982). Even though Mexico has implemented bans on the harvest of all turtle species in its waters and on the beaches, poaching of eggs, females on the beach, and animals in coastal water continues to happen. In some places throughout Mexico and the whole of the eastern Pacific, consumption of green sea turtles remains a part of the cultural fabric and tradition (NMFS and USFWS 2007; Seminoff and Glass 2020).

Another key factor affecting the range-wide status of ESA-listed species, including the Eastern Pacific DPS of green sea turtles, and aquatic habitat at large, is climate change. Climate change has received considerable attention in recent years, with growing concerns about global warming and the recognition of natural climatic oscillations on varying time scales, such as long-term shifts like the Pacific Decadal Oscillation or short-term shifts, like El Niño or La Niña. Evidence suggests that the productivity in the North Pacific (Mackas *et al.* 1989; Quinn and Niebauer 1995) and the California Current ecosystem (Harvey *et al.* 2022; Bell *et al.* 2023) could be affected by changes in the environment. Important ecological functions such as migration, feeding, and breeding locations may be influenced by factors such as ocean currents and water temperature. Any changes in these factors could render currently used habitat areas unsuitable and new use of previously unutilized or previously not existing habitats may be a necessity for displaced individuals. Changes to climate and oceanographic processes may also lead to decreased productivity in different patterns of prey distribution and availability. Such changes could affect individuals that are dependent on those affected prey.

Based upon available information, it is likely that sea turtles are being affected by climate change. Sea turtle species are likely to be affected by rising temperatures that may affect nesting success and skew sex ratios, as some rookeries are already showing a strong female bias as warmer temperatures in the nest chamber leads to more female hatchlings (Chan and Liew 1995; Kaska *et al.* 2006; Blechschmidt *et al.* 2022). Increased temperatures also lead to higher levels of embryonic mortality (Matsuzawa *et al.* 2002). Rising sea surface temperatures and sea levels

may affect available nesting beach areas as well as ocean productivity (Fuentes and Hamann 2011). An increase in typhoon frequency and severity, a predicted consequence of climate change (Webster *el al.* 2005), can cause erosion which leads to high nest failure (Van Houtan and Bass 2007). Rising sea levels can cause repeated inundation of nests and abrupt disruption of ocean currents used for natural dispersion during the green turtle life cycle. Feeding may also be affected by climate change as seagrasses, a major food source for green sea turtles, may be affected by changing water temperature and salinity (Short and Neckles 1999; Duarte 2002).

Based on climate change modeling efforts in the eastern tropical Pacific Ocean, for example, Saba *et al.* (2012) predicted that the Playa Grande (Costa Rica) sea turtle nesting populations would decline 7% per decade over the next 100 years. Changes in beach conditions are expected to be the primary driver of the decline, with hatchling success and emergence rates declining by 50-60% over the next 100 years in that area (Tomillo *et al.* 2012). Sea turtles are known to travel within specific isotherms and these could be affected by climate change and cause changes in their bioenergetics, thermoregulation, prey availability, and foraging success during the oceanic phase of their migration (Robinson *et al.* 2009; Saba *et al.* 2012). While our understanding of the effects of climate change on sea turtles is improving, there is still uncertainty and limitations surrounding the ability to make precise predictions about or quantify the threat of future effects of climate change on sea turtle populations (Hawkes *et al.* 2009). We consider the ongoing implications of climate change as part of the status of ESA-listed species. Where necessary or appropriate, we consider whether impacts to species resulting from the proposed action could potentially influence the resiliency or adaptability of those species to deal with climate change that we believe is likely over the foreseeable future.

Conservation: There have been important conservation initiatives and advances that have benefited East Pacific DPS green turtles. There are indications that wildlife enforcement branches of local and national governments are stepping up their efforts to enforce existing laws, although successes in stemming sea turtle exploitation through legal channels are infrequent. In addition, there are a multitude of non-profit organizations and conservation networks whose efforts are raising awareness about sea turtle conservation. When assessing conservation efforts, we assumed that all conservation efforts would remain in place at their current levels or improve.

Among the notable regional and/or multinational conservation groups and initiatives are the Central American Regional Network for the Conservation of Sea Turtles, Grupo Tortuguero de las Californias (GTC), Permanent Commission of the South Pacific (CPPS), and the InterAmerican Convention for the Protection and Conservation of Sea Turtles (IAC). The Central American Regional Network resulted in the creation of a national sea turtle network in each country of the Central American region, as well as the development of firsthand tools, such as a regional diagnosis, a 10-year strategic plan, a manual of best practices, and regional training and information workshops for people in the region (e.g., Chacón and Arauz 2001). The GTC is a regional network in Mexico that brings together scientists, conservation practitioners, fishers, and local peoples to address sea turtle conservation issues. Perhaps the greatest achievement of this group was the large decrease in green turtle hunting and local consumption throughout northwestern Mexico. The IAC is the world's only binding international treaty on sea turtle conservation. Signatory nations in the Eastern Pacific include Chile, Peru, Ecuador, Panama, Costa Rica, Honduras, Guatemala, Mexico, and the United States. This treaty endeavors to

reduce fisheries bycatch and habitat destruction through a series of binding conservation agreements across these nations. All three of these initiatives work under the principle that benefits and achievements from working in alliance are much higher than those from working alone.

In southern California, NMFS has increased its outreach and education efforts to improve public awareness of the presence of green turtles and to reduce threats to foraging populations, particularly in SDB, the SGR and adjacent watersheds, as well as estuaries such as Agua Hedionda and Mission Bay. Local threats to green turtles primarily include recreational fishing and vessel strikes, and NMFS has worked with partners to develop educational materials and signs to specifically address those threats.

NMFS and USFWS developed a recovery plan for U.S. Pacific populations of the East Pacific Green Sea Turtle that describes reasonable actions which are believed to be required to recover and/or protect the species (NMFS and USFWS 1998). One of the six major actions described in the Recovery Plan is to identify and protect primary foraging areas in U.S. jurisdiction. In addition, the Recovery Plan specifically recommends the prevention of degradation or destruction of marine habitats caused by dredging or disposal activities.

Proposed Critical Habitat

On July 19, 2023, NMFS proposed to designate new areas of critical habitat for threatened and endangered DPSs of green sea turtle in areas under U.S. jurisdiction. NMFS proposed to designate marine critical habitat in nearshore waters (from the mean high water line to 20 meters depth) of southern California. The proposed critical habitat designation occurs in nearshore waters between the Mexico border and Point Dume in Malibu, California, and includes various major embayment and lagoon systems in this geographic area. The following foraging and resting essential features are essential to the conservation of the East Pacific DPS: nearshore waters up to 20 m depth, underwater refugia (e.g., rocks, reefs, and troughs) and food resources (i.e., seagrass, marine algae, and/or marine invertebrates) of sufficient condition, distribution, diversity, abundance, and density necessary to support survival, development, growth, and/or reproduction of benthic-foraging juveniles, sub-adults, and adults (NMFS 2023). Areas within Newport Bay contain benthic foraging and resting essential features, which include “underwater refugia and food resources (i.e., seagrasses, macroalgae, and/or invertebrates) of sufficient condition, distribution, diversity, abundance, and density necessary to support survival, development, growth, and/or reproduction” (Section 226.208(a)(3) in the proposed rule). In general, federal projects and projects that are federally funded or authorized must ensure that they do not destroy or adversely modify designated critical habitat.

The East Pacific DPS of green sea turtles has significantly increased in recent years, as a result of ESA and foreign protections, leading to a change in status from endangered to threatened (81 FR 20057, April 6, 2016). This increase is reflected in the greater abundance of foraging and resting green turtles in southern California waters. Continued increases in abundance are necessary to recovery, requiring that areas containing essential features must be adequate to support the current population size and future increases. The recovery of the DPS requires successful survival, growth and development of juveniles and sub-adults, and the successful survival and

reproduction of adults. For the East Pacific DPS, benthic-foraging habitats provide the primary food resources and refugia necessary to survive, develop, grow, and reproduce.

Generally, adults and benthic-foraging juveniles occupy small home ranges that include foraging resources and underwater refugia. For example, green turtles acoustically tracked in San Diego Bay occupied areas of 2.09 to 8.70 km^2, remaining in one or two core areas more than half the time (MacDonald *et al.* 2012). Larger turtles may use smaller core areas as a result of increased familiarity and foraging efficiency (MacDonald *et al.* 2012). Multiple recaptures within San Diego Bay between 1990 and 2020 confirm the site fidelity of foraging turtles (Eguchi *et al.* 2010; MacDonald *et al.* 2012; NMFS' unpublished data 2021); however, some individuals move long distances between foraging areas, including one individual tracked from San Diego Bay to a foraging area near Long Beach, California (SWFSC unpublished data 2016). Because of site fidelity and small home ranges, underwater refugia and food resources must be available in sufficient condition, distribution, diversity, abundance, and density necessary to support survival, development, growth, and/or reproduction of benthic-foraging juveniles, sub-adults, and adults.

A stable isotope study on 718 green turtles foraging at 16 areas (including off the coast of California) indicates that turtles of the Eastern Pacific DPS are omnivorous (Seminoff *et al.* 2021). Results of both stomach content analysis and stable isotope analysis indicate that East Pacific green turtles in SDB forage primarily on invertebrates (50 percent) and seagrass (26 percent), while they can also consume red algae (*Polsiphonia* sp.) and sea lettuce (*Ulva* sp.) (McDonald and Dutton 1992, Lemons *et al.* 2011). These data are consistent with studies of East Pacific green turtles outside of U.S. jurisdiction (e.g., waters of Mexico, Colombia, and Galapagos Islands) that also demonstrate omnivorous diets (Seminoff *et al.* 2002; López-Mendilaharsu *et al.* 2005; Amorocho and Reina 2007; Carrión-Cortez *et al.* 2010). A study of green sea turtle diet to the south along the Pacific Coast of Baja California, Mexico, indicated that surfgrass was the most prevalent source of forage for green sea turtles in those coastal waters (Lopez-Mendilaharsu *et al.* 2005). Seagrass habitat, especially eelgrass (*Zostera marina*), is of great importance to the DPS because it provides a major food resource and serves as habitat for mobile and sessile invertebrate prey, such as sponges, tunicates, and mollusks (Lemons *et al.* 2011). Where eelgrass is not present, green turtles primarily forage on benthic algae and invertebrates (Crear *et al*. 2017). The main prey item consumed by turtles at the La Jolla Shores location was a filamentous species of Rhodophyta, red algae (Hanna *et al.* 2021).

2.3. Action Area

"Action area" means all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action (50 CFR 402.02). The action area for this project includes Newport Bay, the Pier G fill site at the Port of Long Beach, the offshore disposal site, and the vessel corridors utilized by the barges and tug boats (Figure 1).

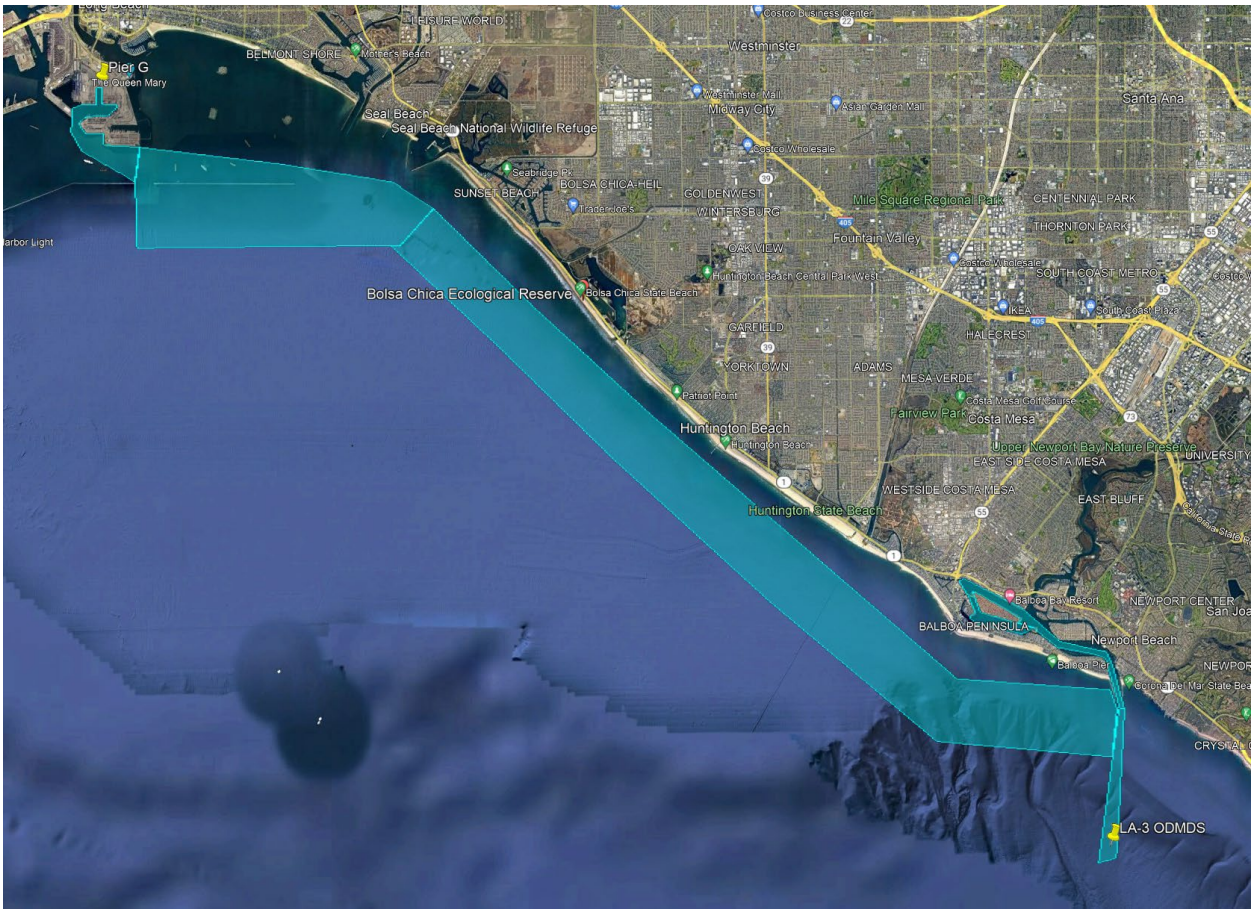

Figure 1: Newport Bay dredge footprint, offshore disposal site location, Pier G, and vessel corridors

2.4. Environmental Baseline

The "environmental baseline" refers to the condition of the listed species or its proposed critical habitat in the action area, without the consequences to the listed species or proposed 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).

Status in the Action Area

Green sea turtles are regularly seen in southern California as far north as Orange County (Hanna et al., 2020). Green sea turtles have been observed in nearshore waters of southern California since at least the early 1960s (Stinson, 1984). Green sea turtle mark-recapture studies have been conducted in San Diego Bay since the late 1980s (Dutton and McDonald, 1990), and in San

Gabriel River and the Seal Beach National Wildlife Refuge since 2010 (Crear et al., 2016, 2017; Barraza et al., 2019). The best available science suggests there are resident foraging aggregations of green sea turtles in San Diego Bay, San Gabriel River/Seal Beach National Wildlife Refuge area, and La Jolla Shores (Crear et al., 2016, 2017, Eguchi et al. 2010, Hanna et al. 2021). The prevalence of additional green sea turtle sightings and stranding reports throughout nearshore and coastal estuaries in southern California suggests that additional locations of frequent occurrence or residence that have not yet been identified through dedicated research likely exist. There is no dedicated research or observational studies on green sea turtles in Newport Bay, so little is known about their abundance in this embayment. There have been relatively few reported strandings and sightings (<10) in Newport Bay over the course of many years, but there have been a moderate number of strandings and sightings outside Newport Bay on the open coast (SWFSC unpublished data 2023). Based upon the information currently available to NMFS, we do not believe Newport Bay currently supports a resident population given relatively few sightings. Current utilization is most likely limited to occasional foraging forays from nearby resident populations.

Proposed critical habitat

Newport Bay and the areas affected by dredging related activities occur within proposed critical habitat for the East Pacific DPS green sea turtle. A variety of food resources, such as eelgrass, algae, and macroinvertebrates, are present in Newport Bay. In addition, there are a variety of refugia options in Newport Bay, ranging from artificial hard features to troughs and channels. Given the observations suggesting occasional green sea turtle presence in the bay and immediate vicinity, as well as the presence of various essential foraging and resting features, NMFS determined these areas provide moderate conservation value to support the recovery of green sea turtles (NMFS 2023).

However, at finer scales, NMFS believes there is a qualitative distinction between Upper and Lower Newport Bay. Upper Newport Bay contains a significant amount of shallow subtidal and intertidal habitat that is both highly productive and relatively warm. In addition, there is relatively less anthropogenic disturbance and stressors in Upper Newport Bay, and a portion of it is a marine protected area. In contrast, Lower Newport Bay is a very active harbor and marina with significant vessel traffic and noise. Although there is a significant amount of shallow water habitat and eelgrass in Lower Newport Bay, NMFS believes the existing and ongoing amount of vessel operations, dredging, dock/pier construction, pollution, and associated human disturbance diminishes the potential foraging and resting functional value in Lower Newport Bay compared to Upper Newport Bay.

The 2022 pre-construction survey identified 127 square meters of vegetated cover with cover defined as at least one eelgrass turion per square meter within the dredge footprint in Newport Bay. In addition, it identified 353 square meters (0.09 acres) of vegetated areal extent, which reflects the bed area within which eelgrass is represented by the presence of at least one turion (shoot) per square meter within the same dredge footprint. To calculate this area, the tight line definition of vegetated cover derived from sonar signature was buffered out by 0.5m such that any eelgrass patch closer than 1 meter from another plant would be merged into the same

vegetated areas extent polygon. The survey also included a 100 foot buffer around the area of potential effect and reported approximately 1.65 acres of eelgrass habitat in the survey area.

In addition to eelgrass, macroalgae and invertebrate food resources occur in affected areas of Newport Bay. Although at varying levels of abundance and diversity, NMFS anticipates that invertebrate forage items are relatively common in the dredge and mooring areas. For example, Marine Taxonomic Services (2022) observed many sea hares (*Aplysia californica*), California aglaja (*Navanax inermis*) and bubble snails (*Bulla gouldiana*), as well as other invertebrates. As described in Section 2.2, Lemons *et al.* (2011) found that invertebrates constituted a significant component (50%) of their diet, and both *N. inermis* and *B. gouldiana* were found to be common invertebrate prey items for green sea turtles in San Diego Bay. NMFS also anticipates the presence of drift benthic macroalgae throughout the dredge footprint, but not highly abundant. Although the USACE's BE failed to recognize forage resources other than eelgrass, NMFS notes that the other available forage items in the dredge channels are likely not particularly high foraging quality given anticipated low abundance and density.

In addition, a portion of the vessel routes that occur over areas less than 20m depth occur in proposed critical habitat. However, the vessel route areas do not support high quality food resources, and likely do not serve as high quality resting habitat given the lack of habitat structure and complexity in these areas. The Port of Long Beach and Pier G do not occur within proposed critical habitat.

Caulerpa prolifera was previously found in two locations of Newport Bay outside the dredging footprint, and an eradication response has been coordinated and implemented by the SCCAT. *Caulerpa* species pose a substantial threat to marine ecosystems in California, particularly to the extensive eelgrass meadows and other benthic environments that make coastal waters such a rich and productive environment. The *Caulerpa* eradication program has met established criteria of three consecutive surveys with no positive findings. The USACE previously implemented pre-construction high intensity level Caulerpa surveys in coordination with NMFS and the SCCAT, and found no Caulerpa within the dredge footprint. However, comprehensive and targeted surveys indicating successful eradication have yet to be completed.

Coastal Development

As described in the USACE's BE, Lower Newport Bay is an extremely busy recreational water body with a near constant stream of a variety of vessels, particularly during the summer, that mostly stay within the bay. Periodic maintenance dredging of the Federal navigation channels has been performed by the USACE since 1937. In addition, Regional General Permit 54 issued to the City by USACE in December 2020 conditionally authorizes small-scale maintenance dredging around private, public, and commercial boat docks, floats, and piers with disposal of dredged material at adjacent beach sites, LA-3 ODMDS, nearshore ocean beaches, or an approved upland disposal site outside the coastal zone. Periodic maintenance dredging also occurs elsewhere throughout Newport Bay to support safe navigation. Other coastal development activities within Newport Bay include dock and piling construction, seawall repairs, boat ramp maintenance, and utility line construction and maintenance.

In addition to dredging and disposal operations within Newport Bay, such activities also occur along the open coast within the action area. For example, maintenance dredging occurs at the Santa Ana River mouth to support flood control activities, as well as improving tidal circulation. Similarly, inlet maintenance dredging occurs at Talbert Marsh and Bolsa Chica to support tidal circulation in these coastal wetland systems, and dredged sediment is placed immediately downcoast along the beaches. The USACE also implements the Surfside-Sunset Beach Nourishment project which involves the dredging of sand from an offshore borrow site with placement on Surfside-Sunset Beach. Lastly, the Navy recently completed modifications to the entrance of Anaheim Bay in order to support their Ammunition Pier and Turning Basin Construction Project at Naval Weapons Station Seal Beach. This project involved construction of a new channel, and new dredging of Outer and Inner Anaheim Bay, and associated sediment disposal in the nearshore immediately downcoast of Anaheim Bay. In addition, the project involved construction of a new ammunition pier, which included fill in various areas, and two eelgrass mitigation sites.

At the Port of Long Beach, increasing global economic trade has resulted in the need for more container terminals, which have necessitated conversion of San Pedro Bay habitat to upland fills. In addition, this has led to a demand for new construction dredging to widen and deepen channels, turning basins, and slips to accommodate these larger vessels. Maintenance dredging is also conducted to support the Port's navigation needs. Moreover, rip-rap revetments, overwater structure, and pile construction and repair are routine activities to support Port operations.

A number of water quality problems occur in Newport Bay due to variety of non-point source issues. These problems include: 1) siltation; 2) bacterial contamination; 3) eutrophication and 4) toxic substances contamination. In response to these problems, the Santa Ana Regional Water Quality Control Board and U.S. Environmental Protection Agency (USEPA) have developed total maximum daily loads (TMDLs) for sediments, nutrients, bacteria, and toxic pollutants (i.e., heavy metals and organics). The primary issue of concern in the federal channels proposed to be dredged is toxic substance contamination. According to the BE, sediments in the federal channels were tested in 2018-2019 to determine suitability of the sediments for ocean disposal. The primary contaminant that resulted in a determination by the USEPA that some sediments are unsuitable for ocean disposal is mercury. Polychlorinated biphenyls (PCBs) were considered a secondary problem affecting some of the same areas of concern identified due to mercury levels. Dichlorodiphenyltrichloroethane (DDT) was not considered an issue for determining suitability for ocean disposal. DDT had been identified as an issue for prior dredging events. Mercury levels in the bay are present at non-toxic levels as demonstrated by bioassay testing (Anchor QEA, 2019).

Upper Newport Bay

Since 1975, Upper Newport Bay has been designated as a nature preserve. It is one of the largest of only a few remaining natural estuarine ecosystems in Southern California. More recently, the State of California designated the Upper Newport Bay State Marine Conservation Area, which protects a little more than one square mile of bay habitat including tidal flats and coastal marsh. Overall, Upper Newport Bay is considered a highly productive ecosystem with a diversity of plants, algae, invertebrates, fish, and birds. For example, annual fish productivity in Upper

Newport Bay littoral fish assemblages may be the highest yet recorded for any bay system using comparable methods of determination (Allen *et al.,* 2006).

Climate Change

Increased storm intensity and frequency may increase the rate of disturbance to eelgrass, algae, and invertebrate communities that typically inhabit shallow habitats in southern California, which may reduce the quality of foraging resources for green sea turtles throughout their range, including in and around the action area. In addition, increasing ocean temperatures may increase the frequency and duration of green sea turtles in the action area. Green sea turtles are dependent on the ambient ocean temperature to support physiological processes such as digestion and growth (Avery *et al.* 1993). As sea temperatures increase, we anticipate the thermal properties of the action area to allow for greater foraging access and use, and may allow for higher growth rates, as observed elsewhere in thermal refuges found in southern California (e.g., Eguchi *et al.* 2012). Increased use of the area may increase the risk of boat collisions and exposure to other potential harmful human interactions.

2.5. Effects of the Action

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 but that are not part of the 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 (see 50 CFR 402.02).

Green Sea Turtle

Direct Contact Injury

In general, the potential exposure to direct contact injury for sea turtles as a result of the proposed action is relatively low as green sea turtles are not known to commonly occur in Lower Newport Bay. However, various project activities may pose a potential direct contact risk to any individuals that may forage, rest, and/or transit through Lower Newport Bay. For example, dredging and its associated equipment may pose a direct contact threat to green sea turtles. A clamshell dredge may strike or capture an unseen turtle, which may lead to serious injury or mortality. However, the clamshell dredging method involves relatively slow-moving machinery that impacts small areas of substrate at a time. In order for a turtle to be entrapped by a clamshell, it would have to avoid detection and remain in the same location, despite the presence of the moving dredging equipment. Furthermore, clamshell dredging has been shown to be less harmful to turtles when compared to other dredging methods, primarily in comparison to hopper dredging or other dredging methods that utilize suction or hydraulic intakes that have been associated with harmful sea turtle interactionsLittle data exists on the behavior of sea turtles in response to noise generated by dredging activities, but we expect the reaction to any disturbance that may be created by the proposed action will be avoidance of the immediate project area. Therefore, avoidance of the area of the proposed project is not likely to significantly impact or disrupt the regular movements or behaviors of turtles over a large area. Avoidance of a small

portion of low to moderate quality foraging habitat is not likely to limit foraging abilities or have any detectable effect on the health of sea turtles, as they are not expected to rely specifically or exclusively on the project areas for forage, rest, or refuge. Therefore, NMFS expects that any effects or disturbance resulting from exposure to project activities will be insignificant, given the low probability that turtles will be in the project area for extended periods of time, and the lack of any expected impact on health and fitness that avoidance of these areas would have on green sea turtles.

Exposure to Contaminants from Sediments

The modified BE provided by the USACE asserts that green sea turtles have a very low exposure pathway to sediment contaminants, and would only be exposed if contaminants entered the water column during dredging or disposal, and the contaminants remain tightly bound to sediments. The original BE also made this assertion and claimed that contaminants are not uptaken by eelgrass. The best scientific information available suggests the USACE's conclusions are inaccurate.

A number of studies have demonstrated the ability of seagrasses to uptake and accumulate various contaminants (Lyngby and Brix 1989, Pergent-Martini et al 1995, Bester 2000, Sanchis et al 2014, Ambo-Rappe and Yasir 2010, Papadopoulos et al 2019, and Peters et al 1997). Dredging can release contaminants into nearby waters and legacy chemicals back into coastal food webs, some of which (e.g., trace metals) accumulate in eelgrass (Komoroske et al. 2011; Komoroske et al. 2012; Barraza et al. 2019; Barraza et al. 2020). Potential pollutants include heavy metals, toxins, oil, tar, marine debris, and plastics. Green turtles are known to carry high loads of contaminants (e.g., metals and persistent organic pollutants; Komoroske et al. 2011, 2012), but there is uncertainty regarding the impact of such environmental pollutants on the conservation of the DPS. In southern California, green turtles forage in urbanized environments and therefore are more exposed to anthropogenic contaminants and pollutants. Sea turtles captured in Seal Beach and San Diego Bay in southern California were found to have higher trace metal concentrations (e.g., selenium and cadmium) than green turtles that inhabit non-urbanized areas (Barraza et al. 2019). A related study found that green sea turtles foraging in San Diego Bay had significantly higher total polychlorinated biphenyls (PCBs) than turtles in Seal Beach, and that these non-dioxin-like PCB congeners may be associated with neurotoxicity (Barraza et al. 2020).

Although green sea turtles may be exposed to contaminants when foraging in the benthos, NMFS anticipates that indirect effects associated with the maintenance dredging action would be limited to the release of contaminants in the water column during the dredging, including some limited uptake by eelgrass. Regional sediment management experts have provided information that identified contaminants within project sediments are generally non-detectable in the water column during dredging and disposal (Anchor QEA, 2021). Given the extremely limited exposure pathway for re-suspended sediments in the water column to be taken up by green sea turtles, this effect is considered discountable. Although eelgrass does have the potential for contaminant uptake from the water column, NMFS anticipates such effects would be non-detectable above the existing baseline. In addition, the removal of the contaminants from Newport Bay may provide a long-term benefit by reducing overall contaminant exposure when

foraging in the benthos. Disposal of sediments deemed unsuitable for nearshore disposal at the LA-3 ODMDS is not considered a potential exposure pathway for green sea turtles that may be present at the LA-3 ODMDS because sediments are dropped from a split hull scow at a depth of approximately -1,600 ft. MLLW, and sediments drop rapidly through the water column to the ocean floor well beyond the known depth range of green sea turtle foraging. Lastly, NMFS anticipates little to no risk of contaminant exposure during disposal at Pier G given that it is a confined fill with a number of best management practices to avoid and minimize pollutant re-introduction to the Port of Long Beach environment. Given the highly limited exposure and general non-detectability of pollutants associated with discharge at the offshore site and Pier G, NMFS concludes any adverse effects associated with pollutant exposure from sediment disposal operations are discountable.

Impacts to foraging and resting habitat

Dredging and sediment placement activities will remove or bury habitat areas that contain foraging resources for green sea turtles. In addition, benthic forage resources may be physically disrupted by mooring activities. The majority of the dredge and mooring footprint in Newport Bay is unvegetated, soft bottom habitat. Foraging resources in these habitat areas are likely limited to invertebrates and sparsely distributed macroalgae. Studies conducted in San Diego Bay to evaluate the recovery of fish and invertebrate communities following benthic disturbance associated with dredging revealed that benthic infaunal density and biomass recovered over a period of 5 to 11 months, while community composition recovered between 17-24 months after impact. Epibenthic invertebrate communities recovered over a period between 29-35 months, while the fish community recovered over a period between 14-22 months following disturbance (Merkel & Associates 2009 and 2010). De La Cruz *et al* (2020) measured macroinvertebrate density, biomass, and energy content in adjacent dredged and undredged areas in San Francisco Bay to evaluate trophic support for SFB benthic foraging fishes. Although a site may begin to show invertebrate recolonization shortly after dredging, their study indicated it can take more than 1-3 years for a site to recover trophic functions that approximate those of adjacent undredged areas. Although community structure and full equivalency may not recover completely from the benthic disturbance, NMFS anticipates that foraging resources throughout much of the dredge footprint will recover sufficiently within three years to provide similar quality in foraging function for green sea turtles. Dredging and sediment placement activities also have the potential to impact resting habitat, but any such effects would be temporary and limited to the period of active dredging.

It is assumed that all eelgrass occurring with the dredging area of potential effect (APE) will be impacted by the implementation of the proposed project (Merkel and Associates, 2022). As delineated by the USACE, 353 square meters (0.09 acres) of vegetated areal extent will be directly impacted by the dredging. NMFS believes the majority of eelgrass habitat more recently observed via the USACE's eelgrass surveys in the dredge footprint is likely near its photosynthetic depth limit, and/or likely experiences chronic disturbance associated with mooring chain benthic disturbance and associated turbidity at the Yacht Anchorage mooring area. In almost all cases, the eelgrass found on the flat bottom of the APE consisted of one to a few turions with limited basal plant spread. Plants appeared to be the result of 2021 recruitment with none of the plants being suggestive of multi-season persistence. Given that the proposed

dredging and associated over depth allowance will likely deepen the areas beyond the anticipated photosynthetic capability of eelgrass in Newport Bay, the proposed action will effectively result in a permanent loss of this vegetated eelgrass habitat and its functional area of influence, as described in CEMP. However, this permanent loss constitutes only 0.04% of the available eelgrass within Newport Bay, and its seascape context in federal navigation channels in a busy harbor likely limit its foraging importance to green sea turtles. Therefore, we conclude this small loss of relatively low-quality habitat would have an insignificant impact on the behavior and fitness of green sea turtles in the action area.

Indirect effects to eelgrass habitat areas outside the immediate dredging footprint may also occur from elevated turbidity and/or suspended sediments over an extended period of time (i.e. 100 weeks of dredging). Many areas for which the USACE is planning their upcoming maintenance dredging project contain significant amounts of fine sediment, which are more likely to remain suspended for longer periods of time. For example, Coastal Resources Management, Inc. (2014) concluded that it was likely that dredging, barge scow, and tug movements associated with significant dredging activity within upper Newport Bay resulted in reductions in eelgrass density in various locations. Indirect eelgrass impacts beyond the immediate dredging footprint were also observed associated with the USACE's 2021 dredging event. Merkel and Associates (2021b) indicated that some eelgrass losses along the margins of the dredge footprint may have occurred due to equipment positioning, bottom scour around the deeper draft scows, relaxation of steep dredge cut banks, or erosion migration following the dredge removal of adjacent eelgrass beds.

The pre-construction eelgrass survey identified the APE as the planned dredge footprint, and does not account for indirect eelgrass impacts that may occur in areas outside the dredge footprint. However, the survey did include a 100 foot buffer around the APE. Although the buffer may not serve as an exact predictor of turbidity extent, NMFS believes it likely provides the best reasonable approximation of eelgrass habitat areas that may suffer prolonged turbidity. In total, the USACE's BE indicates there is approximately 1.65 acres of eelgrass habitat in the survey area. Given the potential for turbidity related effects associated with the extended dredging duration (100 months) and the relatively fine sediment in some of the inner reaches of Newport Bay, NMFS believes the APE to eelgrass has the potential to be much larger. Marine Taxonomic Services (MTS) (2023) conducted a baywide survey for a different purpose that encompasses a much larger area than covered by the pre-construction eelgrass survey provided by the USACE. We assume the potential for turbidity effects to occur in the MTS (2023) survey regions identified as West Newport, Lido Isle, Lido Peninsula, Mariner's Mile, Bayshores, Bay Island, Harbor Island, and the deeper water areas adjacent to the Balboa Channel. It is difficult to quantify the additional area that may be indirectly affected from dredging based upon the information provided by the USACE. In consideration of localized decreases in eelgrass area and density from previous major dredging and disposal operations (e.g., CRM 2014), and order of magnitude estimation, we assume approximately 10 acres of eelgrass may be exposed to turbidity related effects. In total, MTS (2023) documented 205.4 acres of eelgrass habitat in Newport Bay. However, NMFS does not anticipate the turbidity would persist long enough over this entire area to result in complete loss. Regardless of the full extent of indirect impacts, any eelgrass lost via this pathway would likely recover within five years given the relatively favorable environmental conditions for eelgrass that have prevailed over many years (e.g., MTS,

2023). With limited exception, most of the affected eelgrass habitat is found amongst piers, docks, and active boating, and likely does not confer high quality foraging function to green sea turtles given the baseline disturbances. Therefore, given the anticipated recovery over several years, the availability of significant areas of higher quality habitat elsewhere in Newport Bay, and limited current utilization of these areas by green sea turtles, we conclude any temporary losses to eelgrass foraging function would have an insignificant effect on the behavior and fitness of green sea turtles in the action area.

Another potential adverse effect of dredging is the spread of the highly invasive alga, *Caulerpa prolifera.* As mentioned in the environmental baseline and the USACE's BE, the spread of *Caulerpa* spp. would have negative impacts on the local ecosystem, particularly outcompeting native eelgrass habitat, and it is critical to continue surveys as an infected system until eradication has been established. Given that the most recent surveys have not found *Caulerpa* in the previous infestation sites, multiple projects elsewhere in Newport Bay have similarly resulted in negative findings, and the USACE has committed to performing additional surveys for *Caulerpa* spp. consistent with the *Caulerpa* Control Protocol (NMFS 2021), NMFS believes the risk of *Caulerpa* spread and subsequent effects to green sea turtle foraging habitat are discountable.

The disposal site at Pier G is a confined Port slip fill and not suitable habitat for green sea turtles. Similarly, the offshore disposal site does not provide suitable benthic foraging or resting habitat. Therefore, there is no measurable effect to foraging or resting behaviors, and any indirect effects are discountable.

Conclusion

Given the limited number of turtles anticipated to be present in Lower Newport Bay during the proposed activities, the limited exposure to direct contact injury, and implementation of the proposed avoidance and minimization measures, we conclude the risk of direct contact and injury or death as a result of the proposed action is extremely unlikely, and therefore discountable. Similarly, NMFS expects that any acoustic effects or disturbance resulting from exposure to project activities will be discountable, given the low probability that turtles will be in the project area for extended periods of time and the lack of any expected impact on health and fitness that avoidance of these areas would have on green sea turtles. In addition, given the extremely limited exposure pathway for re-suspended sediments in the water column to be taken up by green sea turtles, any health effects associated with pollutant exposure are considered discountable.

Lastly, NMFS anticipates a small permanent loss of marginal quality eelgrass habitat, and short-term impacts to forage resources elsewhere in the project area. However, given the baseline disturbance associated with an active harbor and federal navigation channels, and the marginal foraging quality of the dredge and mooring footprint, NMFS anticipates very few green sea turtles would actively use this area for foraging and resting, and likely only opportunistically as they move to less disturbed areas elsewhere in Newport Bay. Moreover, NMFS does not have information suggesting there is currently a resident population in Newport Bay, so any green sea turtles currently utilizing Newport Bay are likely occasional foragers from nearby resident

populations. Green sea turtles will still be able to forage or seek refuge in areas outside of active dredging and mooring sites. NMFS believes there is much higher quality habitat available outside the dredging areas to support foraging and resting behavior. For example, there are relatively large areas of warm, shallow water habitat in Upper Newport Bay, and there are more extensive eelgrass beds (e.g., 205.4 acres (MTS 2023)) throughout Newport Bay. In summary, NMFS anticipates very few green sea turtles will be exposed to the adverse effects to foraging and resting habitat, and any behavioral and/or fitness effect associated with the reduced foraging resources in these areas is not likely measurable. Therefore, NMFS concludes the effects of the proposed action on green sea turtles are insignificant and discountable.

Green Sea Turtle Critical Habitat

As described above in the impacts to foraging and resting habitat section, dredging and placement activities will remove and bury benthic habitat containing eelgrass, invertebrates, and algae, which are considered essential foraging features of proposed critical habitat. In addition, benthic forage resources may be physically disrupted by mooring activities. Direct effects will be limited to the dredge and mooring footprints, and invertebrate and algae forage resources within the unvegetated soft bottom habitat are ultimately expected to recolonize these areas within one to three years. In addition, eelgrass habitat outside the dredge footprint also may be adversely affected via prolonged turbidity. However, NMFS does not anticipate indirect losses associated with prolonged turbidity to exceed a couple acres. NMFS believes any permanent functional eelgrass habitat losses will be confined to a very small portion of the dredge area, and indirectly affected eelgrass habitat would recover within five years. Given the spatial extent (i.e.~120 acres) of the proposed dredging and mooring activities, and associated benthic disturbance to essential forage resources, NMFS concludes the proposed action will adversely affect proposed critical habitat via a permanent loss of a relatively small area of vegetated eelgrass habitat (0.09 acres), and more widespread temporary losses of foraging resources, such as invertebrates and algae within the dredge footprint, and eelgrass indirectly affected outside the dredge footprint.

The proposed activities will not result in any permanent changes to essential resting features as the dredged areas will resume the same resting potential after the project is completed, and no areas will be dredged deeper than 20m, which is the proposed maximum depth containing resting features. Therefore, NMFS concludes any effects to resting features would be insignificant.

2.6. Cumulative Effects

"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.

Some continuing non-federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline *vs.* cumulative effects. Therefore, all relevant future climate-related

environmental conditions in the action area are described earlier in the discussion of environmental baseline (Section 2.4).

Vessel traffic and recreational fishing are reasonably certain to occur, and may lead to some level of harassment or take given that vessel strikes and recreational fishing interactions have been a documented source of previous green sea turtle stranding events in southern California. In addition, an unintentional spread of the invasive species, *Caulerpa prolifera*, may occur due to a state or private action. However, the active eradication and management response suggest that further spread is not reasonably certain to occur. In general, sediment and water quality within Newport Bay is improving due to improved watershed practices, and established TMDLs for constituents of concern, but the potential exists for temporary declines in water quality associated with oil and/or pollution spills.

2.7. Integration and Synthesis

The Integration and Synthesis section is the final step in assessing the risk that the proposed action poses to species and critical habitat. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), 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.

In this biological opinion, we have considered the potential effects from the proposed action include direct contact injury, acoustic disturbances, exposure to contaminants, and effects to foraging and resting habitat, and have determined that any potential effects to green sea turtles are expected to be insignificant and discountable. Therefore, we conclude that the proposed action will not adversely affect or appreciably reduce the likelihood of both the survival and recovery of green sea turtles.

However, we have concluded that project activities are likely to adversely affect proposed critical habitat via measurable reductions in foraging habitat quantity and quality.
The relatively limited number of green sea turtle sightings in the area, despite the sighting opportunities provided by high bay visitation and recreation, suggests there currently is not a resident population in Newport Bay. Given the tendency for green sea turtles to use relatively small home ranges, NMFS assumes that current use of Newport Bay is limited to occasional foraging forays from turtles elsewhere in southern California. However, NMFS anticipates green sea turtle numbers to increase as recovery measures continue to address key threats, and a fully recovered green sea turtle population would likely result in the establishment of a resident population in Newport Bay.

As a whole, NMFS determined the nearshore waters between San Onofre and Newport Beach (including Newport Bay) to be of moderate conservation value to the DPS. In particular, Newport Bay contains many physical and biological features that may serve as high quality foraging and resting habitat for the recovering green sea turtle population. However, the baseline conservation value of the federal channel dredge footprint is relatively low given the chronic

behavioral disturbances associated with significant vessel traffic. Although community structure and full equivalency may not recover completely from the benthic disturbance, NMFS anticipates that foraging resources throughout much of the dredge footprint will recover sufficiently within three years to provide similar quality in foraging function. Furthermore, NMFS believes there is much higher quality habitat available in Newport Bay outside the dredging areas to support foraging and resting behavior. Moreover, the area of proposed critical habitat that may be adversely affected by the proposed project is relatively small compared to the entire proposed critical habitat area, which includes most of ~150 miles (~241 km) of nearshore coastline ranging from Santa Monica Bay to the U.S. Mexico border, including multiple embayments from the mean high water line to -20 m MLLW. Given that we anticipate little to no long-term alteration to foraging and resting habitats, there is much higher quality foraging and resting habitat elsewhere in Newport Bay, and the affected area represents a small fraction of available habitat in southern California, we conclude the project will not appreciably diminish the value of proposed critical habitat as a whole for the conservation of the species.

2.8. Conclusion

After reviewing and analyzing the current status of the proposed 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 the cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to adversely affect green sea turtles, or destroy or adversely modify proposed critical habitat for the East Pacific DPS of green sea turtles.

2.9. 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.

In this biological and conference opinion, we have determined that the proposed action is not likely to result in take of individual green sea turtles, although some adverse effects to the proposed critical habitat are anticipated. Therefore, no take of green sea turtles will be anticipated, enumerated, or exempted, through this biological and conference opinion. Accordingly, there are no Reasonable and Prudent Measures, and associated Terms and Conditions, required through this opinion.

2.10. 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). After consideration of the USACE's environmental commitments to avoid and minimize effects to green sea turtles, and the limited permanent impacts to proposed critical habitat, we have no conservation recommendations to provide regarding green sea turtles or their proposed critical habitat designation. However, we do have conservation recommendations to provide with respect to other ESA-listed species that may be affected by the proposed action, as described in section 2.12 *"Not Likely to Adversely Affect" Determinations*.

- NMFS is interested in collecting sightings data of gray whales with photos and/or videos where possible within Harbors. We invite the USACE to facilitate collection and submission of documentation from USACE-funded/permitted projects to the NMFS Long Beach Protected Resources Division Office (contact Callie Leiphardt, Natural Resource Protection Specialist, callie.leiphardt@noaa.gov). This will assist in determining whether any individuals that may belong to the endangered Western North Pacific DPS are spending time in or near action areas in southern California where USACE-permitted coastal development projects occur.

- NMFS is interested in collecting data in coastal areas to assist in the determination of endangered species occurrence in project areas. We encourage the USACE to facilitate collections of documentation from USACE-funded/permitted projects of all marine mammal and sea turtle observations in the action area, including Newport Bay and the transit to LA-3, and submit a sighting report to NMFS Long Beach Protected Resource Division Office when the project is complete. This will assist in determining endangered species occurrence and distribution in USACE-permitted coastal development projects.

- The USACW should not discharge dredge material if a sea turtle or marine mammal is within 100 meters of the dump scow. Disposal activities should not resume until the protected species has departed the project area of its own volition, or has not been sighted for 15 minutes.

2.11. Reinitiation of Consultation

This concludes our ESA consultation and formal conference on the effects of the Lower Newport Bay Federal Maintenance Dredging Project on green sea turtles and proposed critical habitat.

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."

In the context of this biological and conference opinion, there is no incidental take anticipated and the reinitiation trigger set out in § 402.16(a)(1) is not applicable. If any of the direct take amounts specified in this opinion's effects analysis (Section 2.5) are exceeded, reinitiation of formal consultation will be required because the regulatory reinitiation triggers set out in § 402.16(a)(2) and/or (a)(3) will have been met.

2.12. "Not Likely to Adversely Affect" Determinations

The USACE determined the proposed action may affect, but is not likely to adversely affect, (NLAA) the following ESA-listed species:

- Fin whale (*Balaenoptera physalus*)
- Blue whale (*Balenoptera musculus*)
- Humpback whale (*Megaptera novaeangliae*); Central America and Mexico DPS
- Sperm whale *(Physeter macrocephalus*)
- Sei whale (*Balaenoptera borealis*)
- Gray whale (*Eschrichtius robustus*); Western North Pacific DPS
- Leatherback turtle (*Dermochelys coriacea*)
- Loggerhead turtle (*Caretta caretta*); North Pacific DPS
- Olive Ridley turtle (*Lepidochelys olivacea*)
- Guadalupe fur seal (*Arctocephalus townsendi*)

The USACE has made no effect determinations for the following ESA-listed species and designated critical habitats:

- Hawksbill sea turtle (*Eretmochelys imbricata*)
- Killer whale (*Orcinus orca*); Southern Resident DPS
- False killer whale (*Pseudorca crassidens*); Main Hawaiian Islands Insular DPS
- Steelhead trout (*Oncorhynchus mykiss*); CA coast DPS
- Leatherback sea turtle designated critical habitat
- Hawksbill sea turtle designated critical habitat
- Humpback whale designated critical habitat
- Killer whale designated critical habitat
- False killer whale designated critical habitat
- Steelhead trout designated critical habitat

The following potential effects of the proposed action listed in reference to the ESA-listed species determined to be NLAA are expected to be similar in nature across species, although the nature and severity of those effects may differ somewhat given their varying responses and sensitivities to these effects. The potential effects are generally discussed together, and specific considerations for individual species or species groups are highlighted if appropriate or necessary. There is no designated critical habitat in the action area for the NLAA ESA-listed

species.

1. Direct contact with dredging construction equipment

   ESA-listed marine mammals and other sea turtle species are very unlikely to come into direct contact with dredging equipment (clamshell dredge, barge-mounted excavator) due to their lack of presence within the vicinity of the action area inside Newport Bay. In addition, the conservation measures laid out by USACE would minimize any impact to detected sea turtles. Therefore, we expect the effects of the risks of direct contact between the ESA-listed species and construction equipment used for the proposed action to be discountable.

2. Vessel strikes

   Vessel strikes by towing scows within the dredging areas and offshore/away from Newport Bay to disposal sites pose a potential impact due to the possible presence of ESA-listed sea turtles and marine mammals in the proposed project area. Additionally, any turtles present in the project area may be subjected to injuries if struck by a vessel being used during dredging and placement activities. During research operations, NMFS staff reportedly have observed the detection and avoidance reactions of sea turtles to slow moving vessels, even upon detecting them at a very close proximity while surfacing (Dan Lawson, NMFS West Coast Region). Vessel collisions are occasionally a source of injury and mortality to sea turtles along the U.S. West Coast, and particularly in southern California where green sea turtles are the most frequent species struck by vessels including jet skis and small power boats. Adult nesting female turtles are more susceptible to vessel strikes when making reproductive migrations, although none of the ESA-listed sea turtle species nest in California. Based on what we know from stranding (2004-2023) and sighting (2015 to present) records and fishery observer program reports (1990-present), leatherbacks, loggerheads and olive ridleys are relatively rare in nearshore southern California. Leatherbacks are generally pelagic in nature, and their distribution is most concentrated off central California and areas in the Pacific Northwest. Loggerheads are also mostly pelagic in nature, with higher concentrations found more offshore. Most olive ridley turtles lead a primarily pelagic existence, migrating throughout the Pacific, from their nesting grounds in Mexico and Central America, to the deep waters of the Pacific that are used as foraging areas.

   While various ESA-listed whales and Guadalupe fur seals have the potential to occur within the action area, they are not expected to occur near the area directly impacted by dredging and placement. Guadalupe fur seals are pelagic and spend a majority of their time in the open ocean, with the vast majority of healthy individuals (i.e., not stranded) generally only coming ashore at Guadalupe Island, 250 km offshore of the Baja California Peninsula. While collisions with smaller marine mammal species have also been reported (Van Waerebeek et al. 2007), these species tend to be more agile swimmers and more capable of avoiding collisions with oncoming vessels. There have been very few documented vessel strikes with pinnipeds; and stranding data indicates over the last two decades, there are no reported cases of vessel collisions for Guadalupe fur seals.

Sperm whales are typically found foraging in deep water canyons and escarpments and would therefore rarely be found in the action area. The anticipated occurrence and densities of ESA-listed blue, fin, and humpback whales in nearshore areas adjacent to the construction area are expected to be low based on information related to predictive models of whale distributions (Becker et al. 2020), and the infrequent documentation or reporting of whale sightings within the harbor and immediate surrounding areas. Sei whales are distributed far out to sea in temperate waters worldwide and do not appear to be associated with coastal features (Carretta et al. 2023). Gray whales are presently recognized as two populations in the North Pacific Ocean, and recent genetic studies using both mtDNA and nuclear markers have demonstrated significant differentiation between the western North Pacific (WNP) and eastern North Pacific (ENP) populations (LeDuc et al. 2002; Lang et al. 2011; Weller et al. 2013). The WNP are an endangered population with a 2016 estimate of 290 whales. The fraction of the population that migrates to the ENP is estimated to be 45-80% (Cooke et al. 2018), but more than 99% of the gray whale population that migrates through the action area twice each year is expected belong to the ENP population.

While whales are not evenly distributed either spatially or temporally, the available information suggests low potential for encounter of ESA-listed species with construction activities. All vessels associated with the construction would be moving at relatively slow speeds while conducting project-related movements (6 knots with a loaded scow and 8 knots with an empty scow). The LA-3 ODMDS is approximately 4.3 nautical miles SW of the entrance of Newport Harbor. Given the average capacity of 1,500 CY for the split hull scow, it is estimated there will be 540 sediment disposal trips over the 100 week period of the project. Slower vessel speeds have been linked to reduced risk of vessel collisions with whales (Laist et al. 2001; Vanderlaan and Taggart 2007), with the most dramatic increase of lethality occurring between 10 and 14 knots (Vanderlaan and Taggart 2007). Due to the slow speed of vessels and low probability of species' in the action area, the collision risk is reduced. Based on information provided by USACE, the proposed action is not expected to lead to any increases in the level of vessel traffic within the action area once the project is completed, so NMFS does not believe the proposed project will lead to increased exposure to vessel traffic compared to baseline conditions as a consequence of the project's completion. Therefore, given all the above, we conclude the risk of vessel strikes from the proposed action would be discountable.

3. Exposure to contaminants from sediment discharge

ESA-listed species, including sea turtles, whales, and Guadalupe fur seals, would only be exposed if contaminants entered the water column during dredging or disposal, although the presence of these NLAA listed species in the action area is very rare and dredging operations would be discrete, temporary events. Disposal of sediments offshore at the LA-3 ODMDS is not considered a potential exposure pathway because sediments are dropped from a split hull scow at a depth of approximately -1,600 ft. MLLW rapidly through the water column to the ocean floor, with no chance for contaminants to dissolve into the water column and affect any potential

passing vertebrates, or their prey. Therefore, the risks associated with contaminants released from sediment discharge would be discountable.

4. Noise Disturbance

Project activities using construction equipment can cause noise disturbance in marine environments; however, the level of sound produced by dredging activities is typically expected to be relatively limited compared to other types of in-water construction activities such as pile driving. Clamshell dredging generally generates low frequency sound pressure levels around 100 to 120 dB re 1 microPascal (Dickerson et al. 2001), which is below the NMFS guidance for marine mammal harassment criteria from acoustic sources, which is 160 dB re 1 microPascal for impulsive sounds. As described above in the *Effects of the Action* (section 2.5), NMFS guidance for acoustic disturbance of sea turtles is also well above the sound levels anticipated from the proposed action. With the exception of green sea turtles, NMFS believes it extremely unlikely that other listed sea turtles and marine mammals will be exposed to dredging activities in Newport Bay. If, in the unlikely event they are present during dredging activities, we expect the reaction to any disturbance that may be created by the proposed action will be avoidance of the immediate project areas. While a number of ESA-listed sea turtle and marine mammal species may occur in the action area, we do not expect any individuals from these species to spend significant periods of time in or frequent the action area; therefore, the risks associated with limited and temporary underwater noise disturbance for these species are insignificant.

3. MAGNUSON–STEVENS FISHERY CONSERVATION AND MANAGEMENT ACT ESSENTIAL FISH HABITAT RESPONSE

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 Groundfish (PCG), Coastal Pelagic Species, and Highly Migratory Species FMP. In addition, the proposed project occurs within and in close vicinity to estuary and eelgrass

habitat, which are both habitat areas of particular concern (HAPC) for various fish species within the PCG FMP. NMFS has determined that the proposed project would adversely affect EFH for various federally managed fish species under the above FMPs. The adverse effects from dredging and material placement include: 1) direct removal/burial of organisms; 2) turbidity and/or siltation effects, including light attenuation from turbidity; 3) contaminant release and uptake, including nutrients, metals and organics; 4) release of oxygen consuming substances; 5) entrainment; 6) noise disturbance; and 7) alteration to hydrodynamic regimes and physical habitat.

Of particular concern to NMFS is the potential spread of *Caulerpa prolifera* due to dredging activities. If the invasive alga is present within the project area, the dredging activities would adversely affect EFH by promoting its spread and increasing its negative ecosystem impacts. However, NMFS believes their environmental commitment to conduct pre-construction *Caulerpa* surveys consistent with the *Caulerpa* Control Protocol, and close coordination with the SCCAT, will adequately address this risk. However, if future survey efforts in Newport Bay report a positive *Caulerpa* finding outside the previous infestation sites, then the USACE should re-initiate consultation pursuant to 50 CFR 600.920(l).

NMFS is also concerned by the potential for cumulative direct and indirect adverse effects to eelgrass habitat within Newport Bay. Although the USACE has committed to conducting pre- and post-construction eelgrass surveys and mitigation in accordance with CEMP, the eelgrass surveys they have provided to date are not fully consistent with CEMP, and the USACE has previously rejected our recommendations to implement measures consistent with CEMP. We have previously addressed various issues associated with the USACE regarding eelgrass surveys and mitigation in prior EFH consultation responses (i.e., NMFS 2020, 2022, 2023). In summary, the USACE's eelgrass survey and mitigation approach has not: 1) delineated eelgrass habitat as defined in CEMP, which results in an underestimate of eelgrass habitat area; 2) properly accounted for temporal losses associated with prior mitigation failure and delay; and 3) adequately accounted for risk of mitigation failure. Therefore, NMFS is not reasonably certain that the USACE will implement their stated commitment to comply with CEMP, and concludes that any additional eelgrass habitat impacts associated with this maintenance dredging event will likely lead to a loss in eelgrass function. Given that NMFS has previously clarified our concerns in multiple responses with limited acceptance by the USACE, and we do not seek to elevate our EFH concerns given competing conservation priorities, we are not providing any additional EFH conservation recommendations.

If the USACE would like to reconsider their previous responses to our EFH conservation recommendations, and coordinate with NMFS to ensure their projects fully comply with CEMP, please let us know. The USACE 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)).

4. Data Quality Act Documentation and Pre-Dissemination Review

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these

DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

4.1. Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this opinion are USACE. Other interested users could include the City of Newport Beach and the Port of Long Beach. Individual copies of this opinion were provided to the USACE. The document will be available within 2 weeks at the NOAA Library Institutional Repository [https://repository.library.noaa.gov/welcome]. The format and naming adhere to conventional standards for style.

4.2. Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3. Objectivity

Information Product Category: Natural Resource Plan

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR part 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion and EFH consultation contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and MSA implementation, and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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