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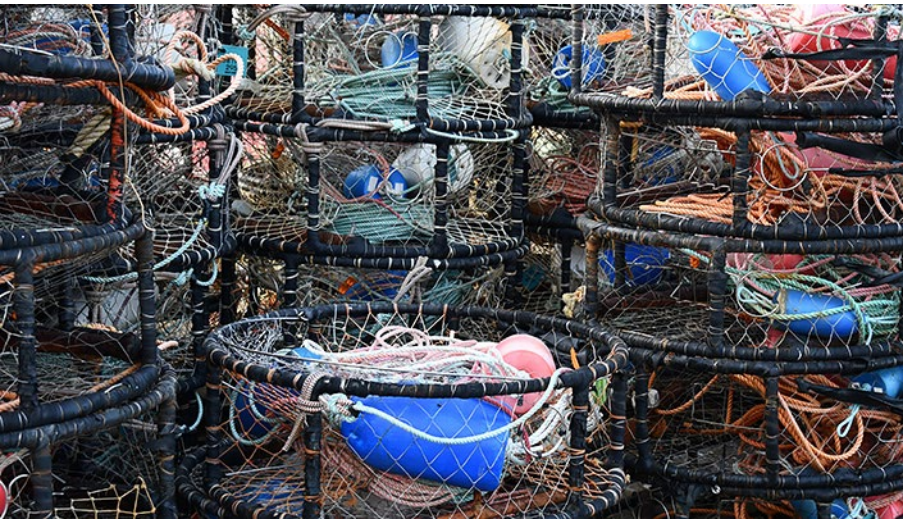
Draft Environmental Impact Report

California Commercial Dungeness Crab Fishery Risk Assessment and Mitigation Program Regulatory Amendments

State Clearinghouse No. 2022090320

April 2024



Prepared for:

California Department of Fish and Wildlife

Draft Environmental Impact Report

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State Clearinghouse No. 2022090320

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LIST OF ABBREVIATIONS

°C	Celsius
°F	Fahrenheit
AB	Assembly Bill
ASBS	Areas of Special Biological Significance
BLM	US Bureau of Land Management
BOEM	US Bureau of Ocean Energy Management
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
Cal/OSHA	California Occupational Safety and Health Administration
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCC	California Coastal Commission
CCIEA	California Current Integrated Ecosystem Assessment
CCR	California Code of Regulations
CCS	California Current System
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CMA	Central Management Area
CNDDB	California Natural Diversity Database
CO	carbon monoxide
CO_2	carbon dioxide
CP	Conservation Plan
CRHR	California Register of Historical Resources
CWA	Clean Water Act
DCTF	Dungeness Crab Task Force
DDE/DDD	dichlorodiphenyldichloroethane
DDT	dichlorodiphenyltrichloroethane
DPS	Distinct Population Segment
Draft EIR	Draft Environmental Impact Report
DTSC	California Department of Toxic Substances Control

DWR	California Department of Water Resources
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EIR	environmental impact report
ENSO	El Niño Southern Oscillation
EPA	US Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	federal Endangered Species Act
EZ	Exclusion Zone
FGC	California Fish and Game Code
GHG	greenhouse gas
HAP	hazardous air pollutant
ITP	incidental take permit
LMH	Large Marine Heatwave
MBTA	Migratory Bird Treaty Act
MLPA	Marine Life Protection Act
MMA	marine management area
MMPA	Marine Mammal Protection Act
$MMTCO_2e$	metric tons of carbon dioxide equivalents
MPA	marine protected area
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NMA	Northern Management Area
NMFS	National Marine Fisheries Service
NMS	national marine sanctuary
NO	nitric oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOAA	National Oceanic and Atmospheric Administration
NOP	notice of preparation
NPGO	North Pacific Gyre Oscillation
NPH	North Pacific High
NRHP	National Register of Historic Places
OAL	Office of Administrative Law
ONI	Oceanic Niño Index
OPC	California Ocean Protection Council

OSHA	Occupational Safety and Health Administration
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PDO	Pacific Decadal Oscillation
PM	particulate matter
PM_{10}	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
$PM_{2.5}$	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
PRC	Public Resources Code
RAMP	Risk Assessment and Mitigation Program
ROG	reactive organic gases
RWQCB	regional water quality control board
SB	Senate Bill
SIP	State Implementation Plan
SLC	State Lands Commission
SO_2	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SST	sea surface temperature
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
Tri-State	Tri-State Dungeness Crab Committee
USC	US Code
USCG	US Coast Guard
USFWS	US Fish and Wildlife Service
VGP	Vessel General Permit
VIDA	Vessel Incident Discharge Act
WQO	Water Quality Objective

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The California Department of Fish and Wildlife (CDFW) proposes to amend Title 14 Section 132.8 of the California Code of Regulations (CCR) codifying the Risk Assessment and Mitigation Program (RAMP) for the California commercial Dungeness crab fishery, which is the proposed project subject to approval by CDFW and compliance with the California Environmental Quality Act (CEQA). The regulatory amendments would refine and further develop existing RAMP provisions to reduce the risk and severity of marine life entanglements and improve identification of entanglements in California commercial Dungeness crab gear. The RAMP amendments would also strengthen California's regulatory authority to implement Conservation Plan (CP) measures to support the National Marine Fisheries Service's (NMFS's) discretionary approval and issuance of an Incidental Take Permit (ITP) for the potential take of specified Actionable Species under Section 10 of the federal Endangered Species Act (ESA) for the California commercial Dungeness crab fishery (the "project").

This summary is provided in accordance with State CEQA Guidelines Section 15123. As stated in Section 15123(a), "[a]n EIR [environmental impact report] shall contain a brief summary of the proposed action and its consequences. The language of the summary should be as clear and simple as reasonably practical." As required by the guidelines, this chapter includes (1) a summary description of the project, (2) a synopsis of environmental impacts and recommended mitigation measures (Table ES-1, presented at the end of this summary), (3) identification of the alternatives evaluated and of the environmentally superior alternative, and (4) a discussion of the areas of controversy associated with the project and issues to be resolved.

ES.2 SUMMARY DESCRIPTION OF THE PROJECT

ES.2.1 Project Location

Subject to RAMP regulations (14 CCR Section 132.8), the commercial Dungeness crab fishery is located within ocean and coastal waters off California. The project's location (referred to as "project area" in this EIR) encompasses the portion of the Exclusive Economic Zone (EEZ – the area within 200 nautical miles of the shoreline) extending from the California/Oregon border in the north to the California/Mexico border in the south (Figure ES-1). Although the commercial Dungeness crab fishery occurs almost exclusively north of Point Conception (CDFW 2020), CDFW jurisdiction over the fishery extends throughout the portion of the EEZ off California's coast (16 US Code Section 1856 note), which, historically, has been divided at the Sonoma-Mendocino County line into two areas that have slightly different Fishing Seasons. The Northern Management Area (NMA) extends from Oregon to the Sonoma-Mendocino County line, and the Central Management Area (CMA) extends from the Sonoma-Mendocino County line to Mexico.

ES.2.2 Background and Need for the Project

Reported entanglement of Actionable Species (blue whale [*Balaenoptera musculus*], humpback whale [*Megaptera novaengliae*] Central America Distinct Population Segment (DPS) and Mexico DPS, and Pacific leatherback sea turtle [*Dermochelys coriacea*]) in fishing gear off the West Coast has increased in recent years (Saez et al. 2021). The Actionable Species are protected under ESA. Trap gear from the California commercial Dungeness crab fishery, one of the most valuable commercial fisheries in California, is known to contribute to these entanglements (Saez et al. 2021). Between 2014 and 2023, there were 50 known humpback whale, three known blue whale, and two known Pacific leatherback sea turtle entanglements in California commercial Dungeness crab gear (Table ES-1).

Source: Adapted by Ascent in 2024.

Figure ES-1 Project Area

Table ES-1 Confirmed Entanglements in California Commercial Dungeness Crab Gear by Year for Each Actionable Species, 2014–2023

Year	Blue Whale	Humpback Whale	Pacific Leatherback Sea Turtle
2014	0	2	0
2015	0	7	0
2016	2	19	1
2017	1	3	0
2018	0	7	0
2019	0	3	0
2020	0	1	0
2021	0	1	0
2022	0	4	0
2023	0	5	1
Total	**3**	**52**	**2**
Annual average	**0.3**	**5.2**	**0.2**

Sources: Saez et al. 2021; NMFS 2023.

Although take of all three Actionable Species has been documented in California commercial Dungeness crab gear, the highest number of entanglements has been of humpback whales. Of the 52 humpback whale entanglements, 28 (54 percent) occurred during the 2014–2016 Large Marine Heatwave, which was a historically unusual, prolonged warmwater event. This large marine heatwave event led to an extended delay in the 2015–2016 Fishing Season. Santora et al. (2020) directly connects the heatwave's impacts on fishery operations and Actionable Species distributions with the dramatic increase in large whale entanglements documented in 2015 and 2016. Although the number of entanglements has since declined, the entanglements documented during this large marine heatwave were the impetus for CDFW's increasingly active management of the Dungeness crab fishery and triggered the requirement that CDFW apply for an ITP from NMFS.

Senate Bill (SB) 1309, also known as the 2018 Fisheries Omnibus Bill, added Section 8276.1 to the Fish and Game Code (FGC). FGC Section 8276.1 mandated CDFW to adopt RAMP into regulation. CDFW adopted RAMP into regulation in October of 2020, after consultation with stakeholders such as the California Dungeness Crab Fishing Gear Working Group (Working Group), a collaborative advisory body consisting of commercial and recreational fishing representatives, environmental organization representatives, scientists, members of the disentanglement network, and state and federal agencies. RAMP formally established criteria and protocols to evaluate and respond to the potential risk of marine life entanglement. RAMP is a dynamic management framework that establishes thresholds for determining if entanglement risk is elevated, specifies potential management actions, and requires use of the best available science when determining appropriate management actions by the CDFW Director. The proposed project would consist of amendments to the RAMP regulations, incorporating feedback from various stakeholders, guidance from NMFS to help CDFW acquire the ITP, and lessons learned from recent experience implementing the program.

INCIDENTAL TAKE PERMIT

The federal ESA requires that CDFW obtain an ITP from NMFS for the incidental take of Actionable Species through management of the California commercial Dungeness crab fishery. The required ITP application and proposed implementing agreement would be submitted to NMFS for federal approval and issuance of an ITP to CDFW. The ITP would provide federal authorization for limited incidental take of Actionable Species associated with the California commercial Dungeness crab fishery.

To obtain the ITP, CDFW must work with NMFS to develop a CP that establishes a comprehensive management framework for NMFS to determine that the California commercial Dungeness crab fishery is not likely to jeopardize

the continued existence of the Actionable Species. The CP, as required by NMFS pursuant to the ESA, would serve as the primary source of information for CDFW's application for the ITP and the management plan prescribing the California commercial Dungeness crab fishery's ESA compliance strategy. The conservation measures developed in the CP would also help inform the proposed RAMP regulatory amendments; however, as a required component of the federal ITP, the CP is not subject to a discretionary approval action by CDFW.

CDFW would request a 15-year-term, renewable ITP from NMFS. This ITP duration would allow the ITP term to align with required Marine Mammal Protection Act (MMPA) authorizations that must occur every 3 years, provide sufficient time to implement the CP and evaluate the adaptive management framework, and provide greater predictability for fishery participants. In addition, this period would likely encompass multiple large-scale oceanographic regimes that have been directly linked to episodic fluctuations in entanglement frequency (Santora et al. 2020). By the end of the 15-year period, additional research would likely become available to further inform the conservation of Actionable Species and the approval of future ITPs. CDFW also notes that fishery managers in Oregon and Washington are seeking ITPs with similar permit terms.

CDFW would request in its ITP application the following allowable take levels of Actionable Species by the California commercial Dungeness crab fishery: up to 58 humpback whales from the Mexico DPS, 34 humpback whales from the Central America DPS, 8 blue whales, and 2 Pacific leatherback sea turtles. For purposes of determining whether these take thresholds have been reached, CDFW would consider each confirmed entanglement of an Actionable Species in California commercial Dungeness crab gear (reported from any location) to constitute take of an individual.

THE CONSERVATION PLAN

CDFW has been working closely with NMFS to develop the CP for several years. The document has been going through the final stages of development as of Spring 2024. While the decision to approve and adopt the final document rests with NMFS, CDFW is not expecting the fundamental management framework it establishes to change substantially. The objectives of the CP are as follows:

1. reduce humpback whale, blue whale, and Pacific leatherback sea turtle entanglement risk from the commercial Dungeness crab fishery by restricting presence of actively fished vertical lines;
2. reduce co-occurrence of humpback whale, blue whale, and Pacific leatherback sea turtle with lost or abandoned California commercial Dungeness crab gear throughout the project area;
3. develop, evaluate, and require use of gear modifications that reduce the severity of entanglement if humpback whale, blue whale, or Pacific leatherback sea turtle become entangled in commercial Dungeness crab gear;
4. jointly develop with NMFS safe handling procedures for leatherback sea turtles that become entangled in pot/trap gear; and
5. support rapid entanglement response efforts that minimize the severity of entanglements in commercial Dungeness crab gear.

To achieve these goals, CDFW plans to pursue a two-prong approach of avoidance and minimization. CDFW and the commercial Dungeness crab fishery would meet the first two objectives by first avoiding co-occurrence of Dungeness crab gear and Actionable Species. For co-occurrence that may inevitably occur, actions would be taken under the remaining three objectives to minimize the severity of any potential entanglement to the maximum extent practicable. As the primary instrument allowing CDFW to control the presence of active commercial Dungeness crab gear in the ocean, the RAMP regulations serve as the center piece of the CP's avoidance strategy.

ES.2.3 Project Objectives

The specific objectives of the proposed RAMP regulatory amendments are listed below.

1. use ongoing risk evaluation to reduce risk of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in commercial Dungeness crab gear throughout the project area using active management;
2. improve identification of entanglements of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area;
3. reduce the likelihood and/or severity of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area by authorizing the use of alternative fishing gear; and
4. strengthen regulatory authority to implement actions designed to reduce entanglement risks, including CP goals and measures and federal ITP requirements.

ES.2.4 Proposed Project

The proposed RAMP regulatory amendments constitute the proposed project for purposes of CEQA compliance. They are part of CDFW's comprehensive strategy to avoid, minimize, mitigate, and monitor entanglements of Actionable Species in commercial Dungeness crab fishing gear off the coast of California consistent with the framework established by the CP. The proposed amendments would add new RAMP components consisting of the management actions of restricting surface gear and active tending requirements as well as new buoy and line marking requirements. The proposed amendments would modify existing RAMP components. These regulatory changes are being proposed to satisfy requirements for the ITP pursuant to NMFS feedback, help streamline implementation processes to conserve staff resources, and clarify existing language to facilitate implementation and enforcement of RAMP.

PROPOSED RAMP REGULATORY AMENDMENTS

The revisions proposed in 14 CCR Section 132.8 (i.e., the RAMP regulations) are summarized below and discussed further in the sections that follow.

- clarify that an Actionable Species entanglement involving California commercial Dungeness crab gear observed anywhere would be considered as a Confirmed Entanglement;
- clarify that an Actionable Species entanglement in Unknown Fishing Gear would count as a Confirmed Entanglement only if it is reported from a Fishing Zone off California;
- clarify that Confirmed Entanglements would be assigned based on information provided by NMFS, and would be made when sufficient data are available, but no longer than on a quarterly basis;
- remove provision pertaining to Confirmed Entanglements involving multiple fisheries;
- simplify Confirmed Entanglement calculation by repealing the concept of Impact Score;
- consider unidentifiable gear as Unknown Fishing Gear unless the gear in question is entirely inconsistent with a Dungeness crab trap;
- phase out assignment of Confirmed Entanglements in Unknown Fishing Gear to the Dungeness crab fishery based on a new line marking requirement;
- specify that Fishing Zones would extend to all "Ocean Waters" within the specified area;
- remove the concept of "Fishing Grounds" and apply the 100-fathom boundary to only the Marine Life Concentration surveys;

- define "Ocean Waters";
- remove Fishing Zones 6 and 7;
- move the start time of risk assessments from November 1 to October 15 and discontinue assessment once a Fishing Zone has been closed for the rest of the season;
- clarify that a management action would remain in effect until it is revoked;
- clarify that if a Fishing Zone is closed for the season, only approved Alternative Gear would be used in that zone for the rest of the season;
- institute revised Confirmed Entanglement thresholds to align with ESA and anticipated requirements under an ITP;
- stipulate that the validity of a survey for risk assessment would no longer expire after a specified period of time;
- elevate a management action's effectiveness at minimizing entanglement to its primary goal;
- consolidate the spatial data on the Actionable Species under one subsection and explicitly allow the consideration of data in areas adjacent to Fishing Zones;
- extend consideration of entanglement pattern from only the ongoing calendar year and Fishing Season to prior years and seasons as well while crafting management actions;
- remove Fleet Advisory as a management action;
- add restrictions to the amount of surface gear and mandatory active tending of crab gear as possible management actions;
- update fishery closure requirements by clarifying that all fishing gear must be removed from a closed Fishing Zone by the effective date of the fishery closure; and crabs from delayed or closed zones cannot be taken, possessed, sold, or landed, with special stipulations for crabs taken from these zone(s) right before closure;
- further clarify that all Dungeness crab permit holders, whether they are using traditional or Alternative Gear, must submit the bi-weekly report when they have gear in any Fishing Zone(s); reports would be due on the first and sixteenth of each month, and may be submitted through a CDFW provided form in addition to email or text;
- require bi-weekly reports to include the due dates and number of newly lost traps known to each permit holder;
- require an end-of-season report due two weeks following the submission of each permit holder's last bi-weekly report of a Fishing Season documenting the traps lost during that season and their associated buoy tags;
- update requirements for electronic monitoring systems by commercial Dungeness crab vessels when RAMP management measures are in place; monitoring systems would have to be able to track vessel accurately without interruption; tampering would be prohibited, and any interruption would have to be reported and corrected before fishing could resume;
- require each main buoy to be legibly marked to identify the fishery and the operator;
- require trap line marking to identify the gear belonging to the Dungeness crab fishery; and
- further stipulate the types of limitations or conditions that may be attached to the authorization of an Alternative Gear.

SPATIAL MANAGEMENT

Seven Fishing Zones are currently defined for the commercial Dungeness crab fishery; six of which collectively comprise the project area and a seventh Fishing Zone designated as the "Pacific Leatherback Sea Turtle Foraging Area" which encompasses the southern portion of Fishing Zone 2, the entirety of Fishing Zone 3, and the northern

portion of Fishing Zone 4 (see Figure 2-8). This would be streamlined into five Fishing Zones with the following latitudinal boundaries (see Figure 2-9):

- Zone 1: From the California/Oregon border (42° N latitude) to Cape Mendocino (40° 10' N latitude).
- Zone 2: From Cape Mendocino to the Sonoma/Mendocino county line (38° 46.125' N latitude).
- Zone 3: From Sonoma/Mendocino county line to Pigeon Point (37° 11' N latitude).
- Zone 4: From Pigeon Point to Lopez Point (36° N latitude).
- Zone 5: From Lopez Point to Point Conception (34° 27' N latitude).

Instead of defining a specific Fishing Zone focused on leatherback sea turtles, management actions aimed to conserve the species would be applied to Fishing Zones 3 and 4, which closely mirror the extent of Fishing Zone 7.

Marine Life Concentrations would be evaluated within the portions of Fishing Zones 1-5 between shore and 100 fathoms (as defined in 50 CFR Sections 660.71-660.72).

RAMP SCHEDULE AND THRESHOLDS

CDFW would continue to conduct surveys from aerial and/or vessel platforms between shore and 100 fathoms in Fishing Zones 1-5 to evaluate the abundance and distribution of Actionable Species. However, the start of risk assessments would be moved from November 1 to October 15 of each year and would cease once a season is closed. When weather or mechanical issues prevent Marine Life Concentrations surveys from being conducted, CDFW would review and consider other sources of current information, including aerial or vessel surveys conducted by other partners. If sufficient information is not available, CDFW would implement management actions to close or otherwise restrict the commercial Dungeness crab fishery.

Although CDFW proposes to evaluate Marine Life Concentrations only within the portions of each Fishing Zone between shore and 100 fathoms to focus available resources on evaluating Actionable Species distribution and presence within the areas where commercial harvest of Dungeness crab occurs, management actions could be applied to one or more Fishing Zones (including the portions outside of 100 fathoms) as well as other portions of the project area (i.e., waters south of Point Conception). Additionally, management actions would be implemented for any Fishing Zone where a leatherback sea turtle is present as well as within the Pacific Leatherback Sea Turtle Foraging Area.

As for confirmed entanglement thresholds, CDFW would no longer discount a humpback whale entanglement based on the perceived severity of the entanglement. Instead, any confirmed entanglement of a humpback would be counted as an entanglement regardless of its perceived severity. Furthermore, following the mandatory marking of all surface gear starting November 1, 2025, each confirmed entanglement in Unknown Fishing Gear would be counted as a quarter of a confirmed entanglement in commercial Dungeness crab gear. Following the marking of the top 15 fathoms of all lines after November 1, 2028, CDFW would no longer account for any entanglement in Unknown Fishing Gear.

Based on feedback from NMFS, CDFW would further amend the entanglement thresholds for the Actionable Species to meet the potential requirements of the ITP. CDFW would no longer wait for multi-year thresholds to be reached before taking management actions. Instead, management actions would be taken after every confirmed entanglement of any Actionable Species. Early closure on April 1 would also be imposed for two subsequent calendar years following a confirmed blue whale entanglement, while season delay to January 1 would be imposed for 9 calendar years in Fishing Zones 3 and 4 following a confirmed Pacific leatherback sea turtle entanglement.

Furthermore, if three or more confirmed humpback whale entanglements occur within a calendar year, the fishery would be closed for the remainder of the season and not open until January 1 of the next calendar year.

MANAGEMENT ACTIONS

Management actions would include implementation of two new management tools:

1. Surface Gear Prohibition: The CDFW Director may prohibit the use of additional surface buoys and any surface line within any or all Fishing Zone(s) during the Fishing Season.
2. Active Tending Requirement: The CDFW Director may shorten the maximum service interval to four (4) hours and the maximum distance from a Dungeness crab fishing vessel to any and all of its crab traps that are placed into ocean waters to 2 miles during the Fishing Season for any Fishing Zone(s).

Issuance of a Fleet Advisory would no longer be included as an option. Furthermore, Fishery Closure/Fishery Delay would be extended to prohibition against possession, sale, and landing of Dungeness crabs taken from the closed/delayed Fishing Zones as well as mandatory removal of all Dungeness crab gear from the zone. Once a Fishing Zone closes, it would not reopen for the rest of the season and only Alternative Gear could be used to take Dungeness crab within it.

MANAGEMENT CONSIDERATIONS

CDFW's experience over the last several Fishing Seasons has highlighted the fact that evaluating marine life entanglement risk requires a dynamic, flexible approach rather than relying on historical patterns alone. CDFW's obligation is to reduce and minimize take of Actionable Species across the entire project area and, therefore, CDFW must consider how curtailing fishing effort in one area might increase fishing effort and associated entanglement risk in another.

CDFW would continue relying on the management considerations specified in 14 CCR Section 132.8(d) when selecting appropriate management actions. However, CDFW would no longer disregard information from older surveys beyond a specific period; instead, any prior survey data would be considered as part of each assessment so long as they are relevant. Similarly, when deciding whether to apply management action to a Fishing Zone, CDFW would consider spatial data from any adjacent areas and data from prior years as long as they are also relevant. Furthermore, when considering which management tool would be implemented, their effectiveness at minimizing entanglement would take precedence over any other consideration.

REPORTING REQUIREMENTS

CDFW would continue to require all commercial Dungeness crab permit holders to submit bi-weekly reports; these reports would now include the number of newly lost traps. Moreover, permit holders would be required to submit an end-of-season report documenting trap loss during the entire Fishing Season. Permit holders would also be held responsible for any tampering with the mandatory electronic monitoring systems.

ALTERNATIVE GEAR

Once testing and enforcement challenges are addressed, certification of Alternative Gear would allow for continued fishing activity during periods of elevated entanglement risk. Such gear would have to be detectable, retrievable, identifiable, beneficial, and enforceable. The authorized use of these gear may be subject to limitations on Fishing Zone, depth, maximum trap number, notification, and other requirements to ensure that the criteria are met.

GEAR IDENTIFICATION REQUIREMENTS

To improve the ability of CDFW and NMFS to identify and attribute Actionable Species take to the appropriate state's commercial Dungeness crab fishery and improve the ability of NMFS to make negligible impact determinations under the MMPA, CDFW would amend current buoy marking requirements for commercial Dungeness crab to align with

line marking requirements implemented for other state-managed commercial fisheries. CDFW would also implement line marking to further make the lines identifiable.

ES.3 ENVIRONMENTAL IMPACTS AND RECOMMENDED MITIGATION MEASURES

ES.3.1 Project-Specific Impacts

This EIR has been prepared pursuant to CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 CCR Section 15000 et seq.) to evaluate the physical environmental effects of the proposed project. CDFW, which is the lead agency for the project, has the principal responsibility for approving and carrying out the project and for ensuring that the requirements of CEQA have been met. After the Final EIR is prepared and the EIR public review process is complete, the CDFW Director is the party responsible for certifying that the EIR adequately evaluates the impacts of the project.

Table ES-2, presented at the end of this summary, provides a summary of the environmental impacts for the proposed project. The table identifies the level of significance of the impact before mitigation, recommended mitigation measures, and the level of significance of the impact after implementation of the mitigation measures.

ES.3.2 Significant and Unavoidable Impacts and Cumulative Impacts

State CEQA Guidelines Section 15126.2(c) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. As documented throughout Chapter 3 (project-level impacts) and in Chapter 4, "Cumulative Impacts," of this Draft EIR, all impacts associated with implementation of the proposed RAMP regulatory amendments would be less than significant, and no mitigation would be required. The project would not have any significant and unavoidable impacts.

ES.4 ALTERNATIVES TO THE PROPOSED PROJECT

The following alternatives are evaluated in more detail in Chapter 5, "Alternatives," of this Draft EIR:

- Alternative 1: No Project Alternative assumes that the California commercial Dungeness crab fishery would continue to operate in accordance with existing RAMP regulations. Title 14 CCR Section 132.8 would not be amended, and CDFW would not apply for an ITP for the Actionable Species based on the CP.
- Alternative 2: Permanently Reduce Gear Allotments Alternative would reduce the potential for entanglements by permanently reducing the capacity of the commercial Dungeness crab fishery through reduced gear allotments. CDFW would revise the RAMP regulations based on the gear allotment reductions and apply for an ITP based on the CP.
- Alternative 3: Permanently Shortened Season Alternative would restrict the commercial Dungeness crab fishery operations to a period of historically extremely low entanglement risk. CDFW would revise the RAMP regulations based on the shortened Fishing Season and apply for an ITP based on the CP.

A summary of the environmental effects of the alternatives relative to those of the proposed project is provided in Table ES-2 (presented at the end of this summary).

ES.4.1 Environmentally Superior Alternative

Implementing the proposed project would not result in any significant effects on the environment, so no substantial reductions of environmental impacts would occur with implementation of feasible alternatives. Nonetheless, as illustrated in Table ES-3, below, Alternatives 2 and 3 would further reduce the less-than-significant impacts associated with the project. Alternative 3, by permanently curtailing and restricting the duration of the commercial Fishing Season to a period with historically low entanglement risk, would result in more impact reduction than deploying less gear (Alternative 2). As a result, Alternative 3 is the environmentally superior alternative for purposes of CEQA compliance, although the environmental impact differences would not be substantial.

ES.5 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

On September 19, 2022, a notice of preparation (NOP) for the project was distributed to responsible agencies, interested parties, and organizations, as well as private organizations and individuals that may have an interest in the project. A public scoping meeting was held on October 4, 2022. The purpose of the NOP and the scoping meeting was to provide notification that an EIR was being prepared for the project and to solicit input on the scope and content of the environmental document. The NOP and responses to the NOP are included in Appendix A of this Draft EIR. The following key concerns and issues were expressed during the scoping process:

- economic impacts of implementing the proposed regulatory amendments, applying for an ITP, and implementing the CP for the commercial Dungeness crab fishery,
- feasibility of alternative gear, and
- establishment of an appropriate environmental baseline.

Areas of controversy that fall within the scope of CEQA are addressed in this Draft EIR. Issues that fall outside the scope of CEQA are not evaluated in this Draft EIR; however, CDFW will continue to respond to these issues through the project planning process.

Table ES-2 Summary of Impacts and Mitigation Measures

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Air Quality			
Impact 3.2-1: Generate a Substantial Increase in Long-Term Operational ROG, NO_X, PM_{10}, and $PM_{2.5}$ Emissions Reasonably foreseeable compliance responses from implementation of the project would include the generation of criteria air pollutants and ozone precursors from the movement of commercial fishing and monitoring vessels throughout the project area. However, this level of vessel activity would not be substantially more than the current level of activity associated with the commercial harvest of Dungeness crab. Moreover, implementation of the project would not prohibit or prevent the deployment of fishing vessel-related regulations included in the SIP as overseen by CARB. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Archaeological, Historical, and Tribal Cultural Resources			
Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources The project is not anticipated to result in additional seafloor–disturbing activities above baseline conditions that could result in discovery of or damage to as-yet-undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. In addition, current state law prohibits all unauthorized salvage and removal of artifacts from submerged shipwrecks, aircraft, and other archaeological resources in state waters. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource CDFW sent notification for consultation to 317 tribes. Three responses were received during the 30-day response period for AB 52 as defined in CEQA Section 21080.3.1, but none identified any tribal cultural resource as defined by CEQA Section 21074. Because the proposed project does not include a substantial increase in seafloor–disturbing activities above baseline conditions that could damage subsurface artifacts, would not impede traditional ceremonial activities or alter viewsheds, and would not have an adverse effect on wildlife, all of which could be identified as tribal cultural resources, the impact on tribal cultural resources would be less than significant.	LTS	No mitigation is required for this impact.	LTS

LTS = Less than significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Greenhouse Gas Emissions and Climate Change			
Impact 3.4-1: Generate GHG Emissions That May Exceed Existing Levels of Baseline Emissions The reasonably foreseeable compliance responses to the project would not include the construction of any new land-based or maritime facilities or infrastructure. Reasonably foreseeable compliance responses to the project would include the generation of GHG emissions from the movement of fishing and monitoring vessels throughout the project area. However, this level of vessel activity would not be substantially more than what is currently occurring to commercially harvest Dungeness crab. Moreover, implementation of the project would not prohibit or prevent the deployment of fishing vessel–related regulations included in the 2022 Scoping Plan as overseen by CARB. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Hazards and Hazardous Materials			
Impact 3.5-1: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey and active tending vessel trips. This small increase in the number of survey and active tending vessel trips relative to the total number of vessel trips in the project area would not constitute a significant hazard to the public or environment from the routine transport, use, or disposal of hazardous materials. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.5-2: Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey and active tending vessel trips. The small increase in the number of survey and active tending vessel trips relative to the total number of vessels in the project area would not constitute a significant hazard to the public related to the release of hazardous materials into the environment from accidents involving maintenance activities or spills or from hazardous materials washed from the surface of the vessels. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

LTS = Less than significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 3.5-3: Be Located on a Site Which Is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5 and, As a Result, Would Create a Significant Hazard to the Public or the Environment Implementation of the proposed RAMP regulatory amendments would result in a limited increase in the number of survey vessel trips, but this small increase would not create a significant hazard to the public or the environment related to trips occurring in an area with a site included on a list of hazardous materials sites, because survey activities would not disturb the seafloor. In addition, while servicing traps during active tending has the potential to disturb the seafloor, these disturbances would be limited to the same locations. Implementation of the project would reduce the amount of lost or abandoned gear that could disturb hazardous materials sites through improvements to reporting requirements for gear use and lost or abandoned gear. Although early season closures, season opening delays, and depth restrictions may result in the concentration of vessels decreasing in some areas and increasing in other areas at times, the number of permitted vessels and gear allotments would not change with project implementation, and the number of vessel trips associated with gear deployment and retrieval would not be expected to change substantially. Furthermore, most of the hazardous materials sites are located in areas that are not typically fished by the commercial Dungeness crab fleet. Therefore, the potential for project implementation to result in the accumulation of commercial Dungeness crab fishing activity in an area with hazardous materials sites such that the sites would be disturbed during trap deployment or retrieval would be low. For these reasons, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.5-4: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within Two Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard or Excessive Noise for People Residing or Working in the Project Area Implementation of the proposed RAMP regulatory amendments would result in a limited increase in the number of aerial survey trips. This small increase in the number of aerial surveys relative to the total current extent of air traffic in the project area would not constitute a safety hazard or excessive noise for people residing or working in the project area. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

LTS = Less than significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Marine Biological Resources			
Impact 3.6-1: Result in Disturbance to or Loss of Special-Status Wildlife Species Project implementation would include systematic surveys to determine marine life concentrations in the project area, as well as continuation of the existing trap gear retrieval program and revised active tending requirements. Implementation of these efforts could result in a minor increase in vessel and aircraft activity in the project area. Although more vessel and aircraft activity could result in an increased risk of marine mammal or sea turtle boat strikes or disturbance to special-status marine mammals, sea turtles, or seabirds, the modest increase in vessel and aircraft activity associated with these efforts would not be substantial, and existing regulatory protections (e.g., MPAs, NOAA Regulated Overflight Zones, provisions of NMFS scientific research permits) would prevent adverse effects on special-status wildlife. Specific measures implemented under the RAMP regulatory amendments may include closures or delays in opening of one or more Fishing Zone(s) in response to entanglement risk or other measures, including crab gear depth constraints. Closure or delay in opening a zone could result in a location shift to another zone, which may increase the magnitude or concentration of crab fishing activities in some Fishing Zones (i.e., resulting from season closures or delays) or inshore areas (i.e., resulting from implementation of depth constraints). An increase in the magnitude or concentration of crab fishing activities could result in disturbance to or loss of noncovered special-status species. However, the total fishing activity in the project area would not change substantially. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS
Impact 3.6-2: Interfere with Wildlife Movement Corridors or Impede the Use of Wildlife Nurseries Project implementation could result in increased vessel traffic in important wildlife migratory corridors or in the vicinity of wildlife nursery sites. Although more vessel activity could result in a disruption in the normal movement, breeding, and foraging behavior of marine organisms, the increase in vessel activity would not be substantial, and existing regulatory protections (e.g., special closures, provisions of NMFS scientific research permits) would prevent interference with wildlife movement corridors and adverse effects on wildlife nurseries. This impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

LTS = Less than significant

Impacts	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Water Quality			
Impact 3.7-1: Violate Any Water Quality Standards, Waste Discharge Requirements, or Water Quality Control Plan or Otherwise Substantially Degrade Ocean Water Quality Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey vessel trips and active tending trips. This small increase in the number of survey vessel and active tending trips relative to the total number of vessels in the project area would not constitute a significant water quality impact related to the accidental release of pollutants from maintenance activities or spills or from pollutants washed from the surface of the vessels. Ballast water releases from fishing vessels are regulated by the 2013 VGP and in the future will be regulated by discharge standards established in the VIDA when they are published. The VGP establishes numeric discharge limitations and best management practices for ballast water. It is illegal to abandon vessels, and programs are in place through ABs 716 and 166 to deter vessel abandonment; therefore, abandonment of vessels would not result in a significant water quality impact under the project. Implementation of the proposed RAMP regulatory amendments would not increase the number of crab traps deployed. In addition, each trap is isolated spatially from other traps and is less than 5 feet in diameter. Disturbed seafloor sediment from crab trap deployment is dispersed by the current and resettles on the ocean floor and does not cause a significant water quality impact. All alternative gear is required to be certified by CDFW before use and to comply with all federal, state, and local regulations. No violations or impairment of water quality standards or beneficial uses would result from implementation of the project. Therefore, this impact would be less than significant.	LTS	No mitigation is required for this impact.	LTS

NOTES: AB = Assembly Bill; CARB = California Air Resources Board; CDFW = California Department of Fish and Wildlife; CEQA = California Environmental Quality Act; GHG = greenhouse gas; LTS = Less than significant; MPAs = Marine Protected Areas; NMFS = National Marine Fisheries Service; NOAA = National Oceanic and Atmospheric Administration; NO_x = nitrogen oxides; $PM_{2.5}$ = fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; RAMP = Risk Assessment and Mitigation Program; ROG = reactive organic gases; SIP = State Implementation Plan; VGP – Vessel General Permit; VIDA = Vessel Incident Discharge Act .

Source: Compiled by Ascent in 2024.

Table ES-3 Summary Comparison of the Environmental Impacts of the Alternatives Relative to the Proposed Project

Environmental Topic	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Permanently Reduce Gear Allotments Alternative	Alternative 3: Permanently Shortened Season Alternative
Air Quality	LTS	Similar	Less	Less
Archaeological, Historical, and Tribal Cultural Resources	LTS	Greater	Less	Less
Greenhouse Gas Emissions and Climate Change	LTS	Similar	Less	Less
Hazards and Hazardous Materials	LTS	Similar	Less	Less
Marine Biological Resources	LTS	Greater	Less	Less
Water Quality	LTS	Similar	Less	Less

Notes: LTS = Less than significant.

Source: Compiled by Ascent in 2024.

1 INTRODUCTION

The California Department of Fish and Wildlife (CDFW) proposes to amend Title 14 Section 132.8 of the California Code of Regulations (CCR) codifying the Risk Assessment and Mitigation Program (RAMP) for the California commercial Dungeness crab fishery, which is the proposed project subject to approval by CDFW and compliance with the California Environmental Quality Act (CEQA). The regulatory amendments would refine and further develop existing RAMP provisions to reduce the risk and severity of marine life entanglements and improve identification of entanglements in California commercial Dungeness crab gear. The RAMP amendments would also strengthen California's regulatory authority to implement Conservation Plan (CP) measures to support that National Marine Fisheries Service's (NMFS's) discretionary approval and issuance of an Incidental Take Permit (ITP) for the potential take of specified Actionable Species under Section 10 of the federal Endangered Species Act (ESA) for the California commercial Dungeness crab fishery.

The EIR has been prepared under the direction of CDFW in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000 et seq.) and the State CEQA Guidelines (14 CCR Section 15000 et seq.). This chapter of the Draft EIR provides information on:

- a synopsis of the project requiring environmental analysis;
- the type, purpose, and intended uses of this Draft EIR;
- the scope of this Draft EIR;
- agency roles and responsibilities;
- the public review process;
- the organization of this Draft EIR; and
- the standard terminology used in this Draft EIR.

1.1 SYNOPSIS OF PROJECT COMPONENTS REQUIRING ENVIRONMENTAL ANALYSIS

This section presents a synopsis of the project components. For further information on the proposed project, see Chapter 2, "Project Description."

The proposed RAMP regulatory amendments constitute the proposed project for purposes of CEQA compliance. They are part of CDFW's comprehensive strategy to avoid, minimize, mitigate, and monitor entanglements of Actionable Species: blue whale (*Balaenoptera musculus*), Central America and Mexico humpback whale (*Megaptera novaengliae*) DPS, and Pacific leatherback sea turtle (*Dermochelys coriacea*) in commercial Dungeness crab fishing gear off the coast of California. The proposed amendments would add new RAMP components consisting of the management actions of restricting surface gear and active tending requirements as well as new buoy and line marking requirements. The proposed amendments would also modify existing RAMP components. These regulatory changes are being proposed to satisfy requirements for the ITP pursuant to NMFS feedback, help streamline implementation processes to conserve staff resources, and clarify existing language to facilitate implementation and enforcement.

1.2 PURPOSE AND INTENDED USES OF THIS DRAFT EIR

According to CEQA, preparation of an EIR is required whenever it can be fairly argued, based on substantial evidence, that implementing a proposed project may result in a significant environmental impact. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental

impacts of a project, identify possible ways to minimize the significant impacts, and describe reasonable alternatives to the project that could feasibly attain most of the basic objectives of the project while substantially lessening or avoiding any of the significant environmental impacts. Public agencies are required to consider the information presented in the EIR when determining whether to approve a project.

This Draft EIR has been prepared to meet the requirements of a project EIR as defined by Section 15161 of the State CEQA Guidelines. A project EIR focuses on the changes in the physical environment that would result from implementation of a project, including its construction and operation. CDFW's intention in preparing a project EIR is that no further environmental analysis would be required for additional regulatory approvals following approval of the project, absent conditions requiring a subsequent EIR, a supplement to the EIR, or an addendum. (See State CEQA Guidelines Sections 15162–15164.)

1.3 SCOPE OF THIS DRAFT EIR

This Draft EIR includes an evaluation of the following six environmental issue areas, as well as other CEQA-mandated topics (e.g., cumulative impacts, growth-inducing impacts, significant and unavoidable impacts, alternatives):

- air quality;
- archaeological, historical, and tribal cultural resources;
- greenhouse gas emissions and climate change;
- hazards and hazardous materials;
- marine biological resources; and
- marine water quality.

Under CEQA and the State CEQA Guidelines, a lead agency may limit an EIR's discussion of environmental effects when such effects are not considered potentially significant (CEQA Section 21002.1[e]; State CEQA Guidelines Sections 15128, 15143). Information used to determine which impacts would be potentially significant was derived from review of the proposed RAMP regulatory amendments; other applicable planning documents; the results of updated records searches; feedback from public and agency consultation; comments received during a public scoping meeting held on October 4, 2022; and comments received on the notice of preparation (NOP) (see Appendix A of this Draft EIR).

Further information on the NOP and scoping process is provided below in Section 1.5, "Public Review Process."

1.4 AGENCY ROLES AND RESPONSIBILITIES

CDFW is the lead agency for confirming that the requirements of CEQA have been met and for considering approval of and carrying out the project. After the public review process for the EIR is complete, CDFW will determine whether to certify the EIR as adequate under CEQA (see State CEQA Guidelines Section 15090) and take action on the proposed project.

1.4.1 Trustee, Responsible, and Involved Federal Agencies

A trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. Trustee agencies are invited to comment on the environmental analysis in the Draft EIR. Besides CDFW, which serves as lead agency and is a state trustee agency for fish and wildlife, other trustee agencies that have jurisdiction over resources potentially affected by the project are the California Department of Parks and Recreation for state marine parks, the California Coastal Commission for resources in the coastal zone, and the California State Lands Commission for submerged land within 3 miles of the coast.

Responsible agencies are state, regional, or local public agencies, other than the lead agency, that have discretionary-approval responsibility for funding, carrying out, or approving elements of a project. There are no state, regional, or local responsible agencies with authority over the proposed project.

An involved federal agency with interest in the proposed project is NMFS through its duties under the federal Endangered Species Act. As the federal entity approving the ITP, NMFS has discretionary authority to issue the ITP under Section 10 of the ESA.

1.5 PUBLIC REVIEW PROCESS

In accordance with CEQA regulations, a Notice of Preparation (NOP) was distributed on September 19, 2022, for a 30-day review period to the State Clearinghouse at the Governor's Office of Planning and Research, trustee agencies, NMFS, California coastal counties, and known interested parties and organizations. In addition, CDFW held an online public scoping meeting on October 4, 2022, to present information on the project and provide an opportunity for agencies, organizations, and the public to comment on the scope and content of the EIR. The NOP was also available on CDFW's Public Notices and Meetings web page (https://wildlife.ca.gov/Notices/CEQA). The NOP, responses to the NOP, and public scoping meeting presentation are included in Appendix A of this Draft EIR.

This Draft EIR will be circulated for public review and comment for a period of 45 days. During this period, comments on environmental issues may be submitted in writing and addressed to CDFW: Amanda Canepa, California Department of Fish and Wildlife, Marine Region, 20 Lower Ragsdale Drive, Suite 100, Monterey, CA 93940 or R7CEQA@wildlife.ca.gov. In addition, CDFW will hold a Draft EIR public meeting to receive oral and written comments on this environmental document during the comment period.

Following the public review and comment period, a Final EIR will be prepared that will include both written and oral comments on the Draft EIR received during the public review period, written responses to significant environmental concerns raised in the public comments, and any revisions to the Draft EIR made in response to public comments. The Draft EIR and Final EIR together will make up the EIR for the project.

Before consideration of adopting the revised RAMP regulations, CDFW as the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the CDFW Director reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the lead agency.

1.6 DRAFT EIR ORGANIZATION

This Draft EIR is organized into chapters, as identified and briefly described below.

- The "Executive Summary": This chapter introduces the proposed project; provides a summary of the environmental review process, effects found not to be significant, and key environmental issues; and significant or potentially significant impacts along with feasible mitigation measures to reduce significant impacts to a less-than-significant level.
- Chapter 1, "Introduction": This chapter provides a synopsis of the project; a description of the type, purpose, and intended uses of this Draft EIR; a description of the scope of this EIR; a description of the lead and responsible agencies; a summary of the public review process; a description of the organization of this EIR; and definitions of standard terminology used in this EIR.
- Chapter 2, "Project Description": This chapter describes the location, background, and goals and objectives for the project and describes the project elements in detail.
- Chapter 3, "Environmental Impacts and Mitigation Measures": The sections in this chapter evaluate the expected environmental impacts of the project, arranged by subject area (e.g., air quality and water quality). In each section of Chapter 3, the relevant regulatory background, existing conditions, analysis methodology, and thresholds of significance are described. The anticipated changes to the existing conditions from reasonably foreseeable compliance responses to implementation of the proposed RAMP regulatory amendments are then

evaluated for each subject area. For any significant or potentially significant impact that would result from project implementation, and the level of impact significance for each impact is identified. Environmental impacts are numbered sequentially within each section (e.g., Impact 3.2-1, Impact 3.2-2).

- Chapter 4, "Cumulative Impacts": This chapter provides information required by CEQA regarding cumulative impacts that would result from the contribution of any adverse impacts of the project to significant cumulative effects from other past, present, and probable future projects causing related impacts.
- Chapter 5, "Alternatives": This chapter evaluates alternatives to the proposed project, including alternatives considered but eliminated from further consideration, the No Project Alternative, and two action alternatives. The environmentally superior alternative is also identified in this chapter.
- Chapter 6, "Other CEQA Sections": This chapter evaluates growth-inducing impacts and the irreversible and irretrievable commitment of resources and discloses any significant and unavoidable adverse impacts.
- Chapter 7, "References": This chapter identifies the documents and individuals used as sources for the analysis.
- Chapter 8, "Report Preparers": This chapter identifies the preparers of this Draft EIR.

1.7 STANDARD TERMINOLOGY

This Draft EIR uses the following standard terminology:

- "Baseline" is the set of physical conditions that define the existing point of analytical comparison used to determine the level of significance of environmental effects of the proposed project.
- "No impact" means no change from baseline conditions (no mitigation is needed).
- "Less-than-significant impact" means no substantial adverse change in the physical environment from baseline conditions (no mitigation is needed).
- "Potentially significant impact" means a substantial adverse change in the environment that might occur (mitigation is recommended because potentially significant impacts are treated as significant).
- "Significant impact" means a substantial adverse change in the physical environment that would occur (mitigation is proposed).
- "Significant and unavoidable impact" means a substantial adverse change in the physical environment that would occur and cannot be avoided or reduced to a less-than-significant level, even with the implementation of all feasible mitigation.

2 PROJECT DESCRIPTION

CDFW proposes to amend the regulations codifying RAMP (the "project"), which is the proposed project subject to approval by CDFW and compliance with CEQA. The regulatory amendments would refine and further develop existing RAMP provisions to reduce the risk and severity of marine life entanglements and improve identification of entanglements in California commercial Dungeness crab gear. The RAMP amendments would also strengthen California's regulatory authority to implement Conservation Plan (CP) measures to support that National Marine Fisheries Service's (NMFS's) discretionary approval and issuance of an Incidental Take Permit (ITP) for the potential take of specified Actionable Species under Section 10 of the federal Endangered Species Act (ESA) for the California commercial Dungeness crab fishery.

The following section provides detailed information on the proposed project. Pursuant to the CEQA Guidelines Section 15124, the project description need not be exhaustive but should supply information necessary for evaluation and review of the project's significant impacts on the environment.

2.1 BACKGROUND AND NEED FOR THE PROJECT

Reported entanglement of Actionable Species (blue whale, the Central America and Mexico humpback whale DPS', and Pacific leatherback sea turtle) in fishing gear off the West Coast has increased in recent years (Saez et al. 2021). The Actionable Species are protected under ESA. Trap gear from the California commercial Dungeness crab fishery, one of the most valuable commercial fisheries in California, is known to contribute to these entanglements (Saez et al. 2021). Between 2014 and 2023, there were 50 known humpback whale, three known blue whale, and two known Pacific leatherback sea turtle entanglements in California commercial Dungeness crab gear (Table 2-1).

Table 2-1 Confirmed Entanglements in California Commercial Dungeness Crab Gear by Year for Each Actionable Species, 2014–2023

Year	Blue Whale	Humpback Whale	Pacific Leatherback Sea Turtle
2014	0	2	0
2015	0	7	0
2016	2	19	1
2017	1	3	0
2018	0	7	0
2019	0	3	0
2020	0	1	0
2021	0	1	0
2022	0	4	0
2023	0	5	1
Total	**3**	**52**	**2**
Annual average	**0.3**	**5.2**	**0.2**

Sources: Saez et al. 2021; NMFS 2023.

Although take of all three Actionable Species has been documented in California commercial Dungeness crab gear, the highest number of entanglements has been of humpback whales. Of the 52 humpback whale entanglements, 28 (54 percent) occurred during the 2014–2016 Large Marine Heatwave, which was a historically unusual, prolonged warmwater event. This large marine heatwave event led to an extended delay in the 2015–2016 Fishing Season. Santora et al. (2020) directly connects the heatwave's impacts on fishery operations and Actionable Species distributions with the dramatic increase in large whale entanglements documented in 2015 and 2016. Although the

number of entanglements has since declined, the entanglements documented during this large marine heatwave were the impetus for CDFW's increasingly active management of the Dungeness crab fishery and triggered the requirement that CDFW apply for an ITP from NMFS.

Senate Bill (SB) 1309, also known as the 2018 Fisheries Omnibus Bill, added Section 8276.1 to the Fish and Game Code (FGC). FGC Section 8276.1 mandated CDFW to adopt RAMP into regulation. CDFW adopted RAMP into regulation in in October of 2020, after consultation with stakeholders such as the California Dungeness Crab Fishing Gear Working Group (Working Group), a collaborative advisory body consisting of commercial and recreational fishing representatives, environmental organization representatives, scientists, members of the disentanglement network, and state and federal agencies. RAMP formally established criteria and protocols to evaluate and respond to the potential risk of marine life entanglement. RAMP is a dynamic management framework that establishes thresholds for determining if entanglement risk is elevated, specifies potential management actions, and requires use of the best available science when determining appropriate management actions by the CDFW Director. The proposed project would consist of amendments to the RAMP regulations, incorporating feedback from various stakeholders, guidance from NMFS to help CDFW acquire the ITP, and lessons learned from recent experience implementing the program.

2.1.1 Incidental Take Permit

The federal ESA requires that CDFW obtain an ITP from NMFS for the incidental take of Actionable Species through management of the California commercial Dungeness crab fishery. The required ITP application and proposed implementing agreement would be submitted to NMFS for federal approval and issuance of an ITP to CDFW. The ITP would provide federal authorization for limited incidental take of Actionable Species associated with the California commercial Dungeness crab fishery.

To obtain the ITP, CDFW must work with NMFS to develop a CP that establishes a comprehensive management framework for NMFS to determine that the California commercial Dungeness crab fishery is not likely to jeopardize the continued existence of the Actionable Species. The CP, as required by NMFS pursuant to the ESA, would serve as the primary source of information for CDFW's application for the ITP and the management plan prescribing the California commercial Dungeness crab fishery's ESA compliance strategy. The conservation measures developed in the CP would also help inform the proposed RAMP regulatory amendments; however, as a required component of the federal ITP, the CP is not subject to a discretionary approval action by CDFW.

CDFW would request a 15-year-term, renewable ITP from NMFS. This ITP duration would allow the ITP term to align with required Marine Mammal Protection Act (MMPA) authorizations that must occur every 3 years, provide sufficient time to implement the CP and evaluate the adaptive management framework, and provide greater predictability for fishery participants. In addition, this period would likely encompass multiple large-scale oceanographic regimes that have been directly linked to episodic fluctuations in entanglement frequency (Santora et al. 2020). By the end of the 15-year period, additional research would likely become available to further inform the conservation of Actionable Species and the approval of future ITPs. CDFW also notes that fishery managers in Oregon and Washington are seeking ITPs with similar permit terms.

CDFW would request in its ITP application the following allowable take levels of Actionable Species by the California commercial Dungeness crab fishery: up to 58 humpback whales from the Mexico DPS, 34 humpback whales from the Central America DPS, 8 blue whales, and 2 Pacific leatherback sea turtles. For purposes of determining whether these take thresholds have been reached, CDFW would consider each confirmed entanglement of an Actionable Species in California commercial Dungeness crab gear (reported from any location) to constitute take of an individual.

2.1.2 The Conservation Plan

CDFW has been working closely with NMFS to develop the CP for several years. The document has been going through the final stages of development as of Spring 2024. While the decision to approve and adopt the final document rests with NMFS, CDFW is not expecting the fundamental management framework it establishes to change substantially. The objectives of the CP are as follows:

1. reduce humpback whale, blue whale, and Pacific leatherback sea turtle entanglement risk from the commercial Dungeness crab fishery by restricting presence of actively fished vertical lines;
2. reduce co-occurrence of humpback whale, blue whale, and Pacific leatherback sea turtle with lost or abandoned California commercial Dungeness crab gear throughout the project area;
3. develop, evaluate, and require use of gear modifications that reduce the severity of entanglement if humpback whale, blue whale, or Pacific leatherback sea turtle become entangled in commercial Dungeness crab gear;
4. jointly develop with NMFS safe handling procedures for leatherback sea turtles that become entangled in pot/trap gear; and
5. support rapid entanglement response efforts that minimize the severity of entanglements in commercial Dungeness crab gear.

To achieve these goals, CDFW plans to pursue a two-prong approach of avoidance and minimization. CDFW and the commercial Dungeness crab fishery would meet the first two objectives by first avoiding co-occurrence of Dungeness crab gear and Actionable Species. For co-occurrence that may inevitably occur, actions would be taken under the remaining three objectives to minimize the severity of any potential entanglement to the maximum extent practicable. As the primary instrument allowing CDFW to control the presence of active commercial Dungeness crab gear in the ocean, RAMP serves as the center piece of the CP's avoidance strategy.

2.2 PROJECT LOCATION

Subject to RAMP, the commercial Dungeness crab fishery is located within ocean and coastal waters off California. The project area encompasses the entirety of the Exclusive Economic Zone (EEZ, the area within 200 nautical miles of the shoreline) extending from the California/Oregon border in the north to the California/Mexico border in the south (Figure 2-1). Although the commercial Dungeness crab fishery occurs almost exclusively north of Point Conception (CDFW 2020), CDFW jurisdiction over the fishery extends throughout the portion of the EEZ off California's coast (16 US Code Section 1856 note), which, historically, has been divided at the Sonoma-Mendocino County line into two areas that have slightly different Fishing Seasons (see Section 2.3.2). The Northern Management Area (NMA) extends from Oregon to the Sonoma-Mendocino County line, and the Central Management Area (CMA) extends from the Sonoma-Mendocino County line to Mexico (see Figure 2-1). Spatial trends in fishing activity are further discussed in Section 2.3.3.

Commercial Dungeness crab fishing depths are dependent on multiple factors, including fishing location, time of year, and to a lesser extent, the vessel type. Fishing locations are dependent on the time of year, home port, and access to processing facilities. In practice, traps are rarely if ever deployed in waters deeper than 750 feet (125 fathoms), with average maximum fishing depths reported of 180 feet (30 fathoms) reported to CDFW.

2.3 COMMERCIAL DUNGENESS CRAB FISHERY

Dungeness crab (*Metacarcinus magister*) inhabit a wide variety of ocean floor habitats, but commercial fishing activity is concentrated in sandy to silty substrates shallower than 300 feet (50 fathoms) where adult Dungeness crab are commonly found (CDFW 2020). These substrates are prone to natural disturbances and generally considered to be more resilient to fishing impacts than other more structurally complex habitats. These crabs take approximately 3–5 years to reach the minimum legal size of 6.25 inches, and seasonal landings are dependent on crab production cycles with decadal variability, resulting in large fluctuations from year to year.

Source: Adapted by Ascent in 2024.

Figure 2-1 Project Area

2.3.1 Historical Management of the Fishery

The Dungeness crab fishery is one of the oldest commercial fisheries in California. The fishery began in the mid-1800s and over time developed into one of the most valuable commercial fisheries in the state (Wild and Tasto 1983). Regulation of this commercial fishery began in 1895, after the Board of Fish Commissioners (a forerunner of the modern-day California Fish and Game Commission [Commission]) submitted a report to the California Legislature describing decreasing catch in historic fishing areas and subsequent expansion into new fishing areas to meet increasing consumer demand (Wild and Tasto 1983). In response to the report's request for management measures to protect and restore the fishery, the legislature prohibited harvest of female crab in 1897, followed by a seasonal closure in 1903 and a minimum size limit in 1905. These three management measures are collectively known as the "3 S" principle ("sex," "size," and "season") and still form the core of Dungeness crab fishery management (CDFW 2020).

2.3.2 Current Management Framework

Dungeness crab is a valuable fishery resource not only in California, but for the entire U.S. West Coast. Management measures in California, Oregon, and Washington are coordinated through the Tri-State Dungeness Crab Committee (Tri-State), overseen by the Pacific States Marine Fisheries Commission pursuant to Section 302(e) of the Magnuson-Stevens Fishery Conservation and Management Act (16 US Code Section 1856 note) (CDFW 2020). The Tri-State process fosters interstate cooperation in management of the Dungeness crab fishery and allows the states to consult on issues affecting the commercial fishery. The primary management authority for the Dungeness crab fishery in California rests with the California Legislature, although provisions in SB 1309 (2018) delegated additional limited authority to CDFW, increasing its ability to be responsive to emerging management concerns, such as increased marine life entanglement risk (CDFW 2020).

Statutes codified in FGC and regulations found in Title 14 CCR jointly provide the management framework for the California commercial Dungeness crab fishery. Under current regulations, the CDFW Director's authority to restrict the commercial Dungeness crab fishery is limited to protecting human health (FGC Section 5523), reducing risk of marine life entanglement (FGC Section 8276.1[c] and 14 CCR Section 132.8), and avoiding low crab quality (FGC Section 8276.2). As discussed previously, FGC Section 8276.1(b) requires CDFW, in consultation with the Working Group and other stakeholders, to adopt regulations establishing criteria and protocols to evaluate and respond to potential risk of marine life entanglement from the recreational and commercial Dungeness crab fisheries. The Working Group was convened by CDFW in September 2015 in partnership with the California Ocean Protection Council (OPC) and NMFS.

Summaries of existing management measures governing the commercial Dungeness crab fishery are provided below. Current management structure under RAMP is discussed in Section 2.3.4.

TRAP GEAR

The Dungeness crab fishery uses trap gear, which is generally composed of three elements: a weighted trap, surface gear, and a vertical line connecting the trap to the surface gear (Figure 2-2). The trap is constructed from two circular iron frames, 3 to 3.5 feet in diameter, connected by spokes on the outer edges. The frame is wrapped with strips of rubber, and the entire frame is covered with stainless steel wire mesh (Figure 2-3). When gear is deployed, the weighted trap sinks to the seafloor and generally remains in place until the trap is hauled in, limiting the spatial footprint of the associated benthic disturbance (CDFW 2024a).

Traps must contain at least two rigid circular openings not less than 4.25 inches in diameter on the top or side of the trap. They also must contain at least one destruct device (defined in 14 CCR Section 180.2[a]), which creates a minimum 5-inch diameter opening in the top or upper half of the trap when the device corrodes.

The surface gear is composed of one or more buoys connected to the vertical line by a short length of rope that generally floats at the surface when the gear is deployed (FGC Section 9005). Dungeness crab traps must be marked by a tagged buoy that includes the commercial fishing license number of the operator (FGC Section 9006). Additional trailer buoys may be used, depending on the operator's need for added buoyancy to facilitate trap gear recovery.

The amount of vertical line that connects the trap and the surface gear is dictated by the depth where the trap will be deployed, with additional scope to compensate for tidal changes, swell, and currents. The fleet typically uses blue steel-type line, also known as "floating line," but more recently participants have been switching to neutral buoyancy lines.

Source: Illustration by Morgan Ivens-Duran (CDFW).

Figure 2-2 Typical Commercial Dungeness Crab Trap Setup

Source: Photograph by Morgan Ivens-Duran (CDFW).

Figure 2-3 Stacked Commercial Dungeness Crab Trap Gear

FISHING VESSEL PERMITS AND TRAP ALLOCATION

The California Legislature first implemented a restricted access program in 1995, capping the fishery at 681 permits (Assembly Bill 3337). A trap limit program to further control effort was established in 2013 (SB 369). Dungeness crab vessel permit holders were divided into seven tiers based on their total California Dungeness crab landings from the 2003-2004 through the 2007-2008 seasons. The number of allotted traps is capped for each tier. The allotments range from 500 traps for the highest tier (Tier 1) to 175 traps allotted for the lowest tier (Tier 7). Under the trap limit program, if a permit is not renewed, the permit is relinquished and can no longer be reissued. As of the 2023-2024 Fishing Season, 521 permits were renewed across the seven tiers (Table 2-2). Trap allotments are enforced with biennial buoy tags marked with the permit number. Originally implemented due to concerns about overcapacity and latent permits, the unique gear marking has allowed commercial Dungeness crab gear to be more easily identified when involved in a marine life entanglement.

Table 2-2 Number of Dungeness Crab Permits Renewed in 2020 through 2023 by Trap Tier

Tier	Trap Tags per Permit	Number of 2020 Permit Holders	Number of 2021 Permit Holders	Number of 2022 Permit Holders	Number of 2023 Permit Holders
1	500	58	57	57	57
2	450	53	53	53	53
3	400	57	55	56	55
4	350	55	55	55	55
5	300	57	53	52	50
6	250	164	163	156	154
7	175	109	105	103	97
Total	—	553	541	534	521

Source: CDFW 2023.

MONITORING LANDINGS

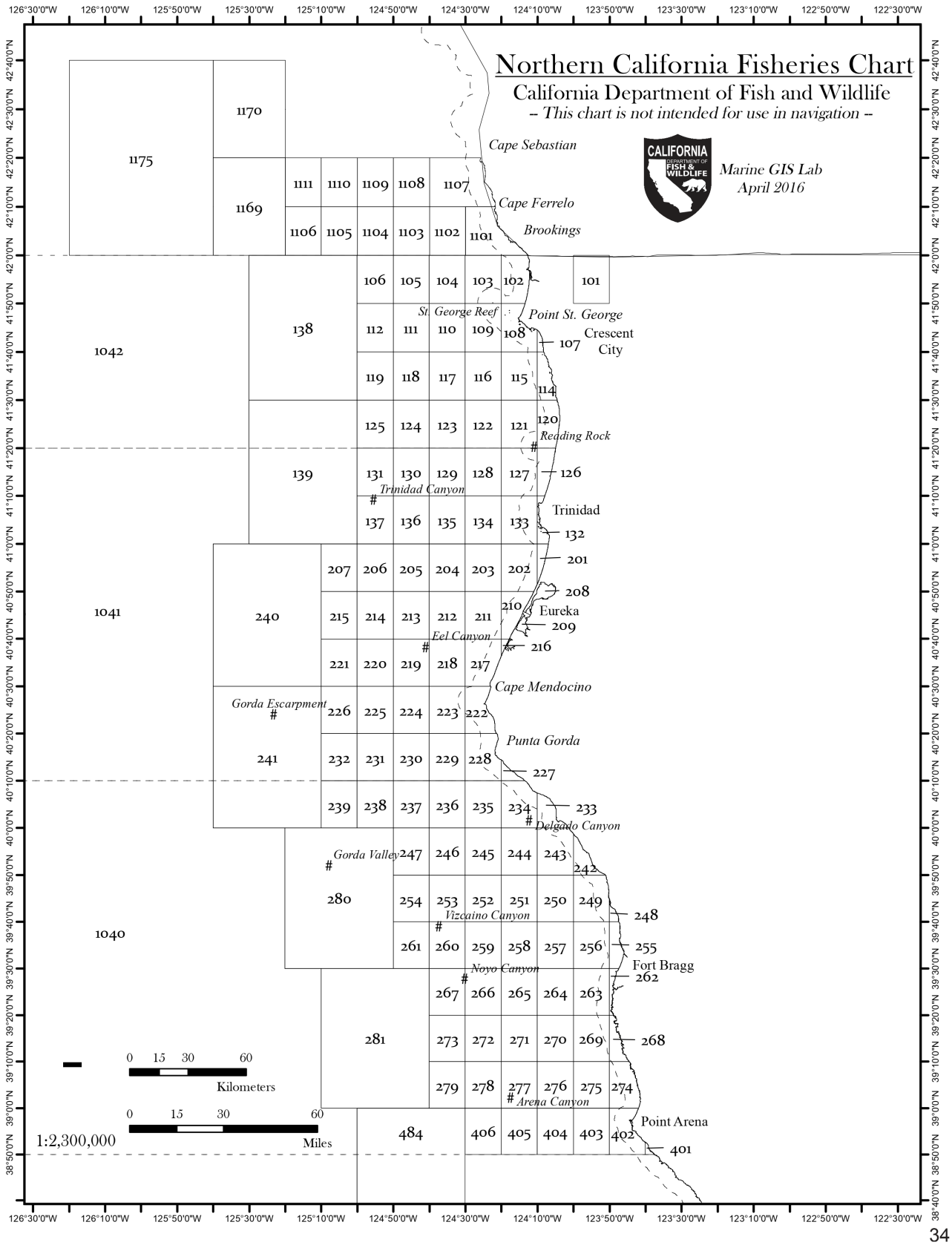
All catch taken under a California commercial fishing license must be reported on a commercial landing receipt (commonly called a "fish ticket") (FGC Section 8043). These landing receipts include vessel and commercial fishing license information, pounds caught by species, unit price, catch location, port of landing, and fishing business information. These documents are then submitted by the commercial fishing business to CDFW via an electronic platform (E-Tix, maintained by the Pacific States Marine Fisheries Commission) within 3 business days of the landing, allowing managers to have access to nearly real-time information on fishing activity.

Trap Estimates

Landing receipts require identification of the fishing vessel, which can be combined with permitting information from the state's Automated License Data System to identify the vessel's permit tier and trap allotment. However, the number of deployed traps is not reported on landing receipts. Historically, this has made it difficult for CDFW to quantify the amount of gear used in the fishery. CDFW has three methods to quantify gear use. The first method is to identify the total number of issued permits and sum the associated trap limits to estimate the maximum amount of gear that could be fished. The second is to identify which vessels participated in the fishery (i.e., "active" vessels that made landings) and sum the associated trap limits to estimate the maximum amount of deployed gear. The third method relies on a requirement established in the 2020-2021 season for fishery participants to self-report trap use to estimate the number of deployed traps. Because there is not yet full compliance with the reporting requirement, the third method likely underestimates the amount of gear deployed. However, to correct for vessels that harvested Dungeness crab but did not provide bi-weekly reports, and vessels whose bi-weekly reports did not include the number of lost traps, CDFW estimated trap loss by calculating tier-specific averages for those vessels that submitted lost trap totals (rounded to the nearest whole number), and total deployed traps are calculated by summing each permit's maximum reported trap number. For those vessels which harvested crab in California but did not provide bi-weekly reports, the permit was assumed to have deployed their full trap allotment.

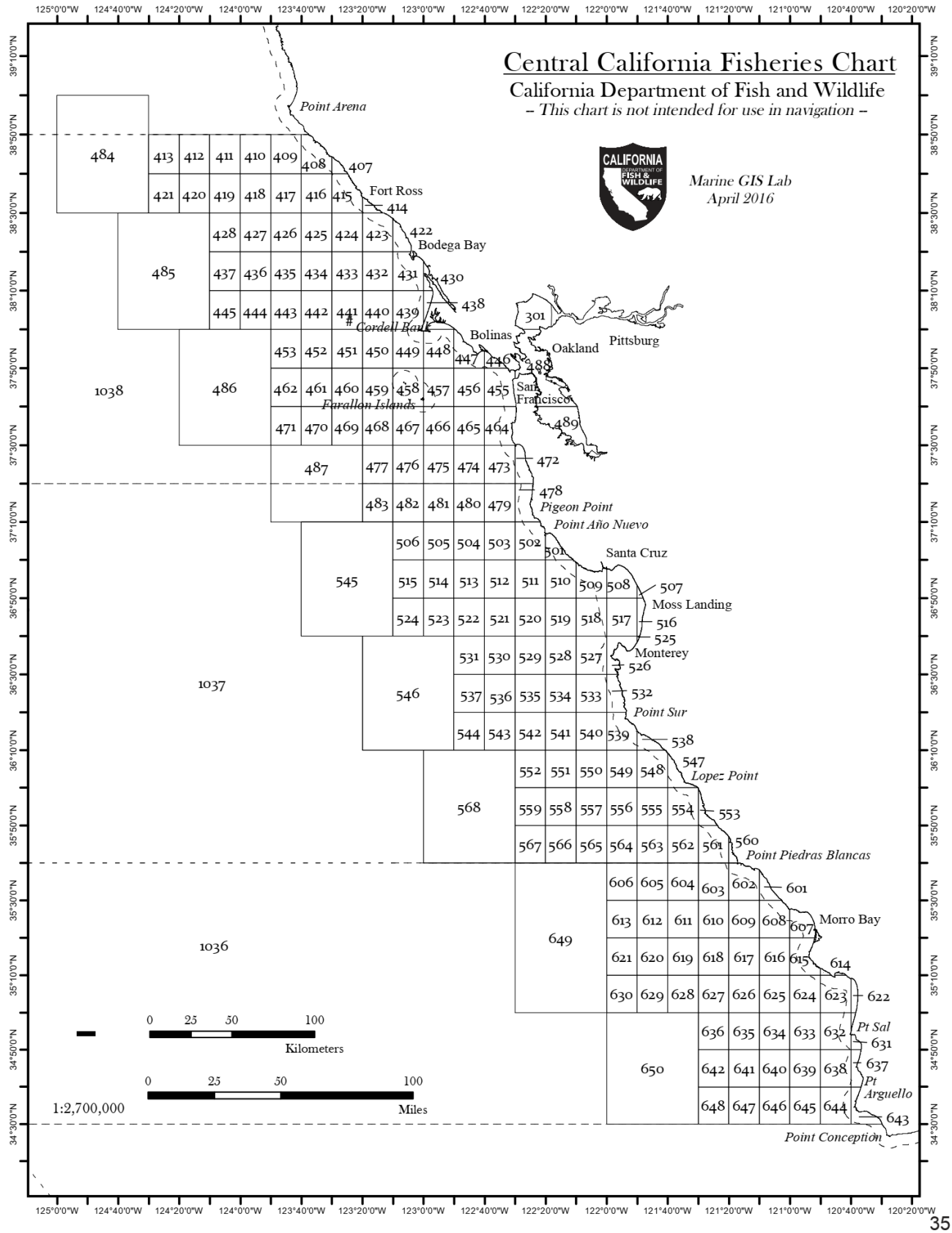
Location of Catch

Catch location, which is assumed to correlate with where gear is deployed, is reported by CDFW fishing block where the majority of catch occurred (Figures 2-4 and 2-5). The size of these reporting blocks varies, with smaller blocks nearshore and larger blocks offshore, but in all instances block locations provide a coarse understanding of where gear is deployed.



Source: CDFW 2024a.

Figure 2-4 CDFW Fishing Blocks, Northern California



Source: CDFW 2024a.

Figure 2-5 CDFW Fishing Blocks, Central California

Fishery Management Areas and Timing

As previously stated, historically, the commercial Dungeness crab fishery has been divided by the Sonoma-Mendocino County line into the NMA and the CMA, based on slightly different fishing seasons (see Figure 2-1). In the NMA, the scheduled season runs from December 1 through July 15, and in the CMA, it runs from November 15 through June 30 (FGC Section 8276). However, the CDFW Director may delay the season opening for part or all of the NMA because crab meat quality is low (FGC Section 8276.2), close any area because of biotoxin risk (FGC Section 5523), and restrict fishing activity in any area because marine life entanglement risk is elevated (FGC Section 8276.1 and 14 CCR Section 132.8). The interactions between these three provisions (crab meat quality, biotoxin risk, and entanglement risk) generate uncertainty regarding the timing and duration of the fishing season. Regardless of the actual start date, most landings occur within the first 2 months of any given season.

The scheduled season start date is preceded in both management areas by a designated "pre-soak" period during which baited trap gear can be deployed but Dungeness crab cannot yet be harvested. Historically, there was a 64-hour pre-soak period for the NMA and an 18-hour pre-soak period for the CMA. SB 80 (McGuire 2021) amended FGC Section 8283 to establish a uniform 64-hour pre-soak period for both management areas, which has been in effect since the 2021-2022 season.

FGC Section 8276(d) requires all Dungeness crab traps to be removed from the water by 11:59 p.m. on the last day of the Dungeness crab season, and neither FGC nor CCR, Title 14 provide any post-season buffer period during which trap gear may remain at sea.

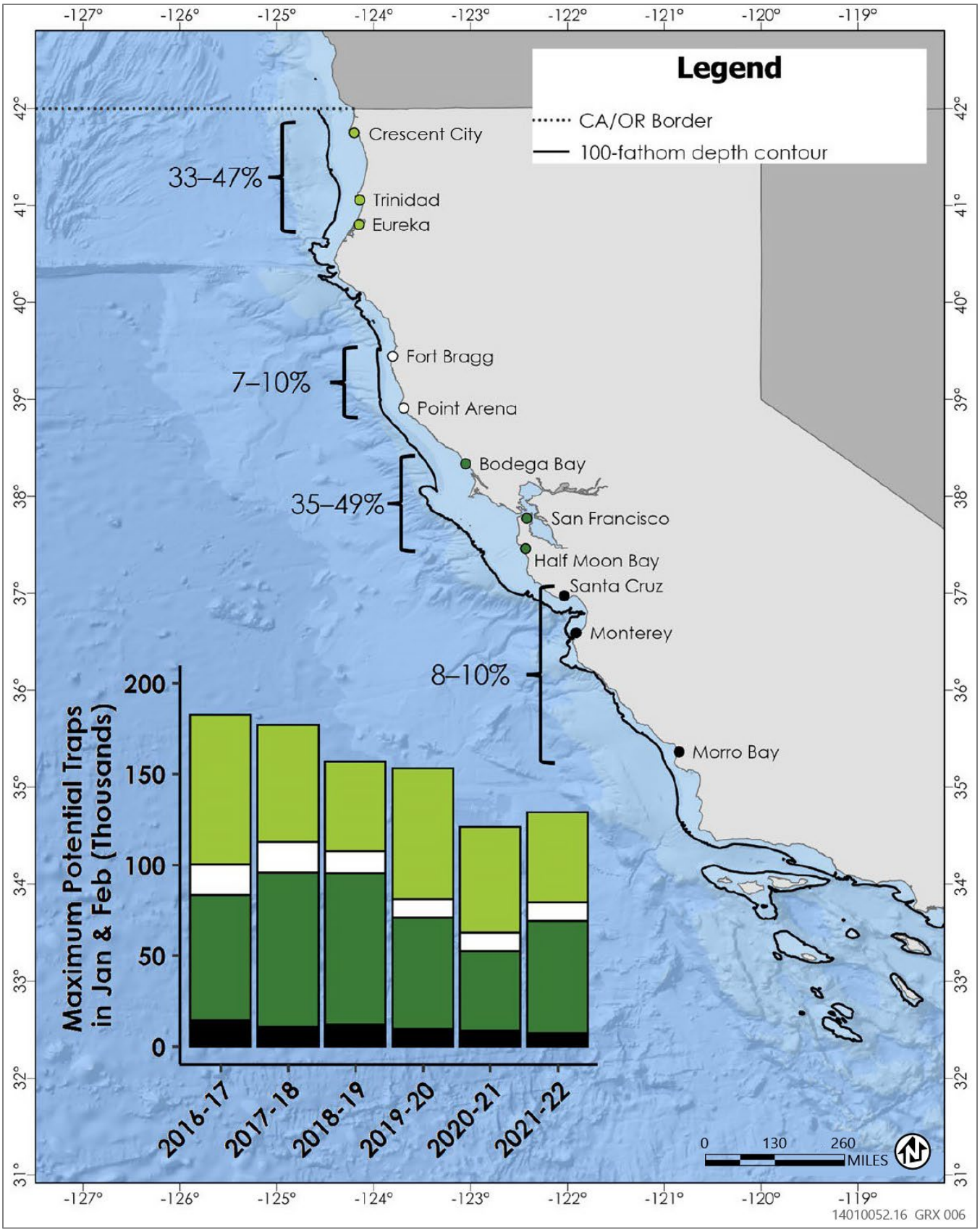
2.3.3 Spatial Trends in Fishing Activity

The relative importance of an individual port or management area during any given Dungeness crab Fishing Season is largely driven by the interannual variability in crab production within nearby fishing grounds, although a small number of vessels will transit a substantial distance between the area where crab was harvested and the port of landing. Historical CDFW Dungeness crab landings data are available beginning with the 1915-1916 Fishing Season. Since the mid-1940s, the bulk of Dungeness crab landings have been made into ports within the NMA, although during the last decade there has been an increase in the proportion of landings made into CMA ports, which may reflect the five-fold increase in pre-season Dungeness crab abundance before and after 2000 (Richerson et al. 2020, CDFW 2024a).

In addition to crab landings volume, examining the number of permitted vessels that make landings into each port (active vessels) during January and February and their associated trap limits provides another method for evaluating fishing activity. The period of January and February captures when the most vessel activity occurs, while reducing overlap of vessels that transit to more than one port area over the course of the Fishing Season.

The relative contribution of landings by port region to the total number of active vessels between the 2016-2017 and 2022-2023 Fishing Seasons is shown in Figure 2-6, with about a third to half of active vessels landing in the ports of Crescent City, Trinidad, and Eureka within the NMA, and a similar proportion landing in Bodega Bay, San Francisco and Half Moon Bay within the CMA. This is in contrast to ports in Mendocino County (e.g., Fort Bragg and Point Arena) and from Monterey Bay south that have a smaller proportion of active vessels (≤10 percent).

Figure 2-6 also displays the maximum number of traps those vessels may have deployed during each Fishing Season. While the trap estimates are based on port of landing rather than catch area, CDFW anticipates these traps would mostly be found near these ports and inside the 100-fathom depth contour.



Source: CDFW 2024a.

Figure 2-6 Contribution of Active Vessels to Landings by Port Region (2016-2017 - 2021-2022 Fishing Seasons)

2.3.4 Risk Assessment and Management Program

As previously stated, RAMP regulations (14 CCR Section 132.8) were adopted by CDFW in October 2020. The regulations that became effective on November 1, 2020, include definitions, a risk assessment schedule, triggers for management action, management considerations, management actions, notification process when management actions are being taken, mandatory data reporting requirements, and a process for alternative gear requests.

Specifically, RAMP establishes thresholds for determining whether entanglement risk is elevated, specifies potential management actions to avoid or minimize risk of entanglement, and requires use of the best available science when the CDFW Director determines appropriate management actions. Under the *2018 Marine Life Management Act Master Plan*, CDFW has defined best available science as relevant, inclusive, objective, open, and timely scientific information (CDFW 2018). Under RAMP, the CDFW Director is required to conduct a risk assessment at least monthly between November 1 and the end of the Fishing Season and consider Working Group recommendations regarding appropriate management measures before implementation. The Working Group plays a role in the risk assessment process by recommending management actions to the CDFW Director based on the Working Group members' relevant expertise. Figure 2-7 provides an overview of the RAMP process.

In addition, RAMP contains provisions that relate to available data and management actions, specifies additional reporting requirements for all fishery participants, and establishes a process for CDFW certification of alternative gear.

Enforcement of RAMP is primarily the responsibility of CDFW's Law Enforcement Division. CDFW officers are responsible for enforcing compliance with various management measures implemented under RAMP, including time/area closures, vertical line reductions, and gear modifications. CDFW also receives law enforcement support from the US Coast Guard and NMFS Office of Law Enforcement.

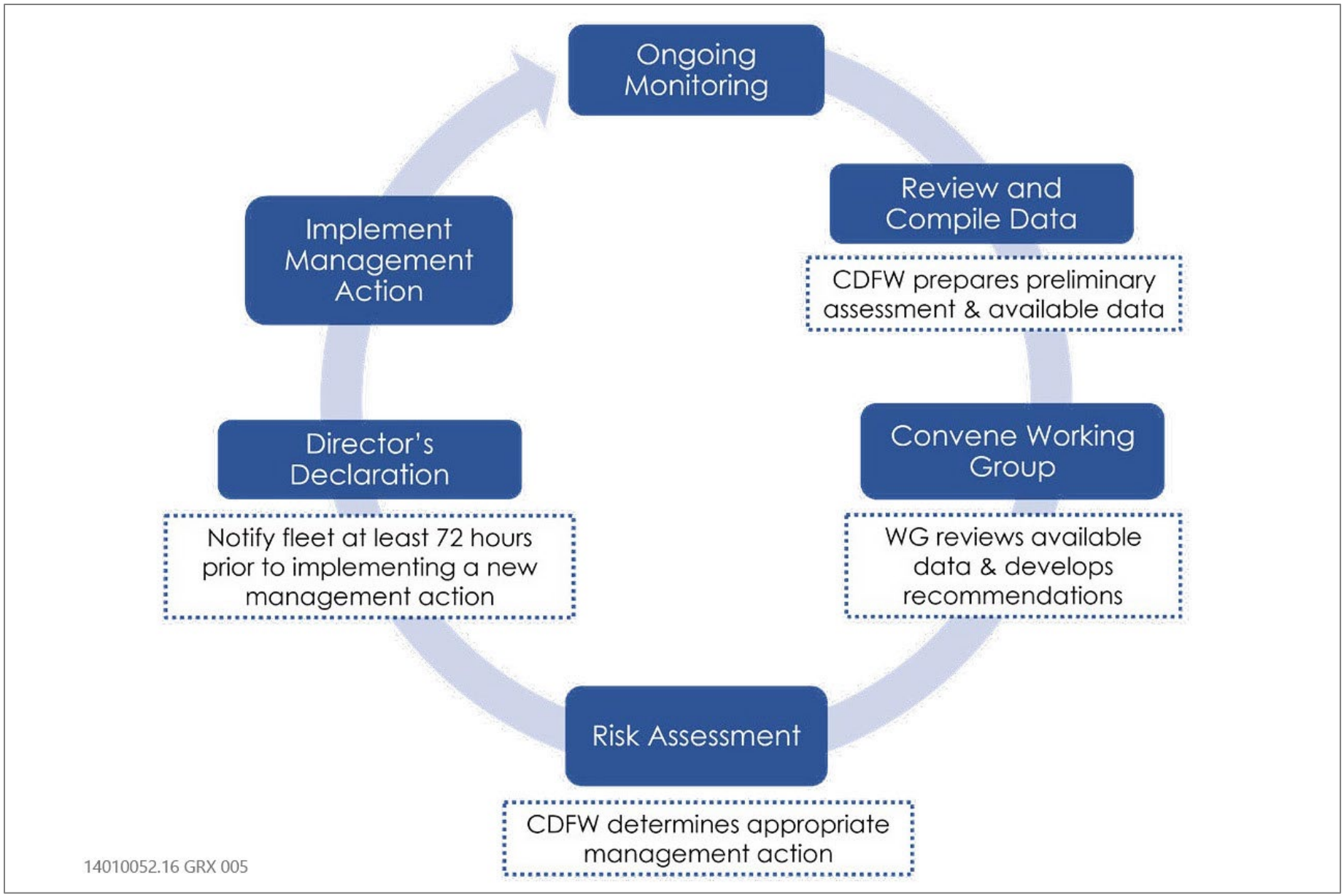
For management purposes, RAMP regulations divides the EEZ into several Fishing Zones (Figure 2-8) with the following latitudinal boundaries:

- Zone 1: from the California/Oregon border (42° N latitude) to Cape Mendocino (40°10' N latitude)
- Zone 2: from Cape Mendocino to the Sonoma-Mendocino County line (38°46.125' N latitude)
- Zone 3: from Sonoma-Mendocino County line to Pigeon Point (37°11' N latitude)
- Zone 4: from Pigeon Point to Lopez Point (36° N latitude)
- Zone 5: from Lopez Point to Point Conception (34°27' N latitude)
- Zone 6: from Point Conception to the US/Mexico border (32° 32' N latitude)

An additional Fishing Zone (Fishing Zone 7) is defined as the "Pacific Leatherback Sea Turtle Foraging Area" and extends from Point Arena (38° 57.5' N. latitude) to Point Pinos (36° 38.314' N latitude).

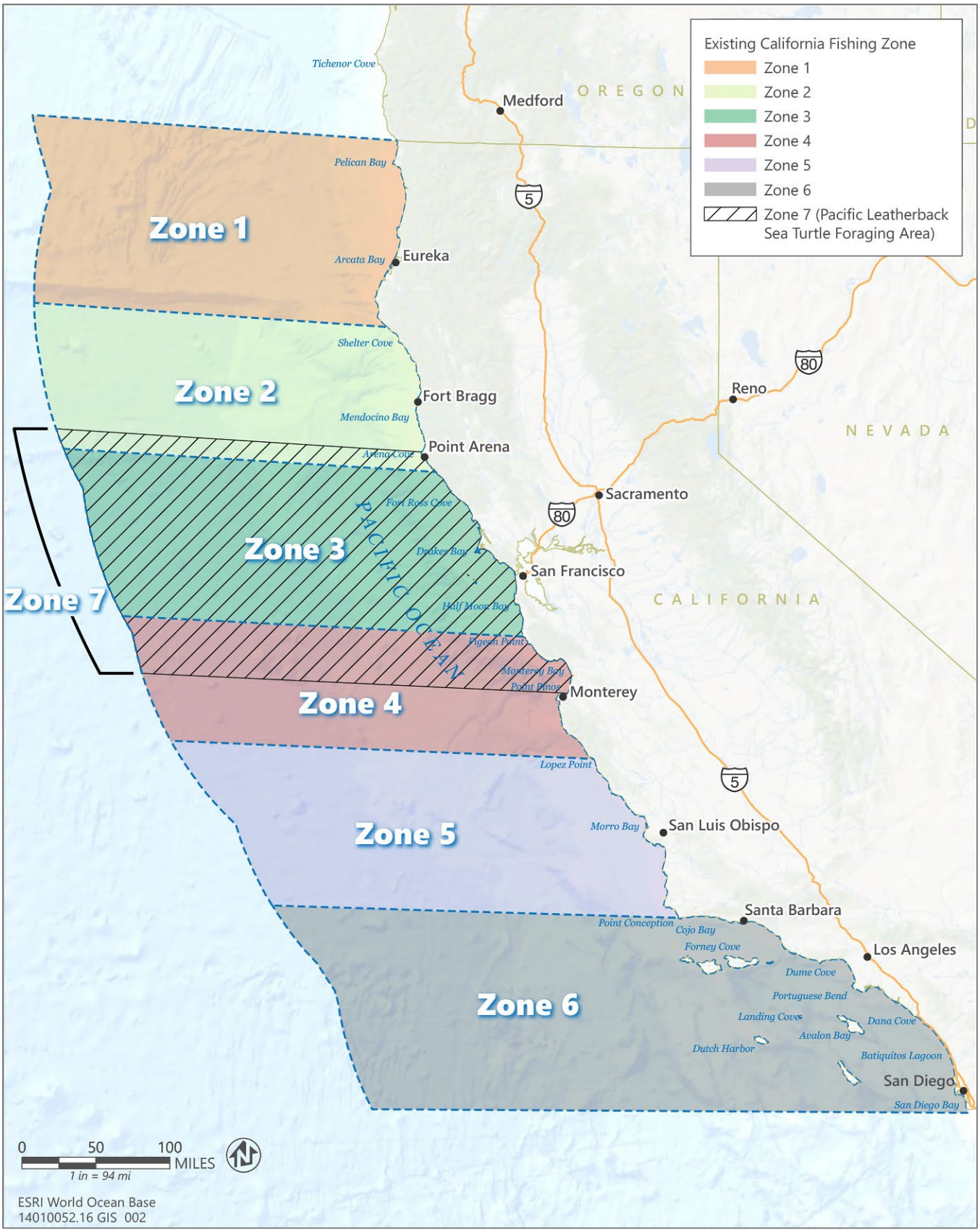
RISK ASSESSMENT SCHEDULE

Beginning in the late fall, CDFW evaluates marine life entanglement risk and any needed modifications to the scheduled opener of the commercial fishery (see Section 2.3.2) in each Fishing Zone. In general, four risk assessments are conducted between October and December at approximately 2-to-3-week intervals, but they must occur at least monthly starting November 1. Once a given Fishing Zone is open, the timing of each subsequent risk assessment is guided by available data but conducted at least monthly until the closure of that Fishing Zone.



Source: CDFW 2024a.

Figure 2-7 Phases of the RAMP Cycle



Source: Adapted by Ascent in 2024.

Figure 2-8 Existing California Commercial Dungeness Crab Fishing Zones

RISK EVALUATION

Presence, Distribution, and Abundance of Actionable Species

Pursuant to the RAMP regulations, CDFW evaluates entanglement risk, and the need for management action, based on separate abundance thresholds for each Actionable Species and for two periods, fall (November 1 – December 31) and spring (March 1 until fishery closure). Two distinct time periods are identified because information collected during these periods has different implications for management based on anticipated presence of Actionable Species and their respective historical migration patterns.

During the fall risk evaluation period, CDFW does not open the season in each Fishing Zone until sufficient data are available to inform the risk assessment process. If presence, distribution, and abundance data indicate the risk is elevated, the CDFW Director must implement a management action. If data are available and counts of humpback whales are greater than or equal to 20 or there is a running average of five or more animals over a 1-week period within a single Fishing Zone (excluding Fishing Zone 7), the CDFW Director must implement a management action to restrict the commercial harvest of Dungeness crab.

The same applies when counts of blue whales are greater than or equal to three or there is a running average of three or more blue whales over a 1-week period within a single Fishing Zone (excluding Fishing Zone 7). For leatherback sea turtles a management action must be implemented for any Fishing Zone where surveys or satellite telemetry information indicate one or more leatherback sea turtles are present (including Fishing Zone 7).

During January and February (i.e., the interval between the fall and spring risk evaluation periods), CDFW scales back data collection efforts. The low abundance of Actionable Species within the project area during this interim period is associated with low marine life entanglement risk, making intensive data collection efforts unnecessary.

The spring risk evaluation period begins on March 1 and continues through June 30 (or the end of the Fishing Season). If data are unavailable for a given Fishing Zone by March 15, the CDFW Director must implement a management action to restrict the take of Dungeness crab. As during the fall, the absence of current information does not mean there is no entanglement risk. Therefore, if data are available and the number of humpback whales is greater than or equal to 10 or there is a running average of five or more animals over a 1-week period within a single Fishing Zone (excluding Fishing Zone 7), risk is deemed to be elevated and the CDFW Director will implement a management action. The same applies when there are three or more blue whales or a running average of three or more blue whales over a 1-week period within a single Fishing Zone (excluding Fishing Zone 7). For leatherback sea turtles, a management action will be implemented for any Fishing Zone (including Fishing Zone 7) where one or more leatherback sea turtles are present.

CDFW uses multiple, complementary monitoring methods to evaluate and consider presence, distribution, and number of Actionable Species observed within a Fishing Zone (collectively described as "Marine Life Concentrations"), including aerial surveys, vessel surveys, and satellite tagging programs targeting blue whales and leatherback sea turtles. Aerial surveys provide high-resolution information regarding distribution of Actionable Species, forage (e.g., bait balls, *Chrysaora* patches), and observed trap gear. Vessel-based surveys place observers in proximity to observed individuals, enabling collection of genetic samples and high-resolution photographs (allowing assignment of individuals to specific DPS units), attachment of satellite tags, and other supplemental research activities. Satellite tagging datasets provide long-term tracks of individual animal movements. For species with known migratory patterns, these index individuals provide a general understanding of when populations begin to arrive in or depart from the project area. These methods support an adaptive management approach by relying on monitoring information to make management decisions.

Confirmed Entanglements

Any entanglement of an Actionable Species confirmed in California commercial Dungeness crab gear (reported from any location) or Unknown Fishing Gear (reported within the project area) is considered an indicator of elevated risk. Entanglements reported in unidentified gear are classified as Unknown Fishing Gear if available documentation indicates the gear could have originated from the California commercial Dungeness crab fishery. Unlike thresholds related to Marine Life Concentrations, which forecast future risk based on potential overlap with fishing activity,

confirmed entanglements in California commercial Dungeness crab gear indicate overlap has occurred and management actions are needed to prevent additional entanglements.

CDFW therefore has assigned the following Impact Scores, with pre-determined management actions taken following attainment of specified cumulative total Impact Scores:

- Humpback whales
  - Confirmed entanglement in California commercial Dungeness crab gear = 0.75
  - Confirmed entanglement in California commercial Dungeness crab gear, deceased = 1
  - Confirmed entanglement in Unknown Fishing Gear = 0.38
  - Confirmed entanglement in Unknown Fishing Gear, deceased = 0.5
- Blue whales and leatherback sea turtles
  - Confirmed entanglement in California commercial Dungeness crab gear = 1
  - Confirmed entanglement in Unknown Fishing Gear = 0.5

Confirmed entanglements of Actionable Species in California commercial Dungeness crab gear would be counted regardless of the reporting location (i.e., inside or outside of the project area) or time of year (i.e., whether the fishery is currently open or closed), while Unknown Fishing Gear entanglements are considered only if they are observed off the coast of California. For purposes of determining impact score, CDFW would consider each confirmed entanglement of a blue whale or leatherback sea turtle in California commercial Dungeness crab gear as an impact score of one.

Management Actions

Once risk is determined to be elevated, including when current data regarding Marine Life Concentrations are not available, the RAMP regulations require CDFW's Director to implement a management action to reduce marine life entanglement risk. The default action when a trigger is reached is closure of one or more Fishing Zone(s) to traditional Dungeness crab trap gear. In most cases, however, the CDFW Director selects from several alternatives based on the best available science related to the management considerations described below.

Management responses are limited to issuance of a Fleet Advisory, depth constraint, vertical line/gear reduction, Fishing Zone closure, and authorizing deployment of Alternative Gear (14 CCR Section 132.8[e]) which are summarized below and described in detail in Sections 5.1.5.1 through 5.1.5.5 in the CP.

- Fleet Advisory. The CDFW Director may issue an advisory to the fleet to encourage voluntary efforts if entanglement risk is elevated or expected to increase but a more restrictive management response is not necessary. Voluntary actions include reducing slack line and minimizing surface gear, avoiding areas with high concentrations of forage, and avoiding areas where Actionable Species have been sighted.
- Depth Constraint. A depth constraint, based on waypoints used to define depth contours, may be implemented to limit co-occurrence of Actionable Species and commercial harvest of Dungeness crab. Depth constraints have added value when paired with a vertical line/gear reduction, to avoid increasing entanglement risk due to effort displacement into the areas that remain open (Samhouri et al. 2021).
- Vertical Line/Gear Reduction. If survey data indicate that Actionable Species (or their prey) are widely distributed across a broad range of depths, reducing the number of vertical lines in the water is another method to reduce entanglement risk. Given the current requirements for each Dungeness crab trap to be individually marked with a buoy (see Section 2.3.2), vertical line reductions are implemented as gear reductions.
- Closures. Spatiotemporal closures are a key management measure in the spring months when historical migration patterns, surveys, and/or models indicate that Actionable Species have begun to arrive in the fishing grounds, and during the fall if they have not yet left. In these instances, the scheduled season opening can be delayed, or the scheduled season closure advanced. When real-time information on Marine Life Concentrations,

trap gear, and co-occurrence is available, spatiotemporal closures can also be used to selectively close areas with elevated entanglement risk. Closures may be implemented by Fishing Zone or statewide (14 CCR Section 132.8).

- Alternative Gear Deployment. Innovative gear types that reduce entanglement risk compared to the standard gear may be developed for certification and use. RAMP establishes a process for CDFW certification of innovative gear types as Alternative Gear. Once certified, Alternative Gear becomes legal commercial fishing gear and may be used by all fishery participants. However, use of Alternative Gear is limited to specified closures on or after April 1.

Management Considerations

Although CDFW implements the management actions above to reduce marine life entanglement risk within portions of the fishing grounds when Actionable Species presence exceeds the thresholds defined under "Risk Evaluation" above, evaluating marine life entanglement risk requires a dynamic, flexible approach rather than relying on historical patterns alone. Furthermore, CDFW's intention is to reduce entanglement risk for all Actionable Species across the entire project area, which requires considering how curtailing effort in one area might increase effort, and associated entanglement risk, in another. Therefore, following attainment of a Marine Life Concentration trigger, the CDFW Director implements a management response based on the best available science and, to the maximum extent possible, by relying on relevant and publicly available information. The types of information that are considered include Working Group recommendations, information from NMFS, management measure effectiveness, economic impact, historical migration patterns, Fishing Season dynamics, available forage, ocean conditions, confirmed entanglements, and cumulative take.

In all instances, CDFW considers the potential for unintended consequences when implementing a management action that could displace, rather than remove, fishing effort. Given differences in migration patterns, habitat utilization, and forage needs of the Actionable Species, it is possible that management actions taken in response to elevated risk for one species could lead to increased take of another species. Therefore, CDFW selects the type, spatial extent, and temporal duration of any management action to minimize take of each Actionable Species.

TRAP GEAR LOSS

FGC Section 9004 requires each trap to be raised, cleaned, and serviced at intervals not to exceed 96 hours (weather conditions at sea permitting) and that no trap shall be abandoned in the waters of the state. This requirement is actively enforced by CDFW Law Enforcement Division.

Prior to implementation of RAMP, CDFW had no specific mechanism to assess gear loss, however requests for replacement buoy tags allow CDFW to estimate gear loss. Replacement tag requests can be submitted both in-season and between the two seasons of each biennial period and are assumed to reflect gear loss, other than instances where the request form included sufficient details to determine that only tags (and no gear) were lost or that the loss occurred on land rather than at sea. Beginning with the 2020-2021 Fishing Season, the bi-weekly Fishing Activity Reports under 14 CCR Section 132.8(g)(1) require fishery participants to annually report the number of lost traps.

The best available information regarding causes of gear loss is from the between-season requests for replacement buoy tags that are processed by the CDFW License and Revenue Branch. Form DFW 1302 (Rev 05/25/2022) requires Dungeness crab vessel permitholders to "describe the factual circumstances surrounding the loss of the buoy tags." Based on the descriptions provided on the between-season request affidavits submitted in 2014, 2016, and 2018, gear loss was most frequently caused by other boats (55.2 percent), weather (27 percent), and kelp (16.3 percent), followed by wear and tear (5.7 percent), debris (2 percent), the operator's boat (1.5 percent), or silt (1 percent). Nearly half (48 percent) of gear loss incidents did not include sufficient details to assign a cause of gear loss.

Entanglement reports, including information collected during a response effort, rarely include sufficient details to evaluate whether the entanglement occurred in lost (rather than actively fished) gear. Of the 246 confirmed large whale entanglements between 2013 and 2020, only three are known to have occurred in lost or abandoned gear, and

another 11 had "indications" of lost gear but could not be confirmed as such (Saez pers. comm. 2022). Despite this, CDFW considers lost or abandoned gear as a substantial source of marine life entanglement risk.

CDFW estimates a total of 105,327 traps were deployed and a total of 1,772 traps were lost within the project area during the 2020-2021 season. For the 2021-2022 season, CDFW estimates a total of 112,540 traps were deployed and a total of 3,923 traps were lost. For the 2022-2023 season, CDFW estimates that a total of 106,006 traps were deployed within the project area and a total of 3,438 traps were lost.

TRAP GEAR RETRIEVAL PROGRAM

CDFW adopted regulations (14 CCR Section 132.7) in September 2019 that implemented a formal lost or abandoned commercial Dungeness crab trap gear retrieval program (Trap Gear Retrieval Program). Under the terms of the program, qualified entities (sport or commercial fishing associations with a board and/or charter, non-profits, and local government agencies or harbor districts) may apply for a Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval Permit from CDFW. These Retrieval Permittees identify vessels (Designated Retrievers) in their permits to conduct on-the-water retrieval operations to recover lost or abandoned commercial Dungeness crab trap gear from 2 weeks after the scheduled season closure (FGC Section 8276) to September 30. The CDFW Director can authorize retrieval to begin sooner as part of a closure under RAMP. All retrieved traps are documented in a logbook that is submitted to CDFW each year. Compensation for retrieval activities is provided either by the Dungeness crab vessel permitholder, in exchange for the retrieved trap, or by CDFW. The guaranteed compensation is one key difference between the formal program and the informal retrieval activities conducted under 14 CCR Section 132.2. CDFW has conducted extensive outreach to potential Retrieval Permittees to encourage their participation, as well as notifying commercial fishery participants of the program's implications. A summary of traps recovered in 2020 through 2023 is provided in Table 2-3.

Table 2-3 Summary of Commercial Dungeness Crab Trap Retrieval for Years 2020 through 2023

Year	Designated Retrievers	Retrieval Trips	Dungeness Crab Traps Collected	Number of Unique Dungeness Crab Vessels	Average Traps per Vessel	Total Reported Traps Recovered
2020	13	47	521	130	4	633
2021	12	21	244	66	3.7	250
2022	9	30	584	109	5.3	800
2023	5	8	111	37	3	116

Source: CDFW 2024b.

OUTREACH AND BEST PRACTICES

The Working Group, with input and support from OPC, NMFS, and CDFW, identifies best practices to reduce take of Actionable Species. These best practices are recommended and not enforceable and are contained in the Best Practices Guide for Minimizing Marine Life Entanglement, which is issued annually. Copies are given to Working Group members for distribution, posted online, and shared through various listservs. The Best Practices Guide is available at CDFW license counters within the range of the Dungeness crab fishery and is also distributed by CDFW staff during recreational fishery sampling and at outreach events. The guide is updated on an as-needed basis to incorporate new recommendations from the Working Group, Working Group Advisors, and agencies.

CDFW also prepares and distributes an annual pre-season newsletter that includes updates regarding development and implementation of Conservation Measures to address marine life entanglements and any new regulatory requirements for the commercial fishery. The newsletter is mailed to all Dungeness crab vessel permitholders.

In addition, CDFW holds at least one public meeting prior to the start of each Fishing Season. The goal of these meetings is to increase awareness of marine life entanglement issues and management actions amongst the fleet and the public.

CDFW also generates press releases, sends updates via a dedicated listserv, and regularly updates the CDFW Whale Safe Fisheries web page. These outreach efforts are an important aspect of adaptive management, which aims to incorporate and facilitate effective stakeholder engagement.

ENTANGLEMENT RESPONSE AND REPORTING

In California, members of the Large Whale Entanglement Response Network, a group of non-profit, academic, industry, and government organizations coordinated through NMFS, handle response efforts for both large whales and sea turtles. Having reporting parties promptly report entanglements, document pertinent information regarding the entanglement, and monitor the entanglement until a Large Whale Entanglement Response Network team can arrive on site makes it more likely responders will be able to locate the entangled animal and mount a successful response. Documentation collected by the initial reporting party or during an entanglement response can also support forensic reviews, which can identify best practices and improve the general state of knowledge regarding gear configuration, environmental conditions, and other circumstances that result in entanglements.

CDFW also conducts follow up interviews with California-permitted fishermen whose gear is involved in marine life entanglements. When buoy markings indicate the gear may have originated from a California fishery and traced back to an individual, CDFW searches license and permitting records for vessel, permit, or fishermen identification numbers documented on entangling gear. If this search indicates California-permitted gear was responsible for the entanglement, CDFW conducts a follow up interview with the permitted individual to learn about gear set location, gear configuration, last known servicing and any other relevant information that could support entanglement response and forensic review and shares those findings with NMFS.

2.4 PROPOSED PROJECT

The proposed RAMP regulatory amendments constitute the proposed project for purposes of CEQA compliance. They are part of CDFW's comprehensive strategy to avoid, minimize, mitigate, and monitor entanglements of Actionable Species in commercial Dungeness crab fishing gear off the coast of California consistent with the framework established by the CP. The proposed amendments would add new RAMP components consisting of the management actions of restricting surface gear and active tending requirements as well as new buoy and line marking requirements. The proposed amendments would also modify existing RAMP components. These regulatory changes are being proposed to satisfy requirements for the ITP pursuant to NMFS feedback, help streamline implementation processes to conserve staff resources, and clarify existing language to facilitate implementation and enforcement.

2.4.1 Project Objectives

The specific objectives of the proposed RAMP regulatory amendments are listed below.

1. use ongoing risk evaluation to reduce risk of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in commercial Dungeness crab gear throughout the project area using active management;
2. improve identification of entanglements of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area;
3. reduce the likelihood and/or severity of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area by authorizing the use of alternative fishing gear; and
4. strengthen regulatory authority to implement actions designed to reduce entanglement risks, including CP goals and measures and federal ITP requirements.

2.4.2 Proposed RAMP Regulatory Amendments

The revisions proposed in Section 132.8 (Title 14, California Code of Regulations [CCR], i.e., the RAMP regulations) are summarized below and discussed further in the sections that follow.

- clarify that an Actionable Species entanglement involving California commercial Dungeness crab gear observed anywhere would be considered as a Confirmed Entanglement;
- clarify that an Actionable Species entanglement in Unknown Fishing Gear would count as a Confirmed Entanglement only if it is reported from a Fishing Zone off California;
- clarify that Confirmed Entanglements would be assigned based on information provided by NMFS, and would be made when sufficient data are available, but no longer than on a quarterly basis;
- remove provision pertaining to Confirmed Entanglements involving multiple fisheries;
- simplify Confirmed Entanglement calculation by repealing the concept of Impact Score;
- consider unidentifiable gear as Unknown Fishing Gear unless the gear in question is entirely inconsistent with a Dungeness crab trap;
- phase out assignment of Confirmed Entanglements in Unknown Fishing Gear to the Dungeness crab fishery based on a new line marking requirement;
- specify that Fishing Zones would extend to all "Ocean Waters" within the specified area;
- remove the concept of "Fishing Grounds" and apply the 100-fathom boundary to only the Marine Life Concentration surveys;
- define "Ocean Waters";
- remove Fishing Zones 6 and 7;
- move the start time of risk assessments from November 1 to October 15 and discontinue assessment once a Fishing Zone has been closed for the rest of the season;
- clarify that a management action would remain in effect until it is revoked;
- clarify that if a Fishing Zone is closed for the season, only approved Alternative Gear would be used in that zone for the rest of the season;
- institute revised Confirmed Entanglement thresholds to align with ESA and anticipated requirements under an ITP;
- stipulate that the validity of a survey for risk assessment would no longer expire after a specified period of time;
- elevate a management action's effectiveness at minimizing entanglement to its primary goal;
- consolidate the spatial data on the Actionable Species under one subsection and explicitly allow the consideration of data in areas adjacent to Fishing Zones;
- extend consideration of entanglement pattern from only the ongoing calendar year and Fishing Season to prior years and seasons as well while crafting management actions;
- remove Fleet Advisory as a management action;
- add restrictions to the amount of surface gear and mandatory active tending of crab gear as possible management actions;
- update fishery closure requirements by clarifying that all fishing gear must be removed from a closed Fishing Zone by the effective date of the fishery closure; and crabs from delayed or closed zones cannot be taken, possessed, sold, or landed, with special stipulations for crabs taken from these zone(s) right before closure;

- further clarify that all Dungeness crab permit holders, whether they are using traditional or Alternative Gear, must submit the bi-weekly report when they have gear in any Fishing Zone(s); reports would be due on the first and sixteenth of each month, and may be submitted through a CDFW provided form in addition to email or text;
- require bi-weekly reports to include the due dates and number of newly lost traps known to each permit holder;
- require an end-of-season report due two weeks following the submission of each permit holder's last bi-weekly report of a Fishing Season documenting the traps lost during that season and their associated buoy tags;
- update requirements for electronic monitoring systems by commercial Dungeness crab vessels when RAMP management measures are in place; monitoring systems would have to be able to track vessel accurately without interruption; tampering would be prohibited, and any interruption would have to be reported and corrected before fishing could resume;
- require each main buoy to be legibly marked to identify the fishery and the operator;
- require trap line marking to identify the gear belonging to the Dungeness crab fishery; and
- further stipulate the types of limitations or conditions that may be attached to the authorization of an Alternative Gear.

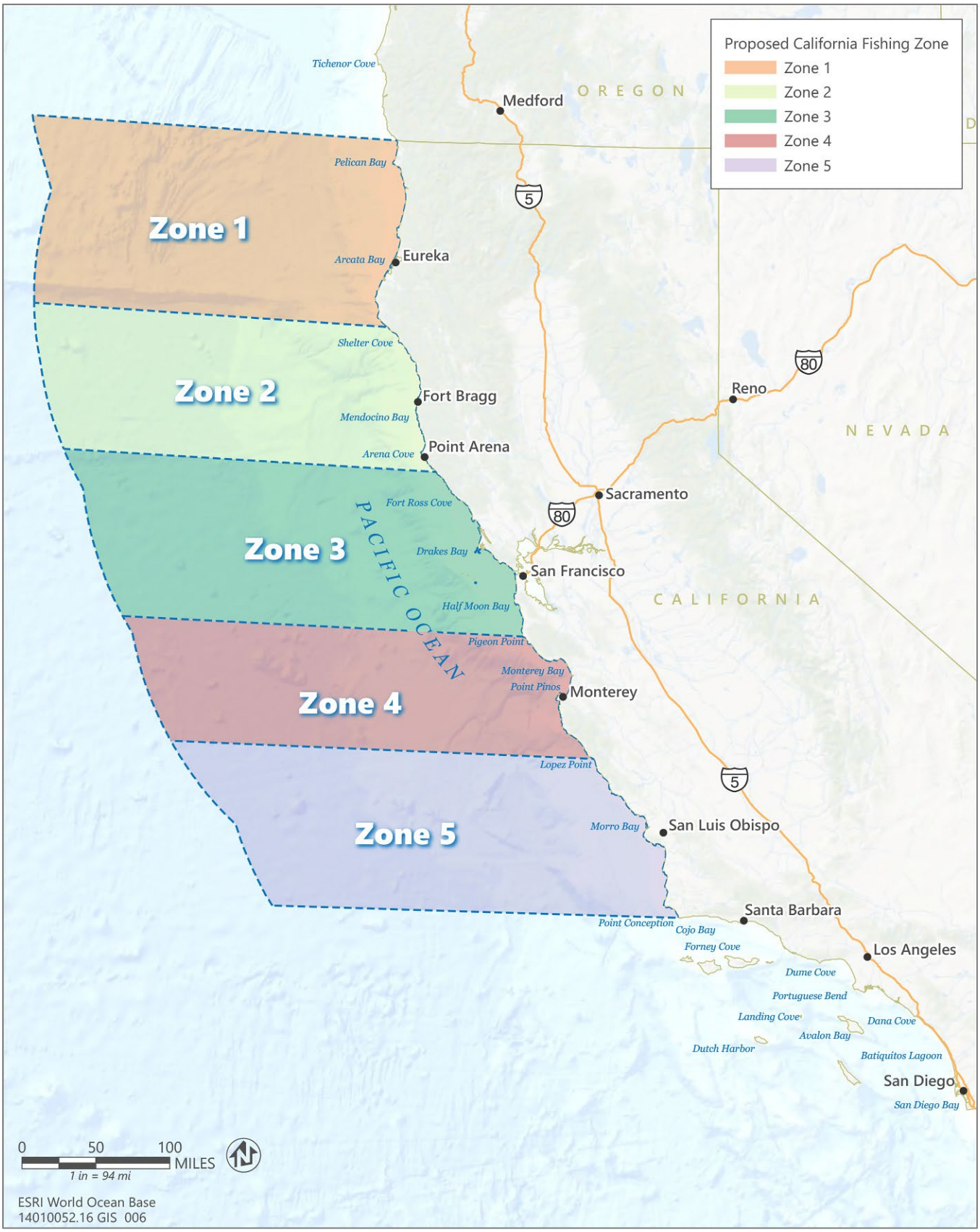
SPATIAL MANAGEMENT

As described previously, seven Fishing Zones are currently defined for the commercial Dungeness crab fishery; six of which collectively comprise the project area and a seventh Fishing Zone designated as the "Pacific Leatherback Sea Turtle Foraging Area" which encompasses the southern portion of Fishing Zone 2, the entirety of Fishing Zone 3, and the northern portion of Fishing Zone 4 (see Figure 2-8). This would be streamlined into five Fishing Zones with the following latitudinal boundaries (Figure 2-9):

- Zone 1: From the California/Oregon border (42° N latitude) to Cape Mendocino (40° 10' N latitude).
- Zone 2: From Cape Mendocino to the Sonoma/Mendocino county line (38° 46.125' N latitude).
- Zone 3: From Sonoma/Mendocino county line to Pigeon Point (37° 11' N latitude).
- Zone 4: From Pigeon Point to Lopez Point (36° N latitude).
- Zone 5: From Lopez Point to Point Conception (34° 27' N latitude).

Instead of defining a specific Fishing Zone focused on leatherback sea turtles, management actions aimed to conserve the species would be applied to Fishing Zones 3 and 4, which closely mirror the extent of Fishing Zone 7.

Marine Life Concentrations would be evaluated within the portions of Fishing Zones 1-5 between shore and 100 fathoms (as defined in 50 CFR Sections 660.71-660.72).



Source: adapted by Ascent in 2024.

Figure 2-9 Proposed California Commercial Dungeness Crab Fishing Zones per the RAMP Regulations

RAMP SCHEDULE AND THRESHOLDS

CDFW would continue to conduct surveys from aerial and/or vessel platforms between shore and 100 fathoms in Fishing Zones 1-5 to evaluate the abundance and distribution of Actionable Species. However, the start of risk assessments would be moved from November 1 to October 15 of each year and would cease once a season is closed. When weather or mechanical issues prevent Marine Life Concentrations surveys from being conducted, CDFW would review and consider other sources of current information, including aerial or vessel surveys conducted by other partners. If sufficient information is not available, CDFW would implement management actions to close or otherwise restrict the commercial Dungeness crab fishery.

Although CDFW proposes to evaluate Marine Life Concentrations only within the portions of each Fishing Zone between shore and 100 fathoms to focus available resources on evaluating Actionable Species distribution and presence within the areas where commercial harvest of Dungeness crab occurs, management actions could be applied to one or more Fishing Zones (including the portions outside of 100 fathoms) as well as other portions of the project area (i.e., waters south of Point Conception). Additionally, management actions would be implemented for any Fishing Zone where a leatherback sea turtle is present as well as within the Pacific Leatherback Sea Turtle Foraging Area.

As for confirmed entanglement thresholds, CDFW would no longer discount a humpback whale entanglement based on the perceived severity of the entanglement. Instead, any confirmed entanglement of a humpback would be counted as an entanglement regardless of its perceived severity. Furthermore, following the mandatory marking of all surface gear starting November 1, 2025, each confirmed entanglement in Unknown Fishing Gear would be counted as a quarter of a confirmed entanglement in commercial Dungeness crab gear. Following the marking of the top 15 fathoms of all lines after November 1, 2028, CDFW would no longer account for any entanglement in Unknown Fishing Gear.

Based on feedback from NMFS, CDFW would further amend the entanglement thresholds for the Actionable Species to meet the potential requirements of the ITP. CDFW would no longer wait for multi-year thresholds to be reached before taking management actions. Instead, management actions would be taken after every confirmed entanglement of any Actionable Species. Early closure on April 1 would also be imposed for two subsequent calendar years following a confirmed blue whale entanglement, while season delay to January 1 would be imposed for 9 calendar years in Fishing Zones 3 and 4 following a confirmed Pacific leatherback sea turtle entanglement.

Furthermore, if three or more confirmed humpback whale entanglements occur within a calendar year, the fishery would be closed immediately and not open until January 1 of the next calendar year.

MANAGEMENT ACTIONS

Management actions would include implementation of two new management tools:

1. Surface Gear Prohibition: The CDFW Director may prohibit the use of additional surface buoys and any surface line within any or all Fishing Zone(s) during the Fishing Season.
2. Active Tending Requirement: The CDFW Director may shorten the maximum service interval to four (4) hours and the maximum distance from a Dungeness crab fishing vessel to any and all of its crab traps that are placed into ocean waters to 2 miles during the Fishing Season for any Fishing Zone(s).

Issuance of a Fleet Advisory would no longer be included as an option. Furthermore, Fishery Closure/Fishery Delay would be extended to prohibition against possession, sale, and landing of Dungeness crabs taken from the closed/delayed Fishing Zones as well as mandatory removal of all Dungeness crab gear from the zone. Once a Fishing Zone closes, it would not reopen for the rest of the season and only Alternative Gear could be used to take Dungeness crab within it.

MANAGEMENT CONSIDERATIONS

CDFW's experience over the last several Fishing Seasons has highlighted the fact that evaluating marine life entanglement risk requires a dynamic, flexible approach rather than relying on historical patterns alone. CDFW's obligation is to reduce and minimize take of Actionable Species across the entire project area and, therefore, CDFW must consider how curtailing fishing effort in one area might increase fishing effort and associated entanglement risk in another.

CDFW would continue relying on the management considerations specified in 14 CCR Section 132.8(d) when selecting appropriate management actions. However, CDFW would no longer disregard information from older surveys beyond a specific period; instead, any prior survey data would be considered as part of each assessment so long as they are relevant. Similarly, when deciding whether to apply management action to a Fishing Zone, CDFW would consider spatial data from any adjacent areas and data from prior years as long as they are also relevant. Furthermore, when considering which management tool would be implemented, their effectiveness at minimizing entanglement would take precedence over any other consideration.

REPORTING REQUIREMENTS

CDFW would continue to require all commercial Dungeness crab permit holders to submit bi-weekly reports; these reports would now include the number of newly lost traps. Moreover, permit holders would be required to submit an end-of-season report documenting trap loss during the entire Fishing Season. Permit holders would also be held responsible for any tampering with the mandatory electronic monitoring systems.

ALTERNATIVE GEAR

Once testing and enforcement challenges are addressed, certification of Alternative Gear would allow for continued fishing activity during periods of elevated entanglement risk. Such gear would have to be detectable, retrievable, identifiable, beneficial, and enforceable. The authorized use of these gear may be subject to limitations on Fishing Zone, depth, maximum trap number, notification, and other requirements to ensure that the criteria are met.

GEAR IDENTIFICATION REQUIREMENTS

To improve the ability of CDFW and NMFS to identify and attribute Actionable Species take to the appropriate state's commercial Dungeness crab fishery and improve the ability of NMFS to make negligible impact determinations under the MMPA, CDFW would amend current buoy marking requirements for commercial Dungeness crab to align with line marking requirements implemented for other state-managed commercial fisheries. CDFW would also implement line marking to further make the lines identifiable.

2.5 REASONABLY FORESEEABLE COMPLIANCE RESPONSES

Reasonably foreseeable compliance responses would be the activities carried out by the commercial Dungeness crab fishery and involved public agencies in response to the approval of the proposed RAMP regulatory amendments that may result in physical changes to the environment. These compliance responses would be the source of potential environmental effects reviewed in this EIR. The following is a summary of the reasonably foreseeable compliance responses expected with implementation of the proposed project:

- No change in the number of issued permits would occur, and the number of active vessels and gear allotments would not change.
- Slightly increased air and vessel traffic associated with systematic implementation of monitoring surveys to determine concentrations of Actionable Species in the fishing zones would be reasonably anticipated.

- Reduced vessel traffic and trap deployment would be the result if delayed season opening or early Fishing Season closure in one or more fishing zones became necessary.
- More concentrated vessel traffic and trap deployment in portions of a Fishing Zone would be reasonably expected during periods when depth restrictions would be imposed.
- Reduced potential for entanglements would be reasonably anticipated because the number of vertical lines would be reduced.
- Reduced vessel traffic in areas with Actionable Species and increases in vessel traffic in areas without Actionable Species would occur.
- The amount of lost or abandoned gear would decrease because of improvements in the gear retrieval process (i.e., compensation for gear retrieval), vertical line/gear reductions, and alternative gear use.

2.6 OTHER POTENTIAL PERMITS AND APPROVALS REQUIRED

CDFW is the CEQA Lead Agency for the project described above. However, subsequent project-related actions may require permits and/or approval by other federal or state agencies as described below.

2.6.1 Federal

- NMFS – As discussed previously, CDFW must submit an ITP application and CP to NMFS to obtain authorization for the take of Actionable Species in the California commercial Dungeness crab fishery. NMFS is responsible for ITP review and approval pursuant to ESA Section 10 and any potentially ensuing compliance with the National Environmental Policy Act (NEPA).

2.6.2 State

- California Office of Administrative Law (OAL) – All regulations developed by a California administrative agency, such as CDFW, must be approved by OAL pursuant to the California Administrative Procedure Act. After an agency adopts new regulations or regulatory changes, OAL is responsible for reviewing their legal and procedural requirements before the regulations are published in the CCR.
- CDFW – If discretionary action by CDFW is taken to implement the CP and NMFS ITP implementing agreement authorizing incidental take of Actionable Species in the California commercial Dungeness crab fishery, additional CEQA compliance review may be required.

3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

3.0 APPROACH TO THE ENVIRONMENTAL ANALYSIS

This Draft EIR evaluates and discloses the environmental impacts associated with implementation of the proposed amendments to the RAMP regulations (14 CCR Section 132.8), in accordance with CEQA (PRC Section 21000 et seq.) and the State CEQA Guidelines (14 CCR Section 15000 et seq.). Sections 3.2 through 3.7 of this Draft EIR present a discussion of regulatory background, existing conditions, environmental impacts associated with project implementation, mitigation measures to reduce the level of impact, and residual level of significance (i.e., after application of mitigation, including identification of impacts that would remain significant and unavoidable after application of all feasible mitigation measures). Issues evaluated in these sections consist of the environmental topics identified for review in the notice of preparation (NOP) prepared for the project (see Appendix A of this Draft EIR). Other environmental topics dismissed from detailed evaluation are summarized in Section 3.1. Chapter 4 of this Draft EIR, "Cumulative Impacts," presents an analysis of the project's impacts considered together with those of other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. Chapter 5, "Alternatives," presents a reasonable range of alternatives and evaluates the environmental effects of those alternatives relative to those of the proposed project, as required by Section 15126.6 of the State CEQA Guidelines. Chapter 6, "Other CEQA Sections," includes an analysis of the project's growth-inducing impacts, as required by Section 21100(b)(5) of CEQA.

Sections 3.2 through 3.7 of this Draft EIR each include the following components:

- Regulatory Setting: This subsection presents information on the laws, regulations, plans, and policies that relate to the issue area being discussed. Regulations originating from the federal, state, and local levels are each discussed as appropriate to help evaluate the covered environmental impact topics.
- Environmental Setting: This subsection presents the existing environmental conditions in the project area and in the surrounding area around the time of the NOP review period, in accordance with State CEQA Guidelines Section 15125. The discussions of the environmental setting focus on information relevant to the issue under evaluation. The extent of the environmental setting area evaluated differs among resources, depending on the locations where impacts would be expected to occur.
- Environmental Impact Analysis: This subsection presents thresholds of significance and discusses significant and potentially significant effects of implementing the RAMP regulatory amendments and applying for an ITP on the existing environment, including the environment beyond the project boundaries, in accordance with State CEQA Guidelines Section 15126.2.

  The project consists of regulatory amendments to RAMP, so the potential for changes to the physical environment would be derived from the reasonably foreseeable compliance responses of commercial Dungeness crab fishing operators, regulatory agencies, and CDFW to meet the requirements of the amended regulations. For instance, this may include changes in fishing operations, such as location, new or modified fishing equipment, or limitations in the timing of fishing activities.

  The methodology for the impact analysis is described, including technical studies on which the analyses rely. The thresholds of significance are defined, and thresholds for which the project would have no impact are disclosed and dismissed from further evaluation. Project impacts and mitigation measures are numbered sequentially in each subsection (e.g., Impact 3.2-1, Impact 3.2-2, Impact 3.2-3). A summary impact statement precedes a more detailed discussion of each environmental impact. The discussion includes the analysis, rationale, and substantial evidence on which conclusions are based. The determination of level of significance of the impact is presented in bold text. A "less-than-significant" impact is one that would not result in a substantial adverse change in the physical environment. A "potentially significant" impact or "significant" impact is one that may or would result in a substantial adverse change in the physical environment, respectively; both are treated the same under CEQA in

terms of procedural requirements and the need to identify feasible mitigation. Mitigation measures are identified, as feasible, to avoid, minimize, rectify, reduce, or compensate for significant or potentially significant impacts, in accordance with the State CEQA Guidelines Section 15126.4. Unless otherwise noted, the mitigation measures presented are recommended in the EIR for consideration by CDFW to adopt as conditions of approval.

Where an existing law, regulation, or permit specifies mandatory and prescriptive actions about how to fulfill the regulatory requirement as part of the project definition, leaving little discretion in its implementation, and those actions would avoid an impact or maintain it at a less-than-significant level, the environmental protection afforded by the regulation is considered before determining impact significance. Where existing laws or regulations specify a mandatory permit process for future projects, performance standards without prescriptive actions to accomplish them, or other requirements that allow substantial discretion in how they are accomplished, or have a substantial compensatory component, the level of significance is determined before the influence of the regulatory requirements is applied. In this circumstance, the impact would be potentially significant or significant, and the regulatory requirements would be included as a mitigation measure.

This subsection also describes whether mitigation measures would reduce project impacts to a less-than-significant level. Significant and unavoidable impacts are identified as appropriate in accordance with State CEQA Guidelines Section 15126.2(c). Significant and unavoidable impacts are also summarized in Chapter 6, "Other CEQA Sections."

3.1 EFFECTS FOUND NOT TO BE SIGNIFICANT

If a lead agency determines that environmental effects are not significant or potentially significant and need not be discussed in detail, the EIR shall include a statement briefly explaining the reasons for this determination (PRC Section 21100, State CEQA Guidelines Sections 15126.2[a] and 15128). Based on review of comments received in response to the NOP and scoping meeting input (Appendix A), research and analysis of relevant project data, and review of the proposed regulatory amendments, it was determined that implementing the project would not result in significant or potentially significant environmental impacts in the areas identified below. Accordingly, these resources are not addressed in detail in this Draft EIR.

3.1.1 Aesthetics

The project area consists of the EEZ of the Pacific Ocean along the coast of California, extending from the California/Oregon border in the north to the California/Mexico border in the south. This project area is characterized by open ocean, several islands, and scattered rocky ocean outcrops. Aesthetic resources include numerous views of coastal and marine features from the coastline and from vessels. For divers in the project area, the aesthetic setting also includes the underwater environment. Scenic vistas onshore and scenic highways (e.g., State Route 1) along the coast provide views of the project area. Existing built features apparent in open ocean views include piers, jetties, buoys, and oil drilling platforms.

During the open season for the California commercial Dungeness crab fishery, there are views of commercial vessels on the open water, as well as small trap buoys for submerged crab traps. The traps are underwater, and all activities are seasonal and do not leave behind permanent structures. Implementation of the RAMP regulatory amendments would not increase the number of vessels in the project area nor extend the commercial Dungeness crab Fishing Season; therefore, vessels would not be visible in greater numbers or for a longer period. The amount and types of activities that could be visible from scenic vistas or scenic highways would be similar to existing conditions and would be slightly less in some years if the commercial Dungeness crab fishery is shortened in response to management triggers. These shifts would be seasonal and would result in only slight changes in visible fishing activity in the area. The visual character of the open ocean would not substantially change. Therefore, implementation of the project would not degrade the visual character of the project area or degrade scenic vistas or the viewshed of scenic highways. In addition, although vessels may use limited vessel lighting for safety and navigation, implementation of the project would not increase the number of vessels in the project area at night nor the amount of nighttime

lighting in the project area. For the reasons described above, implementing the project would not result in significant impacts related to aesthetics, and this issue is not discussed further.

3.1.2 Agriculture and Forestry Resources

The project area encompasses the EEZ, which is entirely off the coast of California. Because the entire project area is in the marine environment, it includes no lands designated as Important Farmland or Williamson Act land. In addition, implementation of the proposed RAMP regulatory amendments would involve changes only in the operation of the existing commercial Dungeness crab fishery and would not involve activities that could adversely affect Important Farmland or convert farmland to nonagricultural uses. Furthermore, no land is located in the project area, so there is no designated forestland or timberland. Implementation of the project would, therefore, not result in conversion of forestland to non forest uses. For these reasons, implementing the project would not result in significant impacts related to agriculture or forestry resources, and this issue is not discussed further.

3.1.3 Energy

Implementation of the proposed RAMP regulatory amendments would not involve any construction that would require consumption of fuels or use of energy. Operation of fishing vessels during the commercial Dungeness crab Fishing Season would continue to require the use of diesel fuel and oil in and auxiliary equipment on marine vessels. The amount of energy used associated with the commercial Dungeness crab fishery would not substantially change, because neither the number of vessels permitted to fish nor the length of the season would increase. The amount of energy expended during the commercial Dungeness crab Fishing Season may be slightly less in some years if the commercial Dungeness crab fishery is shortened in response to management triggers. Changes in gear types as a result of implementing the project are not expected to substantially change the amount of energy expended to deploy or collect gear. Implementation of the project would not result in the wasteful or inefficient use of energy. For the reasons described above, implementing the project would not result in significant impacts related to energy, and this issue is not discussed further.

3.1.4 Geology and Soils

No new structures would be constructed as part of the project. Implementation of the proposed RAMP regulatory amendments would involve changes only in the operation of the existing commercial Dungeness crab fishery, including changes in vessel traffic, changes in crab fishing gear used, and changes in monitoring. These marine-based activities would not be subject to damage from ground displacement, ground shaking, or liquefaction of soils from earthquakes. In addition, no construction would be implemented as part of the project that could disturb the seafloor. Crab gear is typically deployed over sandy or silty substrates; therefore, deploying crab fishing gear may cause a minor, temporary disturbance to the seafloor. However, these areas are subject to regular natural disturbance, crab gear is currently being deployed during the commercial Dungeness crab Fishing Season and implementing the project would not increase the number of traps. The potential for marine water quality impacts related to temporary disturbance of the seafloor or nearshore sediments is addressed in Section 3.7, "Water Quality." No stormwater would be generated by implementation of the project because the operations are all marine based. For the reasons described above, implementing the project would not result in significant impacts related to geology and soils, and this issue is not discussed further.

3.1.5 Hydrology

Implementation of the proposed RAMP regulatory amendments would involve changes only in the operation of the existing commercial Dungeness crab fishery, including changes in vessel traffic, changes in crab fishing gear used, and changes in monitoring. These marine-based activities would not affect groundwater resources or alter any drainages. Because the project area is entirely within the marine environment, there would be no impacts related to

flooding. While there is the potential for tsunamis to occur within the project area, the project would not include construction of any structures that would increase the potential for damage related to tsunamis. Potential marine water quality impacts are addressed in Section 3.7, "Water Quality." For the reasons described above, implementing the project would not result in significant impacts related to hydrology, and this issue is not discussed further.

3.1.6 Land Use and Planning

The project area consists of open ocean waters and is not subject to any local government general plans, zoning designations, or land use plans that govern development and land uses. Regulations governing activities in the project area include the Marine Life Protection Act (MLPA) and restrictions associated with marine management areas (MMAs), including marine protected areas (MPAs). There are no developed communities in the project area, and the project area is not subject to an existing habitat conservation plan or natural community conservation plan. Therefore, implementation of the proposed RAMP regulatory amendments would not divide an established community or conflict with an existing habitat conservation plan. The commercial Dungeness crab fishery would continue to operate consistent with the MLPA and restrictions on fishing within MMAs and MPAs. Implementing the project would not result in an increase in commercial crab fishing and would improve conditions for listed whale and sea turtle species, which would be consistent with the goals of the MLPA. For these reasons, implementing the project would not result in significant impacts related to land use, and this issue is not discussed further.

3.1.7 Mineral Resources

Mineral resources in the project area are limited to petroleum hydrocarbon resources, which include oil and gas deposits. The entire coast of California has the potential for oil and gas reservoirs, and active submerged land leases currently produce petroleum hydrocarbons off the southern California coast (CDFW 2002). Implementation of the proposed RAMP regulatory amendments would involve changes only in the operation of the existing commercial Dungeness crab fishery and would not involve activities resulting in the loss of availability of or altered accessibility to any mineral resources. For these reasons, implementing the project would not result in significant impacts related to mineral resources, and this issue is not discussed further.

3.1.8 Noise

Existing noise conditions are governed by the presence of noise-sensitive receptors, the location and type of noise sources, and overall ambient noise levels. Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where a quiet setting is an essential element of their intended purpose. The project area does not contain uses that are generally considered sensitive to increases in exterior noise levels, such as residences, schools, historic sites, or cemeteries, which are all land based. Implementation of the proposed RAMP regulatory amendments would not involve any construction. Therefore, there would not be any construction-related increases in noise. The primary noise sources associated with the commercial Dungeness crab fishery are diesel engines used by fishing and monitoring vessels and engines in aircraft used during aerial surveys. However, these noise sources exist now, and their use in the project area is and will continue to be seasonal and temporary. Implementation of the project would not increase the number of vessels or type of noise sources. In addition, no substantial sources of vibration are associated with continued operation of the commercial Dungeness crab fishery. For the reasons described above, implementing the project would not result in significant impacts related to noise, and this issue is not discussed further.

3.1.9 Population and Housing

No permanent housing is present in the marine-based project area; therefore, no homes would be displaced as a result of implementing the project. If liveaboard vessels are present with maritime residents, the operation of commercial Dungeness crab fishing vessels would not affect them. No homes would be constructed as part of the

proposed RAMP regulatory amendments. Implementation of the project would not result in an increase in employees or jobs associated with operation of the commercial Dungeness crab fishery, because neither the number of vessels nor the length of the season would increase. Implementing the project would not directly or indirectly induce population growth. For these reasons, implementing the project would not result in significant impacts related to population and housing, and this issue is not discussed further.

3.1.10 Public Services

CDFW's Law Enforcement Division is the primary agency responsible for enforcing state fish and wildlife laws and regulations in the project area. The California Division of Boating and Waterways oversees all aspects of recreational boating in California, including public access, safety, and education. The US Coast Guard also patrols all navigable waterways along the coast and coordinates regularly with all sheriff's departments. The project area does not contain any public facilities or services associated with law enforcement, fire protection, public schools, or other public facilities. Implementation of the proposed RAMP regulatory amendments would not result in an increase in population or employment, and public access to the project area would not change. In addition, while some of the regulatory changes may increase the need for enforcement of fishery regulations, the number of permit holders and types of activities allowed would not change, and thus the project would not result in a substantial increase in the demand for law enforcement. Therefore, implementing the project would not cause an increase in demand for police or fire services, public schools, or other governmental services beyond existing conditions. For these reasons, implementing the project would not result in significant impacts related to public services, and this issue is not discussed further.

3.1.11 Recreation

Recreational fishing for several species, including Dungeness crab, occurs throughout the project area. Other recreational uses in the project area include diving, surfing, kayaking, sailing, cruising, and boat-based wildlife viewing. Implementation of the proposed RAMP regulatory amendments primarily applies to the commercial Dungeness crab fishery; however, the Risk Assessment and Mitigation Program also limits recreational fishing when marine life concentration triggers are reached. The project would not result in substantial changes to how the recreational Dungeness crab fishery or any other recreational fisheries are managed in the project area. In addition, implementing the project would not result in an increase in population that could indirectly affect demand for recreational facilities or resources, and no new recreational facilities would be constructed or expanded as part of the project. For these reasons, implementing the project would not result in significant impacts related to recreation, and this issue is not discussed further.

3.1.12 Transportation

Federal regulations concerning marine navigation, codified in 33 CFR Parts 1–399, are implemented by the US Coast Guard and US Army Corps of Engineers. Federal regulations for marine vessel shipping, codified in 46 CFR Parts 1–599, are implemented by the US Coast Guard, Maritime Administration, and Federal Maritime Commission.

The only type of transportation in the project area is vessel traffic, and types of transportation include commercial ships (e.g., tankers, container ships, bulk carriers, military vessels), commercial fishing vessels, research vessels, and recreational boating. The major ports in the project area are in Los Angeles, Long Beach, and San Diego. Several private and public airports in and adjacent to the project area contribute to air traffic over the project area. There are no public transit, bicycle, or pedestrian facilities in the project area, and no congestion management programs are applicable to the project area, because it is located in a marine environment.

With implementation of the proposed RAMP regulatory amendments, vessel traffic would continue to occur in the same project area and would continue to travel to and from the same marinas and boat launching facilities that are currently used for commercial Dungeness crab fishing. Commercial and recreational vessels would continue to

operate in accordance with existing boating regulations governing circulation on waterways. In addition, implementation of the project would not increase vessel congestion in the project area and would not increase the number of fishing permits, which could result in additional vessels on the water. In fact, the number of fishing vessels in the project area or a portion of the project area may be slightly less in some years if the commercial Dungeness crab Fishing Season is shortened in response to management triggers. Implementing the project would not change emergency access in the project area, and no new facilities would be constructed that would involve any design feature related to transportation or traffic-related infrastructure. There may be a small increase in vessel and aircraft traffic related to whale monitoring surveys; however, implementing the project would not involve a substantial increase in vessel or aircraft traffic. For the reasons described above, implementing the project would not result in significant impacts related to transportation, and this issue is not discussed further.

3.1.13 Utilities and Service Systems

Many types of utilities exist off the coast of California, and they can generally be classified into three groups: offshore cables, offshore oil and gas pipelines, and service pipelines. Communication cables, both offshore and onshore, are regulated by the Federal Communications Commission and the California Public Utilities Commission. Offshore pipelines are under the regulatory jurisdiction of federal and state agencies. In federal waters, the Federal Energy Regulatory Commission, US Bureau of Ocean Energy Management, and US Department of Transportation are responsible for regulating various aspects of oil and gas pipelines. The California State Lands Commission; the Pipeline Safety Division of the Office of the State Fire Marshal; and the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources regulate pipelines in state waters. Service pipelines, such as sewage treatment plant outfalls, are regulated by the State Water Resources Control Board through its issuance of National Pollutant Discharge Elimination System permits. The location of many submerged cables and sewage outfalls are identified on National Oceanic and Atmospheric Administration nautical charts. However, the various locations of the US Navy undersea communication cables are generally classified, and their locations are not revealed (CDFW 2002).

Implementation of the proposed RAMP regulatory amendments would not generate any wastewater and the project would not require the construction of new or expanded wastewater treatment facilities. In addition, the project would not require the construction of new or expanded water supply or treatment facilities. No land use changes or development are proposed as part of the project; therefore, implementing the project would not generate stormwater or require construction of new stormwater drainage facilities or the expansion of existing facilities in the project area. Although some solid waste is currently generated by the commercial Dungeness crab fishery, implementation of the project would not result in an overall increase in the level of fishing activity, or the amount of solid waste generated by the fishery. While there are submerged utilities in the project area, the locations of these utilities (except for classified utilities) are identified on navigational maps, and fishing activities are not expected to interfere with utilities. In addition, implementing the project would not result in an increase in the number of traps that would have contact with the seafloor. For the reasons described above, implementing the project would not result in significant impacts related to utilities or service systems, and these issues are not discussed further.

3.1.14 Wildfire

The project area is entirely in the marine environment; therefore, it is not located in a fire hazard severity zone and implementation of the proposed RAMP regulatory amendments would not exacerbate wildfire risks nor expose people to pollutant concentrations from wildfire; to the uncontrolled spread of wildfire; or loss, injury, or death involving wildland fires. Implementing the project would not change emergency access in the project area; therefore, it would not interfere with an emergency response plan. For these reasons, implementing the project would not result in significant impacts related to wildfire, and this issue is not discussed further.

3.2 AIR QUALITY

This section includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by reasonably foreseeable compliance actions in response to implementation of the proposed RAMP regulatory amendments.

No comments related to air quality were made during the notice of preparation scoping period.

3.2.1 Regulatory Setting

Air quality in the project area is regulated through the efforts of various federal and state agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of programs. The agencies responsible for improving the air quality in the air basins are discussed below.

FEDERAL

US Environmental Protection Agency

The US Environmental Protection Agency (EPA) has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress in 1990. EPA's air quality efforts address both criteria air pollutants and hazardous air pollutants (HAPs). EPA regulations concerning criteria air pollutants and HAPs are presented in greater detail below.

Criteria Air Pollutants

The CAA required EPA to establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants found all over the United States, referred to as criteria air pollutants. EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter with an aerodynamic diameter of 10 micrometers or less (PM_{10}), fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less ($PM_{2.5}$), and lead. The NAAQS are shown in Table 3.2-1. The primary standards protect public health, and the secondary standards protect public welfare.

The CAA also required each state to prepare a state implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. California's SIP is modified periodically to reflect the latest emission inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, EPA may prepare a federal implementation plan that imposes additional control measures. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table 3.2-1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California (CAAQS)[a, b]	National (NAAQS)[c] Primary[b, d]	National (NAAQS)[c] Secondary[b, e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	—	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	9.0 µg/m^3	15.0 µg/m^3
	24-hour	—	35 µg/m^3	Same as primary standard
Lead [f]	Calendar quarter	—	1.5 µg/m^3	Same as primary standard
	30-day average	1.5 µg/m^3	—	—
	Rolling 3-month average	–	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No National Standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride [f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m^3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

[a] California standards for ozone, carbon monoxide, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[c] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM_{10} 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. The $PM_{2.5}$ 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the US Environmental Protection Agency for further clarification and current federal policies.

[d] National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016.

Hazardous Air Pollutants and Toxic Air Contaminants

Toxic air contaminants (TACs), or in federal parlance, HAPs, are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally rather than regionally. TACs can cause long-term health effects, such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects, such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and noncarcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 3.2-1). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

STATE

The California Air Resources Board (CARB) is the agency responsible for coordinating and providing oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish California Ambient Air Quality Standards (CAAQS) (Table 3.2-1).

Criteria Air Pollutants

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases, the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to attain and maintain the CAAQS by the earliest date practical. It specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources. The CCAA also provides air districts with the authority to regulate indirect sources.

Toxic Air Contaminants

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (Hot Spots Act) (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, particulate matter (PM) exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that TAC. If a threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including off-road diesel equipment (e.g., commercial fishing vessels). Over time, the replacement of old equipment and engines will result in a fleet that produces substantially lower levels of TACs than under current conditions. Off road-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan and other regulatory programs, it is estimated that emissions of diesel PM will be less than half of those in 2010 by 2035. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

EPA established the NAAQS, and CARB established the CAAQS. Together, CARB and local air districts in California have primary responsibility for implementing the NAAQS and CAAQS at the local level. The air districts are responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development in their air quality plans. To assist in environmental analysis, air districts can develop and adopt CEQA guidelines with either qualitative or numerical thresholds for determining when projects would generate emissions that would result in a significant impact on air quality. In some cases, the air districts' CEQA guidelines require prescriptive mitigation measures that must be implemented if implementing the project would result in a significant air quality impact based on its emissions.

The primary mechanism through which the air districts regulate the emissions of air pollution involves the issuance of permits to stationary sources of air pollution in accordance with the rules and regulations adopted by each district. The districts also review and coordinate projects with other local government agencies to reduce emissions associated with transportation. Each district has review procedures to identify and promote emissions reductions through the application of mitigation measures placed as conditions on specific projects. Commercial fishing vessels, which are the focus of this section, are not directly regulated by any of the individual districts. Like other mobile sources, the emissions from their engines are subject to limits adopted at the federal or state level.

3.2.2 Environmental Setting

The strong influence of the Pacific Ocean, the California Coastal Range, the Sierra Nevada, and the Cascade Range provides climate variations in California that run in a general west-to-east direction. California's climate varies from Mediterranean (coastally and most of the state) to steppe (scattered foothills areas) to alpine (high Sierra Nevada and Cascade Range). Air quality is a function of the climate, topography, and emissions in an area or upwind of that area.

The Sierra Nevada and Cascade Range act as barriers to the passage of air masses. In summer, California is protected from much of the hot, dry air masses that develop over the central United States. Because of this barrier and its western border with the Pacific Ocean, portions of the state, particularly along the coast, generally have a milder summer climate than other parts of the country. Summers are characterized by dry, sunny conditions with infrequent rainfall. In winter, the Sierra Nevada and Cascade Range block cold, dry air masses located in the interior of the United States from moving into California. Consequently, winters in California are milder than would be expected at these latitudes. Specific to the California coast, the temperatures within these areas are regulated by the influence of the Pacific Ocean, which, as a large body of water, has high specific heat and maintains atmospheric temperatures throughout the year. In the northern portion of the California Coast, where the Pacific Ocean's current trends southward from the Arctic Circle, temperatures are typically cooler as compared to the temperatures along the state's southern coast, where the Pacific Ocean's current has begun to warm.

Air pollution in coastal California is occasionally aggravated by daily and seasonal wind patterns. Sea breezes move air pollution inland from coastal areas during the day as cold, dense air moves onshore. Land breezes push pollution back to coastal areas during the night. During winter, inversions can cause the buildup of pollutants in coastal areas due to emissions from industrial facilities, transportation sources, and residential areas.

CRITERIA AIR POLLUTANTS

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. Criteria air pollutants are a group of compounds that are regulated in California and at the national level. They are air pollutants for which acceptable levels of exposure can be determined and an ambient (outdoor) air quality standard has been set. The term "criteria air pollutants" comes from the requirement that EPA must describe the characteristics and potential health and welfare effects of these pollutants. EPA and CARB periodically review new scientific data and may propose revisions to the standards as a result. Criteria air pollutants include ozone, CO, NO_2, SO_2, respirable and fine particulate matter (PM_{10} and $PM_{2.5}$, respectively), and lead. A description of the sources and health effects for each criteria pollutant is summarized in Table 3.2-2.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air in large amounts but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X) in the presence of sunlight (EPA 2022). ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents used primarily in coating and adhesive processes, as well as evaporation of fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels.

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2022). Emissions of the ozone precursors ROG and NO_X have decreased over the past two decades because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2014a).

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2022).

Acute health effects of exposure to NO_X include coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2022).

Particulate Matter

PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2014a; EPA 2022). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, construction and demolition, and particles from residential fuel combustion. Acute health effects of PM_{10} exposure include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (CARB 2014a). Direct emissions of PM_{10} have increased slightly over the last 20 years and are projected to continue to increase slightly through 2035 (CARB 2014b). Ambient $PM_{2.5}$ emissions have remained relatively steady over the last 20 years and are projected to decrease slightly through 2035 (CARB 2014a).

Table 3.2-2 Sources and Health Effects of Criteria Air Pollutants

Pollutant	Sources	Acute[1] Health Effects	Chronic[2] Health Effects
Ozone	Secondary pollutant resulting from reaction of ROG and NO_X in presence of sunlight; ROG emissions result from incomplete combustion and evaporation of chemical solvents and fuels, and NO_X results from the combustion of fuels	Increased respiration and pulmonary resistance; cough, pain, shortness of breath, lung inflammation	Permeability of respiratory epithelia, possibility of permanent lung impairment
Carbon monoxide (CO)	Incomplete combustion of fuels; motor vehicle exhaust	Headache, dizziness, fatigue, nausea, vomiting, death	Permanent heart and brain damage
Nitrogen dioxide (NO_2)	Combustion devices (e.g., boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines)	Coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, death	Chronic bronchitis, decreased lung function
Sulfur dioxide (SO_2)	Coal and oil combustion, steel mills, refineries, and pulp and paper mills	Irritation of upper respiratory tract, increased asthma symptoms	Insufficient evidence linking SO_2 exposure to chronic health impacts
Respirable particulate matter (PM_{10}), Fine particulate matter ($PM_{2.5}$)	Fugitive dust, soot, smoke, mobile and stationary sources, construction, fires, and natural windblown dust, and formation in the atmosphere by condensation and/or transformation of SO_2 and ROG	Breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	Alterations to the immune system, carcinogenesis
Lead	Metal processing	Reproductive/developmental effects (fetuses and children)	Numerous effects, including neurological, endocrine, and cardiovascular effects

Notes: NO_X = oxides of nitrogen; ROG = reactive organic gases.

[1] "Acute" refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.

[2] "Chronic" refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.

Source: EPA 2022.

TOXIC AIR CONTAMINANTS

TACs are air contaminants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health" (CDPH 2014). Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or their acute or chronic health risks. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another.

There are no federal or state standards for allowable ambient concentrations of TACs. However, for TACs that are known or suspected carcinogens, CARB has consistently found that there are no levels or thresholds below which exposure is risk-free. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a hazard index is used to evaluate risk.

SENSITIVE RECEPTORS

For this analysis, sensitive receptors are defined as people, facilities, and areas that are particularly susceptible to the adverse effects of air pollution. They include children, the elderly, and people with illnesses and can include schools, nursing homes, hospitals, and residential areas. Air pollution can cause adverse health effects in humans, including aggravating asthma conditions and other respiratory problems. Under the project, offshore activities would occur in the ocean and would not be located near any sensitive receptors.

3.2.3 Environmental Impact Analysis

METHODOLOGY

The focus of the impact analysis is the potential generation of criteria air pollutants and ozone precursors, TACs, CO, and odors from physical changes to the environment that may occur in response to the reasonably foreseeable compliance responses to the project (see Section 2.5). Implementation of the RAMP regulatory amendments would not require the construction of any new facilities to further the project's objectives. Operational sources of air pollution from the reasonably foreseeable compliance responses to the project would include mobile source emissions from the movement of commercial fishing and monitoring vessels and aircraft throughout the project area, monitoring, and tracking purposes. The change in vessel activity from the project compared to baseline levels of vessel movement is unknown; therefore, operational emissions of criteria air pollutants and ozone precursors are assessed qualitatively.

THRESHOLDS OF SIGNIFICANCE

The significance criteria listed below are based on Appendix G of the State CEQA Guidelines. Air districts in the state also typically recommend mass emissions thresholds of significance for determining the air quality impacts of projects proposed within their jurisdictions. However, as stated previously, activities producing air pollution from the project would occur off the coast of California and would not be beholden to an air district's recommended thresholds of significance. An impact on air quality would be significant if implementation of the project would:

- conflict with or obstruct implementation of the applicable air quality plan,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard,
- expose sensitive receptors to substantial pollutant concentrations, or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

ISSUES NOT DISCUSSED FURTHER

Construction-Generated Emissions of Criteria Air Pollutants and Ozone Precursors

The reasonably foreseeable compliance responses from implementation of the proposed RAMP regulatory amendments (see Section 2.5) would not include the construction of new facilities to support the project's objectives. Therefore, no increase in construction-related emissions of criteria air pollutants and ozone precursors would occur from implementation of the project. Because there would be no construction-related impacts, this impact is dismissed from further consideration.

Substantial Concentrations of Toxic Air Contaminants

The reasonably foreseeable compliance responses from implementation of the proposed RAMP regulatory amendments (see Section 2.5) would not include the construction of new facilities to support the project's objectives; however, some generation of diesel PM would occur from the movement of fishing and monitoring vessels as well as aircraft to monitor wildlife throughout the project area. These emissions would be dispersed throughout the project area, which extends out to 200 nautical miles from the California coastline.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period.

Because of the magnitude of the project area and there are no sensitive receptors within the project area, the amount of diesel PM generated by operation of diesel-powered fishing vessels would not expose receptors to high doses of diesel PM. Moreover, these vessels would generally be moving while operational, and diesel PM is highly dispersive; therefore, the risk of exposing sensitive receptors to high concentrations of diesel PM would be negligible. Because there would be no TAC impacts, this impact is dismissed from further consideration.

Carbon Monoxide Hotspots

The reasonably foreseeable compliance responses from implementation of the proposed RAMP regulatory amendments (see Section 2.5) would not include the generation of any new on-road vehicle trips, but continued fishing activities in the project area would be allowed. Operation of fishing and monitoring vessels would be dispersed throughout the project area, would not create a stationary source of emissions, and would not contribute CO emissions to the degree that a CO hotspot could occur. The operation of vessels could contribute offshore CO emissions that could affect the regional air quality of a California basin; however, this contribution would not be localized such that a CO hotspot could occur. Operation of aircraft would also not produce CO hotspots due to the altitude of operation. Because there would be no CO hotspots from implementation of the project, this impact is dismissed from further consideration.

Odors

The reasonably foreseeable compliance responses from implementation of the proposed RAMP regulatory amendments (see Section 2.5) would not include the introduction of new sources of odors. The project would allow for continued fishing of Dungeness crab off the coast of the state; however, this activity would occur in the project area and would not produce odors that would affect an existing receptors. Because there would be no odor impacts, this impact is dismissed from further consideration.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.2-1: Generate a Substantial Increase in Long-Term Operational ROG, NO_X, PM_{10}, and $PM_{2.5}$ Emissions

Reasonably foreseeable compliance responses from implementation of the project would include the generation of criteria air pollutants and ozone precursors from the movement of commercial fishing and monitoring vessels throughout the project area. However, this level of vessel activity would not be substantially more than the current level of activity associated with the commercial harvest of Dungeness crab. Moreover, implementation of the project would not prohibit or prevent the deployment of fishing vessel-related regulations included in the SIP as overseen by CARB. This impact would be **less than significant**.

The reasonably foreseeable compliance responses from implementation of the RAMP regulatory amendments would include the operation of commercial fishing vessels to harvest Dungeness crab and monitoring of marine life concentrations (see Section 2.5 for a summary of the reasonably foreseeable compliance responses from project implementation). Although the emissions associated with this activity could be transported inland given the characteristics of California's meteorology and historic wind patterns, regional air quality plans do not account for offshore sources of pollution; thus, the regional plans, and associated reduction measures, prepared by coastal air districts have no bearing on emissions generated by coastal vessel activity. In addition, the mass emissions thresholds developed and applied to projects proposed within an air district's jurisdiction are designed in consideration of long-term regional air quality planning. These considerations include the current attainment status of the air basin, existing sources of pollution, and growth projections related to future development and population. These thresholds are applicable to land-based development or maritime construction projects and are not intended to capture emissions generated outside an air district's jurisdiction.

Because mass emissions thresholds and compliance with regional air quality plans are not appropriate thresholds for evaluating the project's significance, the plan that is most relevant to the project is the 2022 State SIP Strategy (2022 SIP).

The 2022 SIP summarizes the regulations adopted by CARB to reduce emissions from all sectors, including the offroad sector, which encompasses maritime vessels. Imbedded in the 2022 SIP are the Commercial Harbor Craft regulation amendments, which were adopted in March 2022. The amendments mandate the accelerated deployment of zero-emission technologies for private vessels, towboats, crew and supply vessels, work boats, pilot vessels, barges, dredges, commercial vessels, and passenger fishing boats. Commercial fishing vessels used to facilitate the capture of Dungeness crab and the monitoring of marine resources would be subject to the benchmark deadlines contained in the Commercial Harbor Craft regulation amendments, as well as any future amendments adopted by CARB. The project would not conflict with the deployment of these amendments.

Implementation of the project would not result in an increase in the number of commercial fishing permits issued or the number of vessels used for fishing, but it would result in a limited increase in the number of survey and active tending vessel and survey aircraft trips. Although implementation of systematic surveys to determine marine life concentrations would potentially result in an increase in vessel or aircraft traffic in the project area, CDFW would use data collected during vessel-based and aerial surveys that are already being conducted by other agencies and organizations as part of the existing baseline of vessel and aircraft activity. Thus, the modest increase in vessel and aircraft activity associated with these efforts would not result in a level of activity that would be substantially greater than what is currently occurring under baseline conditions. While quantifying the increase in vessel activity would be speculative at this time, it is reasonable to conclude that vessel activity would not substantially increase, although the locations of vessel activity may be redistributed based on implementation of Fishing Zone closures, delays, or depth restrictions. It is not expected that this redistribution of vessels would, by itself, result in a cumulatively considerable net increase in pollution for an area that is in nonattainment. In addition, because vessels would be subject to the off-road specific regulations (i.e., 2022 Commercial Harbor Craft regulation amendments), the project would not conflict with the 2022 SIP. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.3 ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

This section evaluates the potential impacts of reasonably foreseeable compliance actions in response to implementation of the proposed RAMP regulatory amendments on known and unknown marine cultural resources. Cultural resources typically include districts, sites, buildings, structures, or objects generally older than 50 years and considered to be important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. They include prehistoric resources, historic-period resources, and "tribal cultural resources" (the latter as defined by Assembly Bill [AB] 52 [Statutes of 2014] in CEQA Section 21074).

Archaeological resources are locations where human activity has measurably altered the earth, including the benthic environment, or left deposits of prehistoric or historic-period physical remains. In the project area, this potentially includes stone tools, food-gathering implements, bottles, shipwrecks, and pier foundations. Historical (or built-environment) resources in the project area include standing intact structures (e.g., lighthouses, piers, jetties). Tribal cultural resources are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe.

One comment letter regarding cultural resources was received in response to the notice of preparation (see Appendix A). The Native American Heritage Commission (NAHC) requested AB 52 and Senate Bill (SB) 18 compliance information. SB 18 does not apply to the project because a general plan amendment (the trigger for SB 18 compliance) is not associated with the project, and compliance with SB 18 is not a CEQA requirement; therefore, it is not discussed in this section. AB 52 compliance is described below.

3.3.1 Regulatory Setting

FEDERAL

National Register of Historic Places

The National Register of Historic Places (NRHP) is the nation's master inventory of known historic properties. It is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

The formal criteria (36 CFR 60.4) for determining NRHP eligibility are as follows:

1. The property is at least 50 years old (however, properties under 50 years of age that are of exceptional importance or are contributors to a district can also be included in the NRHP);
2. It retains integrity of location, design, setting, materials, workmanship, feeling, and associations; and
3. It possesses at least one of the following characteristics:

   Criterion A Is associated with events that have made a significant contribution to the broad patterns of history (events).

   Criterion B Is associated with the lives of persons significant in the past (persons).

   Criterion C Embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant, distinguishable entity whose components may lack individual distinction (architecture).

   Criterion D Has yielded, or may be likely to yield, information important in prehistory or history (information potential).

For a property to retain and convey historic integrity, it must possess most of the seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. Location is the place where the historic property was constructed or the place where a historic event occurred. Integrity of location refers to whether the property has been moved since its construction. Design is the combination of elements that create the form, plan, space, structure, and style of a property. Setting is the physical environment of a historic property that illustrates the character of the place. Materials are the physical elements that were combined or deposited during a particular period and in a particular pattern or configuration to form a historic property. Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. Feeling is a property's expression of the aesthetic or historic sense of a particular period. This intangible quality is evoked by physical features that reflect a sense of a past time and place. Association is the direct link between an important historic event or person and a historic property. Continuation of historic use and occupation help maintain integrity of association.

Listing in the NRHP does not entail specific protection for a property, but it does guarantee consideration in planning for federal or federally assisted projects, eligibility for federal tax benefits, and qualification for federal historic preservation. In addition, project effects on properties listed in the NRHP must be evaluated under CEQA.

The National Register Bulletin series was developed to assist evaluators in the application of NRHP criteria. For example, National Register Bulletin #36 provides guidance in the evaluation of archaeological site significance. If a property cannot be placed within a particular theme or time period, and thereby lacks "focus," it will be unlikely to possess characteristics that would make it eligible for listing in the NRHP.

STATE

California Register of Historical Resources

All properties in California that are listed in or formally determined eligible for listing in the NRHP are also listed in the California Register of Historical Resources (CRHR). The CRHR is a listing of State of California resources that are significant in the context of California's history. It is a statewide program with a scope and with criteria for inclusion similar to those used for the NRHP. In addition, properties designated under municipal or county ordinances are also eligible for listing in the CRHR.

California Historical Landmarks—buildings, structures, sites, or places that have been determined to have statewide historical significance—are also automatically listed in the CRHR. California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the CRHR.

A historical resource must be significant at the local, state, or national level under one or more of the criteria defined in 15 CCR Chapter 11.5 Section 4850 to be included in the CRHR. The CRHR criteria are tied to CEQA because any resource that meets the criteria listed below is considered a significant historical resource under CEQA. As noted above, all resources listed in or formally determined eligible for listing in the NRHP are automatically listed in the CRHR.

The CRHR uses four evaluation criteria:

Criterion 1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history or to the cultural heritage of California or the United States.

Criterion 2. Is associated with the lives of persons important to local, California, or national history.

Criterion 3. Embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of a master; or possesses high artistic values.

Criterion 4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Similar to the NRHP, a historical resource must meet one of the above criteria and retain integrity to be listed in the CRHR. The CRHR uses the same seven aspects of integrity used by the NRHP.

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "historical resources," "unique archaeological resources," and "tribal cultural resources." Pursuant to CEQA Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether projects would have effects on unique archaeological resources. CEQA Section 21084.2 establishes that a "project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."

Historical Resources

"Historical resource" is a term with a defined statutory meaning (CEQA Section 21084.1; State CEQA Guidelines Sections 15064.5[a] and [b]). Under State CEQA Guidelines Section 15064.5(a), historical resources include the following:

1. A resource listed in, or determined to be eligible by the State Historical Resources Commission for listing in, the CRHR is considered a historical resource (PRC Section 5024.1).
2. A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k), or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g) will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
3. Any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be historically significant if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1).
4. The fact that a resource is not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1[k]), or not identified in a historical resources survey (meeting the criteria in PRC Section 5024.1[g]) does not preclude a lead agency from determining that the resource may be a historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Unique Archaeological Resources

CEQA also requires lead agencies to consider whether projects would affect unique archaeological resources. Section 21083.2(g) states that "unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following criteria:

1. Contains information needed to answer important scientific research questions, and there is a demonstrable public interest in that information.
2. Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric (precontact) or historic event or person.

Tribal Cultural Resources

CEQA also requires lead agencies to consider whether projects would affect tribal cultural resources. Section 21074 states:

a) "Tribal cultural resources" are either of the following:

   1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

      A) Included or determined to be eligible for inclusion in the CRHR.

B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Public Resources Code Section 21080.3

AB 52, signed by the California governor in September 2014, established "tribal cultural resources" as a class of resources under CEQA (Section 21074). Pursuant to CEQA Sections 21080.3.1, 21080.3.2, and 21082.3, lead agencies undertaking preparation of an EIR, negative declaration, or mitigated negative declaration, must notify geographically affiliated California Native American tribes, and consult with any tribes that request consultation. CEQA Sections 21080.3.1 and 21080.3.2 state that within 14 days of determining that a project application is complete, or to undertake a project, the lead agency must provide formal notification, in writing, to the tribes that have requested notification of proposed projects in the lead agency's jurisdiction. If it wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. The lead agency must begin the consultation process with the tribes that have requested consultation within 30 days of receiving the request for consultation. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.

If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process, provisions under CEQA Section 21084.3(b) describe mitigation measures that may avoid or minimize the significant adverse impacts. Examples include:

(1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

(2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

(3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

(4) Protecting the resource.

California Native American Historical, Cultural, and Sacred Sites Act

The California Native American Historical, Cultural, and Sacred Sites Act (PRC Section 5097.9) applies to both state and private lands. The act requires, upon discovery of human remains, that construction or excavation activity cease and that the county coroner be notified. If the remains are those of a Native American, the coroner must notify NAHC, which notifies and has the authority to designate the most likely descendant of the deceased. The act stipulates the procedures that the descendants may follow for treating or disposing of the remains and associated grave goods.

Health and Safety Code Section 7050.5

Section 7050.5 of the Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are those of a Native American. If they are determined to be those of a Native American, the coroner must contact NAHC.

Public Resources Code Section 5097

PRC Section 5097 specifies the procedures to be followed if human remains are unexpectedly discovered on nonfederal land. The disposition of Native American burials falls within the jurisdiction of NAHC. Section 5097.5 of the code states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

California Shipwreck and Historic Maritime Resources Program (PRC 6309, 6313, and 6314)

PRC Sections 6309, 6313, and 6314 pertain to the California State Lands Commission's (SLC) Shipwreck and Historic Maritime Resources Program in the following ways. All abandoned shipwrecks and all submerged archaeological sites and historic resources on or in the tide and submerged lands of California are under the jurisdiction of the SLC (PRC Section 6313[a]). PRC Section 6314 prohibits unauthorized removal or damage to submerged archaeological or historic resources, including shipwrecks, aircraft, and Native American sites. The SLC may grant permits for salvage operations, including archaeological investigations, on submerged archaeological or historic sites when the proposed activity is justified by an educational, scientific, or cultural purpose, or there is a need to protect the integrity of the site or the resource (PRC Section 6313[d]). Recreational diving that does not disturb the subsurface or remove artifacts from a submerged archaeological site or historic resource does not require a permit (PRC Section 6309[g]).

LOCAL

No local plans, policies, or regulations related to archaeological, historical, or tribal cultural resources are applicable to the project.

3.3.2 Environmental Setting

ETHNOHISTORY

The native people of California were complex hunter-gatherers who lived in tribal groups. Precontact occupation and use of the coast of California extends from 5,000 to 8,000 years and possibly longer. Habitation sites along the California coast appear to have been selected for accessibility; protection from wind, rain, and seasonal flooding; and the availability of resources. The large shell mounds along much of the California coastline indicate the importance that tribal groups placed on marine life, such as pelagic fish, mollusks, and marine mammals. These mounds were especially large and numerous south of Point Conception, in Monterey, in San Francisco Bay, and along the coast north of San Francisco. The principal component of these mounds is shells from edible mollusks, but in some areas, especially the extreme north and along the Santa Barbara Channel, the bones of marine mammals are also documented. Staple foods of coastal tribal peoples included acorns, marine mammals, shellfish, fish, and other seafoods. Although marine mammals (such as the sea lion, sea otter [*Enhydra lutris*], and harbor seal [*Phoca vitulina*]) were harvested for food and other uses, the most important food resources were probably salmon and other anadromous fish (Baumhoff 1963: 177, Heizer 1978: 16–17).

Coastal sites and staging areas for fishing, marine mammal hunting, and other resource-gathering activities, which were numerous, have been reasonably well documented in archaeological and ethnographic literature. The same is

true of similar sites and staging areas on islands that are larger or close to the mainland (e.g., the Channel Islands and Gunther Island). Published ethnographic literature for coastal tribes discusses how these offshore islands were used for procuring resources and as meeting areas to discuss matters of importance with other villages and tribes (Gould 1978; Bean and Theodoratus 1978).

Tribal people view themselves as an intrinsic part of the ecosystem (Eglash 2002). For tribes and tribal communities, everything in the natural world is culturally significant (InterTribal Sinkyone Wilderness Council 2010). Tribal communities have long cultural traditions of gathering, harvesting, and fishing for cultural and religious purposes, as well as for subsistence. Their relationship with the natural world reflects their deep connection to the environment. Tribal people believe they have an ongoing responsibility to be stewards of their ancestral lands and resources through sustainable management. Furthermore, tribal people continue to rely on the coast and ocean for a variety of important uses, such as spiritual ceremonies, songs, dances, rituals, and subsistence harvesting and gathering (CDFG 2010).

In some regions of California, tribes continue to reside in or near their ancestral homelands. This occurs in greater numbers on the northern California coast than in other areas of the state. The project area encompasses the traditional homes of approximately 26 tribes, which are grouped as follows by region:

- North Coast (California-Oregon border to Alder Creek): Cahto, Chilula, Hupa, Karuk, Lassik, Mattole, Nogati, Pomo, Tolowa, Sinkyone, Wailaki, Whilkut, Wiyot, Yuki, and Yurok;
- Northern Central Coast (Alder Creek/Point Arena to Pigeon Point): Coast Miwok, Ohlone, and Pomo;
- Central Coast (Pigeon Point to Point Conception): Chumash, Ohlone, and Salinan; and
- South Coast (Point Conception to California-Mexico border): Chumash, Gabrieliño/Tongva, Juaneño/Acagchemem, Kumeyaay, and Luiseño.

However, tribal groups in addition to those listed above also may use coastal resources for religious, traditional, or spiritual ceremonies. Marine and coastal resources continue to be a part of the daily lives of many tribes for a variety of important uses, such as spiritual ceremonies, songs, dances, rituals, diving, and subsistence harvesting and gathering (CDFG 2009). In modern days, important marine resources include salmon, clams and abalone, mussels, seaweed, eels, crab, rockfish, steelhead, trout, sea bass, perch, lingcod, surf fish, candle fish, and sea salt (CDFG 2010). Marine shells, such as abalone and Olivella shells, are especially important for repairing and making traditional garments used in ongoing tribal ceremonies (Kroeber and Gifford 1949; Sundberg 2008). Certain areas along the coast, such as submerged burial grounds, are highly valued for their historic significance (Erlandson et al. 2007).

Geological resources also have traditional cultural significance. Steatite and chert are mined to make items such as polished stone bowls and pipes and flaked-stone knives and arrow points, respectively (InterTribal Sinkyone Wilderness Council 2010). Other geological features along the coast and in nearshore or offshore settings feature in origin stories and religious and ceremonial traditions of tribal people. For example, most sea stacks, offshore rocks, and rocky points or prominences have ancient language place names and creation stories associated with them. Certain areas along the coast, including submerged burial grounds and village sites, have additional historic, archaeological, and traditional cultural significance.

HISTORIC SETTING

The first documented European contact with California was during the 1542–1543 Spanish expedition of Juan Rodríguez Cabrillo up the coast from Mexico as far as Monterey. With no evidence of gold or silver to encourage conquest, and no competition, the Spanish had little interest in further exploration at that time. In 1579, Sir Francis Drake of England landed at the bay now named after him, approximately 30 miles north of San Francisco. He stayed long enough to repair and restock his ships, claiming the land for England (California State Parks 2013: 44).

By the late 1700s, the Spanish Crown realized that its claim to land north of Mexico was not assured without colonization. As a result, the Franciscan Order was chosen to establish missions in Alta California. Twenty-one missions, built with Indian labor, were founded by the Franciscans south to north, from San Diego de Alcalá in 1769 to San Francisco Solano in Sonoma in 1821. In addition to a small military guard at each mission, there was usually a

larger military post nearby, with four presidios, or fortified bases, established at San Diego (1769), Monterey (1770), San Francisco (1776), and Santa Barbara (1782). During the Spanish occupation, the Russians kept to the north, establishing Fort Ross in 1812 as the southernmost settlement in the Russian colonization of North America (California State Parks 2013: 44).

In 1822, Mexico achieved independence from Spain, and the mission system was secularized. The territorial governors distributed mission lands, up to 50,000 acres per person, to approximately 700 people. Some ranchos were even larger because requests were made in the name of multiple family members. Land ownership conferred great power in the region, at least until the Land Act of 1851 redefined who held rights to the ranchos, requiring proof of ownership. In early 1845, the American annexation of Texas caused Mexico to sever diplomatic relations with the United States, and war was declared in May 1846. The Bear Flag of the California Republic was raised over the plaza at Sonoma on June 14, 1846, and within 3 weeks, American naval forces formally proclaimed American rule over the presidios and coastal towns. California was ceded to the United States in 1848 with the Treaty of Guadalupe Hidalgo, ending the Mexican-American War (California State Parks 2013:44).

Since the Gold Rush era, the commercial fishing industry has been one of the primary industries along the California coast. The Dungeness crab fishery is one of the oldest commercial fisheries in California. Dungeness crab fishermen first began harvesting crab in 1848 off the coast of San Francisco. The oyster fishery began during the 1850s with arrival of settlers from the traditional oyster fishing areas on the east coast. The abalone fishery, which became closely associated with the Monterey Bay area, dates from the 1860s. The squid fishery was initiated by Chinese fisherman in 1863 in Monterey Bay. The arrival of highly skilled Japanese and European immigrant fishermen from Portugal, Italy, former Yugoslavia, and Scandinavia in the early 20th century brought a substantial increase in the commercial success of California fisheries, including record catches of halibut (1919) and swordfish (1927) (Jones & Stokes 2006). Although the Dungeness crab fishery was focused around the San Francisco area when it began in the mid-1800s, expansion to other areas along the California coast did not occur until the mid-1940s. During the 1944-1945 Fishing Season, the fishery expanded north into the Eureka-Crescent City area, and during the following Fishing Season, it expanded south (NOAA 2011).

KNOWN RESOURCES

Precontact Archaeology

Much of the current coastal region of California consists of steep, actively eroding coastal bluffs and small pocket beaches. An important factor in coastal California's paleoenvironmental history has been the evolution of the estuary systems along the coast. Many early archaeological sites would have been present along estuary boundaries, areas that are now completely submerged because of the rise in sea level during the late Pleistocene and early Holocene (15,000–10,000 years ago) (Moratto 1984). Precontact sites and artifacts include ceremonial sites, burial grounds and village sites, stone and shell tools, shell and ceramic middens, shell mounds, and rock milling features that indicate food processing sites or larger habitation sites. Many resources, including precontact artifacts and sites, likely lie submerged beneath the water, undiscovered or unrecorded because of the general lack of investigation. However, it is likely that the tribes have particular knowledge of the location of archaeological sites beneath the water that are of cultural importance for them.

Historic-Era Archaeology

Offshore islands and rocky outcroppings along the California coast have been used by the Spanish and Russians for hunting activities and for docking or anchoring their ships. These rocks were also used to stabilize logging flumes that would convey timber to ships that were anchored offshore in the absence of a pier or shoreline dock. Some of the offshore rocks and islands also served as locations for navigational aids, such as lighthouses (Bischoff 2005).

These offshore rocks have also been responsible for numerous shipwrecks throughout California's history. Shipwrecks are the most well-known historic artifacts that lie beneath the water. The SLC shipwreck database lists more than 1,500 shipwreck sites off the coast of California (SLC 2023). Because of the sensitivity of known underwater resources

and the risk of looting or other damage (intentional or unintentional) to the artifacts and sites, their precise locations are kept confidential.

Of the 1,549 known shipwrecks, 682 do not have a county designation, and 80 are not located along coastal counties but instead are along rivers and the Sacramento-San Joaquin Delta. The remaining 787 shipwrecks are located in the following counties, which approximately match the RAMP's existing Fishing Zones:

- Del Norte and Humboldt: 91
- Mendocino: 124
- Sonoma, Marin, San Francisco, and San Mateo: 237
- Santa Cruz and Monterey: 29
- San Luis Obispo and Santa Barbara: 82
- Ventura, Los Angeles, Orange, and San Diego: 224

Historical Resources

Many historical resources in the project area are identified through historic building surveys and cultural resource studies. Historical resources that have been listed in the CRHR, which means they have met established criteria and are significant at the local, state, or national level (see details in Section 3.3.1, "Regulatory Setting," above), are shown on the Office of Historic Preservation website. However, these resources do not include those that have been evaluated as eligible but that are not listed on the register or resources that have been listed on a local register.

Table 3.3-1 lists known historical resources in the project area as identified in the CRHR by the State Historical Resources Commission. It presents them by county group, which approximately matches the RAMP's existing Fishing Zones. This is not a comprehensive list of project area resources in the CRHR and does not reflect resources listed in the CRHR by consensus determination (Office of Historic Preservation 2023).

Table 3.3-1 Listed Historical Resources in the Project Area

Resource Name	NRHP	CRHR	CHL
Zone 1. Del Norte and Humboldt Counties			
Crescent City Lighthouse, Del Norte County	X	X	
St. George Reef Light Station, Del Norte County	X	X	
Punta Gorda Light Station, Humboldt County	X	X	
Trinidad Head Light Station, Humboldt County	X	X	
Zone 2. Mendocino County			
Point Arena Light Station, Mendocino County	X	X	
Point Cabrillo Light Station, Mendocino County	X	X	
Zone 3. Sonoma, Marin, San Francisco, and San Mateo Counties			
Bodega Bay and Harbor, Sonoma County			X
Salt Point Landing Historical and Archaeological District, Sonoma County	X	X	
Point Bonita Light Station, Marin County	X	X	
Point Reyes Light Station, Marin County	X	X	
Point Reyes Lifeboat Rescue Station, Marin County	X	X	
Brock Schreiber Boathouse and Beach, Marin County	X	X	
Drakes Bay Historic and Archeological District, Marin County	X	X	
C.A. Thayer (schooner), San Francisco County	X	X	
Balclutha (ship), San Francisco County	X	X	

Resource Name	NRHP	CRHR	CHL
Alma (schooner), San Francisco County	X	X	
Eureka (steamboat), San Francisco County	X	X	
Hercules (tugboat), San Francisco County	X	X	
SS Jeremiah O'Brien (ship), San Francisco County	X	X	
USS Pampanito (submarine), San Francisco County	X	X	
M.V. Santa Rosa (ferry), San Francisco County	X	X	
Drydock 4 Hunters Point Naval Shipyard, San Francisco County	X	X	
Hunters Point Commercial Drydock Historic District, San Francisco County	X	X	
Yerba Buena Island Lighthouse, San Francisco County	X	X	
San Francisco/Oakland Bay Bridge, San Francisco County	X	X	
Golden Gate Bridge, San Francisco County	X	X	
Central Embarcadero Piers Historic District, San Francisco County	X	X	
Point Montara Light Station, San Mateo County	X	X	
Pigeon Point Lighthouse, San Mateo County	X	X	
Zone 4. Santa Cruz and Monterey Counties			
Point Sur Light Station, Monterey County	X	X	
Point Pinos Lighthouse, Monterey County	X	X	
Zone 5. San Luis Obispo and Santa Barbara Counties			
Port San Luis Site, San Luis Obispo County	X	X	
Piedras Blancas Light Station, San Luis Obispo County	X	X	
San Luis Obispo Light Station, San Luis Obispo County	X	X	
Point Conception Light Station, Santa Barbara County	X	X	
Zone 6. Ventura, Los Angeles, Orange, and San Diego Counties			
Anacapa Island Light Station, Ventura County	X	X	
Malibu Historic District, Los Angeles County	X	X	
RMS Queen Mary (ship), Los Angeles County	X	X	
Zumbrota (yacht), Los Angeles County	X	X	
Los Angeles Harbor Light Station, Los Angeles County	X	X	
Point Fermin Lighthouse, Los Angeles County	X	X	
Point Vicente Lighthouse, Los Angeles County	X	X	
Wild Goose (yacht), Orange County	X	X	
Huntington Beach Municipal Pier, Orange County	X	X	
Berkeley (ferryboat), San Diego County	X	X	
Pilot (boat), San Diego County	X	X	
Renown (yacht), San Diego County	X	X	
Star of India (ship), San Diego County	X	X	
Old Point Loma Lighthouse, San Diego County	X	X	

Notes: NRHP = National Register of Historic Places; CRHR = California Register of Historical Resources; CHL = California Historical Landmark.

Source: Data compiled by Ascent in 2023.

Tribal Cultural Resources

There continue to be many traditional cultural uses of the coast and ocean waters by tribal people that are consumptive and nonconsumptive. Consumptive uses include traditional subsistence, medicinal, spiritual, and ceremonial contexts. Nonconsumptive use examples include use of the viewshed from a particular place for spiritual purposes. Tribal cultural resources are of particular significance to tribes and tribal communities for the continuation of traditional religious and ceremonial activities and for the continuation of traditional cultural harvesting and gathering. California native plants and animals can also be tribal cultural resources. In addition, specific areas are identified for certain resources or uses by a given family, tribe, or group of tribes.

On August 29, 2022, CDFW sent out letters to tribal representatives in accordance with its Tribal Communication and Consultation Policy; 317 tribal representatives were contacted.

Two tribes, the Agua Caliente Band of Cahuilla Indians and the Rincon Band of Luiseño Indians, responded stating that the project is not located within their Traditional Use Area/Area of Historic Interest and deferring to the tribes located closer to the project area, which may have pertinent information. The Habematolel Pomo Cultural Resources Department reviewed the project and requested that CDFW continue to provide it with updates regarding the project. No tribes requested formal consultation with CDFW.

3.3.3 Environmental Impact Analysis

METHODOLOGY

The focus of the impact analysis is on the potential physical changes to the environment that may occur in response to the reasonably foreseeable compliance responses to the proposed RAMP regulatory amendments (see Section 2.5). The environmental analysis identifies those resources that may be present in the water or buried beneath the seafloor because the proposed project would affect only marine areas. A cultural resources inventory, including records search and survey, was not performed and is not needed because of the large geographic area—the EEZ from the California/Oregon border in the north to the California/Mexico border in the south and 200 nautical miles offshore—encompassed by the project and the open ocean character of the project area.

CEQA Section 21083.2(g) defines a "unique archaeological resource" as an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets one or more of the following CRHR-related criteria: (1) it contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information; (2) it has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) it is directly associated with a scientifically recognized important precontact or historic event or person. An impact on a resource that is not unique is not a significant environmental impact under CEQA (State CEQA Guidelines Section 15064.5[c][4]). If an archaeological resource qualifies as a resource under CRHR criteria, then the resource is treated as a unique archaeological resource for the purposes of CEQA.

CEQA Section 21074 defines "tribal cultural resources" as "sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that are listed or determined eligible for listing in the CRHR, listed in a local register of historical resources, or otherwise determined by the lead agency to be a tribal cultural resource.

For the purposes of the impact discussion, "historical resource" is used to describe built-environment historic-period resources. Archaeological resources (both precontact and historic-period), which may qualify as "historical resources" pursuant to CEQA, are analyzed separately from built-environment historical resources.

THRESHOLDS OF SIGNIFICANCE

An impact on cultural resources would be significant if implementation of the project would:

- cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the State CEQA Guidelines;
- cause a substantial adverse change in the significance of a tribal cultural resource, defined in CEQA Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe; or
- disturb any human remains, including those interred outside of formal cemeteries.

ISSUES NOT DISCUSSED FURTHER

Human Remains

Precontact or historic-era marked or unmarked human interments are present throughout the landscape of California but would not be an issue for the open ocean setting of the proposed RAMP regulatory amendments. California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and PRC Section 5097. However, the reasonably foreseeable compliance responses associated with the proposed RAMP regulatory amendments (see Section 2.5) do not include any ground-disturbing activities where human remains might be present. Therefore, implementation of the project would have no impact on human remains. This issue is not discussed further in this EIR.

Historical Resources

Historical resources include standing buildings (e.g., lighthouses, warehouses, offices) and intact structures (e.g., piers, bridges) that have been evaluated as appearing eligible for listing in the CRHR. Damage to a building or structure that is a designated historic resource, as defined in State CEQA Guidelines Section 15064.5, could result in a change in its historical significance. However, the reasonably foreseeable compliance responses associated with the proposed RAMP regulatory amendments (see Section 2.5) would occur in the open ocean. They would not include any activities that could result in damage to buildings or structures. Therefore, implementation of the project would have no impact on historical resources. This issue is not discussed further in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.3-1: Cause a Substantial Adverse Change in the Significance of Unique Archaeological Resources

The project is not anticipated to result in additional seafloor–disturbing activities above baseline conditions that could result in discovery of or damage to as-yet-undiscovered archaeological resources as defined in State CEQA Guidelines Section 15064.5. In addition, current state law prohibits all unauthorized salvage and removal of artifacts from submerged shipwrecks, aircraft, and other archaeological resources in state waters. This impact would be **less than significant**.

As described above, because this document covers a large geographic area that is underwater in the open ocean, a records search and survey of the project area was not conducted and is not considered necessary. Approximately 780 shipwrecks are known to be located along California's coast (SLC 2023); it is possible that previously unrecorded shipwrecks are in the project area. In addition, shipwreck locations are often recorded at the site where the vessel was last seen and might not indicate where the sunken vessel settled on the seafloor.

The project proposes to amend the RAMP regulations for the commercial Dungeness crab fishery. The project is not anticipated to result in additional seafloor–disturbing activities above baseline conditions that could result in discovery of or damage to undiscovered subsurface archaeological resources. Traps deployed for Dungeness crab fishing would not cause substantial disturbance to the seafloor or be expected to result in damage to subsurface archaeological resources because fishing primarily occurs in soft-bottom (sand and silt) habitat which is prone to natural disturbances and generally considered to be more resilient to fishing impacts than other more structurally complex habitats. Furthermore, the project would not result in additional fishing permits or deployment of more traps overall. Specific measures implemented under the proposed RAMP regulatory amendments may include closures or delays in the opening of one or more Fishing Zone(s) or include crab gear depth constraints in response to entanglement risk. These specific measures could result in an increase in the magnitude or concentration of crab fishing activities in recently opened Fishing Zones, including those Fishing Zones that open under a depth restriction. However, the "fair start provision" would prevent an influx of crab fishing activities in recently opened Fishing Zones. Project implementation would include implementation of systematic surveys by survey vessels and aircraft to determine marine life concentrations and may include active tending that could result in a slight increase in vessel and aircraft activity in the project area. However, these activities would not involve substantial seafloor disturbance. Implementation of the existing trap gear retrieval program under 14 CCR Section 132.7 involves retrieval of lost or abandoned traps from the seafloor. If snagging of a previously unknown archaeological resource was to occur during these activities, this could result in the discovery or damage to an undiscovered subsurface archaeological resource. However, as described in the "Trap Gear Retrieval Program" section in the discussion of Impact 3.6-1, in Section 3.6, "Marine Biological Resources," with project implementation, the incidence of lost or abandoned gear is anticipated to decrease; therefore, gear retrieval activities would not be expected to result in an increase in the discovery of or damage to undiscovered subsurface archaeological resources above baseline conditions. For these reasons, the project would not result in a substantial increase in seafloor–disturbing activities above baseline conditions that could result in discovery of or damage to undiscovered subsurface unique archaeological resources. Furthermore, current state law prohibits all unauthorized salvage and removal of artifacts from submerged shipwrecks, aircraft, and other archaeological resources in state waters (PRC Sections 6313 and 6314), and the project would be required to comply with existing state law. Therefore, the impact on unique archaeological resources, including shipwrecks, would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.3-2: Cause a Substantial Adverse Change in the Significance of a Tribal Cultural Resource

CDFW sent notification for consultation to 317 tribes. Three responses were received during the 30-day response period for AB 52 as defined in CEQA Section 21080.3.1, but none identified any tribal cultural resource as defined by CEQA Section 21074. Because the proposed project does not include a substantial increase in seafloor–disturbing activities above baseline conditions that could damage subsurface artifacts, would not impede traditional ceremonial activities or alter viewsheds, and would not have an adverse effect on wildlife, all of which could be identified as tribal cultural resources, the impact on tribal cultural resources would be **less than significant**.

CDFW sent out letters to 317 tribal representatives in accordance with its Tribal Communication and Consultation Policy. The Habematolel Pomo Cultural Resources Department reviewed the project and requested that CDFW continue to provide it with updates regarding the project. No tribes requested formal consultation with CDFW.

The project does not include any land use changes, development, or other modifications that would restrict existing tribal uses of areas, if any, or viewsheds. The project is not anticipated to result in a substantial increase in seafloor–disturbing activities above baseline conditions that could result in discovery of or damage to undiscovered subsurface tribal cultural resources. Deployment of commercial Dungeness crab traps would not cause substantial disturbance to the seafloor or be expected to result in damage to subsurface tribal cultural resources. Furthermore, the project would not result in additional fishing permits or deployment of more traps overall. Specific measures implemented under the proposed RAMP regulatory amendments may include closures or delays in the opening of one or more

Fishing Zone(s) or include crab gear depth constraints in response to entanglement risk. These specific conservation measures could result in an increase in the magnitude or concentration of crab fishing activities in recently opened Fishing Zones, including those Fishing Zones that open under a depth restriction. However, the "fair start provision" would prevent an influx of crab fishing activities in recently opened Fishing Zones. Project implementation would include implementation of systematic surveys by survey vessels and aircraft to determine marine life concentrations and revised active tending requirements that could result in a slight increase in vessel and aircraft activity in the project area. However, these activities would not involve a substantial increase in seafloor disturbance. Implementation of the trap gear retrieval program under 14 CCR Section 132.7 involves retrieval of lost or abandoned traps from the seafloor. If snagging of a previously unknown tribal cultural resource was to occur during these activities, this could result in the discovery or damage to an undiscovered subsurface tribal cultural resource. However, as described in the "Trap Gear Retrieval Program" section in the discussion of Impact 3.6-1, in Section 3.6, "Marine Biological Resources," with project implementation, the incidence of lost or abandoned gear is anticipated to decrease; therefore, gear retrieval activities would not be expected to result in a substantial increase in the discovery of or damage to undiscovered subsurface tribal cultural resources above baseline conditions. In addition to subsurface artifacts, California native plants and animals can also be tribal cultural resources. Implementation of the previously discussed systematic surveys and trap gear retrieval program could result in an increase in vessel and aircraft activity in the project area. However, the modest increase in vessel and aircraft activity associated with these efforts would not be substantial, and existing regulatory protections (see Section 3.6, "Marine Biological Resources") would prevent adverse effects on special-status wildlife.

Because the proposed project would not impede traditional ceremonial activities or alter viewsheds, would not result in additional seafloor–disturbing activities above baseline conditions that could damage subsurface artifacts, and would not have an adverse effect on special-status wildlife, all of which could be identified as tribal cultural resources, the impact on tribal cultural resources would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.4 GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions, a summary of climate change science and GHG sources in California, a qualitative analysis of project-generated GHG emissions, and a discussion about their contribution to global climate change.

No comments related to climate change were made during the notice of preparation scoping period.

3.4.1 Regulatory Setting

FEDERAL

In *Massachusetts et al. v. Environmental Protection Agency et al.,* 549 U.S. 497 (2007), the Supreme Court of the United States ruled that carbon dioxide (CO_2) is an air pollutant as defined under the federal Clean Air Act and that the United States Environmental Protection Agency (EPA) has the authority to regulate GHG emissions.

EPA has adopted exhaust emission standards for marine diesel engines installed in marine vessels ranging in size and application from small recreational vessels to tugboats and large, ocean-going vessels. On February 10, 2023, EPA amended Part 1042 of Title 40 of the Code of Federal Regulations. The amendments apply to the national marine diesel engine program and provide relief provisions to address concerns associated with installing Tier 4 marine diesel engines in some commercial vessels, which could include fishing vessels.

STATE

Statewide GHG Emission Targets and Climate Change Scoping Plan

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the California Legislature include reducing statewide GHG emissions to 40 percent below 1990 levels by 2030 (Senate Bill 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050. This target was superseded by Assembly Bill (AB) 1279, passed on September 16, 2022, which codifies a goal for carbon neutrality and an 85-percent reduction in emissions below 1990 levels by 2045. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2 degrees Celsius, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius (United Nations 2015).

The California Air Resources Board (CARB) released the *Final 2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on November 16, 2022, as directed by AB 1279 (CARB 2022). It identifies the reductions needed by each GHG emission sector (e.g., transportation [including off-road mobile source emissions], industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). The reductions made in the 2022 Scoping Plan rely on the functionality of many regulations, plans, and programs, including the Commercial Harbor Craft regulation, to reduce emissions from diesel engines on commercial harbor craft vessels, and subsequent amendments (the most recent occurring in March 2022). The 2022 Scoping Plan traces the pathway for the state to achieve its carbon neutrality and an 85-percent reduction in 1990 emissions goal by 2045 using a combined top-down, bottom-up approach under various scenarios. CARB adopted the 2022 Scoping Plan on December 16, 2022.

LOCAL

Unlike regional air pollution, emissions of GHGs are not location specific and have a global impact regardless of the location where they are emitted. For CEQA purposes, local air districts and their CEQA guidelines (if available) are

used as resources for assessing the significance of GHG emissions in environmental documents. Air districts in the state support a variety of different thresholds for determining a project's contribution to climate change, including application of project design features, consistency with local climate action plans, compliance with the state's Cap-and-Trade Program, and numerical mass-emission thresholds. Any emissions generated by the compliance responses to the project would occur from the movement of fishing and monitoring vessels, which would generate GHG emissions offshore, outside of the jurisdiction of an air district. Moreover, the aforementioned recommended methods of analyzing GHG impacts are most appropriately applied to land use development or stationary source projects that introduce new electrical demand; introduce use of GHG-emitting equipment; and generate new vehicle trips, wastewater, and solid waste. Because of the character of the proposed RAMP regulatory amendments and reasonably foreseeable compliance responses (see Section 2.5), the available guidance provided by air districts is unsuitable for use in this analysis.

3.4.2 Environmental Setting

PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect, leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about 1 day), GHGs have long atmospheric lifetimes (1 to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remain stored in the atmosphere (IPCC 2013: 467).

The quantity of GHGs in the atmosphere that ultimately results in climate change is not precisely known but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature or to global climate, local climates, or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

GREENHOUSE GAS EMISSION SOURCES

As discussed previously, GHG emissions are attributable in large part to human activities. The total GHG inventory for California in 2020 was 370 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) (CARB 2022). This is less than the 2020 target of 431 $MMTCO_2e$ (CARB 2022).

Table 3.4-1 summarizes the statewide GHG inventory for California.

Table 3.4-1 Statewide GHG Emissions by Economic Sector (2020)

Sector	Emissions ($MMTCO_2e$)	Percent
Transportation	141	38%
Industrial	85	23%
Electricity generation (in state)	41	11%
Agriculture and forestry	33	9%
Residential	30	8%
Commercial	22	6%
Electricity generation (imports)	19	5%
Total	**370**	**100%**

Note: $MMTCO_2e$ = million metric tons of carbon dioxide equivalents.

Source: CARB 2022.

As shown in Table 3.4-1, transportation, industrial, and electricity generation (in state) are the largest GHG emission sectors.

Emissions of CO_2 are byproducts of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3–7 degrees Fahrenheit (°F) by the end of the century, depending on future GHG emission scenarios (IPCC 2014). According to California's Fourth Climate Change Assessment, temperatures in California are projected to increase by 5.6 to 8.8°F by 2100 (OPR et al. 2018a: 23).

Other environmental resources could be indirectly affected by the accumulation of GHG emissions and resulting rise in global average temperature. In recent years, California has been marked by extreme weather and its effects. According to the California Natural Resources Agency's report *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra Nevada snowpack on record in 2015 and 2014 (CNRA 2018). In contrast, the northern Sierra Nevada experienced its wettest year on record in 2016 (CNRA 2018). The changes in precipitation exacerbate wildfires throughout California, increasing their frequency, size, and devastation. As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2018). Furthermore, in the extreme scenario involving the rapid loss of the Antarctic ice sheet, sea level along California's coastline could rise up to 10 feet by 2100, which is approximately 30–40 times faster than sea level rise experienced over the last century (CNRA 2018).

Water availability and changing temperatures, which affect the prevalence of pests, disease, and species, also directly affect terrestrial crop development and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health (CNRA 2018). Water resource–related vulnerabilities also include potential degradation of watersheds, alteration of ecosystems and loss of habitat, impacts on coastal areas, and ocean acidification (CNRA 2018). The ocean absorbs approximately one-third of the CO_2 released into the atmosphere every year from industrial and agricultural activities, changing the chemistry of the ocean by decreasing the pH of seawater. Ocean acidification affects many shell-forming species, including oysters, mussels, abalone, crabs, and the microscopic plankton that form the base of the oceanic food chain (Kroeker et al. 2010, 2013). In addition, significant changes in the behavior and physiology of fish and invertebrates attributable to rising CO_2 and increased acidity have already been documented (OPR et al. 2018a).

California's ocean supports a vast diversity of marine life, as well as commercial fishing businesses and communities that depend on fish and shellfish for their livelihoods and that provide a diverse supply of seafood to the state and for export. In 2012, approximately 1,900 commercial fishing vessels operated in California, and 7,700 jobs were supported by recreational marine fishing. California is much less susceptible to the impacts of climate change on recreational and commercial fishing than other regions, but the state's role in providing wild-caught fish to a global market will be affected. In the last few years, California has experienced an unprecedented marine heat wave, resulting in closures of fisheries and a significant loss of northern kelp forests. Between 2014 and 2016, typical seasonal dynamics in the northeast Pacific were disrupted by a Large Marine Heatwave (LMH) event colloquially known as "The Blob." Driven by changes in sea level pressure, this LMH event had profound impacts on ocean circulation patterns that cascaded throughout the ecosystems of the California Current System, a highly productive coastal ecosystem spanning the West Coast of North America from British Columbia to Baja California. One such restricted upwelling event, which occurred in the 2015-2016 period, compressed available forage into a relatively narrow band along the coast. When large whales arrived off the California coast, their distribution was similarly compressed into nearshore areas where active Dungeness crab fishing was occurring. The convergence of these factors likely contributed to the record number of confirmed large whale entanglements along the West Coast in 2016 (n = 56), 22 (39 percent) of which involved California commercial Dungeness crab gear. There is increasing evidence that sea-level rise, ocean acidification, and ocean warming associated with climate change are transforming and degrading California's coastal and marine ecosystems (OPR et al. 2018b).

3.4.3 Environmental Impact Analysis

METHODOLOGY

The focus of the impact analysis is the potential generation of GHG emissions from physical changes to the environment that may occur in response to the reasonably foreseeable compliance responses to the project (see Section 2.5). The project would not require the construction of any new facilities to further the project's objectives. Operational sources of GHG emissions from the reasonably foreseeable compliance responses to the project would include fishing and monitoring vessels moving through the project area for fishing, monitoring, and tracking purposes. The delta in vessel activity from the project compared to baseline levels of vessel movement is unknown; therefore, operational emissions of GHG emissions are assessed qualitatively.

THRESHOLDS OF SIGNIFICANCE

The issue of global climate change is inherently a cumulative issue because the GHG emissions of individual projects cannot be shown to have any material effect on global climate. Thus, the project's impact on climate change is addressed only as a cumulative impact.

State CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. Under Appendix G of the State CEQA Guidelines, implementing a project would result in a cumulatively considerable contribution to climate change if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or
- conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs.

With respect to GHG emissions, State CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The State CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or performance-based standards" (Section 15064.4[a]). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change" (Section 15064.4[c]). The State CEQA Guidelines state that the lead agency should consider the following factors when determining the significance of impacts from GHG emissions on the environment (Section 15064.4[b]):

- the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting;
- whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
- the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

Appendix G of the State CEQA Guidelines is a sample initial study checklist that includes inquiries related to the subject of climate change, as it does on a series of additional environmental topics. Lead agencies are under no obligation to use these inquiries when fashioning thresholds of significance for subjects addressed in the checklist (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather, with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance" (*Ibid*). Even so, it is a common practice for lead agencies to take the language from the inquiries set forth in Appendix G and to use that language in fashioning thresholds. CDFW has done so here.

As stated above and provided in Section 15064(b) of the State CEQA Guidelines, a project or plan may assess the significance of a climate change impact by evaluating the extent that a project may increase or reduce GHG emissions as compared to baseline conditions. This threshold of significance will be applied to determine whether the project's contribution to climate change would be substantial. Using this significance criterion, the project would have a cumulatively considerable contribution to climate change if it would:

- result in an increase in GHG emissions compared to baseline conditions.

ISSUES NOT DISCUSSED FURTHER

All issues related to climate change are addressed in this analysis.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Generate GHG Emissions That May Exceed Existing Levels of Baseline Emissions

The reasonably foreseeable compliance responses to the project would not include the construction of any new land-based or maritime facilities or infrastructure. Reasonably foreseeable compliance responses to the project would include the generation of GHG emissions from the movement of fishing and monitoring vessels throughout the project area. However, this level of vessel activity would not be substantially more than what is currently occurring to commercially harvest Dungeness crab. Moreover, implementation of the project would not prohibit or prevent the deployment of fishing vessel–related regulations included in the 2022 Scoping Plan as overseen by CARB. This impact would be **less than significant**.

The reasonably foreseeable compliance responses from implementation of the project (see Section 2.5) would not include the construction of any land-based or maritime facilities or infrastructure. The only GHG-generating activity resulting from the reasonably foreseeable compliance responses would occur from potential changes in the operation of vessels to harvest Dungeness crab and operation of vessels and aircraft to survey for and determine marine life concentrations in the project area. As discussed in Section 3.4.1, "Regulatory Setting," several air districts in the state have recommended various approaches for assessing the significance of GHG impacts for projects proposed within their jurisdiction; however, these methods are more appropriately applied to land use development or stationary source projects, which do not align with the character of the proposed RAMP regulatory amendments. For this reason, the concept of increasing GHG emissions above baseline levels is applied to the project to determine significance.

The project involves amending the RAMP regulations to ultimately reduce the risk of entanglement of Actionable Species in commercial Dungeness crab fishing gear. It is not anticipated that implementation of the project would result in an increase in fishing activity as compared to baseline conditions. It is foreseeable that with implementation of the project, the location of fishing vessels may be dispersed throughout the project area; however, unlike emissions of criteria air pollutants (see Section 3.2, "Air Quality"), which affect the quality of ambient air on a local or regional basis, GHG emissions are a global concern. The location of where GHGs are emitted is irrelevant because these pollutants have a global effect on the heat-trapping capacity of the earth's atmosphere.

Moreover, the fishing vessels used to harvest Dungeness crab would be subject to off-road regulations overseen by CARB and included in the 2022 Scoping Plan. The 2022 Scoping Plan claims that implementation of the Commercial Harbor Craft regulation and subsequent amendments (the most recent occurring in March 2022) have resulted in the reduction of GHG emissions. The amendments mandate the accelerated deployment of zero-emission technologies for private vessels, towboats, crew and supply vessels, work boats, pilot vessels, barges, dredges, commercial vessels, and passenger fishing boats. Fishing vessels used to facilitate the harvest of Dungeness crab and the monitoring of marine resources would be subject to the benchmark deadlines contained in the Commercial Harbor Craft regulation amendments, as well as any future amendments adopted by CARB. The project would not conflict with the deployment of these amendments.

Implementation of the project would not result in an increase in the number of commercial fishing permits issued or the number of vessels used for fishing, but it would result in a limited increase in the number of survey and active tending vessel and survey aircraft trips. Although implementation of systematic surveys to determine marine life concentrations could potentially result in an increase in vessel or aircraft traffic in the project area, vessel and aircraft activity associated with the proposed project would not result in a level of activity that would be substantially greater than what is currently occurring under baseline conditions. While quantifying the increase in vessel activity would be speculative at this time, it is reasonable to conclude that vessel activity would not substantially increase, although the locations of vessel activity may be redistributed based on implementation of Fishing Zone closures, delays, or depth restrictions. It is not expected that this redistribution of vessels would, by itself, result in a cumulatively considerable net increase in GHG emissions above baseline activity. In addition, because vessels would be subject to the off-road specific regulations (i.e., 2022 Commercial Harbor Craft regulation amendments), the project would not conflict with the 2022 Scoping Plan. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

3.5 HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential environmental impacts from reasonably foreseeable compliance actions in response to implementation of the proposed RAMP regulatory amendments related to public health and safety, hazards, and hazardous materials. It describes existing potential hazards and safety concerns in the project area, as well as the nature of potential impacts that would occur as a result of project implementation.

During the public scoping period for the notice of preparation, commenters expressed concern related to marine vessel navigation. These comments are addressed, as appropriate, in this section.

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined in the Code of Federal Regulations (CFR) as "a substance or material that…is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> "Hazardous material" means a material…that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment…. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that the material would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment….

"Hazardous waste" is defined in California Health and Safety Code Section 25141(b) as wastes that:

> because of its quantity, concentration, or physical, chemical, or infectious characteristics, [may either] [c]ause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness [or] [p]ose a substantial present or potential hazard to human health or the environment…when improperly treated, stored, transported, or disposed of, or otherwise managed.

3.5.1 Regulatory Setting

FEDERAL

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as require measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The US Environmental Protection Agency (EPA) is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are primarily contained in CFR Titles 29, 40, and 49. Hazardous materials, as defined in the code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- The Toxic Substances Control Act of 1976 (15 US Code [USC] Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint hazards in paint, dust, and soil.
- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.

- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.
- The Clean Water Act (CWA) of 1977 (33 USC 1251–1387) was established to restore and maintain the chemical, physical, and biological integrity of the nation's waters and make all surface waters fishable and swimmable. Under the CWA, it is unlawful for any person to discharge any pollutant from a point source into navigable waters unless a National Pollutant Discharge Elimination System permit is obtained and implemented. In addition, the CWA requires the states to adopt water quality standards for receiving water bodies and have those standards approved by EPA. Water quality standards consist of designated beneficial uses for a particular receiving water body (e.g., wildlife habitat, agricultural supply, fishing), along with the water quality criteria necessary to support those uses.
- Title 33 (Navigation and Navigable Waters) and Title 46 (Shipping) of the CFR require the US Coast Guard (USCG) to be the federal agency responsible for vessel inspection, marine terminal operations safety, coordination of federal responses to marine emergencies, enforcement of marine pollution statutes, marine safety (such as navigation aids), and operation of the National Response Center for spill response, and to be the lead agency responsible for offshore spill response.

Transport of Hazardous Materials

The US Department of Transportation regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act, 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials transport regulations are enforced by the Federal Highway Administration, USCG, Federal Railroad Administration, and Federal Aviation Administration.

Worker Safety

The federal Occupational Safety and Health Administration (OSHA) is the agency responsible for ensuring worker safety in the handling and use of chemicals identified in the Occupational Safety and Health Act of 1970 (Public Law 91-596, 9 USC 651 et seq.). OSHA has adopted numerous regulations pertaining to worker safety, contained in CFR Title 29. These regulations set standards for safe workplaces and work practices, including standards relating to the handling of hazardous materials.

STATE

Management of Hazardous Materials

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. The federal law, SARA Title III or EPCRA, described above, encourages and supports emergency planning efforts at the state and local levels and requires that local governments and the public be provided information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities. The provisions of EPCRA apply to four major categories:

- emergency planning,
- emergency release notification,
- reporting of hazardous chemical storage, and
- inventory of toxic chemical releases.

The corresponding state law is Chapter 6.95 of the California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory). Under this law, qualifying businesses are required to prepare a hazardous materials business plan that describes hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. When the business begins to use hazardous materials at levels that reach applicable state or federal thresholds, the plan must be submitted to the administering agency.

The California Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency (CalEPA), has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. CalEPA has authorized DTSC to enforce the Hazardous Waste Control Law (California Health and Safety Code, Division 20, Chapter 6.5, Article 2), which implements the federal Resource Conservation and Recovery Act cradle-to-grave waste management system in California. It establishes criteria for identifying, packaging, and labeling hazardous waste; prescribes management of hazardous waste; establishes permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identifies hazardous waste that cannot be disposed of in landfills. As required by Section 65962.5 of the California Government Code, DTSC maintains a hazardous waste and substances site list for the state, known as the Cortese List.

Worker Safety

The California Occupational Safety and Health Administration (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in the state. Cal/OSHA standards typically are more stringent than federal OSHA regulations and are presented in Title 8 of the CCR. Cal/OSHA conducts on-site evaluations and issues notices of violation to enforce necessary improvements to health and safety practices.

State Contingency Plans

The California State Oil Spill Contingency Plan, prepared by CDFW, addresses discharges of oil to all marine or inland surface waterways of California, as well as oil spills to land. All state and local agencies must carry out spill response activities consistent with this plan and other applicable federal, state, and local spill response plans.

LOCAL

The project area encompasses the portion of the EEZ extending from the California/Oregon border to the California/Mexico border. Because the project area is located in navigable waters off the California coast, local agencies do not have jurisdiction in the area; therefore, no local regulations would apply to the project.

3.5.2 Environmental Setting

The project area is located in the coastal waters of California, encompassing the EEZ from the California/Oregon border to the California/Mexico border. Past and present uses in the project area include commercial and recreational boating, fishing, and diving; mineral resource extraction (oil and gas); undersea telecommunications cable deployment; and ocean dumping or disposal. In addition, a number of sewage outfalls along the coast discharge to the project area.

Dungeness crabs prefer sandy to silty substrates shallower than 300 feet (50 fathoms), and fishing activity is concentrated in this habitat type. Commercial Dungeness crab fishing depths depend on multiple factors, including fishing location, time of year, and vessel type. Time of year, home port, and access to processing facilities determine fishing locations. In practice, traps are rarely if ever deployed in waters deeper than 600 feet (100 fathoms), with average maximum fishing depths of 240 feet (40 fathoms) reported to CDFW. The Dungeness crab fishery is an important fishery along the entire West Coast, with the primary management authority for the fishery in California resting with the California Legislature. However, CDFW has been delegated additional authority to manage the fishery by the Legislature. Although the commercial Dungeness crab fishery occurs almost exclusively north of Point

Conception, CDFW jurisdiction over the fishery extends throughout the entire EEZ off California's coast (16 US Code Section 1856 note) (CDFW 2020a).

Data on historic and documented releases of hazardous materials in the surrounding area were obtained through database searches, including review of the State Water Resources Control Board (SWRCB) GeoTracker database and the state Cortese List via the DTSC EnviroStor database. The results of the database searches are summarized in Table 3.5-1, which provides information regarding each of the known documented sites of contamination that occur in the project area. No contaminated sites in the project area were identified on the EPA Envirofacts/Enviromapper website.

Table 3.5-1 Documented Sites of Contamination in the Project Area

Site	Location	Zone	Type	Status
South Bay Power Plant (Bay Sediment Assessment)	San Diego Bay, Chula Vista, San Diego County	Zone 6	Groundwater and sediments contaminated with petroleum	Open; Inactive (2015)
Sediment off Former Shangrila Site	980 Lagoon Drive, Chula Vista, San Diego County	Zone 6	Sediments and surface water contaminated with metals, petroleum, PCBs, and zinc	Open; Inactive (2016)
Supplemental Environmental Projects Oversight	Coastal San Diego, San Diego County	Zone 6	Contaminated surface water	Open; Site Assessment (2017)
24th Street Marine Terminal	0 Bay Marina Drive, National City, San Diego County	Zone 6	Sediments and surface water contaminated with metals and PCBs	Open; Inactive (2016)
Naval Base San Diego – Mitigation Monitoring and Reporting Program Site 100 – Primary Ship Channel	San Diego Bay, San Diego, San Diego County	Zone 6	Sediments contaminated with munitions debris	Open; Site Assessment (2017)
Memorandum of Agreement Navy Sediment Dredging	Harbor Drive, San Diego, San Diego County	Zone 6	Sediments contaminated with PCBs	Open; Site Assessment (2022)
Naval Base San Diego – San Diego Bay Sediments	3455 Senn Street, San Diego, San Diego County	Zone 6	Sediments contaminated with copper and other metals	Open; Site Assessment (2022)
Shipyard Sediment Site	San Diego Bay, San Diego, San Diego County	Zone 6	Sediments contaminated with metals, PCBs, and PAHs	Open; Verification Monitoring (2018)
BAE Systems and San Diego Gas & Electric Company Northern Sediment Delineation Investigation	2145 East Belt Street, San Diego, San Diego County	Zone 6	Sediments, soil, and surface water contaminated with metals and PCBs	Open; Site Assessment (2020)
Continental Maritime of San Diego Sediment Investigation	1995 Bay Front Street, San Diego, San Diego County	Zone 6	Soil contaminated with diesel	Open; Site Assessment (2020)
Tenth Avenue Marine Terminal to Pacific Maritime Freight Sediment Investigation	1444 Cesar E. Chavez, San Diego Parkway, San Diego County	Zone 6	Sediments, soil, and surface water contaminated with metals and PCBs	Open; Site Assessment (2020)
San Diego Marriott Marina	333 West Harbor Drive, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with copper and zinc	Open; Inactive (2004)
B Street and Broadway Piers	San Diego Bay, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with metals, PCBs, PAHs, and zinc	Open; Inactive (2016)
Laurel to Hawthorn Street Embayment Sediment Assessment – Solar Turbines	San Diego Bay, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with arsenic, copper, DDD/DDE/DDT, mercury (elemental, nickel, other chlorinated hydrocarbons, metals, PCBs, PAHs, silver, and zinc	Open; Site Assessment (2017)

Site	Location	Zone	Type	Status
Laurel to Hawthorn Street Embayment Sediment Assessment – Laurel Hawthorn Central Embayment Sediment Assessment	San Diego Bay, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with chromium, copper, DDD/DDE/DDT, lead, nickel, PCBs, PAHs, waste oil/motor/hydraulic/lubricating, zinc	Open; Site Assessment (2020)
Laurel to Hawthorn Street Embayment Sediment Assessment – City of San Diego 84-inch Stormwater Conveyance System Laurel Hawthorn Embayment Sediment Assessment	Harbor Drive, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with chlordane, DDD/DDE/DDT, and other insecticides/pesticide/fumigants/herbicides	Open; Assessment & Interim Remedial Action (2020)
Sunroad Resort Marina	955 Harbor Island Drive, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with copper and other metals	Open; Site Assessment (2021)
Tow Basin	Harbor Drive, San Diego, San Diego County	Zone 6	Sediments contaminated with PCBs	Open; Site Assessment (2017)
West Harbor Basin	Harbor Island Drive, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with copper and other metals	Open; Inactive (2016)
Commercial Basin (America's Cup Harbor)	Commercial Basin, San Diego, San Diego County	Zone 6	Sediments and surface water contaminated with copper, other metals, and PCBs	Open; Inactive (2016)
Palos Verdes Shelf	Pacific Ocean – White Point Outfall, Palos Verdes, Los Angeles County	Zone 6	DTSC Federal Superfund	Active (1999)
Monterey Bay Sediments	Pacific, Monterey County	Zone 4	DTSC Formally Used Defense Site	Inactive; Needs Evaluation (2005)

Notes: DDD/DDE/DDT = dichlorodiphenyldichloroethane/dichlorodiphenyltrichloroethane; DTSC = Department of Toxics Substances Control; PAHs = polyaromatic hydrocarbons; PCBs = polychlorinated biphenols.

Sources: DTSC 2023a; SWRCB 2023.

Most of the 22 listed contamination sites are located in Fishing Zone 6, with 20 sites in San Diego Bay and one site in the Palos Verdes Shelf offshore of Los Angeles. The other listed site is in Monterey Bay (Fishing Zone 4). However, the commercial Dungeness crab fishery occurs almost exclusively north of Point Conception, in Zones 1–5; therefore, the contamination sites located in San Diego Bay and offshore of Los Angeles would not cause a significant hazardous risk to the public or environment through project implementation.

The Monterey Bay Sediments contamination site is in an area where the commercial Dungeness crab fishery occurs. The site is a military evaluation site, contaminated with potential explosives (e.g., unexploded ordinance and munitions), that is currently inactive and in need of evaluation (DTSC 2023b). In 1995, approximately seventy-five 50-caliber machine gun cartridges were discovered on the ocean floor and were recovered by a US Navy Explosives Ordnance Disposal team. With removal of the cartridges, the potential risk with respect to explosives hazards was reduced; however, there is potential for other munitions to be present in Monterey Bay (DTSC 2012, 2013).

One public airport, Catalina Airport, and two private airports/airstrips, Santa Cruz Island Airport and Christy Airstrip, as well as one school, Avalon High School, on Santa Catalina Island are located in the project area, but they are all on the islands in Zone 6.

3.5.3 Environmental Impact Analysis

METHODOLOGY

The following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the project area, conducted to determine the potential for project implementation to result in an increased health or safety hazard to people or the environment. These resources included EPA, SWRCB, and DTSC hazardous materials database information.

THRESHOLDS OF SIGNIFICANCE

An impact related to hazards and hazardous materials would be significant if implementation of the project would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area; or
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

ISSUES NOT DISCUSSED FURTHER

Schools

As noted above, Avalon High School is located on Santa Catalina Island off the coast of Los Angeles County in Fishing Zone 6 of the project area. However, the Dungeness crab fishery almost exclusively operates north of Point Conception (Fishing Zones 1–5). Furthermore, all project-related activities in the project area would occur in the marine environment. Therefore, the project would not increase the risk of exposure of the occupants of a school to emissions associated with hazardous materials. Because no impact would occur, this issue is not discussed further in this EIR.

Emergency Response

Implementation of the proposed RAMP regulatory amendments would not interfere with any emergency response or evacuation plans. Emergency response plans occurring on land or in the marine environment would not be affected by project implementation, because the project would not alter access points to marine activities that could affect on-land or marine emergency operations. Although implementing the project could result in a slight increase in aircraft and marine vessel traffic associated with systematic surveys to monitor marine life concentrations, as stated below, the increase would not be significant and would therefore not interfere with or modify emergency marine responses. Fishing and survey vessels would abide by regulations and policies of CDFW, including those related to emergency responses, such as the California State Oil Spill Contingency Plan, as mentioned in Section 3.5.1, "Regulatory Setting." Therefore, no impact would occur. This issue is not discussed further in this EIR.

Wildfire

As discussed already in Section 3.1, "Effects Found Not to Be Significant," implementing the project would not result in significant impacts related to wildfire; therefore, this issue is not discussed further in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.5-1: Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials

Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey and active tending vessel trips. This small increase in the number of survey and active tending vessel trips relative to the total number of vessel trips in the project area would not constitute a significant hazard to the public or environment from the routine transport, use, or disposal of hazardous materials. Therefore, this impact would be **less than significant**.

Commercial and recreational fishing for Dungeness crab, in and of itself, does not generate hazardous wastes. Commercial fishermen do, however, use chemicals such as antifreeze, paint, and oil during the use and maintenance of their marine vessels. As mentioned in Chapter 3.7, "Water Quality," materials stored or used on the vessel surface, such as cleaning fluids, mechanical equipment maintenance fluids, and other potential pollutants, have the potential to be washed into the ocean during rain or high-wave events, which could affect the ocean environment. The more vessel trips associated with implementation of the project, the more likely vessel-related hazardous materials could result in a significant hazard through their routine transport, use, or disposal.

The California Legislature first implemented a trap limit program in 1995, capping the fishery at 681 permits through Assembly Bill 3337. Senate Bill 369 further limited the number of traps that a vessel can deploy in 2013. In 2020, 548 permits were renewed for the 2020-2021 Fishing Season. It is assumed that each permit is held by a separate vessel. A cap of 681 permits would exist under the proposed project. Therefore, the number of active fishing vessels would not be greater than the highest number used in the past. However, implementation of the project would slightly increase the number of survey vessels trips to monitor marine life concentrations. Under current conditions, there are fewer than 10 survey vessel trips per season. This number would increase slightly (likely not more than 5 to 10 trips per year) with implementation of the proposed RAMP regulatory amendments.

Active tending requirements that would require fishermen to remain in proximity to the trap gear and tend it more regularly could be imposed as a management action. Efforts to tend to gear more regularly during the crab season may result in an increase in vessel traffic from typical baseline vessel traffic during this period. Potential impacts resulting from an increase in vessel traffic would be the same as described above for vessel survey efforts. Currently, FGC Section 9004 requires each trap to be raised, cleaned, and serviced at intervals not to exceed 96 hours (weather conditions at sea permitting). Active tending requirements would reduce the maximum service interval to 4 hours. While this requirement may result in an increase in vessel traffic, these increases would be modest compared to baseline vessel activity (i.e., all recreational and commercial fishing vessels, recreational vessels, survey vessels, law enforcement vessels), because it would involve vessels already fishing in the area that would remain longer near trap gear, rather than a substantial number of additional vessels.

The small increase in the number of vessel trips associated with marine life concentration surveys and active tending requirements could result in a slightly higher risk of transport, use, or disposal of hazardous materials. However, relative to the total number of all vessels operating on the water in the project area, the increase in vessel traffic associated with these activities would be modest. Furthermore, any additional vessels operating in the marine environment would abide by USCG safety laws and regulations to reduce the risk of vessel accidents associated with maintenance or spills that could cause the release of hazardous materials into the environment, resulting in a hazard. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.5-2: Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment

Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey and active tending vessel trips. The small increase in the number of survey and active tending vessel trips relative to the total number of vessels in the project area would not constitute a significant hazard to the public related to the release of hazardous materials into the environment from accidents involving maintenance activities or spills or from hazardous materials washed from the surface of the vessels. Therefore, this impact would be **less than significant**.

Fuels and lubricants are examples of hazardous materials used to operate marine vessels and equipment that could potentially be leaked into the environment in the event a vessel is damaged, equipment malfunctions, or rain or high-wave events wash residual material overboard. The more vessel trips associated with implementation of the project, the more likely vessel-related activity could result in accidental release of these hazardous materials.

As described under Impact 3.5-1, the number of active fishing vessels would not change with implementation of the proposed project. However, the number of survey and active tending vessel trips could increase slightly, which could result in a slightly higher risk of release of hazardous materials into the environment related to maintenance or spill or from being washed from the surface of the vessel. This small increase in the number of vessel trips would be insignificant relative to the total number of all vessels in the project area. Furthermore, any additional vessels operating in the marine environment would abide by USCG safety laws and regulations to reduce the risk of vessel accidents. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.5-3: Be Located on a Site Which Is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code Section 65962.5 and, As a Result, Would Create a Significant Hazard to the Public or the Environment

Implementation of the proposed RAMP regulatory amendments would result in a limited increase in the number of survey vessel trips, but this small increase would not create a significant hazard to the public or the environment related to trips occurring in an area with a site included on a list of hazardous materials sites, because survey activities would not disturb the seafloor. In addition, while servicing traps during active tending has the potential to disturb the seafloor, these disturbances would be limited to the same locations. Implementation of the project would reduce the amount of lost or abandoned gear that could disturb hazardous materials sites through improvements to reporting requirements for gear use and lost or abandoned gear. Although early season closures, season opening delays, and depth restrictions may result in the concentration of vessels decreasing in some areas and increasing in other areas at times, the number of permitted vessels and gear allotments would not change with project implementation, and the number of vessel trips associated with gear deployment and retrieval would not be expected to change substantially. Furthermore, most of the hazardous materials sites are located in areas that are not typically fished by the commercial Dungeness crab fleet. Therefore, the potential for project implementation to result in the accumulation of commercial Dungeness crab fishing activity in an area with hazardous materials sites such that the sites would be disturbed during trap deployment or retrieval would be low. For these reasons, this impact would be **less than significant**.

As previously described, implementation of the proposed RAMP regulatory amendments would not increase the number of vessels used for crab fishing but would potentially result in an increase in vessel traffic in the project area

during systematic surveys to determine marine life concentrations. However, because CDFW would also use data collected during vessel-based and aerial surveys that are already being conducted by other agencies and organizations as part of the existing baseline, the increase in vessel traffic associated with implementation of systematic surveys would be small. This small increase in the number of vessel trips would be insignificant relative to the total number of all vessels in the project area. Moreover, survey activities would not involve disturbance to the seafloor, and the activity would be subject to the provisions and limitations of Marine Protected Areas, as well as general operational and safety measures.

In addition, shortening the service interval with the active tending requirement is not expected to result in a substantial increase in vessel trips because the increase in activity would involve vessels staying near the trap gear. This small increase in the number of vessel trips would be insignificant relative to the total number of all vessels in the project area. While active tending could result in disturbance to the seafloor, these disturbances would be limited to the same locations.

Fishery participants have commonly estimated annual gear loss of between 5 and 10 percent (CDFW 2021). Dungeness crab vessels can retrieve lost or abandoned gear belonging to another Dungeness crab vessel permit under 14 CCR Section 132.2. CDFW recently implemented a program to permit and incentivize retrieval of lost and abandoned commercial gear after the end of the Fishing Season under 14 CCR Section 132.7. Efforts to retrieve lost or abandoned trap gear would not change with project implementation. Qualified entities (e.g., sport or commercial fishing associations, nonprofit entities, local agencies, harbor or port district) would continue to be permitted by CDFW and compensated for retrieving lost or abandoned trap gear during the period between the closure of the Fishing Season and September 30. No more than 10 designated retrievers, and 10 associated vessels, are allowed to operate under a given Retrieval Permit. Efforts to retrieve lost or abandoned gear may result in an increase in vessel traffic from typical baseline vessel traffic during this period. This program would continue under the project.

A summary of commercial Dungeness trap gear retrieval for the period 2020 through 2023 is provided in Table 2-3. In 2020, the first year of the program, CDFW issued seven permits for trap gear retrieval to organizations in Crescent City, Trinidad, Eureka, Bodega Bay, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2020). In the same year, there were 13 Designated Retrievers (CDFW 2020). A total of 47 retrieval trips were recorded from July 30, 2020, to September 30, 2020 (CDFW 2020). In 2021, CDFW issued six permits for trap gear retrieval to organizations in Crescent City, Bodega Bay, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2021). In the same year, there were 12 Designated Retrievers (CDFW 2021). A total of 21 retrieval trips were recorded from June 7, 2021, to September 30, 2021 (CDFW 2021). In 2022, CDFW issued five permits for trap gear retrieval to organizations in Trinidad, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2022). In the same year, there were nine Designated Retrievers (CDFW 2022). A total of 30 retrieval trips were recorded from April to August (CDFW 2022). In 2023, CDFW issued three permits for trap gear retrieval to organizations in San Francisco and Half Moon Bay. There were five Designated Retrievers and a total of eight retrieval trips were recorded from April to September that year (CDFW 2024).

Although the number of gear retrieval permits, Designated Retrievers, and retrieval trips could increase over time, the intensity of trap gear retrieval efforts and associated vessel activity in the first 4 years of program implementation (i.e., 2020, 2021, 2022, 2023) was modest compared to baseline vessel activity (i.e., all recreational and commercial fishing vessels, recreational vessels, survey vessels, law enforcement vessels). Further, additional efforts to quantify gear use, including the requirement for fishery participants to self-report trap use and education efforts, may indicate a decrease in the amount of lost or abandoned trap gear and a potential reduction in the need for trap gear retrieval.

The list of qualified entities for the trap gear retrieval program is limited; the number of trap retrieval permits, designated retrievers, and retrieval trips has been relatively modest during the first 4 years of program implementation; and additional efforts are underway to reduce the amount of lost or abandoned trap gear. For these reasons, implementing the trap gear retrieval program would not result in a substantial increase in vessel traffic in the project area or a substantial increase in the risk of disturbance to a contamination site that would create a significant hazard to the public or the environment.

Specific measures implemented under RAMP may include closures or delays in opening of one or more Fishing Zone(s) in response to entanglement risk or other measures, including crab gear depth constraints. In addition to implementing closures and delays to address elevated marine life entanglement risk, the CDFW Director may delay the opening of crab Fishing Season in part or all of the NMA because crab meat quality is low or may close any area because of biotoxin risk, and these delays have been routinely implemented. Season closures in specific Fishing Zones could result in an increased magnitude of crab fishing (e.g., more boats, more traps) in open Fishing Zones if crab fishing that would have been conducted in the closed Fishing Zone moved to an open Fishing Zone. Season delays could also result in more crab fishing over a shorter period in the Fishing Zone where the delay was implemented if the same annual crab fishing effort were conducted during the limited duration of the delayed season.

Depth constraints may be implemented to limit interactions of Actionable Species and crab fishery operations—for example, prohibiting take of crab seaward of the 50-fathom line to reduce interactions with blue whales. Implementation of depth constraints may result in increased concentration of crab gear in areas closer to shore if the same number of crab traps is set. Thus, season closures and delays and depth constraints could increase the concentration of crab gear in areas that may contain contamination sites.

The "fair start provision" (Fish and Game Code Section 8279.1) prohibits a vessel from taking, possessing onboard, or landing crab in an area where crab fishing was previously delayed because of marine life entanglement risk, human health risk (e.g., domoic acid), or poor crab quality for a period of 30 days from the date of the opening if that vessel previously participated in other commercial Dungeness crab fishing areas during the same season. This provision would apply to any Fishing Zone delayed because of marine life entanglement risk under RAMP and when a delayed Fishing Zone opens under a depth restriction. The fair start provision would prevent an influx of crab fishing activities in recently opened Fishing Zones, including those zones that open under a depth restriction.

When crab traps are set or pulled up from the seafloor, they cause minor suspension of the surface layer of sediments on the seafloor. However, that suspended material is dispersed by the current and eventually settles back to the seafloor, and the likelihood of any contaminated sediments being carried to the surface during retrieval as the trap is hauled up through the water column is negligible. Traps are typically 3 to 3.5 feet in diameter and are dispersed throughout a fishing area. Only one trap is permitted per line per Fish and Game Code Section 9012, which prevents multi-trap trawls that would drag on the seafloor and cause increased disturbance when the line is pulled up. CDFW estimates that the number of traps deployed during the 2020-2021 season was between 95,267 and 117,525 (CDFW 2021). This would result in a temporary, isolated disturbed area of between 21 and 26 acres per year over the entire project area of 141,954,505 acres. Furthermore, as previously described, there is only one contamination site, the Monterey Bay Sediments site, an inactive Military Evaluation site that is within the portion of the project area where the commercial Dungeness crab fishery mainly occurs. The other listed contamination sites are in Fishing Zone 6, a region of the project area that is not typically fished by the commercial Dungeness crab fleet. Thus, the likelihood of project-related activities causing resuspension of material from a contaminated site in a quantity that could create a significant hazard to the public or the environment is small.

Because the increase in vessel traffic that could result in suspension of sediments at a contamination site on the seafloor and create a hazard to the public or the environment would be small under the proposed project for the reasons discussed above, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.5-4: For a Project Located within an Airport Land Use Plan or, Where Such a Plan Has Not Been Adopted, within Two Miles of a Public Airport or Public Use Airport, Result in a Safety Hazard or Excessive Noise for People Residing or Working in the Project Area

Implementation of the proposed RAMP regulatory amendments would result in a limited increase in the number of aerial survey trips. This small increase in the number of aerial surveys relative to the total current extent of air traffic in the project area would not constitute a safety hazard or excessive noise for people residing or working in the project area. Therefore, this impact would be **less than significant**.

Systematic surveys would be conducted by CDFW to determine marine life concentrations in each California Fishing Zone through marine and aerial surveys. Aerial surveys may result in an increase in air traffic over marine and inshore habitats compared to typical baseline air traffic. The more aerial trips associated with implementation of the project, the more likely aircraft activity could result in a safety hazard or excessive noise.

As discussed in Chapter 3.6, "Marine Biological Resources," aerial surveys are currently being conducted in some capacity by CDFW, NMFS, USCG, Monterey Bay Whale Watch, and Cascadia Research Collective. Although implementation of additional surveys would potentially result in a minor increase in air traffic in the project area, CDFW would use aerial surveys already being conducted by these other agencies and organizations as part of the existing baseline of aircraft activities. As mentioned above, one public and two private airports/airstrips are located on islands in Fishing Zone 6 of the project area. The minor increase in aerial traffic would be insignificant relative to the total number of all aerial traffic in the project area and would therefore not pose a safety hazard or create a significant amount of excessive noise for those residing on the islands in Zone 6 or those working in the project area. For these reasons, this impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.6 MARINE BIOLOGICAL RESOURCES

This section describes the affected environment for marine biological resources. It also describes the impacts on marine biological resources of reasonably foreseeable compliance actions in response to implementation of the proposed regulatory amendments.

Several comment letters regarding biological resources were received in response to the notice of preparation of this EIR (refer to Appendix A). The following issues identified by the commenters are relevant to the scope and content of the EIR. The first bullet is addressed in this section. The second bullet is addressed in Chapter 4, "Cumulative Impacts."

- impacts on species not covered by the RAMP regulations and application for an ITP; and
- cumulative impact of ship strikes, entanglement caused by non-Dungeness crab fishing gear, and other threats to Actionable Species.

3.6.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 US Code Section 1531 et seq.), the US Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to the ESA (including private parties) are prohibited from "taking" endangered or threatened fish and wildlife species on private or government-owned property and from "taking" endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of "take" is "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take.

Section 10 of the ESA applies if a nonfederal agency is the lead agency for an action that would result in take and no other federal agencies are involved in permitting the action. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS or NMFS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it is unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, "take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities." A take does not include habitat destruction or alteration if there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds that are native to the United States.

Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) (16 US Code Chapter 31), first enacted in 1972, provides for protection of all marine mammals (whales, dolphins, seals, and sea lions) in the United States. The MMPA provides that it shall be unlawful, with certain permitted exceptions, to take a marine mammal in waters of the United States. Under the MMPA, "take" is defined as "harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal."

Magnuson-Stevens Fishery Conservation and Management Act

The federal Magnuson-Stevens Fishery Conservation and Management Act (16 US Code Section 1801 et seq.) is the primary law governing management of commercial and recreational marine fisheries in the United States. The purpose of this federal law is sevenfold: conserve fishery resources, support enforcement of international fishing agreements, promote fishing in line with conservation principles, provide for the implementation of fishery management plans to achieve optimal yield, establish regional fishery management councils to steward fishery resources, develop underutilized fisheries, and protect Essential Fish Habitat (EFH).

The Magnuson-Stevens Act requires federal agencies to consult with NMFS when a project has the potential to adversely affect EFH. State agencies are not required to consult with NMFS; however, NMFS is required to develop EFH conservation recommendations for any state agency activity that would affect EFH. Similar to the treatment of critical habitat in the ESA, EFH protection measures recommended by NMFS or a regional fisheries management council are advisory and not prescriptive.

National Marine Sanctuaries Act

The National Marine Sanctuaries Act authorizes the Secretary of Commerce to designate and protect areas of the marine environment with special national significance because of their conservation, recreational, ecological, historic, scientific, cultural, archaeological, educational, or aesthetic qualities as national marine sanctuaries. Designated national marine sanctuaries (NMSs) in California include Cordell Bank NMS, Gulf of the Farallones NMS, Monterey Bay NMS, and Channel Islands NMS.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA), a permit from CDFW is required for projects that could result in the "take" of a plant or animal species listed by the state as threatened or endangered. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of "take" does not include "harm" or "harass," like the ESA definition does. As a result, the threshold for take is greater under CESA than under the ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 ITP.

California Fish and Game Code Sections 3503 and 3503.5

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs or young.

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code prohibit take of fully protected birds, mammals, reptiles and amphibians, and fish. Species listed under these statutes may not be taken or possessed at any time, and no incidental take permits can be issued for these species except for scientific research purposes, for relocation to protect livestock, or as part of a natural community conservation plan.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the state fall under the jurisdiction of the appropriate regional water quality control board (RWQCB). The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB's jurisdiction includes federally protected waters, as well as areas that meet the definition of "waters of the state." Waters of the state are defined as any surface water or groundwater, including saline waters, within the boundaries of the state.

Marine Life Protection Act

The Marine Life Protection Act requires CDFW to develop a master plan for modification of existing and designation of new Marine Protected Areas (MPAs) to increase coherence and effectiveness in protecting the state's marine life and habitats, marine ecosystems, and marine natural heritage, as well as to improve recreational, educational, and study opportunities provided by marine ecosystems subject to minimal human disturbance.

California Ocean Plan

The California Ocean Plan designated Areas of Special Biological Significance (ASBS) in ocean areas requiring protection of species or biological communities to the extent that maintenance of natural water quality is assured. Thirty-four ASBS have been designated by the State Water Resources Control Board (SWRCB) off the coast of California because the areas support an unusual variety of aquatic life and often host unique species.

LOCAL

The project area is located entirely in the portion of the EEZ extending from the California/Oregon border in the north to the California/Mexico border in the south (Figure 2-1) and is outside the jurisdiction of any local (e.g., county, city) agency; thus, the project would not be subject to any local policies or ordinances.

3.6.2 Environmental Setting

This section provides an overview of California coastal and marine habitats and organisms. Because the project area is very expansive (i.e., coastal and pelagic areas statewide), this section does not provide a full inventory of all the common and sensitive biological resources that are known to occur or could occur in the area.

The project area encompasses the portion of the EEZ extending from the California/Oregon border in the north to the California/Mexico border in the south (Figure 2-1). This area includes numerous habitats, sensitive communities, and special-status wildlife species. To organize the biological resources setting description of the project area, the marine waters of California are divided into the Northern Management Area (NMA) and Central Management Area (CMA). As described in Chapter 2, "Project Description," the NMA extends from the California/Oregon border to the Sonoma-Mendocino County line, and the CMA extends from the Sonoma-Mendocino County line to the California/Mexico border (Figure 2-1).

The characteristics of common and sensitive biological resources are described for both management areas in the sections that follow. Information on the physical setting and wildlife habitats, special-status species, EFH, critical habitat, special management areas, and other biologically important lands was gathered through review of existing data sources and is presented as a general summary of resources that may occur in each management area.

Information on sensitive biological resources, including special-status species, in the project area was compiled from:

- California Natural Diversity Database (CNDDB) (records search and GIS query) (CNDDB 2024);
- USFWS Information for Planning and Conservation tool (USFWS 2024);
- USFWS and University of California, Santa Cruz, seabird colony data (Capitolo, pers. comm., 2019);
- pinniped rookeries and haul-out site data (NMFS 2011); and
- publicly available aerial imagery.

The following sections provide an overview of the physical setting, wildlife habitat, sensitive biological resources, special management areas, and other biologically important areas in the project area and summarize the methods and data sources used to identify these resources. Additional detail is provided at a regional scale for the two management areas in the sections that follow.

PHYSICAL SETTING AND WILDLIFE HABITAT

California Coastal Habitat

The coast of California is composed of sandy beaches, rocky headlands, sea cliffs, and lagoons in the intertidal and nearshore environment. Generally, the coastline north of Point Conception is rugged, with prominent headlands, stretches of sea cliffs, and small, sandy beaches. South of Point Conception, the shoreline is typically adjacent to coastal plains and marine terraces, and long, sandy beaches are common. Tidal flats, sandy or muddy expanses that become exposed at low tides and are associated with coastal rivers, as well as bays and estuaries, are also distributed along the California coast. In addition, beds of mussels (*Mytilus* spp.), seagrass beds, and algal assemblages from tufts (e.g., *Endocladia muricata*) to low canopies of leathery kelps (e.g., *Pterygophora californica, Postelsia palmaeformis*) are distributed in patches throughout rocky shoreline habitat along the coast.

Seagrass habitats support an abundant and biologically diverse assemblage of aquatic wildlife species. The most common type of seagrass in estuaries and sheltered coastal bays in California is common eelgrass (*Zostera marina*). Eelgrass beds provide refuge, foraging, breeding, or nursery areas for a variety of invertebrates, fish, and birds, including Dungeness crabs (*Metacarcinus magister*). The most common type of seagrass along the open coast of California is surfgrass (*Phyllospadix* spp.), which forms beds that fringe nearly all the rocky coastline from the zero-tide level down to several meters below the zero-tide level.

Kelp forests are an important component of California's marine ecosystems. They provide shelter for both juvenile and adult species of fish, provide important nursery habitat for southern sea otters (*Enhydra lutris nereis*), offer vertical and horizontal substrate for a variety of marine organisms, and account for a large portion of the primary productivity in the nearshore communities. In California, there are two primary canopy-forming kelp species: giant kelp (*Macrocystis pyrifera*) and bull kelp (*Nereocystis luetkeana*). Kelp forests grow along rocky coastlines and typically remain nearshore in subtidal communities. In addition, intertidal boulders, platforms, and cliffs, as well as tidepools, are home to many species of snails, barnacles, anemones, crabs, sea stars, and fishes.

Many offshore rocks and islets along California's rocky coastlines provide habitat for many species of pinnipeds (i.e., seals and sea lions) and seabirds. Several seabird species occur and nest in colonies on these features, including common murre (*Uria aalge*), Brandt's cormorant (*Phalacrocorax penicillatus*), pelagic cormorant (*Phalacrocorax pelagicus*), double-crested cormorant (*Phalacrocorax auritis*), western gull (*Larus occidentalis*), fork-tailed storm-petrel (*Oceanodroma furcata*), ashy storm-petrel (*Oceanodroma homochroa*), and Leach's storm-petrel (*Oceanodroma leucorhoa*).

Several marine mammal species, which are protected under the federal MMPA, are known to occur in the nearshore environment along the California coast. Gray whales (*Eschrichtius robustus*) undertake the longest migration of any mammal along the California coastline, using inshore areas and protected coves during the springtime northbound migration to Alaska with their calves. Other cetaceans (i.e., whales, dolphins, porpoises), including harbor porpoise (*Phoecena phoecena*) and bottlenose dolphin (*Tursiops truncatus*), use nearshore habitat. Several pinniped species, including harbor seal (*Phoca vitulina*), California sea lion (*Zalophus californianus*), Steller sea lion (*Eumetopias jubatus*), northern elephant seal (*Mirounga angustirostris*), and northern fur seal (*Callorhinus ursinus*), breed and rest on California beaches, river mouths, and offshore rocks.

California Pelagic Habitat

Pelagic (open ocean) fish species off the coast of California include northern anchovy (*Engraulis mordax*), Pacific sardine (*Sardinops sagax*), Pacific herring (*Clupea pallasii)*, Pacific mackerel (*Trachurus symmetricus*), albacore tuna (*Thunnus alalonga*), several Chinook salmon (*Oncorhynchus tshawytscha*) Evolutionarily Significant Units, and steelhead (*Oncorhynchus mykiss irideus*). Seabirds typically associated with offshore habitat in California include northern fulmar (*Fulmarus glacialis*), sooty shearwater (*Ardenna grisea*), pink-footed shearwater (*Ardenna creatopus*), Buller's shearwater (*Ardenna bulleri*), black-footed albatross (*Phoebastria nigripes*), and Laysan albatross (*Phoebastria immutabilis*). Several cetacean species, including humpback whale (*Megaptera novaengliae*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), orca (also known as "killer whale") (*Orcinus orca*), northern right whale dolphin (*Lissodelphis borealis*), common dolphin (*Delphinus delphis*), Risso's dolphin (*Grampus griseus*), and Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), occur in California's pelagic environment. As described in Chapter

2, "Project Description," the humpback whale Central America Distinct Population Segment (DPS) and Mexico DPS and blue whale are listed as endangered under the ESA, and both species are identified as Actionable Species under the RAMP regulations and Covered Species in CDFW's ITP application.

Several sea turtle species are known to occur along the California coast: leatherback sea turtle (*Dermochelys coriacea*), green sea turtle (*Chelonia mydas*), Pacific hawksbill sea turtle (*Eretmochelys imbricate bissa*), loggerhead sea turtle (*Caretta caretta*), and olive ridley sea turtle (*Lepidochelys olivacea*). These species occur primarily in pelagic habitats but occasionally occur nearshore. As described in Chapter 2, "Project Description," leatherback sea turtle is listed as endangered under the ESA and CESA and is identified as an Actionable Species under the RAMP regulations and a Covered Species in CDFW's ITP application.

California Benthic Habitat

Benthic (seafloor) habitat in California varies geographically but is typically characterized by either hard (rocky or reef) substrate or soft (sand or mud) substrate. The locations of each benthic substrate type vary in each biogeographic region based on several factors, including the geology of the shoreline. Both substrates provide habitat for numerous invertebrate and fish species, including sessile invertebrates (e.g., mussels, sea urchins, anemones) and groundfish (e.g., rockfish, lingcod [*Ophiodon elongatus*]). Rocky areas provide hard substratum to which kelp and other algae attach in waters up to approximately 100 feet deep, whereas in deeper water, hard substratum provides attachment substrate for many species of deep-water invertebrates. In addition to attached organisms, the structural complexity of rocky areas provides habitat and protection for mobile invertebrates and fishes.

Soft-bottom environments range from flat expanses to slopes and basin areas. Soft-bottom habitats lack the complex, three-dimensional structure of hard-bottom substrata and are somewhat less diverse in species assemblages than rocky reefs, depending on the compositional sediment type. However, these habitats often support species like California halibut (*Paralichthys californicus*) and Dungeness crab. Soft-bottom habitats can be highly dynamic in nature because sediments shift as a result of wave action, bottom currents, and geological processes. Shallow, sandy, soft-bottom benthic habitat is found in areas along the coast that are subject to constant tide, wave, and shoreline processes, resulting in a highly changing and low-productivity region. Sandy benthic habitat generally extends to water depths of approximately 300 feet. Muddy sediment bottoms are typically found in water depths greater than 300 feet along the shelf but also occur in estuaries and lagoons.

Submarine canyons are submerged, steep-sided valleys that cut through the continental slope and occasionally extend close to shore. These features exhibit bathymetric complexity, support unique deep-water communities, and affect local and regional circulation patterns. Canyons provide habitat for young rockfish and flatfish that settle in nearshore waters to grow and move offshore as adults. Canyons also attract concentrations of prey species (e.g., fish, krill) and provide important foraging opportunities for seabirds and marine mammals (Yen et al. 2004).

SENSITIVE BIOLOGICAL RESOURCES

Special-Status Species

Special-status species in the context of this project are defined as species that are legally protected or otherwise considered sensitive by federal or state agencies. Special-status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- species officially listed by California or the federal government as endangered, threatened, or rare;
- a candidate for state or federal listing as endangered, threatened, or rare;
- species protected by the MMPA (50 CFR 18);
- taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the State CEQA Guidelines;
- species identified by CDFW as species of special concern; and
- species listed as fully protected under the California Fish and Game Code.

The term "California species of special concern" is applied by CDFW to animals not listed under the ESA or CESA but that are considered to be declining at a rate that could result in listing or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW's "fully protected" designation was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as "fully protected" were eventually listed as threatened or endangered under CESA; however, some species remain listed as "fully protected" but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time, and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

Many special-status wildlife species are known to occur in marine habitats. A total of 49 special-status wildlife species were determined to have potential to occur in the project area (CNDDB 2024; USFWS 2023). A full list of these species, including regulatory status and habitat, is included in Appendix B. Special-status bird species in the project area are primarily seabirds, which occur in both terrestrial and marine habitats, nesting on land but foraging at sea.

Sensitive Natural Communities

Sensitive natural communities or habitats are those of special concern to resource agencies, such as CDFW, or those that are afforded specific consideration based on Section 404 of the Clean Water Act, the California Coastal Act (e.g., Environmentally Sensitive Habitat Areas in coastal zones), or other applicable regulations. This concern may be related to the locally or regionally declining status of these habitats or to the fact that they provide important habitat to common and special-status species. Many of these communities are tracked in the CNDDB. The project area is located entirely within the EEZ and does not include terrestrial habitat (i.e., coastal areas) where most sensitive natural communities and riparian habitat would occur. However, eelgrass habitat (described above under "California Coastal Habitat") is considered a sensitive natural community and is present in nearshore waters along the entire coast of California.

Essential Fish Habitat

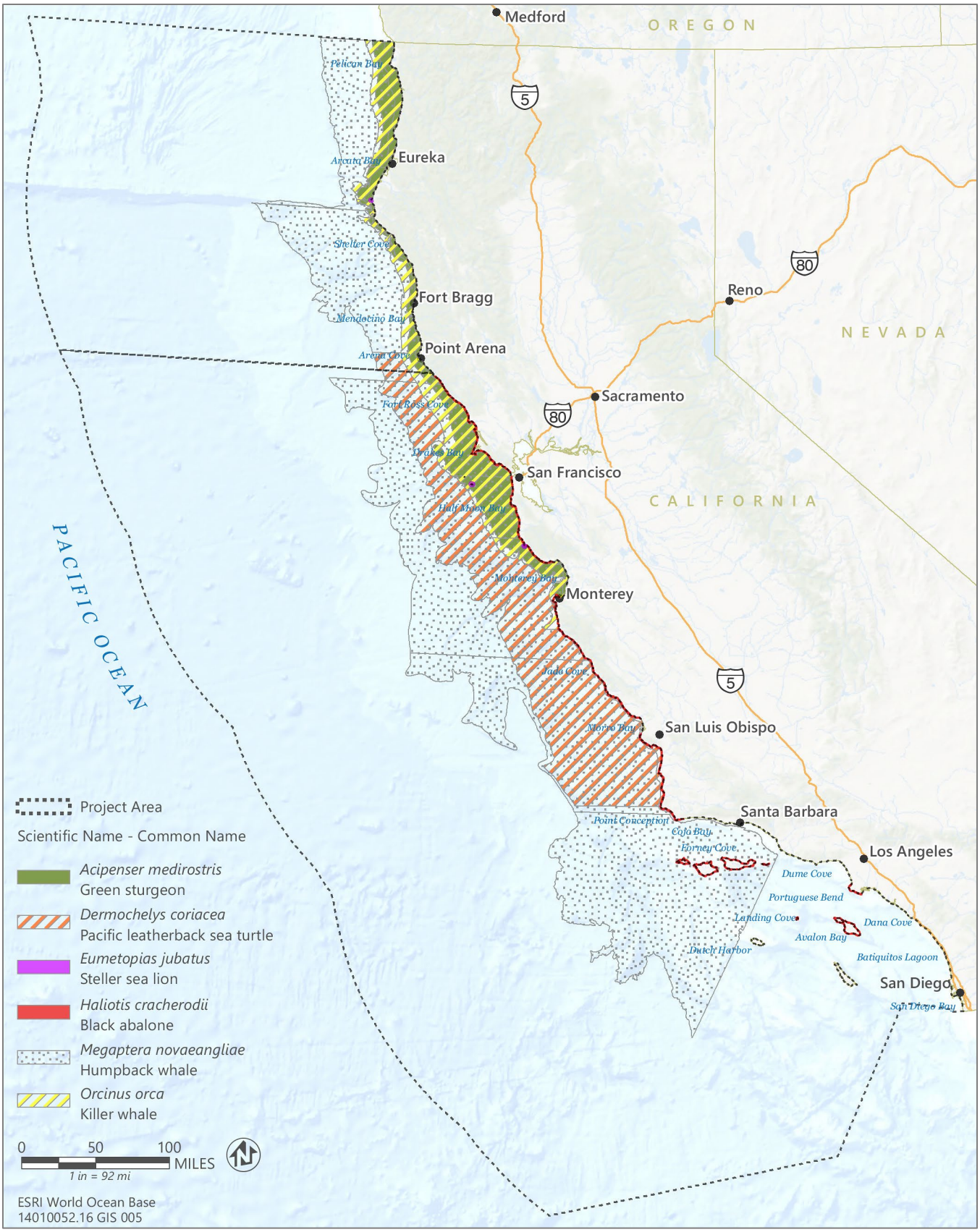
NMFS, in partnership with the Pacific Fishery Management Council and federal and state agencies, has identified EFH for each federally managed fish species (e.g., groundfish, coastal pelagic species, salmon) along the California coast and developed conservation measures to protect and enhance these habitats (refer to "Magnuson-Stevens Fishery Conservation and Management Act" section in Chapter 3.6.1, "Regulatory Setting"). EFH are those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity, such as nearshore waters, intertidal waters, and pelagic deep water. Habitat Areas of Particular Concern are subsets of EFH that highlight high-priority areas for conservation or management. These areas include habitat such as kelp forests, bays and estuaries, rocky shorelines, and eelgrass (or other seagrass) beds. These features occur throughout the project area and in every biogeographic region, but they are typically concentrated in certain areas based on geology or other favorable conditions.

Critical Habitat

"Critical habitat" is a term defined and used in the ESA. It refers to specific geographic areas designated by USFWS or NMFS that contain features essential to the conservation of an endangered or threatened species and that may require special management and protection. Critical habitat designations affect only federal agency actions or federally funded or permitted activities. CDFW, as a state agency, is not required to consult with USFWS or NMFS for actions in critical habitat. The descriptions below and in each biogeographic region description provide a complete list of the wildlife species that have designated critical habitat for informational purposes because these areas may indicate a higher probability of special-status species occurrence.

Critical habitat is present in the project area for the following wildlife species (Figure 3.6-1):

- green sturgeon (*Acipenser medirostris*),
- black abalone (*Haliotis cracherodii*),
- Pacific leatherback sea turtle,
- orca (Southern Resident DPS),
- Steller sea lion, and
- humpback whale (Central America DPS and Mexico DPS).



Source: Data downloaded from NMFS in 2022; adapted by Ascent in 2023.

Figure 3.6-1 Critical Habitat

Special Management Areas and Other Biologically Important Areas

Marine Protected Areas

Under the Marine Life Protection Act (refer to Section 3.6.1, "Regulatory Setting"), the State of California established a statewide network of MPAs in state waters along the entire California coast. MPAs are named, discrete geographic marine or estuarine areas designed to protect or conserve living, geological, and cultural marine resources. The statewide network is divided into five regions: North Coast, North Central Coast, Central Coast, South Coast, and the San Francisco Bay (Figures 3.6-2a and 3.6-2b). Different marine managed area classifications are used in California's MPA network, including three MPA designations (State Marine Reserve, State Marine Conservation Area, State Marine Park), a marine recreational management area (State Marine Recreational Management Area), and special closures.

National Marine Sanctuaries

Cordell Bank NMS

The approximately 1,286-square-mile Cordell Bank NMS was designated in 1989. This NMS is entirely offshore, with the eastern boundary approximately 6 miles from shore and the western boundary approximately 30 miles from shore (Figures 3.6-2a and 3.6-2b). Cordell Bank, the centerpiece of this NMS, is an offshore rocky bank approximately 4.5 miles wide by 9.5 miles long, covering an area of approximately 26 square miles. Cordell Bank supports a diverse array of fish and invertebrates, including sponges, corals, sea squirts, anemones, hydroids, crabs, sea stars, sea cucumbers, snails, and groundfish. The bank also provides important habitat for first-year juvenile and adult rockfishes, lingcod, and other benthic fishes.

Greater Farallones NMS

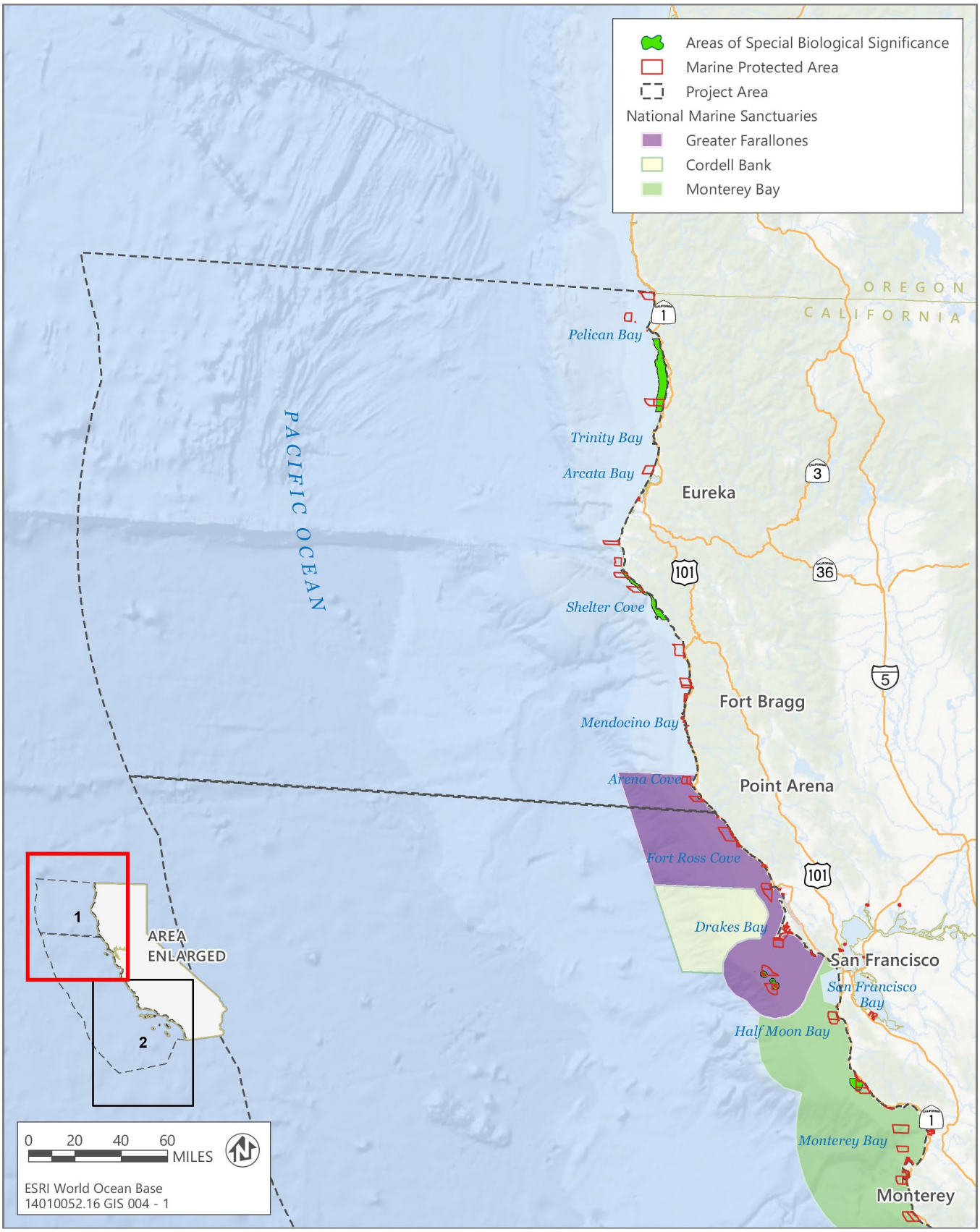
In 1981, the approximately 1,279-square-mile Gulf of the Farallones NMS was designated just north and west of San Francisco Bay to protect open ocean, nearshore tidal flats, rocky intertidal areas, estuarine wetlands, subtidal reefs, and coastal beaches within its boundaries. In 2015, the Gulf of the Farallones NMS was renamed Greater Farallones NMS and expanded north and west of its original boundaries to encompass 3,295 square miles (Figures 3.6-2a and 3.6-2b). The Greater Farallones NMS contains a diverse and productive marine ecosystem that provides breeding and feeding grounds for numerous endangered or threatened species; marine mammal species, including blue, gray, and humpback whales, harbor seals, elephant seals, Pacific white-sided dolphins, and Steller sea lions; breeding seabirds; and white shark (*Carcharodon carcharias*) populations.

Monterey Bay NMS

The Monterey Bay NMS is offshore of California's Central Coast. Stretching from Marin to Cambria, the sanctuary encompasses a shoreline length of 276 miles and 5,322 square miles of ocean (Figures 3.6-2a and 3.6-2b). Supporting one of the world's most diverse marine ecosystems, it is home to numerous mammals, seabirds, fishes, invertebrates, and plants in a remarkably productive coastal environment. The Monterey Bay NMS was established for the purpose of resource protection, research, education, and public use of this national treasure.

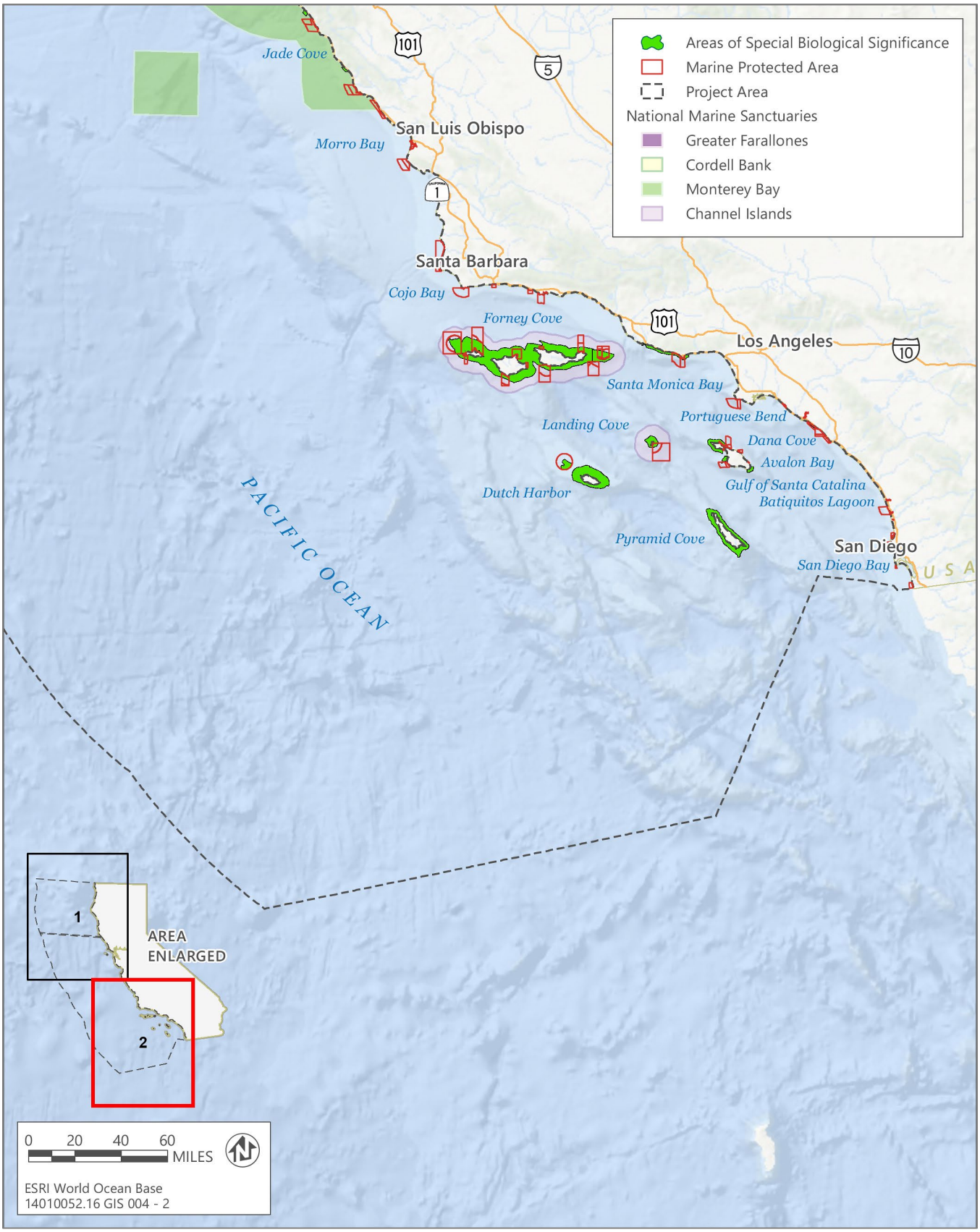
Channel Islands NMS

The Channel Islands NMS, which was designated in 1980, covers approximately 1,470 square miles of ocean waters around Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara Islands, extending from the mean high tide of these islands to 6 nautical miles offshore and surrounding Channel Islands National Park (Figures 3.6-2a and 3.6-2b). The primary goal of this NMS is to protect natural and cultural resources contained within its boundaries. The Channel Islands NMS is managed to promote ecosystem conservation, protect cultural resources, and support compatible human uses.



Source: Data downloaded from CDFW and NMFS in 2019.

Figure 3.6-2a Special and Significant Marine Areas (Map 1 of 2)



Source: Data downloaded from CDFW and NMFS in 2019.

Figure 3.6-2b Special and Significant Marine Areas (Map 2 of 2)

Designated Exclusion Zones[1]

In California, Exclusion Zones (EZs) were designated primarily to help ships navigate, avoid collisions, and move quickly and economically through ports and harbors. Large EZs are present outside the harbors of San Francisco and Los Angeles and are regulated by the US Coast Guard. The US Coast Guard also regulates security zones at the Diablo Canyon Nuclear Power Plant (in the central California region) and the San Diego Coast Guard Air Station. Other branches of the military—the US Navy and the US Air Force—regulate EZs in the central and southern California regions for the purposes of security and public safety. Although the purpose of EZs is not conservation, some EZs may be located in areas that support sensitive marine species or habitat. Natural resources may be protected indirectly by public access restrictions in EZs.

California Coastal National Monument

Statewide, more than 20,000 islands, rocks, and exposed reefs and pinnacles are included in the California Coastal National Monument, managed by the US Bureau of Land Management. The monument extends above the mean high tide line and was designed to protect the biological and geological values of offshore rocks and islets and the important forage and breeding grounds of associated seabirds and marine mammals.

Wildlife Corridors and Nursery Sites

The marine environment provides migration corridors for many wildlife species, and the spatial and temporal scales of these migrations vary based on the specific marine environment (e.g., nearshore, pelagic). Wildlife movement in the marine environment includes nearshore migration of gray whales between Baja California and the Bering Sea, offshore migration of other whale species (e.g., humpback whales, blue whales), seasonal movements of juvenile salmon out of rivers and along the shoreline, and daily movements of pinnipeds between haul-outs and foraging grounds. The Pacific Flyway extends along the Pacific Coast from Mexico north to Alaska and into Siberia, Russia. Migratory birds use this major migratory route because of its unique biological characteristics.

Important wildlife nursery sites along the California coast include pinniped rookeries (e.g., offshore rocks, mudflats, sandy beaches), seabird breeding colonies (e.g., offshore rocks), shorebird breeding areas (e.g., beaches, mudflats), and fish and invertebrate nurseries (e.g., bays, estuaries, eelgrass beds).

NORTHERN MANAGEMENT AREA

Physical Setting and Wildlife Habitat

The NMA extends from the California/Oregon border south to the Sonoma-Mendocino County line (Figure 2-1). Rocky shores are found throughout this area and include headlands and points such as Point Saint George, Patrick's Point, Trinidad Head, Cape Mendocino, Punta Gorda, and Mendocino headlands, as well as much of the coast at Fort Bragg. Notable offshore rocks that provide habitat for seabirds (e.g., common murre, Brandt's cormorant, pelagic cormorant), marine mammals, or other marine wildlife species in the NMA include:

- Prince Island near the Smith River mouth,
- Hunter Rock near the Smith River mouth,
- Castle Rock near Crescent City,
- False Klamath Rock north of the Klamath River mouth,
- Green Rock in Trinidad Bay,
- Flatiron Rock north of Trinidad Bay, and
- Sugarloaf Island near Cape Mendocino.

[1] Although the federal government uses the term "De Facto Marine Protected Areas," California identifies these areas as various "exclusion zones" to differentiate them from and avoid confusion with the extensive network of conservation-oriented Marine Protected Areas.

Additional shoreline habitat in this area is characterized by sandy beach. Snails, bivalves, crustaceans, insects, spiders, isopods, amphipods, and polychaetes are among the organisms that inhabit sandy beaches, and several of these organisms provide nourishment for larger vertebrate animals, including populations of western snowy plover (*Charadrius nivosus nivosus*). Many other species, including harbor seals, use sandy beaches in the NMA for resting and rearing young.

Tidal flats are present in the NMA near the Smith River mouth, Mad River, Humboldt Bay, the Eel River estuary, and the Mattole River mouth. Because of the abundance and diversity of invertebrate prey (e.g., clams, snails, crabs) in these areas, they provide essential foraging grounds for migratory bird species. Eelgrass beds in these habitats provide essential habitat for juvenile fish species.

Humboldt Bay, the second-largest estuary in California, after San Francisco Bay, consists of Arcata Bay at its north end, Central Bay, and South Bay. Humboldt Bay contains several diverse habitats, including tidal flats, salt marsh, and eelgrass beds. It provides habitat for a large diversity of fish species, and at least five fish species listed as threatened or endangered inhabit Humboldt Bay and its tributaries: coho salmon, Chinook salmon, steelhead, longfin smelt (*Spirinchus thaleichthys*), and tidewater goby. The bay also supports recreationally important bivalve species, including Pacific gaper clam (*Tresus nuttallii*), Washington clam (*Saxidomus gigantea*), and Pacific littleneck clam (*Leukoma staminea*), and it provides nursery grounds for Dungeness crabs. Humboldt Bay provides habitat for large concentrations and high species diversity of shorebirds and waterfowl and supports a population of harbor seals.

Four submarine canyons are present in the NMA. From north to south, these canyons are Mendocino Canyon, Mattole Canyon, Spanish Canyon, and Delgada Canyon.

Sensitive Biological Resources

Special-Status Species

Special-status seabird species that could be present in the NMA include ashy storm-petrel, California brown pelican (*Pelecanus occidentalis californicus*), marbled murrelet, and tufted puffin (*Fratercula cirrhata*). Special-status fish known to occur in the NMA include coho salmon, steelhead (northern California DPS), Pacific lamprey (*Entosphenus tridentatus*), and green sturgeon. Special-status sea turtles that could be present in the NMA are green sea turtle, Pacific leatherback sea turtle, and olive ridley sea turtle.

Several pinniped species, which are protected by the MMPA, that are known to occur in the NMA include harbor seal, Steller sea lion, California sea lion, northern fur seal, and northern elephant seal. Of these species, such as harbor seal, Steller sea lion, and northern elephant seal are known to breed in the region. Several cetacean species, also protected by the MMPA, occur in the NMA, including harbor porpoise, gray whale, humpback whale, blue whale, orca, and Dall's porpoise (*Phocoenoides dalli*).

Special Management Areas and Other Biologically Important Areas

Marine Protected Areas and Special Closures

The NMA contains 24 MPAs: seven State Marine Reserves, 16 State Marine Conservation Areas, and one State Marine Recreational Management Area; the NMA also contains six special closures, designated to limit access to sensitive shoreline or offshore rocks (Table 3.6-1).

Table 3.6-1 Marine Protected Areas and Special Closures in the NMA

North Coast MPA Region	
State Marine Conservation Areas	
Pyramid Point SMCA	Ten Mile Estuary SMCA
Point St. George Reef Offshore SMCA	MacKerricher SMCA
Reading Rock SMCA	Russian Gulch SMCA
Samoa SMCA	Big River Estuary SMCA
Big Flat SMCA	Van Damme SMCA
Double Cone Rock SMCA	Navarro River Estuary SMCA
Ten Mile Beach SMCA	
State Marine Reserves	**Special Closures**
Reading Rock SMR	Southwest Seal Rock Special Closure
South Cape Mendocino SMR	Castle Rock Special Closure
Mattole Canyon SMR	False Klamath Rock Special Closure
Sea Lion Gulch SMR	Sugarloaf Island Special Closure
Ten Mile SMR	Steamboat Rock Special Closure
Point Cabrillo SMR	Vizcaino Rock Special Closure
State Marine Recreational Management Area	
South Humboldt Bay SMRMA	
North-Central Coast MPA Region	
State Marine Conservation Areas	**State Marine Reserve**
Saunders Reef SMCA	Point Arena SMR
Point Arena SMCA	
Sea Lion Cove SMCA	

Notes: MPA = Marine Protected Area; NMA = Northern Management Area; SMCA = State Marine Conservation Area; SMR = State Marine Reserve; SMRMA = State Marine Recreational Management Area.

Source: CDFW 2023.

Areas of Special Biological Significance

Four ASBS are located in the NMA: Jughandle Cove, Kings Range, Redwood National Park, and Trinidad Head.

National Marine Sanctuaries

A portion of the Greater Farallones NMS overlaps the NMA.

CENTRAL MANAGEMENT AREA

Physical Setting and Wildlife Habitat

The CMA extends from the Sonoma-Mendocino County line to the California/Mexico border (Figure 2-1). Rocky shore habitats are found throughout the CMA, including extensive stretches along the Sonoma and Marin County coasts. Smaller stretches of rocky shores are interspersed with large sandy beaches along the San Francisco and San Mateo County coasts. Rocky shoreline and offshore rocks along Point Reyes Headlands contain large seabird colonies (e.g., common murre, Brandt's cormorant) and pinniped haul-out sites. In the central California region of the CMA, the coastline is characterized primarily by dramatic sea cliffs and rocky peninsulas (e.g., Pigeon Point, Point Año Nuevo, Point Lobos, Point Sur). Much of the coastline in the southern California region of the CMA contains long stretches of sandy beach habitat (e.g., Malibu, Santa Monica, Huntington Beach) interspersed with rocky headlands (e.g., Point

Conception, Point Mugu, Point Dume, Palos Verdes Point, Dana Point, Point La Jolla). Coastal marshes and tidal flats occur primarily around the edges of bays and estuaries (e.g., Bolinas Lagoon, Drakes Estero, Estero de Limantour, Tomales Bay, Estero Americano, Estero San Antonio), support high levels of productivity, and provide habitat for many species.

Significant expanses of continuous sandy shore areas occur along the San Francisco and San Mateo County coasts, with shorter stretches of sandy beaches and pocket beaches along the Sonoma and Marin County coastlines. Rivers deposit sediments and create barrier beaches and sandspits, such as those at the mouths of the Garcia, Gualala, and Russian Rivers and Bolinas and Limantour estuaries. These habitats support numerous species of shorebirds, including sanderlings (*Calidris alba*), marbled godwits (*Limosa fedoa*), willets (*Tringa semipalmata*), western snowy plovers, and California least terns (*Sterna antillarum*). Pinnipeds haul out on isolated beaches and sands spits.

Offshore rocks with notable seabird colonies located in the CMA include:

- Hog Island in Tomales Bay;
- Bird Rock near Tomales Point;
- Double Point Rocks, Stormy Stack, Point Resistance Rocks, and Millers Point Rocks, south of Point Reyes;
- Bird Island near Point Bonita;
- Seal Rocks in San Francisco;
- Devil's Slide Rock and San Pedro Rock on the San Mateo coast;
- Año Nuevo Island between San Francisco and Santa Cruz;
- Bird Rock near Point Lobos State Natural Reserve;
- Castle Rocks on the Big Sur Coastline;
- Hurricane Point Rocks on the Big Sur Coastline;
- Point Conception;
- Point La Jolla; and
- Channel Islands.

The Farallon Islands, which contain the largest breeding seabird colony in the contiguous United States, are located in the CMA.

Tomales Bay and Monterey Bay, two of the largest bays in California, are present in the CMA. Tomales Bay is tidally influenced and supports large concentrations and high species diversity of shorebirds and waterfowl and is a nursery ground for many species of invertebrates and fish (e.g., Dungeness crab, Pacific herring, California halibut). Tomales Bay provides habitat for several species listed as threatened or endangered, including tidewater goby, coho salmon, and steelhead. In addition, the tidal flat habitat in Tomales Bay provides haul-out habitat for several pinniped species. The Monterey Canyon extends into Monterey Bay and with it, the seasonal presence of typically pelagic species (e.g., humpback whale, shearwaters) in the bay. Both natural habitats (e.g., tidal flats) and human-made features (e.g., docks) provide haul-out habitat for several pinniped species in Monterey Bay. Southern sea otters also occur in Monterey Bay. In addition, the soft benthic habitat in Monterey Bay provides habitat for juvenile rockfish species (Johnson et al. 2001).

Submarine canyons in the CMA include the large Monterey Canyon, other canyons along the Big Sur coastline, Hueneme Canyon, Mugu Canyon, Dume Canyon, Santa Monica Canyon, Redondo Canyon, Scripps Canyon, and La Jolla Canyon. The proximity of some of these productive canyons to the shoreline results in an abundance of highly biodiverse marine species (e.g., humpback whale, bottlenose dolphin, orca, northern fulmar, shearwaters, albatross) relatively close to shore.

Sensitive Biological Resources

Special-Status Species

Special-status seabird species that could be present in the CMA include ashy storm-petrel, brown pelican, California least tern, marbled murrelet, and tufted puffin. Special-status fish known to occur in the region include coho salmon, and steelhead (northern and central California DPS). Special-status sea turtles that could be present in the CMA are green sea turtle, Pacific leatherback sea turtle, and olive ridley sea turtle.

Several pinniped species, which are protected by the MMPA, are known to occur in the CMA-including harbor seal, Steller sea lion, California sea lion, northern fur seal, Guadalupe fur seal (*Arctocephalus townsendi*), and northern elephant seal. All these species are known to breed in the region, primarily on Año Nuevo Island, the Farallon Islands, and the Channel Islands. Southern sea otters also occur in the CMA, especially near Monterey Bay and the Big Sur coastline. Several cetacean species, also protected by the MMPA, occur in the CMA, including harbor porpoise, gray whale, humpback whale, blue whale, fin whale, and orca.

Special Management Areas and Other Biologically Important Areas

Marine Protected Areas and Special Closures

The CMA contains 98 MPAs: 42 State Marine Reserves, 54 State Marine Conservation Areas, and four State Marine Recreational Management Areas; the CMA also has eight special closures (Table 3.6-2).

Table 3.6-2 Marine Protected Areas and Special Closures in the CMA

North-Central Coast MPA Region	
State Marine Conservation Areas	**State Marine Reserves**
Stewarts Point SMCA	Del Mar Landing SMR
Salt Point SMCA	Stewarts Point SMR
Russian River SMCA	Gerstle Cove SMR
Bodega Head SMCA	Bodega Head SMR
Point Reyes SMCA	Point Reyes SMR
Drakes Estero SMCA	Estero de Limantour SMR
Duxbury Reef SMCA	North Farallon Islands SMR
Southeast Farallon SMCA	Southeast Farallon Island SMR
Pillar Point SMCA	Montara SMR
State Marine Recreational Management Areas	**Special Closures**
Russian River SMRMA	Point Reyes Headlands Special Closure
Estero Americano SMRMA	Point Resistance Rock Special Closure
Estero de San Antonio SMRMA	Double Point/Stormy Stack Rock Special Closure
	North Farallon Islands Special Closure
	Southeast Farallon Island Special Closure
	Devil's Slide Rock to Devil's Slide Special Closure

Central Coast MPA Region	
State Marine Recreational Management Areas	**State Marine Conservation Areas**
Morro Bay SMRMA	Greyhound Rock SMCA
State Marine Reserves	Elkhorn Slough SMCA
Año Nuevo SMR	Soquel Canyon SMCA
Natural Bridges SMR	Portuguese Ledge SMCA
Elkhorn Slough SMR	Edward F. Ricketts SMCA
Moro Cojo Slough SMR	Pacific Grove Marine Gardens SMCA
Lovers Point-Julia Platt SMR	Carmel Bay SMCA
Asilomar SMR	Point Lobos SMCA
Carmel Pinnacles SMR	Point Sur SMCA
Point Lobos SMR	Big Creek SMCA
Point Sur SMR	Piedras Blancas SMCA
Big Creek SMR	Cambria SMCA and State Marine Park
Piedras Blancas SMR	White Rock SMCA
Morro Bay SMR	Point Buchon SMCA
Point Buchon SMR	
Vandenberg SMR	
South Coast MPA Region	
State Marine Conservation Areas	
Kashtayit SMCA	Lover's Cove SMCA
Naples SMCA	Farnsworth Onshore SMCA
Campus Point SMCA	Farnsworth Offshore SMCA
Goleta Slough SMCA	Cat Harbor SMCA
Point Dume SMCA	Arrow Point to Lion Head SMCA
Point Vicente SMCA	Anacapa Island SMCA
Abalone Cove SMCA	
Bolsa Bay SMCA	
Bolsa Chica Basin SMCA	
Upper Newport SMCA	
Crystal Cove SMCA	
Laguna Beach SMCA	
Dana Point SMCA	
Batiquitos Lagoon SMCA	
Swami's SMCA	
San Elijo Lagoon SMCA	
San Dieguito Lagoon SMCA	
San Diego-Scripps Coastal SMCA	
South La Jolla SMCA	
Famosa Slough SMCA	
Tijuana River Mouth SMCA	
Painted Cave SMCA	
Blue Caven Onshore SMCA	
Blue Cavern Offshore SMCA	
Casino Point SMCA	

State Marine Reserves	
Point Conception SMR	Skunk Point SMR
Point Dume SMR	South Point SMR
Laguna Beach SMR	Gull Island SMR
Matlahuayl SMR	Scorpion SMR
South La Jolla SMR	Anacapa Island SMR
Cabrillo SMR	Footprint SMR
Richardson Rock SMR	Begg Rock SMR
Harris Point SMR	Santa Barbara Island SMR
Judith Rock SMR	Long Point SMR
Carrington Point SMR	
Special Closures	
San Miguel Island Special Closure	Anacapa Island Special Closure

Notes: CMA = Central Management Area; MPA = Marine Protected Area; SMCA = State Marine Conservation Area; SMR = State Marine Reserve; SMRMA = State Marine Recreational Management Area.

Source: CDFW 2023.

Areas of Special Biological Significance

Twenty-one ASBS are located in the CMA (Table 3.6-3, Figures 3.6-2a and 3.6-2b).

Table 3.6-3 Areas of Special Biological Significance in the CMA

ASBS Name	
Año Nuevo	Julia Pfeiffer Burns
Bird Rock	La Jolla
Bodega	Laguna Point to Latigo Point
Carmel Bay	Pacific Grove
Del Mar Landing	Point Lobos
Double Point	Point Reyes Headlands
Duxbury Reef	Robert E. Badham
Gerstle Cove	Salmon Creek Coast
Heisler Park	San Diego-Scripps
Irvine Coast	Saunders Reef
James V. Fitzgerald	

Notes: ASBS = Area of Special Biological Significance; CMA = Central Management Area.

Source: SWRCB 2023.

National Marine Sanctuaries

All four of the NMSs designated along the California coast (Cordell Bank, Greater Farallones, Monterey Bay, and Channel Islands NMSs) are located in the CMA.

3.6.3 Environmental Impact Analysis

METHODOLOGY

This impact analysis focuses on the potential impacts on the physical environment that may occur as a result of the reasonably foreseeable compliance responses to the proposed RAMP regulatory amendments (see Section 2.5). The environmental analysis addresses those marine biological resources that may be present in the project area, as determined by a review of relevant special-status species databases, available special-status species data, and mapping of special management areas and other biologically important areas as described in Section 3.6.2, "Environmental Setting."

THRESHOLDS OF SIGNIFICANCE

An impact on marine biological resources would be significant if implementation of the project would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NMFS; a "substantial adverse effect" is defined, for the purposes of this analysis, as one that would:
  - substantially reduce the habitat of a fish or wildlife species;
  - cause a fish or wildlife population to drop below self-sustaining levels;
  - threaten to eliminate a plant or animal community; or
  - substantially reduce the number or restrict the range of an endangered, rare, or threatened species;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW, USFWS, or NMFS;
- have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

ISSUES NOT DISCUSSED FURTHER

Special-Status Plants

The project area is located entirely in the EEZ and does not include terrestrial habitats, shallow nearshore habitats (e.g., salt marsh), or offshore island habitats where special-status plants may occur. Thus, there would be no impact on special-status plants as a result of project implementation, and this issue is not discussed further in this EIR.

Riparian Habitat or Other Sensitive Natural Communities

The project area is located entirely in the EEZ and does not include terrestrial habitat (i.e., coastal areas) where most sensitive natural communities and riparian habitat would occur. Although eelgrass beds are present in California state waters nearshore, and these habitats are considered sensitive natural communities, project implementation would not result in modification of eelgrass beds or construction of structures that could adversely affect eelgrass beds through

shading. Thus, there would be no impact on riparian habitat or other sensitive natural communities as a result of project implementation, and this issue is not discussed further in this EIR.

State or Federally Protected Wetlands

The project area is located entirely in the EEZ and does not include coastal areas where state or federally protected wetlands may occur. As a result, project implementation would not result in impacts on state or federally protected wetlands, and this issue is not discussed further in this EIR.

Local Policies or Ordinances

The project area is located entirely in the EEZ, outside the jurisdiction of any local (e.g., county, city) jurisdiction; thus, the project would not be subject to any local policies or ordinances. There would be no impact related to consistency with local policies or ordinances as a result of project implementation, and this issue is not discussed further in this EIR.

Habitat Conservation Plans, Natural Community Conservation Plans, or Other Approved Local, Regional, or State Habitat Conservation Plans

The project area is located entirely in the EEZ, outside the jurisdiction of any local (e.g., county, city) jurisdiction; thus, the project is not located in the plan area of any approved habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. The project would be subject to the regulations of MPAs and NMSs where these designations overlap the project area. Project implementation would not conflict with any of these regulations. Systematic survey efforts to determine marine life concentrations would be subject to overflight restrictions and entry and activity restrictions surrounding designated MPAs. There would be no impact related to consistency with these plans as a result of project implementation, and this issue is not discussed further in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Result in Disturbance to or Loss of Special-Status Wildlife Species

Project implementation would include systematic surveys to determine marine life concentrations in the project area, as well as continuation of the existing trap gear retrieval program, and revised active tending requirements. Implementation of these efforts could result in a minor increase in vessel and aircraft activity in the project area. Although more vessel and aircraft activity could result in an increased risk of marine mammal or sea turtle boat strikes or disturbance to special-status marine mammals, sea turtles, or seabirds, the modest increase in vessel and aircraft activity associated with these efforts would not be substantial, and existing regulatory protections (e.g., MPAs, National Oceanic and Atmospheric Administration (NOAA) Regulated Overflight Zones, provisions of NMFS scientific research permits) would prevent adverse effects on special-status wildlife. Specific measures implemented under the RAMP regulatory amendments may include closures or delays in opening of one or more Fishing Zone(s) in response to entanglement risk or other measures, including crab gear depth constraints. Closure or delay in opening a zone could result in a location shift to another zone, which may increase the magnitude or concentration of crab fishing activities in some Fishing Zones (i.e., resulting from season closures or delays) or inshore areas (i.e., resulting from implementation of depth constraints). An increase in the magnitude or concentration of crab fishing activities could result in disturbance to or loss of noncovered special-status species. However, the total fishing activity in the project area would not change substantially. This impact would be **less than significant**.

Increased Vessel and Aircraft Disturbance as a Result of Implementing Systematic Surveys, the Existing Trap Gear Retrieval Program, or Revised Active Tending Requirements

The proposed project includes RAMP regulatory amendments to monitor, minimize, and mitigate entanglements of blue whales, humpback whales, and Pacific leatherback sea turtles. Systematic surveys to determine marine life concentrations in each California Fishing Zone to inform conservation efforts (e.g., closures, delays), including vessel surveys and aerial surveys, would be conducted in fall and spring. Survey results would be used to provide real-time

data regarding marine life concentrations (including Actionable Species) to assess marine life entanglement risk and to inform additional management efforts (e.g., closures, delays, depth constraints). Systematic survey efforts may result in an increase in vessel traffic from typical baseline vessel traffic during these periods. In addition, aerial surveys conducted to determine marine life concentrations may result in an increase in air traffic over marine and inshore habitats compared to typical baseline air traffic.

Increased vessel traffic could result in increased likelihood of injury to or mortality of whales, dolphins, porpoises, sea turtles, or pinnipeds, including special-status species and Actionable Species identified under the RAMP regulations, from vessel strikes. The visual and auditory disturbance associated with increased vessel activity and aerial survey activity could disturb special-status marine mammals, sea turtles, or seabirds, potentially resulting in disruption of foraging behavior at sea or disruption of breeding seabirds and marine mammals on offshore rocks or inshore breeding areas. Disruption of foraging behavior is energetically costly to seabirds and marine mammals and could result in abandonment of high-quality foraging areas. Auditory or visual disturbance from vessels or aircraft could result in adult seabirds or marine mammals "flushing" from breeding sites, potentially resulting in loss of eggs (e.g., crushing, rolling off the rock, predation) or young (e.g., crushing, predation) and overall reduced breeding productivity.

Many of the important seabird and marine mammal breeding sites along the California coast are subject to protections under the Marine Life Protection Act (i.e., special closures), which limit vessel activities that could occur close to these sites, reducing the likelihood of disturbance of breeding seabirds and marine mammals. In addition, NOAA implements Regulated Overflight Zones that establish minimum altitude limits in certain areas within NMSs (i.e., Greater Farallones, Monterey Bay, Channel Islands) to prevent disturbance of seabirds and marine mammals. These Regulated Overflight Zones include many of the largest seabird and marine mammal breeding sites on the California coast. Although permits that allow aircraft to fly below these minimum altitude thresholds can be authorized for marine research purposes, permit applications require specific information about the intended altitude and duration of survey flights and are subject to the permit's special conditions and approval of NOAA. Special closures and NOAA Regulated Overflight Zones provide protection for many of the important seabird and marine mammal breeding areas on the California coast; however, these regulations do not apply to every breeding site in California.

Systematic survey requirements under the RAMP regulatory amendments would use data collected during ongoing vessel-based and aerial surveys by entities including CDFW, NMFS, the US Coast Guard, Monterey Bay Whale Watch, and Cascadia Research Collective. Vessel-based and aerial surveys are already being conducted by these entities in some capacity; therefore, continuance of these surveys following implementation of the RAMP regulatory amendments would not necessarily result in an increase in vessel or aircraft traffic from baseline conditions. Further, entities conducting ongoing surveys for marine mammals (e.g., photo identification surveys) would be required to operate under scientific research permits from NMFS, which include limits to harassment resulting from survey activities, including Level A harassment (injury of a marine mammal) and Level B harassment (disturbance to a marine mammal resulting in disruption of behavioral patterns, including migration, breathing, nursing, breeding, feeding, or sheltering). Aerial surveys involve the risk of bird strikes. Because bird strikes can result in significant damage to an aircraft and potential death to the pilot, crew, and passengers, it is reasonable to assume that helicopter and fixed-wing aircraft pilots conducting wildlife surveys would generally implement measures to avoid bird strikes, especially over ocean environments.

Although implementation of systematic surveys to determine marine life concentrations would potentially result in a increase in vessel or aircraft traffic in the project area, because CDFW would use data collected during vessel-based and aerial surveys already being conducted by other agencies and organizations as part of the existing baseline of vessel and aircraft activity, this increase would be minor. Further, survey activities would be subject to the provisions and limitations of special closures, NOAA Regulated Overflight Zones, and NMFS scientific research permits, as well as general operational and safety measures. As a result, survey vessels and aircraft would avoid disturbance to marine mammals and seabirds, and systematic survey efforts would not result in a substantial increase in vessel or aircraft traffic in the project area.

Fishery participants have commonly estimated annual gear loss of between 5 and 10 percent (CDFW 2021). Dungeness crab vessels can retrieve lost or abandoned gear belonging to another Dungeness crab vessel permit under 14 CCR Section 132.2. CDFW recently implemented a program to permit and incentivize retrieval of lost and abandoned commercial gear after the end of the Fishing Season under 14 CCR Section 132.7, which may reduce the habitat impacts and risk of entanglement from lost gear. Under this program, Dungeness crab vessel permit holders are liable for the costs of recovering their lost or abandoned trap gear. This program would continue under the project.

The trap gear retrieval program is a strategy to reduce marine life entanglement risk by removing (either through the formal program or through voluntary efforts by the Dungeness crab fishery) lost or abandoned commercial Dungeness crab gear from the ocean. The risk of entanglement of both Actionable Species and noncovered special-status marine wildlife may be reduced through implementation of this program. Efforts to retrieve lost or abandoned trap gear is implemented by qualified entities (e.g., sport or commercial fishing associations, nonprofit entities, local agencies, harbor, or port district) that are permitted by CDFW and compensated for retrieving lost or abandoned trap gear during the period between the closure of the Fishing Season and September 30. No more than 10 Designated Retrievers, and 10 associated vessels, are allowed to operate under a given Retrieval Permit. Efforts to retrieve lost or abandoned gear may result in an increase in vessel traffic from typical baseline vessel traffic during this period. Potential impacts resulting from an increase in vessel traffic would be the same as described above for systematic survey efforts.

A summary of commercial Dungeness trap gear retrieval for the period 2020 through 2023 is provided in Table 2-3. In 2020, the first year of the program, CDFW issued seven permits for trap gear retrieval to organizations in Crescent City, Trinidad, Eureka, Bodega Bay, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2020). In the same year, there were 13 Designated Retrievers (CDFW 2020). A total of 47 retrieval trips were recorded from July 30, 2020, to September 30, 2020 (CDFW 2020). In 2021, CDFW issued six permits for trap gear retrieval to organizations in Crescent City, Bodega Bay, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2021). In the same year, there were 12 Designated Retrievers (CDFW 2021). A total of 21 retrieval trips were recorded from June 7, 2021, to September 30, 2021 (CDFW 2021). In 2022, CDFW issued five permits for trap gear retrieval to organizations in Trinidad, San Francisco, Half Moon Bay, and Monterey Bay (CDFW 2022). In the same year, there were nine Designated Retrievers (CDFW 2022). A total of 30 retrieval trips were recorded from April to August (CDFW 2022). In 2023, CDFW issued three permits for trap gear retrieval to organizations in San Francisco and Half Moon Bay. There were five Designated Retrievers and a total of eight retrieval trips were recorded from April to September that year (CDFW 2024).

Although the number of gear retrieval permits, Designated Retrievers, and retrieval trips could increase over time, the intensity of trap gear retrieval efforts and associated vessel activity in the first 4 years of program implementation (i.e., 2020, 2021, 2022, 2023) was modest compared to baseline vessel activity (i.e., all recreational and commercial fishing vessels, recreational vessels, survey vessels, law enforcement vessels). Further, additional efforts to quantify gear use, including the requirement for fishery participants to self-report trap use and education efforts, may result in a decrease in the amount of lost or abandoned trap gear and a potential reduction in the need for trap gear retrieval.

Because the list of qualified entities for the trap gear retrieval program is limited; because the number of trap retrieval permits, designated retrievers, and retrieval trips has been relatively modest during the first 4 years of program implementation; and because additional efforts are underway to reduce the amount of lost or abandoned trap gear, the trap gear retrieval program would not contribute to a substantial increase in vessel traffic in the project area or a substantial increase in the risk of marine mammal boat strikes or disturbance to marine mammals or seabirds.

Active tending requirements that would require fishermen to remain in proximity to the trap gear and tend it more regularly could be imposed as a management action. Efforts to tend to gear more regularly during the crab season may result in an increase in vessel traffic from typical baseline vessel traffic during this period. Potential impacts resulting from an increase in vessel traffic would be the same as described above for vessel survey efforts. Currently, FGC Section 9004 requires each trap to be raised, cleaned, and serviced at intervals not to exceed 96 hours (weather conditions at sea permitting). Active tending requirements would reduce the maximum service interval to 4 hours. While this requirement may result in an increase in vessel traffic, these increases would be modest compared to baseline vessel

activity (i.e., all recreational and commercial fishing vessels, recreational vessels, survey vessels, law enforcement vessels), because it would involve vessels already fishing in the area that would remain longer near trap gear, rather than a substantial number of additional vessels. Further, closer monitoring of deployed gear resulting from active tending requirements could provide benefits for both Actionable Species take minimization and entanglement reporting.

Active tending would not result in a substantial increase in vessel traffic in the project area or a substantial increase in the risk of marine mammal boat strikes or disturbance to marine mammals or seabirds, because the increase in activity would involve vessels staying near the trap gear, rather than a substantial number of additional vessels.

Increased Magnitude or Concentration of Crab Fishing as a Result of Closures, Delays, or Depth Constraints

Specific measures implemented under RAMP may include closures or delays in opening of one or more Fishing Zone(s) in response to entanglement risk or other measures, including crab gear depth constraints. Crab season closures or delays are intended to reduce the risk of entanglement of Actionable Species, by responding to real-time risk metrics, including the presence of Actionable Species in a Fishing Zone. In addition to implementing closures and delays to address elevated marine life entanglement risk, the CDFW Director may delay the opening of crab Fishing Season in part or all of the NMA because crab meat quality is low or may close any area because of biotoxin risk, and these delays have been routinely implemented. Season closures in specific Fishing Zones could result in an increased magnitude of crab fishing (e.g., more boats, more traps) in open fishing zones if crab fishing that would have been conducted in the closed Fishing Zone moved to an open Fishing Zone. Season delays could also result in more crab fishing over a shorter period in the Fishing Zone where the delay was implemented if the same annual crab fishing effort was conducted during the limited duration of the delayed season.

Depth constraints may be implemented to limit interactions of Actionable Species and crab fishery operations—for example, prohibiting take of crab seaward of the 50-fathom line to reduce interactions with blue whales. Depth constraints are intended to reduce the risk of entanglement of Actionable Species, by responding to real-time risk metrics, including the presence of Actionable Species in a certain depth zone. Implementation of depth constraints may result in increased concentration of crab gear closer to shore if the same number of crab traps is set.

Season closures and delays and depth constraints would be intended to reduce the risk of entanglement of Actionable Species; however, an increase in the magnitude of crab fishing or increased concentration of crab gear as a result of these specific conservation measures could result in an increased risk of entanglement (i.e., due to more crab traps), vessel strikes (i.e., due to more boats), or disturbance to noncovered marine mammal species or seabirds, especially those species associated with inshore areas (e.g., gray whales) where depth constraints would be implemented.

The "fair start provision" (Fish and Game Code Section 8279.1) prohibits a vessel from taking, possessing onboard, or landing crab in an area where crab fishing was previously delayed because of marine life entanglement risk, human health risk (e.g., domoic acid), or poor crab quality for a period of 30 days from the date of the opening if that vessel previously participated in other commercial Dungeness crab fishing areas during the same season. This provision would apply to any Fishing Zone delayed because of marine life entanglement risk under RAMP and when a delayed Fishing Zone opens under a depth restriction. The fair start provision would prevent an influx of crab fishing activities in recently opened Fishing Zones, including those Zones that open under a depth restriction. The 30-day period associated with the fair start provision would therefore prevent a single Fishing Zone from experiencing a substantial increase in the magnitude or concentration of crab fishing activities, which would reduce the likelihood of these activities resulting in disturbance to or loss of noncovered special-status wildlife species.

Conclusion

Impacts on special-status wildlife resulting from systematic survey efforts to determine marine life concentrations, implementation of a trap gear retrieval program, and crab fishing delays or closures or crab gear depth constraints would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.6-2: Interfere with Wildlife Movement Corridors or Impede the Use of Wildlife Nurseries

Project implementation could result in increased vessel traffic in important wildlife migratory corridors or in the vicinity of wildlife nursery sites. Although more vessel activity could result in a disruption in the normal movement, breeding, and foraging behavior of marine organisms, the increase in vessel activity would not be substantial, and existing regulatory protections (e.g., special closures, provisions of NMFS scientific research permits) would prevent interference with wildlife movement corridors and adverse effects on wildlife nurseries. This impact would be **less than significant**.

Migration, dispersal, and other, smaller-scale movements in the project area include movements ranging from those associated with small organisms (e.g., invertebrate larval dispersal) to those associated with the largest organisms (e.g., whale migration). Movements occur over great distances (e.g., large-scale migrations) and locally (e.g., pinniped and seabird dispersal from a haul-out or rookery to offshore foraging grounds). These movements can occur in nearshore and pelagic environments and, when organisms are transiting for foraging purposes, are based on the often unpredictable locations of prey species (e.g., fish, krill).

Various types of wildlife nursery sites are present in the project area. Bays, estuaries, and eelgrass beds provide nursery habitat for many fish and invertebrate species; however, project implementation would not result in impacts on these resources. Nursery sites in the project area that could be adversely affected by project implementation include pinniped rookeries, seabird colonies, and coastal shorebird nesting areas. Wildlife movements are often centered on these sites, particularly with organisms like sea lions and common murres that are considered "central-place foragers" (i.e., organisms that return to the same place after foraging bouts). Many MPAs and special closures in the project area were designed in part to protect these sensitive nursery sites (e.g., Southwest Seal Rock Special Closure, Devil's Slide Rock Special Closure, Año Nuevo State Marine Reserve). Several known nursery sites are also located in ASBS because of their ecological importance. However, many nursery sites (e.g., small seabird colonies, small pinniped rookeries) are not adjacent to MPAs or special closures and thus would not benefit from their protective requirements.

As described above under Impact 3.6-1, implementation of the RAMP regulatory amendments is specifically intended to reduce the risk of entanglement of Actionable Species migrating or otherwise moving through the project area. However, project implementation could result in increased vessel traffic from implementation of systematic surveys to determine marine life concentrations, from implementation of the trap gear retrieval program, and from active tending requirements. If these efforts were conducted in important migratory corridors or close to nursery sites or known foraging grounds, the normal movement, breeding behavior, or foraging behavior of marine wildlife species could be disrupted. Disruptions to the normal behavior of marine wildlife species could lead to abandonment of nursery sites or foraging habitat. In addition, disruption of an established movement corridor could result in increased exposure to predation if a species must move through less protected waters. Vessel operation in important migratory corridors or close to nursery sites or known foraging grounds also could result in disturbance, injury, or mortality to wildlife (e.g., vessel strikes) or interruption of normal breeding or foraging behavior.

For the same reasons described for Impact 3.6-1, above, survey vessels and aircraft would avoid substantial disturbance to wildlife movement corridors and nursery sites, and systematic survey efforts and implementation of the trap gear retrieval program would not result in a substantial increase in vessel traffic in the project area. Impacts on wildlife movement corridors and wildlife nursery sites resulting from project implementation would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

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3.7 WATER QUALITY

This section identifies the regulatory context and policies related to marine water quality, describes existing water quality conditions in the project area, and evaluates potential water quality-related impacts from reasonably foreseeable compliance actions in response to implementation of the proposed RAMP regulatory amendments.

During the public scoping period for the notice of preparation, commenters expressed concern about the potential for ropeless and pop-gear systems to contain toxins and heavy metals that could degrade water quality. These comments are addressed, as appropriate, in this section.

3.7.1 Regulatory Setting

FEDERAL

Clean Water Act

The US Environmental Protection Agency (EPA) is the lead federal agency responsible for water quality management. The Clean Water Act (CWA) is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the CWA address water quality. They are discussed below.

CWA Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations, below, the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

CWA Section 303(d) Impaired Waters List

Under Section 303(d) of the CWA, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). These lists also identify the pollutants causing the impairment. Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. The TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. It is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the state RWQCBs. The Water Quality Control Plan: Ocean Waters of California (California Ocean Plan) is applicable to point source discharges to the ocean off the coast of California.

CWA Section 311

Under Section 311 of the CWA, the discharge of fuel, oil, oily wastes, and hazardous substances into or upon the navigable waters of the United States or the waters of the contiguous zone is prohibited if such discharge causes a film or sheen on, or discoloration of, the surface of the water or causes a sludge or emulsion beneath the surface of the water. If such a discharge occurs, the violating party is responsible for control and cleanup, as well as costs incurred. Oil and chemical spills need to be reported to both the National Response Center and the state. A placard displaying discharge restrictions is required for all vessels 26 feet or longer.

CWA Section 312

Section 312 of the CWA prohibits discharge of untreated sewage into navigable waters. This section of the CWA is implemented jointly by the US Coast Guard (USCG) and EPA. Section 312 also establishes effluent standards for marine sanitation devices (i.e., onboard sewage treatment), including acceptable fecal coliform and suspended solid levels. Onboard sewage treatment systems must have a USCG certification label.

2013 National Pollutant Discharge Elimination System Vessel General Permit

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the CWA to regulate municipal and industrial discharges into surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges, including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the CWA contain general requirements regarding NPDES permits. The RWQCBs in California are responsible for implementing the NPDES permit system (see the discussion of state plans, policies, regulations, and laws, below).

The EPA 2013 Vessel General Permit (VGP) provides permit coverage nationwide for discharges incidental to the normal operation of commercial vessels more than 79 feet in length. This includes deck washdown runoff, above waterline hull cleaning, bilgewater/oily water separator effluent, ballast water, anti-fouling hull coating, aqueous film forming foam, boiler/economizer blowdown, cathodic protection, chain locker effluent, graywater, and more. The VGP contains numeric effluent limits for each discharge category. Small vessels and fishing vessels of all sizes are exempt from permitting under the VGP for all incidental discharges except for ballast water. Small vessels and fishing vessels of any size must follow ballast water discharge requirements established in the VGP, USCG ballast water regulations (Title 33 Part 151[D], "Ballast Water Management for Control of Nonindigenous Species in Waters of the United States), and Title 46 Part 162.060, "Ballast Water Management Systems"), and any applicable state and local government requirements. The 2013 VGP was originally set to expire in 2018 but was replaced by the Vessel Incident Discharge Act (VIDA) (further described below). VIDA discharge regulations are proposed for publishing in the Fall of 2024 and until those regulations are effective, the VGP regulations are in place.

Vessels less than 300 tons that do not have the capacity to hold or discharge more than 8 cubic meters of ballast water do not need to submit a Notice of Intent to obtain coverage under the VGP but must complete the Permit Authorization and Record of Inspection (PARI) form and keep a copy onboard the vessel.

Vessel Incidental Discharge Act

On December 4, 2018, the "Vessel Incidental Discharge Act" (VIDA) (Title IX of the Frank LoBiondo Coast Guard Authorization Act of 2018) was signed into law. VIDA restructures the way the EPA and the USCG regulate incidental discharges, primarily from commercial vessels, into waters of the United States and the contiguous zone. Specifically, VIDA amends CWA Section 312 to include a new subsection (p) titled, "Uniform National Standards for Discharges Incidental to Normal Operation of Vessels." This new subsection requires the EPA to develop new national standards of performance for commercial vessel discharges and the USCG to develop corresponding implementing regulations.

On October 18, 2023, the EPA's Supplemental Notice of Proposed Rulemaking to the Vessel Incidental Discharge National Standards of Performance was published in the *Federal Register* (88 FR 71788). The Supplemental Notice shared new ballast water information that EPA received from the USCG and discussed additional regulatory options for ballast tanks, hulls and associated niche areas, and graywater systems that EPA is considering for the final rule. The rule reduces the environmental impact of discharges, such as ballast water, that are incidental to the normal operation of commercial vessels. This rule streamlines the current patchwork of federal, state, and local requirements that apply to the commercial vessel community and better protects our nation's waters. The EPA has indicated that new federal discharge standards for vessels will be published in the fall of 2024. Until publication of the new standards, the existing ballast water discharge requirements established through the VGP and the USCG ballast water regulations and any applicable state and local government requirements are applicable.

Rivers and Harbors Act

The Rivers and Harbors Act of 1899 prohibits discharge of refuse matter into navigable waters, or tributaries thereof, of the United States without a permit. Permits are also required for any activities that involve excavating, filling, or

altering the course, condition, or capacity of any port, harbor, channel, or other areas covered by the act. Many of these activities are also regulated by the CWA.

Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides for management of the nation's coastal resources. In 1990, the US Congress passed the Coastal Zone Act Reauthorization Amendments to address nonpoint source pollution problems in coastal waters. The California Coastal Commission (CCC) has authority for implementation of the CZMA. The CWA and CZMA require that the state develop coastal nonpoint source pollution control programs that incorporate required management measures to reduce or prevent polluted runoff to coastal waters from specific sources.

STATE

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality and is the primary vehicle for implementation of California's responsibilities under the CWA. The RWQCBs applicable to the proposed project are the North Coast, San Francisco Bay, Central Coast, Los Angeles, Santa Ana, and San Diego RWQCBs. SWRCB and the RWQCBs have the authority and responsibility to adopt plans and policies, regulate discharges to surface water and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a Basin Plan for its region. The Basin Plans usually include a comprehensive list of water bodies in the region and detailed language about the components of applicable Water Quality Objectives (WQOs). They generally recognize natural water quality, existing and potential beneficial uses, and water quality problems associated with human activities. Through the Basin Plans, RWQCBs execute their regulatory authority to enforce the implementation of TMDLs and to ensure compliance with surface WQOs. The Basin Plans include both narrative and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply; irrigation; noncontact and contact water recreation; groundwater recharge; freshwater replenishment; hydroelectric power generation; and preservation and enhancement of wildlife, fish, and other aquatic resources. The California Ocean Plan (2019) (discussed in the following section) was developed by SWRCB to serve the purpose of the Basin Plans for protection of ocean waters.

California Ocean Plan

The California Ocean Plan establishes beneficial uses and water quality standards for point and nonpoint discharges, as well as effluent limitations for point source discharges to the ocean (excluding bays and estuaries). The beneficial uses to be protected include industrial water supply; water contact and noncontact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance; rare and endangered species; marine habitat; fish migration; fish spawning; and shellfish harvesting (SWRCB 2019). The California Ocean Plan establishes numeric water quality objectives for bacteria (such as fecal coliform) and chemical constituents relevant to protection of marine aquatic life and human health. Qualitative standards are included for physical characteristics, such as floating particulates, water color, nutrients, sediment deposition rates, trash, and biological health.

California Coastal Act

The mission of the CCC's Enforcement Program is to uphold the requirements of the California Coastal Act, which mandates protection of coastal resources, including coastal habitats, coastal public access and recreation, and other coastal resources. The Enforcement Program works to ensure that all nonexempt development along the California coast, including development in certain coastal mountains, undergoes the act's independent permit review process and secures the required Coastal Development Permit (CDP). The CCC's Enforcement Program also works to ensure

compliance with all terms and conditions of CDPs previously issued by the CCC. In certain cases, the enforcement program also helps to enforce compliance with the Local Coastal Programs of local coastal governments and the California Coastal Act.

State Nondegradation Policy

The State Nondegradation Policy states that where the existing quality of water is better than required under existing Basin Plans, such quality would be maintained and that any activity that produces waste or increases the volume or concentration of waste and that discharges to existing high-quality waters would be required to meet waste discharge requirements.

State Laws regarding Vessel Abandonment

It is illegal in California to abandon a vessel, and the California Legislature has passed multiple bills to address the issue. Assembly Bill (AB) 716 allows vessels with registrations expired for more than 1 year to be removed from a public waterway by law enforcement officers. AB 716 increased the maximum penalty for abandoning a vessel to $3,000 and allows courts to require violators to pay the actual costs of removal and storage in addition to the fine. AB 166 created a statewide vessel turn-in program that allows owners of unwanted boats to give vessels to a public agency for disposal rather than abandon them.

California Fish and Game Code

The commercial Dungeness crab fishery in California is regulated primarily by California Fish and Game Code Section 8275 et seq. This section addresses season dates and a trap limit program; implementing regulations are found in 14 CCR Sections 132.1 and 132.2. Fish and Game Code Section 9002.5 requires CDFW to develop a program that facilitates retrieval of lost and abandoned commercial crab traps following the end of the Fishing Season; implementing regulations are found in 14 CCR Section 132.7. Fish and Game Code Section 9004 describes gear servicing requirements—specifically, that each trap shall be raised, cleaned, and serviced at intervals not to exceed 96 hours and that no trap shall be abandoned in the waters of the state.

LOCAL

City and County General Plans and Zoning

Cities and counties are required to prepare a comprehensive planning document in order to guide future development at the local level. Goals and policies that regulate water quality typically are included in required elements. Some local jurisdictions have authority offshore.

Bay Management Plans

Bay management plans (e.g., Humboldt Bay Management Plan) identify policies to guide development in and around bay areas and include consideration of water quality.

3.7.2 Environmental Setting

OCEAN CURRENTS

The California coast represents a tectonically active continental margin dominated by processes such as uplift, erosion, and seismic activity, much of which is associated with transform plate movement along the San Andreas Fault. Consequently, the coast in most areas drops quickly into deep water. Generally, the continental shelf is only a few miles wide, although in some parts of the Southern California Bight south of Point Conception it becomes substantially wider. The waters off California are part of the California Current System (CCS), a highly productive marine ecosystem spanning the West Coast of North America from British Columbia to Baja California (Talley et al. 2011). The CCS comprises the California Current, the California Undercurrent, the Davidson Current, and the Southern California Countercurrent (Hickey 1979). Cool water from high latitudes flows south from British Colombia to Baja

California while wind blows from land to sea, pushing ocean surface waters away from the coast and allowing cooler, nutrient-rich water to rise and take its place, a process known as upwelling (NASA 2016). Like other oceanic eastern boundary current systems, the CCS experiences significant, sustained upwelling events driven by large-scale wind and circulation patterns (Carr and Kearns 2003; Talley et al. 2011).

The California Current Integrated Ecosystem Assessment (CCIEA) team identifies three basin-scale oceanographic phenomena that influence dynamics of the CCS: El Niño Southern Oscillation (ENSO), Pacific Decadal Oscillation (PDO), and North Pacific Gyre Oscillation (NPGO) (Harvey et al. 2022).

ENSO has three states: neutral, El Niño, and La Niña. During ENSO neutral years, trade winds move warm surface waters from the eastern Pacific to the western Pacific, driving upwelling along the coast of South America. During El Niño, the high-pressure system over the western Pacific weakens, allowing warm surface waters to move from the western Pacific toward the Americas, reducing upwelling and productivity in the eastern Pacific. During La Niña, trade winds strengthen, intensifying upwelling in the eastern Pacific, bringing cool water to the surface of the Americas' west coast. The CCIEA tracks ENSO conditions through the Oceanic Niño Index (ONI), which is a 3-month running mean of sea surface temperature (SST) anomalies in the Nino 3.4 region (120–150° W. longitude and 5° N. latitude-5° S. latitude). ONI values above 0.5 degree Celsius (ºC) indicate El Niño conditions, and values below -0.5ºC indicate La Niña conditions. The cycling between El Niño, La Niña, and ENSO-neutral conditions is variable in both periodicity and intensity but typically recurs every 2–10 years.

The PDO also reflects anomalies in SST, with positive values (warmer temperatures) indicating lower productivity and lower values (colder temperatures) reflecting higher productivity conditions (Harvey et al. 2022). Cycling between the warm and cool phases of the PDO occurs on longer timescales than ENSO, typically on 20- to 30-year intervals (Harvey et al. 2022).

The NPGO is an index of sea surface height, indicating basin-scale circulation patterns. Positive NPGO values are associated with higher flows of nutrient-rich subarctic waters toward the equator, supporting more productive coastal ecosystems, and negative NPGO values are associated with decreased contributions of subarctic waters and lower productivity (Harvey et al. 2022).

Skogsberg (1936) suggested that three trends broadly apply to the CCS: a spring/summer "upwelling season," a summer/fall "oceanic season," and a winter "Davidson Current season." Persistent, low-magnitude upwelling occurs nearly year-round below Point Conception, and the upwelling season shortens with increasing latitude. Between Point Conception and Cape Mendocino, relatively consistent upwelling of a moderate magnitude occurs from March to October. The highest magnitude upwelling is seen north of Cape Mendocino between April and October, with a peak in July. Complex coastal topography (e.g., capes, points, and peninsulas) and bathymetry (e.g., banks and canyons) can alter upwelling patterns and associated productivity (Huyer 1983; Marchesiello et al. 2003). Upwelling phenology is also affected by basin-scale changes in oceanographic circulation, including ENSO and PDO (Bograd et al. 2009). Specifically, increased advection of southern source water associated with El Niño events can result in dramatic declines in productivity and shifts in community structure, whereas during the cold phases of ENSO, the coastal ecosystem is characterized by intensified transport of nutrient-rich northern waters and increased productivity (Checkley and Barth 2009).

Variations in large-scale atmospheric forcing can also influence upwelling dynamics and ecosystem productivity in the CCS. The North Pacific High (NPH) is a semipermanent area of high pressure (>1020 Pascals) in the North Pacific Ocean, and variation in both the size and location of the NPH affects the timing and strength of coastal upwelling off California (Schroeder et al. 2013). Climate change may alter historical upwelling dynamics. Brady et al. (2017) anticipate that in the latter half of the 21st century, seasonal upwelling in the CCS will be characterized by a more intense spring transition (shift from downwelling to upwelling) and a reduction in total seasonal upwelling. These changes could lead to higher, rather than lower, productivity if more moderate levels of upwelling recalibrate the balance between advection and available nutrients. Between 2014 and 2016, typical seasonal dynamics in the Northeast Pacific were disrupted by a Large Marine Heatwave (LMH) event colloquially known as "The Blob." Driven by changes in sea level pressure (Bond et al. 2015), this LMH event had profound impacts on ocean circulation patterns that cascaded throughout the ecosystems of the CCS. One such restricted upwelling event occurred in the

2015-2016 period that compressed available forage into a relatively narrow band along the coast (Santora et al. 2020). When large whales arrived off the California coast, their distribution was similarly compressed into nearshore areas where active Dungeness crab fishing was occurring. The convergence of these factors likely contributed to the record number of confirmed large whale entanglements along the West Coast in 2016 (n = 56), 22 (39 percent) of which involved California commercial Dungeness crab gear.

MARINE WATER QUALITY

A wide range of pollution sources, both land and water based, affect marine water quality in the project area. Nearshore impairment of water quality can result from municipal sewage discharges, industrial waste discharges, dredge spoils, and agricultural and urban runoff. Treated wastewater discharges associated with urbanized areas can contain both domestic and industrial wastes. Storm runoff from urbanized and nonurbanized areas can contain a variety of pollutants, with agricultural watersheds often contributing loads of pesticides and nutrients to nearshore waters. When water quality is poor, the ability of coastal ecosystems to support healthy fisheries, recreational opportunities, and other beneficial uses is undermined.

The five factors that affect offshore water quality in the project area are described below. Depending on the specific location along the coast, any one or all of these factors can be of concern to the general water quality of the area (CFGC 2016):

- Point Source Pollution: There are specific locations (point sources) where industrial pollution enters coastal waters. Discharges from these locations are generally regulated by state or federal agencies. The origins of these point sources include municipal wastewater treatment and disposal systems and industrial sites, such as desalination plants, power plants, aquaculture sites, and research marine laboratories. In addition, outfalls for untreated stormwater may contain pollutants, such as bacteria, trash, petroleum hydrocarbons, and heavy metals.
- Nonpoint Source Pollution: Nonpoint source pollution is the leading cause of degraded water bodies across the country. Nonpoint pollution sources include urban runoff, resource extraction (offshore energy extraction, sand mining, forestry operations, drilling and pumping of petroleum products onshore), boats (recreational vessels, commercial vessels, and cruise ships), and agriculture. Potential nonpoint source pollution in the project area includes sediment, pesticides, fertilizers, trash, salt, oils, heavy metals, grease, plastics, bacteria, and nutrients.
- Algal Blooms: Certain species of phytoplankton and cyanobacteria pose threats to marine water quality through rapid reproduction and depletion of dissolved oxygen or release of toxins. Harmful algal blooms occur naturally in surface waters under conditions of elevated water temperature, high nutrient levels, and reduced water flow and circulation.
- Contaminated Sediments: Some areas along the California coast have contaminated sediments and have been designated as Superfund sites by the federal government.
- Oil and Hazardous Material Spills: California has been the site of numerous accidental oil spills related to heavy oil and hazardous material tanker traffic, marine shipping, the presence of oil platforms located off the southern California coast, and crude oil and refined product pipelines running from platforms to onshore sites, as well as along the coast.

SWRCB has documented locations of water quality impairment, where pollutants have impaired the ability of water bodies to support their beneficial uses. Several streams and rivers are listed as impaired by pollutants that flow into the Pacific Ocean off the coast of California. Only a few areas of coastal water in the project area are listed as being impaired. Areas listed as impaired in the project area include Humboldt Bay, which is listed for dioxin toxic equivalents and polychlorinated biphenyls (PCBs); Tomales Bay, which is listed for sedimentation/siltation, nutrients, mercury, and pathogens; the Pacific Ocean (between Point Año Nuevo and Soquel Point), which is listed for Dieldrin (insecticide); Santa Monica Bay, which is listed for PCBs, trash, mercury, arsenic, dichlorodiphenyltrichloroethan (DDT); Los Angeles/Long Beach Outer Harbor, which is listed for PCBs, DDT, and toxicity; and Anaheim Bay, which is listed for nickel, toxicity, and PCBs (SWRCB 2023).

3.7.3 Environmental Impact Analysis

METHODOLOGY

Evaluation of potential water quality impacts is based on a review of existing documents and studies that address ocean water conditions and resources along the coast of California. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the thresholds of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, ordinances, and regulations.

THRESHOLDS OF SIGNIFICANCE

An impact on water quality would be significant if implementation of the project would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade ocean water quality or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ISSUES NOT DISCUSSED FURTHER

Groundwater Sustainability

The project would be implemented in the ocean with no land-based facilities. Therefore, the project would have no impact on groundwater supply or onshore surface water quality. Because conflicts with or obstruction of sustainable groundwater management plans would not occur, this issue is not discussed further in this EIR.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.7-1: Violate Any Water Quality Standards, Waste Discharge Requirements, or Water Quality Control Plan or Otherwise Substantially Degrade Ocean Water Quality

Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of fishing permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey vessel trips and active tending trips. This small increase in the number of survey vessel and active tending trips relative to the total number of vessels in the project area would not constitute a significant water quality impact related to the accidental release of pollutants from maintenance activities or spills or from pollutants washed from the surface of the vessels. Ballast water releases from fishing vessels are regulated by the 2013 VGP and in the future will be regulated by discharge standards established in the VIDA when they are published. The VGP establishes numeric discharge limitations and best management practices for ballast water. It is illegal to abandon vessels, and programs are in place through ABs 716 and 166 to deter vessel abandonment; therefore, abandonment of vessels would not result in a significant water quality impact under the project. Implementation of the proposed RAMP regulatory amendments would not increase the number of crab traps deployed. In addition, each trap is isolated spatially from other traps and is less than 5 feet in diameter. Disturbed seafloor sediment from crab trap deployment is dispersed by the current and resettles on the ocean floor and does not cause a significant water quality impact. All alternative gear is required to be certified by CDFW before use and to comply with all federal, state, and local regulations. No violations or impairment of water quality standards or beneficial uses would result from implementation of the project. Therefore, this impact would be **less than significant**.

Vessel-Related Pollutants

The CWA prohibits the discharge of pollutants into navigable waters of the United States, but accidental releases can occur. Boating-related activities can cause water pollution from accidental release of antifouling paint, sewage,

petroleum products, wastewater, and trash during maintenance activities or spills. Antifouling paint used on boat hulls to reduce plant and animal growth contains harmful chemicals, such as copper and lead. These chemicals can have adverse effects on water quality. Efforts are in place to encourage a transition to the use of nonmetal, antifouling paints. Any materials stored or used on the vessel surface have the potential to be washed into the ocean during rain or high-wave events. These materials include cleaning fluids, mechanical equipment maintenance fluids, and other pollutants that could affect water quality in the ocean. The more vessel trips associated with implementation of the proposed RAMP regulatory amendments, the more likely vessel-related pollutants could degrade water quality.

The California Legislature first implemented a restricted access program for the Dungeness crab fishery in 1995, capping the fishery at 681 permits through AB 3337. A trap limit program to further control effort was established in 2013 (SB 369). The total number of permits for the fishery is now capped based on the most recent total number of renewed permits and permit holders are divided into seven tiers with a cap on allotted traps for each tier. In 2023, 521 permits were renewed for the 2023-2024 Fishing Season. Therefore, the fishery would be capped at no more than 521 permits under the proposed project, It is assumed that each permit is held by a separate vessel. Therefore, the number of active fishing vessels would not be greater than the highest number used in the past. It is assumed that all these boats are moored at a harbor or marina and are in the water regardless of Fishing Season length and therefore that the length of the Fishing Season would not alter the water quality impact associated with accidental release of pollutants.

Implementation of the proposed RAMP regulatory amendments would slightly increase the number of vessels used for surveys and active tending. Under current conditions, there are fewer than 10 survey vessel trips per season. This number would increase slightly under the project, which would result in a slightly higher risk of release of pollutants related to maintenance or spill or from being washed from the surface of the vessel. This small increase in the number of vessel trips would be insignificant relative to the total number of all vessels in the project area.

The 2013 VGP establishes numeric effluent limits and best management practices for ballast water to protect water quality. Each vessel with coverage under the VGP is required to create a Ballast Water Management Plan that outlines how they will implement mandatory ballast water management practices. The 2013 VGP was originally set to expire in 2018 and be replaced by the VIDA. VIDA discharge regulations are proposed for publishing in the Fall of 2024 and, until those regulations are effective, the VGP regulations remain in effect.

Vessel Abandonment

If implementation of the proposed RAMP regulatory amendments makes it too costly or difficult for vessel owners to continue in the Dungeness crab industry, there could be an increase in vessel abandonment. Abandoned vessels pose a risk to water quality because of associated hazardous material, including paint, oil, solvents, batteries, and other wastes. It is illegal in California to abandon a vessel, and the California Legislature has passed multiple bills to address the issue. AB 716 allows vessels with registrations expired for more than 1 year to be removed from a public waterway by law enforcement officers. AB 716 increased the maximum penalty for abandoning a vessel to $3,000 and allows courts to require violators to pay the actual costs of removal and storage in addition to the fine. AB 166 created a statewide vessel turn-in program that allows owners of unwanted boats to give vessels to a public agency for disposal rather than abandon them. Compliance with and enforcement of these laws would reduce the risk of water quality contamination from abandoned vessels.

Seafloor Disturbance

When crab traps are set or pulled up from the ocean floor, they cause minor suspension of the surface layer of sediments on the seafloor. This increase in turbidity temporarily affects water quality in the immediately surrounding area. However, suspended material is dispersed by the current and eventually settles back to the seafloor. Traps are typically 3 to 3.5 feet in diameter and are dispersed throughout a fishing area. Only one trap is permitted per line per Fish and Game Code Section 9012, which prevents multi-trap trawls that would drag on the seafloor and cause increased disturbance when the line is pulled up. CDFW estimates that the number of traps deployed during the 2022-2023 season was 106,006 (CDFW 2024). This would result in a temporary, isolated disturbed area of approximately 23 acres per year over the entire project area of 141,954,505 acres.

Lost or abandoned trap gear could also disturb the seafloor as currents move the traps. Fishery participants have commonly estimated annual gear loss of between 5 and 10 percent (CDFW 2024). Dungeness crab vessels can retrieve lost or abandoned gear belonging to another Dungeness crab vessel permit under 14 CCR Section 132.2. CDFW recently implemented a program to permit and incentivize retrieval of lost and abandoned commercial gear after the end of the Fishing Season under 14 CCR Section 132.7, which could reduce the habitat impacts from lost gear. Under this program, Dungeness crab vessel permit holders are liable for the costs of recovering their lost or abandoned trap gear. This program would continue under the project.

Pollutants in Alternative Gear

The RAMP regulatory amendments would encourage the use of alternative, ropeless gear to decrease the risk of entanglement for sea animals. Ropeless and pop-up gear systems could contain potentially toxic plastics and microplastics and computer, battery, and heavy metal components that could, if in mass use, contribute to a decrease in water quality. These systems could consist of acoustic receivers, galvanic timed buoy and rope release devices, electronic timed-release devices, or compressed gas canisters. The RAMP regulations established a process for CDFW certification of alternative gear under 14 CCR Section 132.8 (Objective 2b). Alternative gear performance standards include detectability, reliability of retrieval, identifiability, and reduction in risk or severity of entanglement with marine life. Alternative gear must also comply with all applicable federal, state, and local laws as listed in Section 3.7.1, "Regulatory Setting," above. Upon certification, alternative gear would become legal commercial fishing gear and could be used by all participants. The required certification from CDFW and federal, state, and local oversight for alternative gear would reduce the potential that alternative gear components would result in water quality degradation.

Water Quality Plans

Coastal water quality in the project area is affected by point source discharges, stormwater discharges, nonpoint source pollution, agricultural activities, forestry operations, urban areas, hydrologic modification, ports, harbors, marinas, and associated vessels. Implementation of the proposed RAMP regulatory amendments would not directly affect existing water quality impairments.

Implementation of the project would not conflict with any aspect of the established water quality standards for California's coast, bays, lagoons, or estuarine waters. Based on the evaluation presented above, there would be no substantial changes to water quality that would adversely affect aquatic life or human health. Therefore, no violations or impairment of water quality standards or beneficial uses would result from implementing the proposed project.

Conclusion

Implementation of the proposed RAMP regulatory amendments would not result in an increase in the number of permits issued or the number of vessels used for fishing and would result in only a limited increase in the number of survey and active tending vessel trips. This small increase in the number of boat trips relative to the total number of all vessels in the project area would not constitute a significant marine water quality impact from accidental release of pollutants related to maintenance activities, spills, or wash from the surface of the vessel. Each Dungeness crab trap is small and isolated spatially from other traps; therefore, the sediment that is disturbed by trap deployment and retrieval disperses and resettles on the ocean floor and would not constitute a significant water quality impact. In addition, the lost gear retrieval program (14 CCR Section 132.7) would continue to be implemented under the project to minimize the amount of lost gear that would be transported by currents and disturb ocean floor sediments. The VGP establishes numeric effluent limitations and requires best management practices to prevent water quality impacts from ballast water. It is illegal to abandon vessels, and programs are in place through ABs 716 and 166 to deter vessel abandonment. Alternative gear is required to be certified by CDFW before use and must comply with all federal, state, and local regulations described in Section 3.7.1, "Regulatory Setting," above. Implementation of the project would not conflict with any aspect of the established water quality standards for California's coast, bays, lagoons, or estuarine waters. Based on the evaluation presented above, there would be no significant changes to water quality under the project that would adversely affect aquatic life or human health. No violations or impairment of water quality standards or beneficial uses would result from implementing the project. Therefore, the impact of project implementation on water quality would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

4 CUMULATIVE IMPACTS

4.1 INTRODUCTION TO THE CUMULATIVE ANALYSIS

This Draft EIR provides an analysis of cumulative impacts associated with implementation of the proposed RAMP regulatory amendments taken together with other past, present, and probable future projects producing related impacts, as required by Section 15130 of the State CEQA Guidelines. The goal of such an exercise is twofold: first, to determine whether the overall long-term impacts of all such projects would be cumulatively significant, and second, to determine whether the incremental contribution to any such cumulatively significant impacts by the project would be "cumulatively considerable" (and thus significant). (See State CEQA Guidelines Sections 15130[a]–[b], Section 15355[b], Section 15064[h], and Section 15065[c]; and *Communities for a Better Environment v. California Resources Agency* [2002] 103 Cal. App. 4th 98, 120.) In other words, the required analysis intends first to create a broad context in which to assess cumulative impacts, viewed on a geographic scale beyond the project site itself, and then to determine whether the project's incremental contribution to any significant cumulative impacts from other past, present, or probable future projects is itself significant (i.e., "cumulatively considerable").

Cumulative impacts are defined in State CEQA Guidelines Section 15355 as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." A cumulative impact occurs from "the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355[b]).

Consistent with State CEQA Guidelines Section 15130, the discussion of cumulative impacts in this Draft EIR focuses on significant and potentially significant cumulative impacts. Section 15130(b) of the State CEQA Guidelines provides, in part, the following guidance:

> The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact.

A proposed project is considered to have a significant cumulative effect if:

- the cumulative effects of related activities without the project are not significant and the project's additional impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- the cumulative effects of related activities without the project are already significant and the project contributes measurably to the effect.

The term "measurably" is subject to interpretation. The standards used herein to determine measurability are that the impact must be noticeable to a reasonable person or must exceed an established threshold of significance (defined throughout the resource sections in Chapter 3 of this Draft EIR).

An adequate discussion of significant cumulative impacts must include either a list of past, present, and probable future projects producing related or cumulative effects or a summary of projections from an adopted local, regional, or statewide plan, related planning document, or related environmental document that describes conditions contributing to the cumulative effect (State CEQA Guidelines Section 15130[b][1]).

Because of the extensive project area under consideration, the following discussion includes a description of the general types of projects that occur or could occur in the project area and could contribute to cumulative impacts in the project area.

4.2 CUMULATIVE SETTING

4.2.1 Geographic Scope

The geographic area that could be affected by the project and is appropriate for a cumulative impact analysis varies depending on the environmental resource topic, as presented in Table 4-1.

Table 4-1 Geographic Scope of Cumulative Impacts

Resource Topic	Geographic Area
Air Quality	Regional (affected air basin–pollutant emissions that have regional effects) Local (immediate project vicinity—pollutant emissions that are highly localized)
Archaeological, Historical, and Tribal Cultural Resources	Regional (affected tribal territories)
Greenhouse Gas Emissions and Climate Change	Global
Hazards and Hazardous Materials	Local (project vicinity)
Marine Biological Resources	Regional (special-status species populations) Local (project vicinity)
Water Quality	Regional (offshore) Local (onshore—immediate project vicinity)

Source: Compiled by Ascent in 2024.

4.2.2 Types of Existing or Potential Future Activities in the Project Area

Because of the extensive project area under consideration, including a list of specific projects is not feasible. Descriptions of the general types of activities that exist and are anticipated to occur in the project area and could contribute to cumulative impacts are presented below.

COMMERCIAL AND RECREATIONAL FISHERIES

Commercial fisheries span the coast from northern to southern California. Both recreational and commercial fishermen follow the regulations promulgated by the California Fish and Game Commission (Commission) and enforced by CDFW in state waters and NMFS and the Pacific Fishery Management Council in federal waters. For many years, there has been significant commercial fishing off the California coast consisting of a great variety of fisheries, for both finfish and shellfish. In 2019, commercial fishing in California generated 143,753 jobs and $715 million in sales (US Department of Commerce 2022). Recreational fishing off the coast of California includes various activities, including charters (e.g., live-aboard lobster dive charters, sport fishing charters), shore fishing, and use of personal sport fishing boats. In 2019, more than 3.4 million fishing trips in California generated approximately $1.2 billion in sales (US Department of Commerce 2022).

In 2022, 30 whale entanglements in commercial gear were reported off the coast of California, Oregon, and Washington. Most of the large whale entanglements reported were associated with specific fisheries or gear types (NOAA 2023a). Potential cumulative impacts associated with other commercial and recreational fisheries include disturbance to marine bird, mammal and sea turtle migration, feeding, and breeding. Commercial and recreational fishing can also result in mortality to unmarketable or nontarget fish species as a result of incidental catch (also referred to as bycatch).

ENERGY DEVELOPMENT

Oil and Gas Development

Off the coast of California, oil and natural gas development occurs in both federal and state waters. The Pacific Outer Continental Shelf Region of the US Bureau of Ocean Energy Management (BOEM) manages oil and gas facilities in federal waters offshore of California. Thirty federal oil and gas leases offshore of southern California cover approximately 89 million acres (BOEM 2024).

Existing oil and gas facilities in state waters are managed by the California Coastal Commission (CCC), California State Lands Commission, and any local government with authority offshore. Oil production from offshore wells accounts for roughly 15 percent of California's total oil production. New oil and gas development along the coast of California is limited by the fact that there is a moratorium on new offshore oil and gas leasing in federal and state waters (BOEM 2022).

The types of potential impacts of existing and future oil development that could combine with the effects of the proposed RAMP regulatory amendments include temporary construction effects on water quality and marine biota and risk of damage to biological resources and water quality from vessel discharges and oil leaks.

Ocean Energy, Including Offshore Wind and Wave Energy

The development of renewable energy from the ocean is of increasing interest off the coast of California. Sources of renewable ocean energy include wind, waves, ocean currents, and the sun. BOEM is the bureau in the US Department of the Interior responsible for managing development of the nation's offshore energy resources in an environmentally and economically responsible way. In September 2021, the California Legislature passed, and the governor signed, Assembly Bill 525, which requires the California Energy Commission, in coordination with the CCC, Ocean Protection Council, California State Lands Commission, Office of Planning and Research, CDFW, Governor's Office of Business and Economic Development, California Independent System Operator, Public Utilities Commission, and other relevant federal, state, and local agencies as needed, to develop a strategic plan for offshore wind energy developments installed off the California coast in federal waters and to submit it to the California Natural Resources Agency and the legislature no later than June 30, 2023 (CEC 2023).

In 2021, xWave, California's first at-sea, long-duration wave energy pilot project was launched off Scripps Pier. The 15-foot-long xWave prototype is anchored at the test site and deployed in water nearly 100 feet deep. The project converts wave energy into electricity (US Department of Energy 2022).

The types of impacts of ocean energy development that could potentially combine with the effects of the project include hazards to migrating marine mammals, sea turtles, and fish, localized water quality degradation from equipment leakage and sediment disturbance, and destruction of marine life.

TRANSMISSION AND TELECOMMUNICATION LINES

The California Energy Commission regulates the construction and operation of transmission and telecommunication lines off the coast of California. Transmission and telecommunication lines typically are laid on or buried in the seafloor and may extend across the project area, from the shoreline to the outer edge of the coastal zone. Many telecommunication lines extend across oceans connecting the United States to other countries, such as Asia and Australia. Transmission lines are associated with offshore oil, gas facilities, and renewable energy.

The types of impacts associated with installation of transmission and telecommunication lines that could potentially combine with the effects of the project include water quality degradation from sediment disturbance and hazards to marine mammals, sea turtles, and fish migration.

MARINE TRANSPORTATION

Shipping channels and safe transport lanes are demarcated throughout the project area and offshore in federally regulated waters. The demarcated lanes are regulated for safe passage by large ocean-going vessels that do not often enter the nearshore zone except to make calls at ports with facilities and physical conditions that can accommodate larger vessels. In addition to state-regulated and federally regulated maritime traffic, the project area supports a large volume of recreational and commercial boaters operating closer to shore (sheltered and protected waters and nearshore waters). Recreational vessels include the fishing vessels discussed above, dive boats, and whale watching vessels. Popular locations for whale watching include southern California, Monterey Bay, Santa Cruz, the Gulf of Farallones, and Mendocino. Gray whales, humpback whales, dolphins, blue whales, and orcas migrate along the coast of California each year.

A serious concern exists about the number of whales seriously injured or killed as a result of vessel strikes. Several large whale species found off the coast of California are vulnerable to vessel strikes because they migrate and feed along the coast in areas with heavy shipping traffic (NOAA 2023b). Potential cumulative impacts associated with marine transportation include injury and death of marine wildlife, specifically whale species; air emissions; and water quality degradation.

MARINE AQUACULTURE

Marine aquaculture in California includes production of fish, shellfish, algae, and seaweed. Most of the seafood farmed in California is in freshwater systems, but there are important marine aquaculture operations along the state's coast. For example, oysters are grown in Humboldt, Tomales, Morro, and San Diego Bays, and in Agua Hedionda Lagoon just north of San Diego. Mussel farms are located in the Santa Barbara Channel and off Long Beach, with a permit pending for significant expansion of mussel farming off the coast of Ventura. Abalone are raised both on land in Santa Barbara, Cayucos (near Morro Bay), Davenport (near Santa Cruz) and in the ocean under a wharf in Monterey (California Sea Grant 2024). Other farmed shellfish in California include scallops and clams (CDFW 2020).

Most current marine aquaculture operations in California occur in intertidal waters that are shielded from exposure to the open ocean, such as bays and estuaries. The intertidal zone, also known as foreshore and seashore and sometimes referred to as the littoral zone, is the area that is above water at low tide and underwater at high tide. Intertidal zones along the California coast include sandy beaches, rocky shores, tidal flats, and coastal marsh along the shores of estuaries and lagoons. Shellfish farmers employ on- and off-bottom culture techniques with mesh bags and trays, floating bags and trays, rack and bag, and long lines suspended from submerged lines and floats. Finfish production in California occurs in ponds, raceways, and recirculating systems on land.

The impacts associated with marine aquaculture that could combine with the effects of the proposed RAMP regulatory amendments include air emissions and water quality degradation from construction of aquaculture facilities and disturbance to or destruction of marine life.

4.2.3 Programs and Plans Applicable to the Project Area

The following overarching plans and programs apply to or affect the project area.

MARINE PROTECTED AREAS

In California, CDFW has taken a regional approach to implementing the Marine Life Protection Act. The act directs the state to evaluate Marine Protected Areas (MPAs) to improve recreational, educational, and research opportunities. An MPA is a discrete area located seaward of the mean high tide line that is managed with regulations that are more restrictive than the regulations in the general area, designed to protect or conserve marine life and habitat.

The California MPA Network (California's Network) is divided into five regions:

- North Coast—California/Oregon border to Alder Creek near Point Arena,

- North Central Coast—Alder Creek to Pigeon Point,
- Central Coast—Pigeon Point to Point Conception,
- South Coast—Point Conception to the California-Mexico border, and
- San Francisco Bay—waters in San Francisco Bay.

Different types of marine managed area (MMA) designations are used in California's MPA Network, reflecting a range of allowed uses and resource protection levels. MMAs are named, discrete geographic marine or estuarine areas along the California coast designated by law or administrative action, and intended to protect, conserve, or otherwise manage a variety of resources and their uses. MPAs are a subset of MMAs that are defined as named, discrete geographic marine or estuarine areas seaward of the mean high tide line or the mouth of a coastal river, including any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna, that have been designated by law or administrative action to protect or conserve marine life and habitat. California's Network includes three MPA designations (State Marine Reserve, State Marine Conservation Area, State Marine Park), one MMA specific designation (State Marine Recreational Management Area), and special closures. The more common term "MPA" is used throughout this discussion as an umbrella term to refer to all types of protected areas in California's Network.

NATIONAL MARINE SANCTUARIES

Across the United States, the National Oceanic and Atmospheric Administration manages 15 national marine sanctuaries and two marine national monuments. The West Coast Regional Office manages four of these national marine sanctuaries, which encompass 11,388 square miles along California's coast: the Channel Islands, Cordell Bank, Greater Farallones, and Monterey Bay (NOAA 2023c). Each of these sanctuaries provides comprehensive and coordinated conservation management through the implementation of a management plan. Each management plan includes a policy framework that guides current and future activities in the sanctuary (NOAA 2023c).

CALIFORNIA COASTAL NATIONAL MONUMENT

The US Bureau of Land Management (BLM) manages more than 20,000 rocks, islands, exposed reefs, and pinnacles off the California coast, as well as 7,924 acres of public land in six onshore units: Trinidad Head, Waluplh-Lighthouse Ranch, Lost Coast Headlands, Point Arena-Stornetta, Cotoni-Coast Dairies, and Piedras Blancas. BLM prepares resource management plans that serve as land use management tools for sensitive resources. The plans contain guidance, objectives, policies, and management actions designed to resolve a wide range of natural resource and land use issues that exist for this picturesque portion of California's coastal landscape. BLM manages only the portions of these rocks and islands that extend above the mean high tide line, so submerged lands in state waters are the responsibility of the State of California. The principal focus of the resource management plans is the protection and preservation of the geologic, biological, and cultural values that exist on these federal lands. Development of any kind is discouraged on California Coastal National Monuments (BLM 2023).

EXPERIMENTAL FISHING PERMIT PROGRAM

Effective January 1, 2019, Assembly Bill 1573 added California Fish and Game Code (FGC) Section 1022, which provides for a state Experimental Fishing Permit (EFP) Program to facilitate fishery-related exploration and experimentation to inform fisheries management. Under the EFP Program, the Commission has the authority to approve commercial or recreational marine fishing activities for the purposes of research, education, limited testing, data collection, compensation fishing, conservation engineering, exploratory fishing, or any combination of these purposes that would otherwise be prohibited by FGC or applicable regulations. EFPs are issued by CDFW, subject to conditions and requirements deemed necessary by the Commission to ensure that activities authorized under an EFP are consistent with overarching state management goals and policies set forth in FGC Section 7050 and any applicable fishery

management plan, pursuant to 14 CCR Section 91. The EFP Program allows for the collection of crucial data and development of information that could inform future management decisions for state-managed fisheries.

4.3 ANALYSIS OF CUMULATIVE IMPACTS

This section presents a discussion of the cumulative effects anticipated from implementation of the proposed RAMP regulatory amendments, together with related projects and activities in the project area for each of the six environmental issue areas evaluated in this Draft EIR. The analysis conforms with Section 15130(b) of the State CEQA Guidelines, which specifies that the "discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone. The discussion should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact."

When considered in relation to other reasonably foreseeable projects, cumulative impacts on some resources could be significant and more severe than those caused by the proposed project alone.

For purposes of this EIR, implementing the project would result in a significant cumulative effect if:

- the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the proposed RAMP regulatory amendments would be substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or
- the cumulative effects of related projects (past, current, and probable future projects) are already significant and implementation of the proposed RAMP regulatory amendments would make a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or it must exceed an established threshold of significance.

This cumulative analysis assumes that all elements of the project that would minimize environmental effects are implemented. The analysis herein discusses whether, after implementation of project-specific conservation measures that minimize environmental effects, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects. Where the project would contribute, additional mitigation is recommended where feasible.

4.3.1 Air Quality

The cumulative context for air quality is the EEZ and coastal air basins. Future levels of emissions from cumulative projects would be a function of the type and scale of the activities under construction and operation, including those described in Sections 4.2.2 and 4.2.3. Projected increases in population would likely increase traffic and associated emissions. Existing emissions have resulted in an existing significant cumulative effect on air quality in coastal counties, specifically in those air districts that are not in attainment of ambient air quality standards. Cumulative development and future population growth would continue to contribute to air pollutant emissions.

Implementing the project would not result in any construction-related emissions. Operation-related emissions associated with continued operation of the commercial Dungeness crab fishery would occur, including emissions of criteria air pollutants from fishing vessels and aircraft associated with crab fishing and marine life concentration surveys. As discussed for Impact 3.2-1, the level of vessel activity associated with the project would not be substantially greater than the current level related to commercial harvest of Dungeness crab. The air quality impact associated with the project would be less than significant. Therefore, implementing the project **would not result in a considerable contribution to a significant cumulative impact** on air quality.

4.3.2 Archaeological, Historical, and Tribal Cultural Resources

The cumulative context for archaeological, historical, and tribal cultural resources is the region of the project area, which includes the continental shelf off the entire state of California. Because all significant archaeological and tribal cultural resources are unique and nonrenewable members of finite classes, meaning there are a limited number of these resources, all adverse effects erode a dwindling resource base. The loss of any one site could affect the scientific and religious value of others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The archaeological and tribal cultural system is represented by the total inventory of all sites and other remains in the region. As a result, a meaningful approach to preserving and managing these resources must focus on the likely distribution of cultural resources rather than on a single project or parcel boundary.

The historic lands of California tribal peoples, including lands along the California coast, have been affected by development since the arrival of Sir Francis Drake of England in 1579, and the impact quickly grew with the establishment of 21 missions from San Diego to Sonoma between 1769 and 1821. Development of tribal lands continued with the discovery of gold, followed by California's admission to statehood in 1850, the agricultural boom from the late 1800s through the 1930s, and the post–World War II population growth. Similarly, historic resources throughout California have been affected by suburban sprawl, downtown redevelopment projects, and transportation projects. These activities have resulted in an existing significant cumulative effect on historic resources, archaeological resources, tribal cultural resources, and human remains. Cumulative development, including that described in Section 4.2.3, continues to contribute to the disturbance and degradation of cultural resources.

As discussed in Section 3.3, "Archaeological, Historical, and Tribal Cultural Resources," because the reasonably foreseeable compliance responses to the project would not include any activities that could result in damage to buildings or structures, there would be no impact on historical resources with implementation of the proposed RAMP regulatory amendments. As discussed under Impact 3.3-1, impacts on undiscovered subsurface unique archaeological resources resulting from implementation of the reasonably foreseeable compliance responses to the project, including Fishing Zone opening delays and early closures, the gear retrieval program, systematic vessel and aircraft surveys to determine marine life concentrations throughout the project area, and active tending, would be less than significant because additional seafloor–disturbing activities above baseline conditions would not occur and because current state law prohibits all unauthorized salvage and removal of artifacts from submerged shipwrecks, aircraft, and other archaeological resources in state waters. As discussed under Impact 3.3-2, the impact on tribal cultural resources also would be less than significant because the reasonably foreseeable compliance responses to project implementation would not result in additional seafloor–disturbing activities above baseline conditions that could damage subsurface artifacts, would not impede traditional ceremonial activities or alter viewsheds, and would not have an adverse effect on wildlife, all of which could be identified as tribal cultural resources. Therefore, implementing the project **would not result in a considerable contribution to a significant cumulative impact** on historical, archaeological, and tribal cultural resources.

4.3.3 Greenhouse Gas Emissions and Climate Change

As discussed in Section 3.4, "Greenhouse Gas Emissions and Climate Change," impacts of greenhouse gas (GHG) emissions and climate change are inherently cumulative. GHG emissions from one project cannot, on their own, result in changes in climatic conditions; therefore, the emissions from one project must be considered in the context of their contribution to cumulative global emissions. For this reason, the impact analysis presented in Section 3.4 addresses cumulative GHG impacts.

As discussed for Impact 3.4-1, reasonably foreseeable compliance responses to the project would not entail the construction of any new land-based or maritime equipment. Reasonably foreseeable compliance responses to the project would result in the generation of GHG emissions from the movement of fishing and monitoring vessels and aircraft throughout the project area. However, this level of vessel and aircraft activity would not be substantially greater than the current level related to harvest of Dungeness crab. Therefore, implementing the project **would not result in a considerable contribution to a significant cumulative impact** related to GHG emissions.

4.3.4 Hazards and Hazardous Materials

The cumulative context for hazards and hazardous materials is the region of the project area that includes the continental shelf off the entire state of California. Release of hazardous materials in the marine environment can affect large areas (e.g., oil tanker spill) and interact with other, smaller releases of hazardous materials. Ocean dumping has also resulted in the contamination of marine sediments in some areas off the coast of California. These types of activities have released polychlorinated biphenyls and other chemical contaminants into the marine environment that accumulate in the tissues of some marine organisms (bioaccumulation), causing disease and affecting the fecundity of some species. Other activities that disturb marine sediments, including recreational and commercial bottom-fishing activities, can disturb contaminated sediments, releasing pollutants into the water column and suspending contaminated sediments, which spreads contamination to other areas. These activities have contributed to an existing significant cumulative impact related to hazards and hazardous materials in the project area. Impacts related to emergency response or evacuation plans are considered site specific and not cumulatively considerable. Cumulative projects and associated activities located in and outside the project area would be required to comply with applicable federal and state laws and regulations that govern hazardous materials.

As discussed for Impacts 3.5-1, 3.5-2, and 3.5-3, implementation of the proposed RAMP regulatory amendments would not cause a substantial increase in accidental release of hazardous materials from marine vessels related to maintenance activities or spills; from the transport, use, or disposal of hazardous materials; or from disturbance of the seafloor and related resuspension of sediments in listed contaminated sites. Therefore, implementing the project **would not result in a considerable contribution to a significant cumulative impact** related to hazards and hazardous materials.

4.3.5 Marine Biological Resources

The cumulative context for marine biological resources is the region of the project area that includes the continental shelf off the entire state of California. Threats to marine species and habitats throughout California include development, other ocean-dependent uses (e.g., fishing, shipping), climate change, the spread of invasive species, and water quality issues. As discussed in Section 3.6, "Marine Biological Resources," a variety of habitats, sensitive communities, and special-status animal species are known to occur in the marine environment along the California coast. Marine development and other ocean-dependent uses have resulted in an existing significant cumulative effect on biological resources. Cumulative development and other activities, including that described in Section 4.2.2, continue to contribute to the disturbance and degradation of marine biological resources.

Project implementation could adversely affect special-status wildlife species, wildlife movement corridors, and wildlife nursery sites through increased vessel and aircraft travel associated with systematic surveys to determine marine life concentrations, increased vessel traffic associated with the trap gear retrieval program and active tending, and changes in the magnitude or concentration of crab fishing activity (i.e., number of boats, number of traps, concentration of traps inshore) as a result of season delays, closures, or depth constraints. As discussed for Impacts 3.6-1 and 3.6-2, the increase in vessel and aircraft activity associated with these efforts would not be substantial, because CDFW would use data collected during vessel-based and aerial surveys already being conducted by other agencies and organizations as part of the existing baseline of vessel and aircraft activity, and based on the previous 2 years of data associated with the trap gear retrieval program (e.g., number of designated retrievers, number of retrieval trips). In addition, existing regulatory protections, including MPAs and special closures, National Oceanic and Atmospheric Administration Regulated Overflight Zones, provisions of NMFS scientific research permits, and the fair start provision, as well as general operational and safety measures, would reduce the risk of adverse effects on special-status wildlife, wildlife movement corridors, and wildlife nursery sites by limiting vessel and aircraft activities near sites that are important biologically, limiting harassment of seabirds and marine mammals from survey activities, and preventing a substantial increase in the magnitude or concentration of crab fishing activities. Therefore, implementing the project **would not result in a considerable contribution to a significant cumulative impact** on special-status wildlife, wildlife movement corridors, or wildlife nursery sites.

4.3.6 Water Quality

The cumulative context for water quality is the region of the project area that includes the continental shelf off the entire state of California. Water quality is designated as impaired when the levels of a particular pollutant threaten the identified beneficial uses of the water body. Activities that contribute to the impairment and degradation of water quality off the coast of California typically are related to land use and development, such as agricultural uses, industrial facilities, and construction activities. In addition, municipal wastewater discharges, nonpoint source contaminants in urban runoff, wet and dry deposition of airborne pollutants, harbor and marine transportation discharges, discharges of contaminated groundwater, and marine debris, including plastics and microplastics, can affect water quality. These activities have resulted in an existing significant cumulative effect on water quality.

As discussed under Impact 3.7-1, implementation of the proposed RAMP regulatory amendments would not cause a significant water quality impact from accidental releases of pollutants from fishing vessels related to maintenance activities or spills or from rain or high-wave events that wash pollutants on the surface of the vessels into the ocean, vessel abandonment, minor disturbances of the seafloor and related resuspension of sediments from deployment of fishing traps, or marine debris associated with deployed equipment and traps lost or abandoned in the ocean. Therefore, implementing the project would not result in a considerable contribution to a significant cumulative impact related to substantial degradation of water quality, violation of water quality standards, or conflicts with a water quality control plan.

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5 ALTERNATIVES

5.1 INTRODUCTION

Section 15126.6(a) of the State CEQA Guidelines requires EIRs to describe "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." The environmental analysis presented in this EIR has determined that implementation of the proposed RAMP regulatory amendments would not result in any significant effects on the environment. In light of this environmental analysis outcome, the alternatives analysis focuses on potentially feasible alternatives that might reduce adverse environmental effects regardless of their level of significance.

An EIR need not consider every conceivable alternative to a project. Rather, it must consider a range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives that are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason.

The State CEQA Guidelines require that the EIR include information about each alternative sufficient to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to any that would be caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than any significant effects of the project as proposed (State CEQA Guidelines Section 15126.6[d]).

The State CEQA Guidelines further require that the "no project" alternative be considered (Section 15126.6[e]). The purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving a proposed project with the impacts of not approving the proposed project. If the no project alternative is the environmentally superior alternative, CEQA requires that the EIR "shall also identify an environmentally superior alternative among the other alternatives" (State CEQA Guidelines Section 15126[e][2]).

In defining "feasibility" (e.g., "feasibly attain most of the basic objectives of the project"), State CEQA Guidelines Section 15126.6(f)(1) states, in part:

> Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.

In determining what alternatives should be considered in the EIR, it is important to consider the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision maker—here, the Director of CDFW. (See CEQA Sections 21081.5, 21081[a][3].)

5.2 CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

5.2.1 Attainment of Project Objectives

The objectives of the project are to:

1. use ongoing risk evaluation to reduce risk of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in commercial Dungeness crab gear throughout the project area using active management;
2. improve identification of entanglements of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area;
3. reduce the likelihood and/or severity of entanglement of humpback whales, blue whales, and Pacific leatherback sea turtles in California commercial Dungeness crab gear throughout the project area by authorizing the use of alternative fishing gear; and
4. strengthen regulatory authority to implement actions designed to reduce entanglement risks, including CP goals and measures and federal ITP requirements.

5.2.2 Environmental Impacts of the Project

Sections 3.2 through 3.7 of this Draft EIR address the environmental impacts of implementing the proposed RAMP regulatory amendments. Potentially feasible alternatives were developed with consideration of avoiding or lessening potential adverse impacts of the project, as identified in Chapter 3 of this Draft EIR and summarized below. If an environmental issue area analyzed in this Draft EIR is not addressed below, it is because that issue area was dismissed from further consideration. No significant environmental impacts resulting from the project were identified.

5.3 ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

As described above, State CEQA Guidelines Section 15126.6(c) provides that the range of potential alternatives for the project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. Alternatives that fail to meet the fundamental project purpose need not be addressed in detail in an EIR (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165–1167).

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in State CEQA Guidelines Section 15126.6(a). Although, as noted above, EIRs must contain a discussion of "potentially feasible" alternatives, the ultimate determination as to whether an alternative is feasible or infeasible is made by lead agency decision maker(s). (See CEQA Section 21081[a][3].) At the time of action on the project, the decision maker(s) may consider evidence beyond that found in this EIR in addressing such determinations. The decision maker(s), for example, may conclude that a particular alternative is infeasible (i.e., undesirable) from a policy standpoint and may reject an alternative on that basis provided that the decision maker(s) adopts a finding, supported by substantial evidence, to that effect, and provided that such a finding reflects a reasonable balancing of the relevant economic, environmental, social, and other considerations supported by substantial evidence (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 401, 417; *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 998).

The EIR should also identify any alternatives that were considered by the lead agency but were rejected during the planning or scoping process and briefly explain the reasons underlying the lead agency's determination.

The following alternatives were considered by CDFW but are not evaluated further in this Draft EIR.

5.3.1 Required Use of Multi-trap Gear Configurations

An alternative to require transition from single traps to multi-trap gear configurations was considered as part of the RAMP regulatory amendments. This alternative is one potential method of achieving vertical line reductions. However, this alternative has the potential for gear conflict and safety issues. A reduction in vertical lines in the project area would reduce the potential for entanglement of Actionable Species; however, entanglements that could occur under this alternative may be more severe because the multi-trap configuration would be heavier than gear that is currently used. In addition, fishing with multi-trap gear configurations under this alternative would pose substantial safety concerns for smaller vessels that have less available deck space and capacity to handle the gear. The required use of only multi-trap gear configurations was dismissed from further consideration because there is insufficient evidence that this alternative would benefit Actionable Species overall or avoid any significant impacts. The costs to the fishery of implementing this alternative would also be much higher than the cost of using single traps because all existing equipment would need to be replaced with multi-trap trawls. In addition, this alternative would not meet the project objective to require use of gear modifications that reduce the severity of entanglements. For these reasons, this alternative is not evaluated in detail in this EIR.

5.3.2 Required Use of Pop-Up ("Ropeless") Gear

There is increasing interest in replacing standard trap configurations (which include persistent vertical lines between the traps and surface buoys) with pop-up gear (which does not have a persistent line extending from the trap to the surface). Therefore, CDFW considered an alternative requiring the use of pop-up gear throughout the Fishing Season, rather than limiting the use of this type of gear to certain closures after April 1. Pop-up gear uses lift bags or buoys attached to rope stored at the seafloor in bags, containers, or coiled around a spool. Remote sensors on the gear are triggered by an acoustic signal from the fishing vessel to release the bags or buoys which float to the surface bringing the traps along with them and eliminating unattended vertical lines. After the buoy "pops up" to the surface of the water, the fisherman can retrieve the gear using the same methods as used for traditional gear. Some configurations rely on a timed release rather than an acoustic signal, whereby either a chemical reaction (for galvanic releases) or elapsed time (for electronic releases) results in release of the rope and buoys. Other companies have entirely replaced the rope and buoys; the acoustic releases on their traps trigger compressed gas canisters that fill large lift bags that bring the entire trap to the surface for retrieval.

Under this alternative, each vertical line would be replaced with a pop-up unit, and (for acoustically triggered releases) each vessel would also need an on-deck or hull-mounted unit to locate the gear and transmit the release signal. Calculating the cost for each participant to purchase, install, and operate the required gear is difficult, because the cost would depend on whether a single pop-up unit would be attached to each trap or whether the units could be deployed onto multi-trap gear configurations. In addition, given the number of traps used in the fishery, a fleetwide transition to pop-up gear could drive down the costs to produce the gear. However, equipment acquisition costs for a National Marine Sanctuary Foundation's gear innovations testing project can be used to estimate costs. Galvanic timed-release devices are the lowest-cost option ($225 per unit). These units would require replacement of a $1 component each time the trap is redeployed. Electronic timed-release devices cost approximately $300 per unit, and the cost of acoustic-triggered release devices ranges from $1,700 to $11,000 per unit. In contrast, a traditional Dungeness crab trap, including rope and buoys, typically costs $275. It is unclear at this time how the additional costs of transitioning to pop-up gear would affect the economic viability of the fishery.

Furthermore, the need for pop-up and other types of alternative gear is greatest during spring closures, when the risk of entanglement becomes a concern and then continues to increase through the end of the Fishing Season. Allowing the use of pop-up gear in these situations would allow for continued harvest of Dungeness crab in a manner that poses a lower risk of entanglement, mitigating the economic impacts of such closures. Because traditional commercial Dungeness crab gear will not be deployed in those areas for the remainder of the Fishing Season, the potential for within-fishery gear conflict is reduced. During fall and winter, when Actionable Species are either absent or present in low numbers, the additional protective benefit of using pop-up gear is outweighed by concerns regarding gear conflict.

Studies related to pop-up gear are limited. Therefore, a conclusion regarding whether this alternative would substantially reduce impacts on Actionable Species relative to implementation of the RAMP regulatory amendments would be speculative. This alternative would meet the project objective to reduce the presence of actively fished vertical lines. However, it is uncertain whether this alternative would meet the project objectives to reduce the severity of entanglements and reduce co-occurrence of Actionable Species and lost or abandoned gear. In addition, implementing this alternative could result in potential harm from gear conflicts and economic impacts on the fishery. For these reasons, this alternative is not evaluated in detail in this EIR.

5.4 ALTERNATIVES SELECTED FOR DETAILED ANALYSIS

The following alternatives are evaluated in more detail in this Draft EIR:

- Alternative 1: No Project Alternative assumes that the California commercial Dungeness crab fishery would continue to operate in accordance with existing regulations. Title 14 CCR Section 132.8 would not be amended, and the state would not apply for an ITP for the Actionable Species based on the CP.
- Alternative 2: Permanently Reduced Gear Allotments Alternative would reduce the potential for entanglements by permanently reducing the capacity of the commercial Dungeness crab fishery through reducing gear allotments. CDFW would revise RAMP based on the gear allotment reductions and apply for an ITP based on the CP.
- Alternative 3: Permanently Shortened Season Alternative would restrict the commercial Dungeness crab fishery operations to a period of historically extremely low entanglement risk. CDFW would revise RAMP based on the shortened Fishing Season and apply for an ITP based on the CP.

Further details on these alternatives, and an evaluation of environmental effects relative to the proposed project, are provided below.

5.4.1 Alternative 1: No Project Alternative

As required by CEQA, the No Project Alternative is evaluated in this Draft EIR. Under Alternative 1, the No Project Alternative, the California commercial Dungeness crab fishery would continue to be operated according to adopted regulations (14 CCR Section 132.8) that became effective on November 1, 2020, and the current RAMP regulations. The RAMP regulations would not be modified and CDFW would not apply for an ITP for the Actionable Species based on the CP. Because the current RAMP regulations would continue to be in effect under this alternative, the No Project Alternative would meet most of the project objectives. However, the presence of actively fished vertical lines would not be regulated, and entanglements of Actionable Species could continue to occur. Furthermore, the development and required use of gear modifications, which would reduce the severity of entanglements if whales or sea turtles become entangled in commercial Dungeness crab gear, would not occur.

Although it is acknowledged that with the No Project Alternative, there would be no discretionary action by CDFW, and thus no impact, for purposes of comparison with the action alternatives, conclusions for each technical area are characterized as "impacts" that are greater, similar, or less, to describe conditions that are worse than, similar to, or better than those of the proposed project.

AIR QUALITY

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential air quality impacts of the No Project Alternative would be similar to existing conditions because this alternative would involve continued operation of the commercial Dungeness crab fishery under the current RAMP regulations. The No Project Alternative would not generate construction-related emissions, and the operation-related emissions associated with the Dungeness crab fishery, which would vary from

year to year, would be similar to existing emissions. Therefore, air quality impacts associated with Alternative 1 would be similar to those described for the proposed project.

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential historic resource, archaeological resource, and tribal cultural resource effects under the No Project Alternative would be similar to existing conditions because this alternative would not involve changes to any structures that could be historical resources and would not involve a change in seafloor-disturbing activities that could result in discovery of or damage to yet-undiscovered archaeological resources or human remains. In addition, under the No Project Alternative, the commercial Dungeness crab fishery would continue to be operated consistent with current operations, so the potential for adverse effects on subsurface artifacts would not increase, traditional ceremonial activities would not be impeded, and viewsheds, which could be identified as tribal cultural resources, would not be altered. The No Project Alternative would not provide the same level of benefits to whale and sea turtle species that the proposed project would, and wildlife could be identified as a tribal cultural resource. Therefore, impacts on cultural resources associated with Alternative 1 could be slightly greater than those described for the proposed project.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential greenhouse gas emissions (GHG) associated with the No Project Alternative would be similar to existing conditions because this alternative would involve continued operation of the commercial Dungeness crab fishery under the current RAMP regulations. The No Project Alternative would not generate construction-related emissions, and operation-related emissions associated with the Dungeness crab fishery, which would vary from year to year, would be similar to existing emissions. Because vessels would be subject to the off-road specific regulations (i.e., 2022 Commercial Harbor Craft Amendments), the No Project Alternative would not conflict with the California Air Resources Board's *Final 2022 Scoping Plan for Achieving Carbon Neutrality*. Therefore, GHG impacts associated with Alternative 1 would be similar to those described for the proposed project.

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential for hazards and hazardous materials effects under the No Project Alternative would be similar to existing conditions because there would continue to be a similar potential for foreseeable accidental release of hazardous materials and disturbance to contaminated sites, creating a hazard to the public or the environment through contact. Under the No Project Alternative, there would not be an increase in vessel trips and associated potential for hazards and hazardous materials impacts. However, the potential hazards impacts of the proposed project associated with additional survey and active tending vessel trips would be minimal. Therefore, overall impacts related to hazards and hazardous materials associated with Alternative 1 would be similar to those described for the proposed project.

MARINE BIOLOGICAL RESOURCES

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential for effects on special-status species and wildlife movement corridors associated with Alternative 1 would be greater than under the proposed project because the protection

measures in the amended RAMP regulations to reduce entanglements would not be implemented. Therefore, impacts on marine biological resources associated with Alternative 1 would be **greater** than those described for the proposed project.

WATER QUALITY

Under Alternative 1, the RAMP regulations would not be modified, CDFW would not apply for an ITP for the Actionable Species based on the CP, and there would be no change in the current CDFW management of the commercial Dungeness crab fishery. The potential for water quality effects under the No Project Alternative would be similar to existing conditions because there would continue to be the potential for accidental releases of pollutants from fishing and survey vessels; rain or high-wave events that wash pollutants from the surface of the vessels into the ocean; vessel abandonment; minor disturbances of the seafloor and related resuspension of sediments from deployment of fishing traps; and pollution from plastics and electronic equipment associated with ongoing operation of the fishery. Under the No Project Alternative, there would not be an increase in survey vessel trips and associated potential for water quality impacts. However, potential water quality impacts of the proposed project associated with additional survey vessel trips would be minimal. Therefore, overall impacts on water quality associated with Alternative 1 would be **similar** to those described for the proposed project.

5.4.2 Alternative 2: Permanently Reduced Gear Allotments

Implementing Alternative 2 would permanently reduce the capacity (i.e., amount of crab gear used during the Fishing Season) of the commercial Dungeness crab fishery through reductions in gear allotments and thereby would reduce the potential for co-occurrence of Actionable Species and crab gear. The number of traps a given vessel can deploy is specified by the tier level of the Dungeness crab vessel permit. The existing tiers were established following extensive negotiation with the fleet. Modifying the trap tiers could reduce the maximum amount of gear that could be deployed in the fishery. Implementing this alternative would permanently reduce gear allotments across the entire fleet, rather than phase in reductions through permit stacking as individual operators decide to purchase additional permits, thereby having a more predictable conservation benefit. This alternative could be implemented through a proportional reduction across all tiers or through some differential reduction. For example, all tiers could be limited to 75 percent of their current trap allotment, or a set number of traps (e.g., 25) could be subtracted from each tier's current allotment. FGC Section 8276.5(d) requires that any changes to the existing permit tiers be approved by the Dungeness Crab Task Force, so this alternative would require approval before implementation. This alternative also would involve revisions to the RAMP regulations based on the gear allotment reductions, and application for an ITP based on the CP.

AIR QUALITY

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. Alternative 2 would not generate construction-related emissions. Operation-related emissions under Alternative 2 would vary from year to year but may be slightly less than under the project because with reduced gear allotments, there would be fewer vessel emissions related to deployment and collection of gear. Therefore, air quality impacts associated with Alternative 2 would be **less** than those described for the proposed project.

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. Like the proposed project, this alternative would have no impact on historical resources because it would not involve changes to any structures that could be historical resources. The potential archaeological resource effects under Alternative 2 would be less than those under the proposed project because implementing Alternative 2 would result in deployment of less gear and thus a slightly reduced potential for seafloor-

disturbing activities to result in discovery of or damage to yet-undiscovered archaeological resources or human remains. Additionally, because implementing this alternative would result in less gear in the water, wildlife species that could be identified as a tribal cultural resource would benefit. For these reasons, impacts on cultural resources associated with Alternative 2 would be slightly **less** than those described for the proposed project.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. Alternative 2 would not generate construction-related GHG emissions. Operation-related GHG emissions under Alternative 2 would vary from year to year but may be slightly less than under the project because with reduced gear allotments, there would be fewer vessel emissions related to deployment and collection of gear. Therefore, GHG impacts associated with Alternative 2 would be **less** than those described for the proposed project.

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. The potential for hazards and hazardous materials effects under Alternative 2 related to accidental releases of hazardous materials from fishing and survey vessels and disturbance to contaminated sites, which could create a hazard to the public or the environment through contact, would be slightly less than under the proposed project if fewer vessel trips with the potential to release hazardous materials would be required to deploy and retrieve less gear. Potential hazards and hazardous materials impacts under Alternative 2 associated with contact with contaminated sites would be reduced compared to the proposed project because the amount of gear deployed by vessels that could disturb these sites would be less. For these reasons, impacts on hazards and hazardous materials associated with Alternative 2 would be **less** than those described for the proposed project.

MARINE BIOLOGICAL RESOURCES

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. The potential for effects on special-status species and wildlife movement corridors under Alternative 2 would be less than under the proposed project because less gear would be deployed, which would result in less potential for gear to interact with marine biological resources. Similar to the proposed project, this alternative would include revisions to the RAMP regulations based on the gear allotment reductions, and application for an ITP for Actionable Species based on the CP. Therefore, impacts on marine biological resources associated with Alternative 2 would be **less** than those described for the proposed project.

WATER QUALITY

Under Alternative 2, the amount of gear deployed for the commercial Dungeness crab fishery would be less than under the proposed project. The potential for water quality effects under Alternative 2 related to accidental releases of pollutants from fishing and survey vessels, rain or high-wave events that wash pollutants from the surface of the vessels into the ocean, and vessel abandonment would be slightly less than under the proposed project if fewer vessel trips with the potential to release pollutants would be required to deploy and retrieve less gear. Potential water quality impacts under Alternative 2 associated with minor disturbances of the seafloor and related resuspension of sediments from deployment of fishing traps and pollution from plastics and electronic equipment also would be less under this alternative because the amount of gear deployed would be less. Therefore, impacts on water quality associated with Alternative 2 would be **less** than those described for the proposed project.

5.4.3 Alternative 3: Permanently Shortened Season

Implementation of the RAMP regulatory amendments would create uncertainty for fishery participants related to potential delays and early closures of the Fishing Season. Therefore, CDFW considered an alternative that would permanently shorten the length of the commercial Dungeness crab Fishing Season to a historically low-risk period for entanglements (e.g., late December through March). Alternative 3 would restrict fishery operations to periods of extremely low entanglement risk, as defined by historical patterns, which would require significantly fewer resources for CDFW to implement and enforce, reduce CDFW's reliance on data collection efforts by outside partners, and may provide greater market stability.

Under this alternative, California's commercial Dungeness crab fishery operations would no longer be aligned with those in Oregon and Washington. In addition, although season delays and early closures under RAMP may shorten some Fishing Seasons, permanently shortened seasons would greatly reduce fishing opportunity during otherwise low-risk years. A delayed start to the season would mean fishery participants would no longer provide crab for the Thanksgiving and Christmas holidays, eliminating key markets that support the economic viability of the fishery. An early end to the season would disproportionately affect vessels that traditionally harvest through the spring and early summer months. Although an economic analysis prepared during the RAMP rulemaking process (CDFW 2020) indicates that the fishery, as a whole, could achieve similar levels of harvest despite a Fishing Season delay or early closure, the impacts on specific sectors of the fleet may be far greater.

Furthermore, permanently restricting the fishery to a shorter period would likely have more dramatic effects on the economic viability and composition of the fleet than year to year variations in the length of the Fishing Season. Restricting operations to a specified 2- or 3-month period could compound any negative impacts resulting from adverse climate change effects, harmful algal blooms, trade disputes, or other external pressures. CDFW's interest in maintaining an economically viable fishery includes maintaining a diversity of business plans and avoiding disproportionate impacts on certain sectors of the fleet. Although larger vessels that generally transition to other fisheries after the initial 6–8 weeks of the season might not be affected, CDFW anticipates that this alternative would have a disproportionate impact on smaller, artisanal operators who rely on being able to fish for a greater proportion of the season. Alternative 3 would also include revisions to the RAMP regulations based on the shortened Fishing Season, and application for an ITP based on the CP. Although implementing this alternative would likely reduce potential impacts on Actionable Species, given the dynamic nature of the California Current System and potential for climate change impacts on spatiotemporal dynamics of co-occurrence, this static approach may not provide the necessary protections to Actionable Species over the full permit term.

AIR QUALITY

Under Alternative 3, the season for the commercial Dungeness crab fishery would be permanently shortened, but the number of permits would not change. Alternative 3 would not generate construction-related emissions. Operation-related emissions under Alternative 3 would be less than under the project because the period during which fishing vessels would deploy and retrieve their gear allotment would be shorter, resulting in fewer total trips, which would result in reduced air quality emissions. Therefore, air quality impacts associated with Alternative 3 would be **less** than those described for the proposed project.

ARCHAEOLOGICAL, HISTORICAL, AND TRIBAL CULTURAL RESOURCES

Under Alternative 3, the season for the commercial Dungeness crab fishery would be permanently shortened, but the number of permits would not change. Therefore, the amount of gear that could be deployed during the Fishing Season under this alternative would be the same as under the proposed project. Because this alternative would not involve changes to any structures that could be historical resources and would not involve a change in seafloor-disturbing activities that could result in discovery of or damage to yet-undiscovered archaeological resources or human remains, the potential historic and archaeological resource effects under Alternative 3 would be similar to those under the proposed project. This alternative would result in gear being in the water for less time, which would

benefit wildlife species that could be identified as a tribal cultural resource. Therefore, impacts on cultural resources associated with Alternative 3 would be slightly **less** than those described for the proposed project.

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Under Alternative 3, the season for the commercial Dungeness crab fishery would be permanently shortened, but the number of permits would not change. Alternative 3 would not generate construction-related GHG emissions. Operation-related GHG emissions under Alternative 3 would be less than under the project because the period during which fishing vessels would deploy and retrieve their gear allotment would be shorter, resulting in fewer total trips, which would result in reduced GHG emissions. Therefore, GHG impacts associated with Alternative 3 would be **less** than those described for the proposed project.

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 3, the season for the Dungeness crab fishery would be permanently shortened, but the number of permits would not change. The potential for hazards and hazardous materials effects under Alternative 3 related to accidental release of hazardous materials from fishing and survey vessels and disturbance to contaminated sites, which could create a hazard to the public or the environment through contact, would be less than under the proposed project because the period during which fishing vessels would deploy and retrieve their gear allotment would be shorter, resulting in fewer total trips. Therefore, impacts related to hazards and hazardous materials under Alternative 3 would be **less** than those described for the proposed project.

MARINE BIOLOGICAL RESOURCES

Under Alternative 3, the season for the commercial Dungeness crab fishery would be permanently shortened, but the number of permits would not change. The potential for effects on special-status species and wildlife movement corridors under Alternative 3 would be less than under the proposed project because vessels and equipment would be deployed for a shorter period each year during a time when entanglement risk is historically low, which would result in less potential for vessels and gear to interact with marine biological resources. Similar to the proposed project, this alternative would include revisions to the RAMP regulations based on the shortened Fishing Season, and application for an ITP for Actionable Species based on the CP. Therefore, impacts on marine biological resources associated with Alternative 3 would be **less** than those described for the proposed project.

WATER QUALITY

Under Alternative 3, the season for the commercial Dungeness crab fishery would be permanently shortened, but the number of permits would not change. The potential for water quality effects under Alternative 3 related to minor disturbances of the seafloor and related resuspension of sediments from deployment of fishing traps would be similar to that under the proposed project because the number of traps that could be fished would not change. Alternative 3 is also expected to have similar water quality effects related to vessel abandonment and pollution from plastics and electronic equipment compared to the proposed project. However, because fewer trips would occur to deploy and retrieve the same number of traps during a shortened Fishing Season, accidental releases of pollutants from fishing vessels and rain or high-wave events that wash pollutants from the surface of the vessels into the ocean would be less under Alternative 3. Therefore, impacts on water quality associated with Alternative 3 would be slightly **less** than those described for the proposed project.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Implementing the proposed project would not result in any significant effects on the environment, so no substantial reductions of environmental impacts would occur with implementation of any of the feasible alternatives. Nonetheless, as illustrated in Table 5-1, below, Alternatives 2 and 3 would further reduce the less-than-significant impacts associated with the project. Alternative 3, by permanently curtailing and restricting the duration of the commercial Fishing Season to a period with historically low entanglement risk, would result in more impact reduction than deploying less gear (Alternative 2). As a result, Alternative 3 would be the environmentally superior alternative for purposes of CEQA compliance, although the environmental impact differences relative to the proposed project would not be substantial.

Table 5-1 Summary of Environmental Effects of the Alternatives Relative to the Proposed Project

Environmental Topic	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Permanently Reduced Gear Allotments Alternative	Alternative 3: Permanently Shortened Season Alternative
Air Quality	LTS	Similar	Less	Less
Archaeological, Historical, and Tribal Cultural Resources	LTS	Greater	Less	Less
Greenhouse Gas Emissions and Climate Change	LTS	Similar	Less	Less
Hazards and Hazardous Materials	LTS	Similar	Less	Less
Marine Biological Resources	LTS	Greater	Less	Less
Water Quality	LTS	Similar	Less	Less

Note: LTS = less-than-significant effect on the environment.

Source: Compiled by Ascent in 2024.

6 OTHER CEQA SECTIONS

6.1 GROWTH INDUCEMENT

CEQA Section 21100(b)(5) specifies that the growth-inducing impacts of a project must be addressed in an EIR. Section 15126.2(e) of the State CEQA Guidelines provides the following guidance for assessing growth-inducing impacts of a project:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can induce growth directly, indirectly, or both. Direct growth inducement would result if a project involved construction of new housing. Indirect growth inducement would result, for instance, if implementing a project resulted in:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- substantial short-term employment opportunities (e.g., construction employment) that indirectly stimulates the need for additional housing and services to support the new temporary employment demand; or
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Growth inducement itself is not an environmental effect but may foreseeably lead to environmental effects. If substantial growth inducement occurs, it can result in secondary environmental effects, such as increased demand for housing, demand for other community and public services and infrastructure capacity, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, conversion of agricultural and open space land to urban uses, and other effects.

6.1.1 Growth-Inducing Impacts of the Project

Implementation of the proposed RAMP regulatory amendments would not involve the development of new housing or increase the demand for new housing. In addition, implementing the project would not result in the creation of new jobs or economic opportunities in California. In 2019, commercial fishing in California generated 143,753 jobs and $715 million in sales (US Department of Commerce 2019). The existing commercial Dungeness crab fishery would continue to provide jobs and operate consistent with existing regulations. Implementing the project would not result in expansion of the commercial Dungeness crab fishery; therefore, the number of jobs associated with operation of the fishery would not be expected to increase. The amount of revenue generated by the fishery would continue to fluctuate annually. Implementation of the project may shorten the commercial Dungeness crab Fishing Season in some years, which could result in economic impacts. Because implementing the project would not foster economic or population growth, no significant growth-inducing impacts would be associated with implementation of the project.

6.2 SIGNIFICANT AND UNAVOIDABLE ADVERSE IMPACTS

State CEQA Guidelines Section 15126.2(c) requires EIRs to include a discussion of the significant environmental effects that cannot be avoided if the proposed project is implemented. As documented throughout Chapter 3 (project-level impacts) and in Chapter 4, "Cumulative Impacts," of this Draft EIR, all impacts associated with implementation of the project would be less than significant, and no mitigation would be required. The project would not have any significant and unavoidable impacts.

6.3 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

The State CEQA Guidelines require a discussion of any significant irreversible environmental changes that would be caused by the project. Specifically, State CEQA Guidelines Section 15126.2(d) states:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Continued operation of the commercial Dungeness crab fishery would result in the irreversible and irretrievable commitment of energy resources during each Fishing Season, including:

- the consumption of nonrenewable energy for operation of fishing and monitoring vessels,
- the consumption of nonrenewable energy for operation of monitoring aircraft and vessels,
- degradation of ambient air quality through operation of vessels and aircraft, and
- emission of greenhouse gases that would contribute to global climate change.

However, implementation of the project is not expected to result in a substantial change in the irreversible and irretrievable commitment of energy resources.

7 REFERENCES

Executive Summary

California Department of Fish and Wildlife. 2020. *Dungeness Crab Enhanced Status Report*. Available: https://marinespecies.wildlife.ca.gov/dungeness-crab/management/. Last updated December 30, 2020. Accessed January 13, 2023.CDFW. *See* California Department of Fish and Wildlife.

Carretta JV, Oleson EM, Forney KA, Weller DW, Lang AR, Baker JB, Orr AJ, Hanson B, Barlow J, Moore JE, Wallen M, Brownell Jr. RL. 2023. U.S. Pacific Marine Mammal Stock Assessments: 2022. NOAA Technical Memorandum NMFS-SWFSC-684. 409 p.

CDFW. *See* California Department of Fish and Wildlife.

Saez, L., D. Lawson, and M. DeAngelis. 2021 (March). *Large Whale Entanglements off the US West Coast, from 1982–2017*. NOAA Technical Memorandum NMFS-OPR-63A. National Marine Fisheries Service.

Chapter 1 Introduction

No references were used in this chapter.

Chapter 2 Project Description

California Department of Fish and Wildlife. 2018. *2018 Marine Life Management Act Master Plan*. Available: https://wildlife.ca.gov/Conservation/Marine/MLMA/Master-Plan. Accessed February 2023.

———. 2020. Dungeness Crab Enhanced Status Report. Available: https://marinespecies.wildlife.ca.gov/dungeness-crab/management/. Last updated December 30, 2020. Accessed January 13, 2023.

———. 2023. Commercial Fishing Licenses and Permits. Items reported by license year as of 1/31/2024. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=178045&inline. Accessed 4/17/2024.

———. 2024a. *Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973: Draft Conservation Plan for California's Commercial Dungeness Crab Fishery.* Sacramento, CA.

———. 2024b. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2020–2023.*Available: https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries#55999899-gear-retrieval.

Carretta JV, Oleson EM, Forney KA, Weller DW, Lang AR, Baker JB, Orr AJ, Hanson B, Barlow J, Moore JE, Wallen M, Brownell Jr. RL. 2023. US Pacific Marine Mammal Stock Assessments: 2022. NOAA Technical Memorandum NMFS-SWFSC-684. 409 p.

CDFW. *See* California Department of Fish and Wildlife.

National Marine Fisheries Service. 2023. Southwest Fisheries Science Center Sea Turtle Stranding Database.

NMFS. *See* National Marine Fisheries Service.

Richerson K, Punt AE, Holland D. 2020. Nearly a Half Century of High but Sustainable Exploitation in the Dungeness Crab (*Cancer magister*) Fishery. Fisheries Research 226: 105528. Available: https://doi.org/10.1016/j.fishres.2020.105528.

Saez, Lauren. Contractor, National Marine Fisheries Service, West Coast Region Office. July 26, 2022, and August 26, 2022—telephone calls with Morgan Ivens-Duran, Environmental Scientist, CDFW.

Saez, L., D. Lawson, and M. DeAngelis. 2021 (March). *Large Whale Entanglements off the US West Coast, from 1982–2017*. NOAA Technical Memorandum NMFS-OPR-63A. National Marine Fisheries Service.

Samhouri JF, Feist BE, Fisher MC, Liu O, Woodman M, Abrahms B, Forney KA, Hazen EL, Lawson D, Redfern J, Saez LE. 2021. Marine Heatwave Challenges Solutions to Human – Wildlife Conflict. Proceedings of the Royal Society B. 288: 20211607. Available: https://doi.org/10.1098/rspb.2021.1607.

Santora, J. A., N. J. Mantua, I. D. Schroeder, J. C. Field, E. L. Hazen, S. J. Bograd, W. J. Snydeman, B. K. Wells, J. Calambokidis, L. Saez, D. Lawson, and K. A. Forney. 2020. "Habitat Compression and Ecosystem Shifts as Potential Links between Marine Heatwave and Record Whale Entanglements." *Nature Communications* 11: article number 536.

Wild, P. W., and R. N. Tasto. 1983. *Life History, Environment, and Mariculture Studies of the Dungeness Crab, Cancer magister, with Emphasis on the Central California Fishery Resource*. Fish Bulletin 172. California Department of Fish and Game.

Chapter 3 Environmental Impacts and Mitigation Measures

California Department of Fish and Wildlife. 2002 (August). *Nearshore Fishery Management Plan.* Available: https://www.wildlife.ca.gov/Conservation/Marine/NFMP. Accessed February 2023.

CDFW. *See* California Department of Fish and Wildlife.

Section 3.2 Air Quality

California Air Resources Board. 2014a. The California Almanac of Emissions and Air Quality. 2013 Edition. Available: https://ww2.arb.ca.gov/our-work/programs/resource-center/technical-assistance/air-quality-and-emissions-data/almanac. Accessed March 1, 2023.

———. 2014b. California Air Basin Map. Available: https://ww2.arb.ca.gov/california-map-local-air-district-websites. Accessed March 1, 2023.

———. 2016 (May 4). Ambient Air Quality Standards. Available: https://ww2.arb.ca.gov/sites/default/files/2020-07/aaqs2.pdf. Accessed March 1, 2023.

California Department of Public Health. 2014. What Are Air Contaminants? Available: http://www.cehtp.org/faq/air/what_are_air_contaminants. Accessed February 25, 2019.

CARB. *See* California Air Resources Board.

CDPH. *See* California Department of Public Health.

EPA. *See* US Environmental Protection Agency.

US Environmental Protection Agency. 2022. *Criteria Air Pollutants*. Available: https://www.epa.gov/criteria-air-pollutants. Last updated August 9, 2022. Accessed March 1, 2023.

Section 3.3 Archaeological, Historical, and Tribal Cultural Resources

Barrett, E. M. 1963. *The California Oyster Industry*. Fish Bulletin 123. California Department of Fish and Game. Sacramento, CA.

Baumhoff, M. A. 1963. "Ecological Determinants of Aboriginal California Populations." *University of California Publications in American Archaeology and Ethnology* 49(2): 155–235.

Bean, L., and D. Theodoratus. 1978. "Western Pomo and Northeastern Pomo." In *California*, edited by R. Heizer, 289–305. Volume 8 of *Handbook of North American Indians*, edited by W. C. Sturtevant. Smithsonian Institution. Washington, DC.

Bischoff, M. C. 2005 (June). *Documentation of the Light Station Complex, Año Nuevo Island, Año Nuevo State Reserve, San Mateo County, California*. California Department of Parks and Recreation. Sacramento, CA.

California Department of Fish and Game. 2009 (July 24). *California Marine Life Protection Act Initiative: Regional Profile of the South Coast Study Region (Point Conception to California-Mexico Border)*. Available: http://www.dfg.ca.gov/marine/mpa/regionalprofile_sc.asp.

———. 2010 (April 19). *California Marine Life Protection Act Initiative: Regional Profile of North Coast Study Region (California-Oregon Border to Alder Creek)*. Available: http://www.dfg.ca.gov/marine/mpa/ncprofile.asp.

California State Lands Commission. 2023. California Shipwrecks. Available: https://www.slc.ca.gov/wp-content/uploads/2018/12/ShipwreckInfo.pdf. Accessed February 3, 2023.

California State Parks. 2013. *Sustainable Preservation: California's Statewide Historic Preservation Plan 2013–2017*. Available: http://ohp.parks.ca.gov/pages/1069/files/SustainablePreservation_CaliforniaStatePlan_2013to2017.pdf.

CDFG. *See* California Department of Fish and Game.

Eglash, R. 2002. "Computation, Complexity and Coding in Native American Knowledge Systems." In *Changing the Faces of Mathematics: Perspectives on Indigenous People of North America,* edited by J. Hankes and G. Fast. Available: http://homepages.rpi.edu/~eglash/eglash.dir/nacyb.dir/nacomplx.htm.

Erlandson, J. M., T. C. Rick, T. L. Jones, and J. F. Porcasi. 2007. "One If by Land, Two If by Sea: Who Were the First Californians?" In *California Prehistory: Colonization, Culture and Complexity*, edited by T. L. Jones and K. A. Klar, 53–62. AltaMira Press. Lanham, MD.

Gould, R. 1978. "Tolowa." In *California*, edited by R. Heizer, 128–136. Volume 8 of *Handbook of North American Indians*, edited by W. C. Sturtevant. Smithsonian Institution. Washington, DC.

Heizer, R. F. ed. 1978. *California*. Volume 8 of *Handbook of North American Indians*. Smithsonian Institution. Washington, DC.

InterTribal Sinkyone Wilderness Council. 2010 (April 1). InterTribal Sinkyone Profile. Pages 225–267 in Appendix E, California Tribes and Tribal Communities, *Regional Profile of the North Coast Study Region: California-Oregon Border to Alder Creek*. California Natural Resources Agency.

Jones & Stokes. 2006 (November). *Draft Environmental Impact Report: California Marine Life Protection Act Initiative, Central Coast Marine Protected Areas Project*. Prepared for California Department of Fish and Game. Available: http://www.dfg.ca.gov/marine/mpa/impact.asp.

Kroeber, A. L., and E. W. Gifford. 1949. *World Renewal: A Cult System of Native Northwest California*. Anthropological Records 13. University of California Press. Berkeley

Moratto, M. J. 1984. *California Archaeology*. Coyote Press. Salinas, CA.

National Oceanic and Atmospheric Administration. 2011 (December). Voices of the Bay: Fishery Basics – California Fisheries. Available: https://nmssanctuaries.blob.core.windows.net/sanctuaries-prod/media/archive/education/voicesofthebay/pdfs/dungenesscrab.pdf. Accessed February 24, 2023.

NOAA. *See* National Oceanic and Atmospheric Administration.

Office of Historic Preservation. 2023. California Historical Resources – by County. Available https://ohp.parks.ca.gov/listedresources/. Accessed February 8, 2023.

SLC. *See* California State Lands Commission.

Sundberg, J. 2008. "Trinidad, California, Patrick's Point State Park: The Yurok Village of Sumeg." In *American Indian Places: A Guide,* F. H. Kennedy editor and principal author. Houghton Mifflin Company.

Section 3.4 Greenhouse Gas Emissions and Climate Change

California Natural Resources Agency. 2018 (January). *Safeguarding California Plan: 2018 Update.* Available: http://resources.ca.gov/docs/climate/safeguarding/update2018/safeguarding-california-plan-2018-update.pdf. Accessed March 1, 2023.

California Air Resources Board. 2022. *2022 Scoping Plan for Achieving Carbon Neutrality.* Available: https://ww2.arb.ca.gov/sites/default/files/2022-12/2022-sp.pdf. Accessed March 2, 2023.

CARB. *See* California Air Resources Board.

CNRA. *See* California Natural Resources Agency.

Governor's Office of Planning and Research, California Energy Commission, and California Natural Resources Agency. 2018a. *California's Fourth Climate Change Assessment: Statewide Summary Report*. Available: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf. Accessed March 1, 2023.

———. 2018b. *California's Fourth Climate Change Assessment: California's Coast and Ocean Summary Report*. Available: https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-011_OceanCoastSummary_ADA.pdf. Accessed March 1, 2023.

Intergovernmental Panel on Climate Change. 2013. Chapter 6, Carbon and Other Biogeochemical Cycles. Pages 465–570 in *Climate Change 2013: The Physical Science Basis*. Working Group I Contribution to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Available: http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf. Accessed March 1, 2023.

———. 2014. *Climate Change 2014 Synthesis Report: Summary for Policymakers*. Available: https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf. Accessed March 1, 2023.

IPCC. *See* Intergovernmental Panel on Climate Change.

Kroeker, K.J., R.L. Kordas, R.N. Crim, and G.G. Singh. 2010. Meta-Analysis Reveals Negative yet Variable Effects of Ocean Acidification on Marine Organisms. *Ecology Letters* 13(11):1419–1434. Available: https://doi.org/10.1111/j.1461-0248.2010.01518.x. Accessed March 1, 2023.

Kroeker, K.J., R.L. Kordas, R. Crim, I.E. Hendriks, L. Ramajo, G.S. Singh, C.M. Duarte, and J.P. Gattuso. 2013. Impacts of Ocean Acidification on Marine Organisms: Quantifying Sensitivities and Interaction with Warming. *Global Change Biology* 19(6):1884–1896. Available: https://doi.org/10.1111/gcb.12179. Accessed March 1, 2023.

OPR. *See* Governor's Office of Planning and Research.

United Nations. 2015. Paris Agreement. Available: https://unfccc.int/sites/default/files/english_paris_agreement.pdf. Accessed March 1, 2023.

Section 3.5 Hazards and Hazardous Materials

California Department of Fish and Wildlife. 2020a. Dungeness Crab, *Metacarcinus magister*, Enhanced Status Report. Available: https://marinespecies.wildlife.ca.gov/dungeness-crab/management/. Last updated December 30, 2020. Accessed January 13, 2023.

———. 2020b. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2020.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=191648. Accessed February 27, 2023.

———. 2021. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2021.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=199037&inline#:~:text=Under%20the%20program%2C%20CDFW%20issues,crab%20gear%20from%20the%20ocean. Accessed February 27, 2023.

California Department of Toxic Substances Control. 2012. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F7850845158%2FMaster_NDAI_Monterey%20Bay_Sediments.pdf. Accessed January 25, 2023.

———. 2013. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/getfile?filename=/public%2Fdeliverable_documents%2F5124510049%2FDTSC%20rspns.Monterey%20Bay%20Sediments%20NDAI%20021413.pdf. Accessed January 25, 2023.

———. 2023a. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/public/. Accessed January 19, 2023.

———. 2023b. EnviroStor. Available: https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=80000751. Accessed January 25, 2023.

CDFW. *See* California Department of Fish and Wildlife.

City of Rancho Palos Verdes. 2023. Marine Protected Area (MPA). Available: https://www.rpvca.gov/1328/Marine-Protected-Area-MPA. Accessed January 25, 2023.

DTSC. *See* California Department of Toxic Substances Control.

State Water Resources Control Board. 2023. GeoTracker. Available: https://geotracker.waterboards.ca.gov/. Accessed January 19, 2023.

SWRCB. *See* State Water Resources Control Board.

Section 3.6 Marine Biological Resources

California Department of Fish and Wildlife. 2020. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2020.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=191648. Accessed February 7, 2023.

———. 2021. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2021.* Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=199037&inline#:~:text=Under%20the%20program%2C%20CDFW%20issues,crab%20gear%20from%20the%20ocean. Accessed February 7, 2023.

———. 2022. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2022.*Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=210935&inline. Accessed February 8, 2024.

———. 2023. *Marine Protected Area List by County*. Available: https://wildlife.ca.gov/Conservation/Marine/MPAs/Outreach-Materials#267163719-mpa-list-by-county. Accessed February 5, 2023.

———. 2024. *Lost or Abandoned Commercial Dungeness Crab Trap Gear Retrieval during 2020–2023.*Available: https://wildlife.ca.gov/Conservation/Marine/Whale-Safe-Fisheries#55999899-gear-retrieval. Accessed April 9, 2024.

California Natural Diversity Database. 2024. Results of electronic records search. California Department of Fish and Wildlife, Biogeographic Data Branch. Sacramento, CA. Retrieved February 8, 2024.

Capitolo, Phil. Wildlife biologist. University of California, Santa Cruz. February 14, 2019—Email transmittal of California seabird colony location data, originally obtained from Gerry McChesney, refuge manager at US Fish and Wildlife Service, to Allison Fuller of Ascent.

CDFW. *See* California Department of Fish and Wildlife.

CNDDB. *See* California Natural Diversity Database.

Johnson, K. A., M. M. Yoklavich, and G. M. Cailliet. 2001. "Recruitment of Three Species of Juvenile Rockfish (*Sebastes* spp.) on Soft Benthic Habitat in Monterey Bay, California." *California Cooperative Oceanic Fisheries Investigations Report* 42: 153–166.

National Marine Fisheries Service. 2011. *Pinniped Rookeries and Haulout Sites within California*. ArcGIS webmap. Available: https://arcg.is/LzWu8. Accessed February 5, 2023.

NMFS. *See* National Marine Fisheries Service.

State Water Resources Control Board. 2023. *California's Areas of Special Biological Significance.* Available: https://www.waterboards.ca.gov/water_issues/programs/ocean/asbs_map.shtml. Accessed February 5, 2023.

SWRCB. See State Water Resources Control Board.

US Fish and Wildlife Service. 2024. Information for Planning and Consultation electronic records search. Available: https://ecos.fws.gov/ipac/. Retrieved February 8, 2024.

USFWS. *See* US Fish and Wildlife Service.

Yen, P. W., W. J. Sydeman, and K. D. Hyrenback. 2004. "Marine Bird and Cetacean Associations with Bathymetric Habitats and Shallow-Water Topographies: Implications for Trophic Transfer and Conservation." *Journal of Marine Systems* 50: 79–99.

Section 3.7 Water Quality

Bograd, S. J., I. Schroeder, N. Sarkar, X. Qiu, W. J. Sydeman, and F. B. Schwing. 2009. "Phenology of Coastal Upwelling in the California Current." *Geophysical Research Letters* 36: 1–5.

Bond N. A., M. F. Cronin, H. Freeland, and N. Mantua. 2015. "Causes and Impacts of the 2014 Warm Anomaly in the NE Pacific." *Geophysical Research Letters* 42:3414–3420.

Brady, R. X., M. A. Alexander, N. S Lovenduski, and R. R. Rykaczewski. 2017. "Emergent Anthropogenic Trends in California Current Upwelling." *Geophysical Research Letters* 44: 5044–5052.

California Department of Fish and Wildlife. 2024 *Application for an Individual Incidental Take Permit under the Endangered Species Act of 1973: Draft Conservation Plan for California's Commercial Dungeness Crab Fishery*. Sacramento, CA.

California Fish and Game Commission. 2016 (March). *Final Initial Study/Negative Declaration: California Spiny Lobster Fishery Management Plan and Proposed Regulatory Amendments*.

Carr, M. E., and E. J. Kearns. 2003. "Production Regimes in Four Eastern Boundary Current Systems." *Deep Sea Research Part II: Topical Studies in Oceanography* 50: 3199–3221.

CDFW. *See* California Department of Fish and Wildlife.

CFGC. *See* California Fish and Game Commission.

Checkley, D. M., and J. A. Barth. 2009. "Patterns and Processes in the California Current System." *Progress in Oceanography* 83: 49–64.

Harvey, C., T. Garfield, G. Williams, and N. Tolimieri. 2022 (March). *2021-2022 California Current Ecosystem Status Report*. Report of the NOAA California Current Integrated Ecosystem Assessment Team (CCIEA) to the Pacific Fishery Management Council.

Hickey, B. M. 1979. "The California Current System: Hypotheses and Facts." *Progress in Oceanography* 8(4): 191–279.

Huyer, A. 1983. "Coastal Upwelling in the California Current System." *Progress in Oceanography* 12(3): 259–284.

Marchesiello, P., J. C. McWilliams, and A. Shchepetkin. 2003. "Equilibrium Structure and Dynamics of the California Current System." *Journal of Physical Oceanography* 33: 753–783.

NASA. *See* National Aeronautics and Space Administration.

National Aeronautics and Space Administration. 2016. California Coastal Current. Available: https://earthobservatory.nasa.gov/images/87575/california-coastal-current. Accessed January 16, 2023.

Santora, J. A., N. J. Mantua, I. D. Schroeder, J. C. Field, E. L. Hazen, S. J. Bograd, W. J. Sydeman, B. K. Wells, J. Calambokidis, L. Saez, D. Lawson, and K. A. Forney. 2020. "Habitat Compression and Ecosystem Shifts as Potential Links between Marine Heatwave and Record Whale Entanglements." *Nature Communications* 11: 1–12.

Schroeder, I. D., B. A. Black, W. J. Sydeman, S. J. Bograd, E. L. Hazen, J. A. Santora, and B. K. Wells. 2013. "The North Pacific High and Wintertime Pre-Conditioning of California Current Productivity." *Geophysical Research Letters* 40(3): 541–546.

Skogsberg, T. 1936. "Hydrography of Monterey Bay, California: Thermal Conditions, 1929–1933." *Transactions of the American Philosophical Society* 29(1): 1–152.

State Water Resources Control Board. 2019. *Water Quality Control Plan: Ocean Waters of California*. Sacramento, CA.

———. 2023. Industrial Storm Water Map. Available: https://www.arcgis.com/home/webmap/viewer.html?webmap=0d5a1593ced644658206debd338ee6f8&extent=-124.4982,29.0016,-115.006,43.5909. Accessed February 2, 2023.

SWRCB. *See* State Water Resources Control Board.

Talley, L. D., L. P. George, W. J. Emery, and J. H. Swift. 2011. *Descriptive Physical Oceanography: An Introduction*. Sixth edition. Academic Press. San Diego, CA.

Chapter 4 Cumulative Impacts

BLM. *See* US Bureau of Land Management.

BOEM. *See* US Bureau of Ocean Energy Management.

California Department of Fish and Wildlife. 2020 (May). *The Status of Commercial Marine Aquaculture in California*. Available: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=187229&inline. Accessed February 7, 2024.

California Energy Commission. 2023. Offshore Wind in California. Available: https://www.energy.ca.gov/programs-and-topics/topics/renewable-energy/offshore-renewable-energy. Accessed January 31, 2023.

California Sea Grant. 2024. Aquaculture in California. Available: https://caseagrant.ucsd.edu/our-work/discover-california-seafood/aquaculture-california. Accessed April 3, 2024.

CDFW. *See* California Department of Fish and Wildlife.

CEC. *See* California Energy Commission.

National Oceanic and Atmospheric Administration. 2023a (March). *2022 West Coast Entanglement Summary*. Available: https://www.fisheries.noaa.gov/resource/document/2022-west-coast-whale-entanglement-summary. Accessed February 7, 2024.

———. 2023b. Marine Mammals on the West Coast: Vessel Strikes. Available: https://www.fisheries.noaa.gov/west-coast/marine-mammals-west-coast-vessel-strikes. Accessed January 31, 2023.

———. 2023c. National Marine Sanctuaries: West Coast Region. Available: https://sanctuaries.noaa.gov/about/westcoast.html. Accessed January 31, 2023.

NOAA. *See* National Oceanic and Atmospheric Administration.

US Bureau of Land Management. 2023. California Coastal National Monument. Available: https://www.blm.gov/programs/national-conservation-lands/california/california-coastal. Accessed January 31, 2023.

US Bureau of Ocean Energy Management. 2022 (July). Oil and Gas Energy Fact Sheet. Available: https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/Lease%20stats%201-1-23.pdf. Accessed January 31, 2023.

———. 2024 (February 1). Combined Leasing Report as of February 1, 2024. Available:https://www.boem.gov/sites/default/files/documents/oil-gas-energy/leasing/Lease%20stats%202-1-24.pdf. Accessed February 27, 2024.

US Department of Commerce. 2022 (March). *Fisheries Economics of the United States 2019.* Silver Spring, MD.

US Department of Energy. 2022 (March 28). CalWave Launches California's First Long-Term Wave Energy Project. Available: https://www.energy.gov/eere/water/articles/calwave-launches-californias-first-long-term-wave-energy-project. Accessed February 2, 2023.

Chapter 5 Alternatives

California Department of Fish and Wildlife. 2020. Standardized Regulatory Impact Assessment, Proposed Addition of Section 132.8, Title 14, California Code of Regulations for the Risk Assessment Mitigation Program: Commercial Dungeness Crab Fishery.

CDFW. *See* California Department of Fish and Wildlife.

Chapter 6 Other CEQA Sections

US Department of Commerce. 2022 (March). *Fisheries Economics of the United States 2019.* Silver Spring, MD.

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