



Chumash Heritage National Marine Sanctuary

Final Environmental Impact Statement: Volume I



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Recommended Citation:

National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries.
2024. Chumash Heritage National Marine Sanctuary Final Environmental Impact Statement:
Volume I. Silver Spring, MD.



**NATIONAL
MARINE
SANCTUARIES**

Cover photos: Top: *Urticina* sp., anemone, offshore Montaña de Oro State Park; Photo: Robert Schwemmer/NOAA. Bottom: Pismo Beach, Bird Rock; Photo: Robert Schwemmer/NOAA.



About This Document

Abstract:

The National Oceanic and Atmospheric Administration (NOAA) is proposing to designate a national marine sanctuary to manage nationally significant resources off the coast of San Luis Obispo and Santa Barbara counties, California. In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (U.S.C.) 4321 *et seq.*) and the 2020 Council on Environmental Quality (CEQ) NEPA regulations (85 Federal Register (Fed. Reg.) 43304, July 16, 2020), and the National Marine Sanctuaries Act (NMSA), 16 U.S.C. § 1431 *et seq.*, NOAA has prepared a final environmental impact statement (EIS), which is separated into two volumes; the first considers alternatives for the proposed national marine sanctuary and identifies a Final Preferred Alternative, and the second contains the appendices. This document is Volume I.

This document also serves as a resource assessment that details the present and future uses of the areas identified for potential national marine sanctuary designation. No significant adverse impacts are expected under any alternative. Long-term beneficial impacts are anticipated if the proposed action is implemented.

Lead agency: National Oceanic and Atmospheric Administration

Cooperating agencies: Santa Ynez Band of Chumash Indians, Bureau of Safety and Environmental Enforcement, Bureau of Ocean Energy Management, Department of Defense

For further information on the project, see the project website at:
<https://sanctuaries.noaa.gov/chumash-heritage/>

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UNITED STATES DEPARTMENT OF COMMERCE
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Dear Reader:

In accordance with the provisions of the National Environmental Policy Act (NEPA), we enclose for your review the National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries (ONMS) final environmental impact statement (EIS) for Chumash Heritage National Marine Sanctuary (CHNMS).

NOAA prepared this document to assess the environmental impacts associated with designating the national marine sanctuary under the National Marine Sanctuaries Act (NMSA). The NMSA requires that an EIS be prepared for designation of a national marine sanctuary regardless of the significance of the impacts of the proposed action. NOAA will publish a final rule to establish the boundaries, regulations, and terms of designation for CHNMS. The final management plan will be released with the final rule and contains the nonregulatory management actions for the sanctuary. Under the NMSA, after the publication of the final rule the designation becomes effective after 45 days of Congressional session. During this time, Congress and the Governor of California will review NOAA's designation documents. NOAA will also develop the Record of Decision and publish in the Federal Register the notice of effective date of the designation after the review period is complete.

Although NOAA is not required to respond to comments received as a result of issuance of the final EIS, any comments received will be reviewed and considered for their impact on issuance of a Record of Decision. Please send comments to the Sanctuary Official identified below by October 7, 2024. NOAA will make the Record of Decision publicly available following final agency action.

Sanctuary official: Laura Ingulsrud, West Coast Regional Policy Analyst
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Sincerely,



John Armor
Director



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Acknowledgements

The study area reviewed for the proposed national marine sanctuary spans portions of the historical areas of Chumash and Salinan Peoples and specific locations of importance to them. NOAA's Office of National Marine Sanctuaries (ONMS) wishes to respectfully acknowledge and thank the Tribes and Indigenous groups expressing active interest in the proposed national marine sanctuary, including the Santa Ynez Band of Chumash Indians, Northern Chumash Tribal Council, yak tityu yak tilhini Northern Chumash Tribe, Barbareño/Ventureño Band of Mission Indians, Coastal Band of the Chumash Nation, Barbareño Chumash Tribal Council, Northern Chumash Bear Clan, Xolon Salinan Tribe, Salinan Tribe of Monterey and San Luis Obispo Counties, Salinan Trowtraahl of the Salinan National Cultural Preservation Association, Chumash Maritime Association, and the Wishtoyo Chumash Foundation.

ONMS also wishes to thank those individuals who spent considerable time reviewing the nomination, and public comments, as well as those who studied the condition of and threats to sanctuary resources, and those who learned from Tribes and Indigenous community members.

Contributions to this final EIS (Volumes I and II) from the Santa Ynez Band of Chumash Indians, the Bureau of Safety and Environmental Enforcement, Bureau of Ocean Energy Management, California State Lands Commission, California Coastal Commission, U.S. Army Corps of Engineers, Central Coast Regional Water Quality Control Board, California Department of Fish and Wildlife, and Department of Defense are deeply appreciated.

Lastly, ONMS wishes to thank those who wrote and contributed to the final EIS. They are named in Appendix J: List of Document Preparers.

Glossary of Acronyms

ATBA	Area To Be Avoided
BOEM	Bureau of Ocean Energy Management
BSEE	Bureau of Safety and Environmental Enforcement
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
C.F.R.	Code of Federal Regulations
CHNMS	Chumash Heritage National Marine Sanctuary
CINMS	Channel Islands National Marine Sanctuary
COLREGS	International Regulations for Preventing Collisions at Sea
CPFV	Commercial Passenger Fishing Vessel
CSLC	California State Lands Commission
CWA	Clean Water Act
DCPP	Diablo Canyon Power Plant
DoD	Department of Defense
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
E.O.	Executive Order
ESA	Endangered Species Act
GFNMS	Greater Farallones National Marine Sanctuary
GRT	Gross register tonnage
HAPCs	Habitat Areas of Particular Concern
IMO	International Maritime Organization
MBNMS	Monterey Bay National Marine Sanctuary
MBTA	Migratory Bird Treaty Act
MMPA	Marine Mammal Protection Act
MOA	Memorandum of Agreement
MPA	Marine Protected Area
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSD	Marine Sanitation Device
NHPA	National Historic Preservation Act
NMSA	National Marine Sanctuaries Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOS	National Ocean Service
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OCSLA	Outer Continental Shelf Lands Act
ONMS	Office of National Marine Sanctuaries
PAC-PARS	Pacific Coast Port Access Route Study
PFMC	Pacific Fisheries Management Council
PG&E	Pacific Gas and Electric Company
PMSR	Point Mugu Sea Range



SMCA	State Marine Conservation Area
SMR	State Marine Reserve
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VSFB	Vandenberg Space Force Base

Executive Summary

Introduction

The National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries (ONMS) proposes to designate a portion of the central California coast and offshore waters as Chumash Heritage National Marine Sanctuary (CHNMS). This Chumash Heritage National Marine Sanctuary Final Environmental Impact Statement (EIS) analyzes the impacts on the human environment of the proposed action and a range of alternatives for sanctuary designation, including proposed regulations for managing the new sanctuary. A final management plan, which includes information about the proposed sanctuary's priority management goals, strategies, and actions to address them over the next five years, is being published following this EIS, along with a final rule identifying proposed regulations for the new sanctuary.

Project Location

The proposed sanctuary study area comprises the coastline and waters offshore San Luis Obispo and northern Santa Barbara counties and includes the Santa Lucia Bank, its escarpment, Rodriguez Seamount, Arguello Canyon, and other offshore features and resources to approximately 78 miles offshore.

Sanctuary Nomination and Background

In July 2015, a broad community consortium led by the Northern Chumash Tribal Council submitted a nomination to NOAA through the Sanctuary Nomination Process (established by rule 79 Federal Register (Fed. Reg.) 33851) asking NOAA to consider designating an area on the central California coast as a national marine sanctuary. The nomination asked NOAA to protect this nationally significant area for its biologically and culturally important resources. The nomination also identified opportunities for NOAA to expand upon existing local and state efforts to study, interpret, and manage the area's unique cultural and biological resources.

The nomination also highlighted the maritime history and cultural heritage of the Chumash people. Some of the earliest documented human habitation of North America is in this region. The federally recognized Santa Ynez Band of Chumash Indians, and several other non-federally recognized Tribes and Indigenous groups,¹ have deep cultural connections to this area of central California. Historical records and studies show that much of the current coast of San Luis Obispo and Santa Barbara counties contained thriving settlements and villages occupied by Tribes and Indigenous communities. These coastal sites contain cultural artifacts and remains and are extremely valuable to Tribes and Indigenous communities. Dating back thousands of

¹ This EIS uses "Tribes and Indigenous communities" and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms "federally recognized Tribe(s)" or "federally recognized Tribal Nation(s)." As such, use of the term "Tribe" or "Tribal" is not intended to refer only to federally recognized Tribes unless otherwise specified.

years, offshore submerged continental shelf areas and unsurveyed paleoshorelines also likely contain archaeological resources of great significance to local Tribes and Indigenous groups, and are worthy of acknowledgement, protection, and culturally appropriate study.

A diverse coalition of organizations and individuals at Tribal, local, state, regional, and national levels endorsed the nomination. The [submitted nomination package](#) is available. NOAA added the area to the inventory of nominations that are eligible for designation in October 2015 and extended its eligibility on the inventory on October 1, 2020, for an additional five years after a review of the nomination (85 Fed. Reg. 61935). NOAA formally commenced a designation process for the proposed sanctuary in November 2021.

Purpose and Need for a Sanctuary

The purpose of this proposed action is to increase protection of the ecological, historical, and cultural qualities of the central California coastal marine environment. The proposed designation would provide conservation and comprehensive ecosystem-based management to address threats to the nationally significant biological, cultural, and historical resources of the proposed sanctuary. By implementing a management plan that includes a variety of strategies and actions, the sanctuary would (1) develop coordinated and collaborative marine science, education and outreach, and cultural heritage programs to assist in managing the area’s nationally significant resources; (2) respond to interest for a community-based, Indigenous-inspired, ecosystem-based management regime to address threats to the natural environment, wildlife, and cultural resources of the area; and (3) highlight the area’s diverse human activities, Indigenous cultures and knowledge, and compelling maritime heritage.

The area proposed for national marine sanctuary designation is an important and vibrant ecological transition zone with high biological productivity that supports dense aggregations of marine life, including a nationally significant biodiversity of seabirds, marine mammals, invertebrates, and fishes. It serves as “headwaters” for upwelling that nourishes important ecosystems down current of the proposed sanctuary; however, due to the myriad ongoing and emerging threats to the area from consumptive and non-consumptive human uses and climate change, additional protections are needed. Threats facing these increasingly vulnerable coastal and offshore ecosystems specifically include direct and indirect impacts from offshore energy development, pollution from offshore and onshore sources, increased vessel traffic and transportation, increased coastal development, and other stressors to the ecosystem that compromise its resiliency—especially acute and cumulative impacts from climate change. Moreover, there is a need to recognize and respectfully protect the Indigenous cultural heritage of this area, drawing on Indigenous Knowledge² and working in partnership and collaborative co-stewardship with the federally recognized Santa Ynez Band of Chumash Indians and other Indigenous groups.

² NOAA utilizes the term “Indigenous Knowledge” (see [2023 Guidance](#)) because it is broadly inclusive and aligns with the [Council on Environmental Quality’s 2022 interagency guidance](#) on the use of Indigenous Knowledge in federal decision-making. Indigenous Knowledge is defined as: “a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through interaction and experience with the environment” (see also: Office of Science and Technology Policy & CEQ, 2022)

Public Involvement and Interagency Coordination

NOAA issued a Notice of Intent (NOI) on November 10, 2021, to conduct scoping and prepare an EIS (86 Fed. Reg. 62512). Scoping included an 83-day period during which NOAA solicited public comments related to the scale and scope of the proposed sanctuary, including ideas presented in the sanctuary nomination. In addition, NOAA hosted three virtual public meetings in December 2021 and January 2022 and accepted comments until January 31, 2022.³ All comments received are available to the public through [Regulations.gov](https://www.regulations.gov).

During the scoping period, more than 1,000 individuals provided written comments. At the three scoping meetings, 100 people provided oral comments in total. NOAA studied the scoping comments closely, and relied on them to inform decisions about alternatives to consider and potential impacts of the alternatives, potential regulations, and the scope and substance of the action plans in the draft management plan. The majority of comments supported the goals of sanctuary designation, including protecting the cultural heritage of Chumash Tribal communities and protecting the coastal California ecosystem's health and resilience. Many commenters also noted the importance of managing the area to promote recreation and tourism to support the local economy, foster education and research programs, and establish a shared management approach with Tribes and Indigenous communities. Commenters also voiced concerns about overlapping existing and potential uses of the area such as fishing and offshore energy development.

A public review and comment period of 60 days followed publication of the Notice of Availability of the draft EIS on August 25, 2023. Three public hearings to receive comments on the draft EIS were held. During the public comment period, NOAA received over 110,000 comments from federal, state, and local agencies and officials, organizations, and interested groups and individuals. After the public comment period closed, the comments were carefully reviewed and cataloged. A summary of these comments and the corresponding responses from NOAA are provided in Appendix A of this final EIS. In preparing the final EIS, final management plan, and final rule, NOAA considered all substantive issues raised in the comments. Changes were made to the EIS, as well as the management plan, as a result of the public, Tribal, and agency comments (see Section 1.5 for a summary list of changes). Corresponding changes will be made to the final rule before its publication. These clarifications do not constitute substantial changes relevant to environmental concerns. NOAA has determined that there are no significant new circumstances or information relevant to environmental concerns related to the impacts of the proposed action or alternatives.

Proposed Action and Alternatives

NOAA developed a reasonable range of alternatives as required by the 2020 Council on Environmental Quality (CEQ) NEPA regulations. The proposed action includes the establishment of a new sanctuary, with terms of designation, regulations, and a management plan. The alternatives present various boundary options for the proposed sanctuary and include

³ The initial NOI established a comment deadline of January 10, 2022; a notice published on December 16, 2022 (86 Fed. Reg. 71422) extended this deadline to January 31, 2022.

the Initial Boundary Alternative, four smaller boundary alternatives, two larger boundary sub-alternatives,⁴ and the No Action Alternative.

Proposed Boundaries

The alternatives include the following (see Table ES-1 for a comparison of sizes of the various alternatives):

- **Initial Boundary Alternative**, generally consistent with the action that was identified in the NOI (86 Fed. Reg. 62512; November 10, 2021), but with some minor boundary modifications. This alternative would also include the potential regulations NOAA would adopt if that alternative were approved. The proposed boundary would be located along the mean high water line from approximately Cambria at the terminal boundary of Monterey Bay National Marine Sanctuary (MBNMS), south along the San Luis Obispo County coast, excluding Morro Bay Harbor, Port San Luis (boundary is at the COLREGS (International Regulations for Preventing Collisions at Sea) demarcation line (33 Code of Federal Regulations (C.F.R.) 80.1132 and 80.1130 respectively)), the private marina at Diablo Canyon Power Plant (DCPP), and the Vandenberg Space Force Base Harbor. The boundary would continue further south and east to include the coast of Santa Barbara County to Gaviota Creek (approximately 0.1 mile east of Gaviota Pier), offshore in a southwest direction along the western end of Channel Islands National Marine Sanctuary (CINMS), southward to include Rodriguez Seamount and shifting to the northwest to include the waters and seabed west of Santa Lucia Bank, and reconnect with the boundary for MBNMS offshore Cambria.
- **Alternative 1, Bank to Coast**, focuses on the Santa Lucia Bank to the coast, but excludes most deep-water portions west of Santa Lucia Bank. The boundary would be the same as the Initial Boundary Alternative in both the north and south. The western boundary would shift to the east, reducing the size of the proposed sanctuary by about 1,500 square miles. The southern portions of this alternative would still include Santa Lucia Bank, much of Arguello Canyon, and Rodriguez Seamount.
- **Alternative 2, Cropped Bank to Coast**, focuses on the Santa Lucia Bank to the coast, but excludes most deep-water portions west of Santa Lucia Bank similar to Alternative 1, and also excludes the northern portion of the Initial Boundary Alternative from Cambria to the northern portion of Montaña de Oro State Park at Hazard Canyon Reef. The sanctuary boundary would begin along the coast at Hazard Canyon Reef in the northern portion of Montaña de Oro State Park and would follow the mean high water line as in the Initial Boundary Alternative and Alternative 1 south to Gaviota Creek. The offshore boundary from Gaviota Creek, to the southwest around CINMS and Rodriguez Seamount and then to the north would mirror that of Alternative 1 except that as the offshore boundary approaches the Morro Bay Wind Energy Area, the boundary for Alternative 2 would transit due east-west approximately 2.5 miles to the south of the boundary for the Initial Boundary Alternative. This would form a corridor of non-sanctuary waters between this alternative and the Morro Bay lease areas within the Morro Bay Wind

⁴ The EIS uses the term “Sub-Alternative” to distinguish alternatives that do not stand alone, rather are additive to other boundary alternatives.

Energy Area. At approximately 38 miles to the west of Morro Rock, the boundary would shift to the southeast returning to the point of origin at Hazard Canyon.

- **Alternative 3, Diablo to Gaviota Creek**, excludes the coastal waters from Cambria to Morro Bay, the area identified for new subsea electrical transmission cables from the lease areas within the Morro Bay Wind Energy Area to shore. The boundary also excludes a large area on the Santa Lucia Bank known as the Diablo Canyon Call Area, as well as a broad coastal area to route electrical cables from that call area and the Morro Bay Wind Energy Area to onshore transmission lines at DCP. For the final EIS, NOAA made a minor adjustment to the location of the shoreline boundary to the southeast of DCP to exclude nearshore areas from the sanctuary that encompass future subsea electrical transmission cable points of interconnection to Morro Bay and Diablo Canyon. The boundary along the shoreline would be the same as the Initial Boundary Alternative from approximately two miles southeast of the mouth of the DCP marina, which is one mile farther southeast than the draft EIS Alternative 3 boundary. From that shifted shoreline location, the boundary would extend due south for approximately 12 miles, turn due west for approximately 18 miles, and connect with the original boundary for Alternative 3. See Section 3.5, Section 3.5.1, Figure 3-7a, and Figure 3-7b.
- **Alternative 4, Combined Smallest**, is a composite of the ocean area excluded in Alternative 1 and Alternative 3 to represent the smallest sanctuary area. The northern nearshore boundary of Alternative 4 was adjusted the same way and for the same reason as boundary Alternative 3. It includes a northern boundary that begins approximately two miles southeast of the marina at DCP and mirrors the boundary of the Initial Boundary Alternative, following the shoreline to Gaviota Creek. From Gaviota Creek, the boundary continues offshore to the southwest, and around Rodriguez Seamount and Arguello Canyon. From there the boundary transits north consistent with Alternative 1 along the edge of Santa Lucia Bank to roughly the southern boundary of the Diablo Canyon Call Area. The boundary continues east paralleling the Call Area's southern edge and turns north along its eastern edge. Similar to Alternative 3, the boundary continues due east for approximately 18 miles, turns due north for approximately 12 miles, and connects to the shifted shoreline point where it originated. See Section 3.5, Section 3.6.1, Figure 3-7a, and Figure 3-8.
- **Sub-Alternative 5a, Morro Bay Estuary**, includes the tidally-influenced areas of the estuary, and could be added to the Initial Boundary Alternative and Alternative 1.
- **Sub-Alternative 5b, Gaviota Coast Extension**, includes state waters offshore of much of the Gaviota Coast, and could be added to the Initial Boundary Alternative and any action alternative. It would move the proposed sanctuary boundary along the Gaviota Coast in state waters to the east end of Naples State Marine Conservation Area (SMCA), east of Dos Pueblos Creek. This extension would include all of Gaviota State Park, Refugio State Beach, El Capitán State Beach, all of Kashtayit and Naples SMCAs, and coastal and offshore resources adjacent to historical Chumash village sites at Tajiguas and Dos Pueblos, in particular.
- **No Action Alternative** represents the scenario in which the sanctuary would not be designated and management of the area would continue as it currently exists. No added resource protection under the NMSA would be provided and the various educational and

monitoring programs outlined in the proposed sanctuary management plan would not be implemented.

Table ES-1. Comparison statistics for Initial Boundary Alternative and alternatives.

	Initial Boundary Alternative	Alt. 1, Bank to Coast	Alt. 2, Cropped Bank to Coast	Alt. 3, Diablo to Gaviota Creek	Alt. 4, Combined Smallest	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension**
Total Size	7,573 mi ² [5,718 nmi ²]	6,098 mi ² [4,605 nmi ²]	5,553 mi ² [4,194 nmi ²]	5,804 mi ² [4,382 nmi ²]	4,328 mi ² [3,268 nmi ²]	2.5 mi ² [1.9 nmi ²]	64 mi ² [48 nmi ²]
Total Mi of Shoreline with Offshore Rocks	202 mi	202 mi	144 mi	114 mi	114 mi	12 mi	18 mi
Total Mi of Mainland Shoreline	152 mi	152 mi	115 mi	98 mi	98 mi	11 mi	18 mi
Max Water Depth	13,374 ft	11,580 ft	11,580 ft	13,374 ft	11,580 ft	24 ft	480 ft
Max Distance from Shore	78 mi ^a [68 nmi]	60mi ^b [52 nmi]	60 mi ^b [52 nmi]	78 mi ^a [68 nmi]	60 mi ^b [52 nmi]	--	3.5 mi [3.0 nmi]

mi = miles; nmi = nautical mile

* Sub-Alternative 5a could be added to the Initial Boundary Alternative or to Alternative 1.

** Sub-Alternative 5b could be added to the Initial Boundary Alternative or any of the action alternatives.

Notes: (a) Estero Bay WSW to western boundary; (b) between Shell and Pismo Beaches WSW to western boundary.

NOAA also identifies a Final Preferred Alternative in this final EIS, which differs from the Agency-Preferred Alternative identified in the draft EIS, and combines Alternative 4 (Combined Smallest) and Sub-Alternative 5b (Gaviota Coast Extension), plus a small area to more fully protect the Santa Lucia Bank that had been part of the Initial Boundary Alternative (see Figure ES-1). The Final Preferred Alternative covers 4,543 square miles of coastal and ocean waters, and spans 116 miles of mainland shoreline beginning two miles southeast of the DCPD marina in San Luis Obispo County to Naples Reef on the Gaviota Coast in Santa Barbara County. The Final Preferred Alternative includes offshore features such as Rodriguez Seamount, Arguello Canyon, and part of the Santa Lucia Bank. Chapter 5 contains a comparison of all the alternatives as well as details explaining the basis for identifying the Final Preferred Alternative.

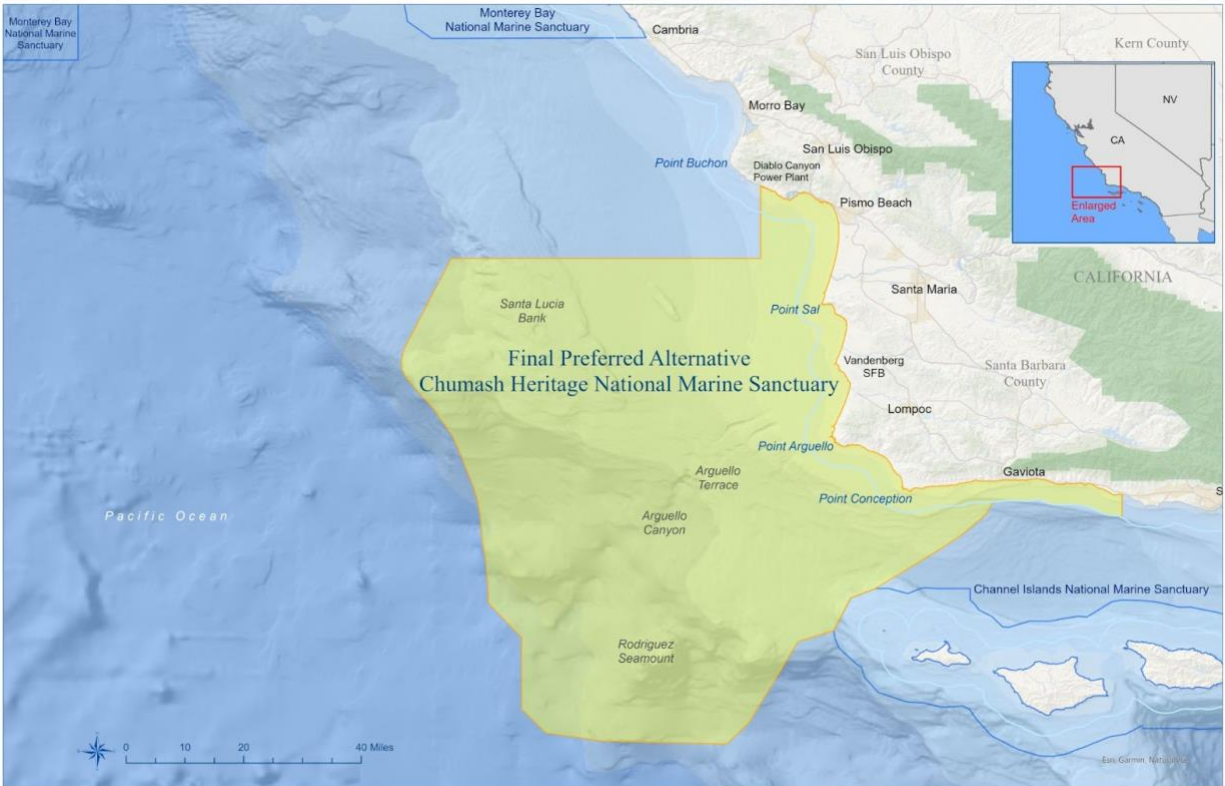


Figure ES-1. NOAA's Final Preferred Alternative boundary for the proposed CHNMS. Image: NOAA.

Proposed Regulations

The proposed sanctuary regulations would closely track regulations for other national marine sanctuaries offshore California, thus addressing the full range of conservation issues, with standard exemptions and permit processes. In general, regulations for national marine sanctuaries are written as “prohibitions” that restrict or limit an activity. If an activity is not covered by a prohibition, it may occur within a sanctuary. Activities that are described as prohibited by a sanctuary regulation may still occur if the activity is covered by an exception to a prohibition, if one or more broad exemptions apply to the activity, if the activity is covered by a permit or authorization issued by the sanctuary superintendent, or if a person receives a certification from NOAA for the activity. Depending on the boundary alternative identified, slight adjustments to the proposed regulations may be necessary.

Prohibitions

The following activities would be prohibited within the sanctuary, subject to specified exceptions and exemptions:

- Oil, gas, and minerals exploration, development, and production, except for continued oil and gas production, including well abandonment, pursuant to existing leases or lease units in effect on the date that sanctuary designation takes effect.
- Discharges within or into the sanctuary, with some exceptions.
- Cruise ship discharges, with limited exceptions.

- Discharging or depositing from beyond the boundary of the sanctuary any material or other matter that enters the sanctuary and injures a sanctuary resource or quality, with some exceptions.
- Disturbing the seabed, with some exceptions.
- Disturbing a historical resource, with limited exceptions.
- Taking or possessing a marine mammal, sea turtle, or bird, unless permitted by other agencies under statute.
- Deserting a vessel.
- Attracting a white shark.
- Disturbing resources deeper than 1,500 feet within the Rodriguez Seamount Management Zone, other than from fishing activities, with limited exceptions.
- Introducing or otherwise releasing an introduced species, with limited exceptions.
- Interfering with an enforcement investigation or action.

Exceptions and Exemptions

Most of the final regulations in Section 922.232(a) (Prohibited or otherwise regulated activities) include limited exceptions that apply to otherwise prohibited activities. The regulations include an exemption clarifying that most of the regulatory provisions would not apply to activities necessary to respond to an emergency threatening life, property, or the environment. Existing Department of Defense (DoD) activities specifically identified in Section 4.9 or Appendix I to this final EIS would also be broadly exempted from the proposed regulations, which also describe a process for considering exemption of new DoD activities.

Sanctuary General Permits

The proposed final sanctuary regulations would establish a permit process to allow some prohibited activities under certain conditions via a national marine sanctuary general permit pursuant to 15 C.F.R. 922 subpart D and the site-specific regulations proposed for this sanctuary (15 C.F.R. 922.232(d) and § 922.233). In addition, to address a need identified during scoping, NOAA is proposing an additional category for issuance of a sanctuary general permit for CHNMS for an activity that will promote or enhance local Native American cultural or ceremonial activities or will promote or enhance education and training related to local Native American cultural or ceremonial activities (15 C.F.R. 922.30(b)(7)).

ONMS Authorizations

Under the proposed final regulations, activities that are otherwise prohibited may be authorized if the activities are allowed pursuant to a separate federal, state, or local agency permit, lease, license, or other approval, and if the applicant complies with applicable regulatory provisions. “ONMS authorizations” would be guided by program-wide regulations at 15 C.F.R. 922.36 for certain prohibited activities, as allowed for in regulations specific to the sanctuary, and would often involve close coordination with the federal, state, or local agency whose permit would be authorized.

Special Use Permits

Pursuant to Section 310 of the NMSA (16 United States Code (U.S.C.) § 1441), special use permits may be issued to authorize the conduct of specific activities in a national marine sanctuary under certain circumstances. Special use permits may be issued only for five years but may be renewed. Past practice by ONMS has allowed continued renewals of some special use permits.

However, NOAA issued a Federal Register notice on August 16, 2024 that modified the special use permit category for the continued presence of commercial submarine cables in the following way: for a two-year period beginning on August 16, 2024, the special use permit category does not apply to sanctuaries designated after August 16, 2024, including the proposed CHNMS.

Certifications

Similar to authorizations, NOAA proposes to establish a process applicable at the time of sanctuary designation whereby existing activities specifically authorized by a valid lease, permit, or other approval could be “certified” and allowed to continue, subject to any terms and conditions consistent with the purposes for which the sanctuary was designated, as allowed for in 15 C.F.R. 922.10.

Terms of Designation

Section 304(a)(4) of the NMSA requires that the terms of designation for national marine sanctuaries include (1) the geographic area included within the sanctuary; (2) the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or aesthetic value; and (3) the types of activities subject to regulation by NOAA to protect those characteristics. The full text of the final terms of designation will be included in the final rule. The sanctuary terms of designation establish the authorities to regulate and prohibit activities—to the extent necessary and reasonable—to ensure the protection and management of the area’s conservation, ecological, recreational, research, educational, historical, and aesthetic resources and qualities.

Final Management Plan

The final management plan consists of the following action plans:

- Indigenous Cultural Heritage
- Climate Change
- Maritime Heritage
- Offshore Energy
- Water Quality
- Blue Economy
- Wildlife Disturbance
- Boundary Adjustment
- Education and Outreach
- Resource Protection
- Research and Monitoring

- Operations and Administration

An introductory section provides background information on the sanctuary and a description of a collaborative co-stewardship framework for Indigenous engagement and participation in sanctuary management.

Most action plans include activities that would either have no environmental impacts or would have only beneficial effects on the environment. Any anticipated environmental impacts of the management plan action plans are addressed in this draft EIS. Most of the activities involve research, education, collaboration, and public outreach. Some activities may require research or monitoring surveys conducted by vessels. The full final management plan is available as a separate document.

Depending on which boundary alternative is identified for sanctuary designation, the proposed management plan may be modified, as needed, to address only those issues within the sanctuary boundaries.

Summary of Impacts

There are environmental tradeoffs among the alternatives even within resource issue areas or topics, which have been considered carefully in determining the net effect of the Initial Boundary Alternative and alternatives. Since all of the impact analysis in this final EIS is necessarily qualitative, specifying precise quantitative differences between the Initial Boundary Alternative and the other alternatives is not feasible.

For the Initial Boundary Alternative and all action alternatives, there would be significant beneficial impacts associated with implementation of proposed sanctuary regulations (e.g., prohibitions against seabed disturbance, certain vessel discharges, and new offshore oil and gas development) that provide added resource protection in the issue areas of physical resources, biological resources, commercial fishing and aquaculture, cultural heritage and maritime heritage resources, and DoD and homeland security activities. Some of the action alternatives would result in reduced beneficial impacts when compared to the Initial Boundary Alternative due to their reduced sanctuary size.

There would be no significant adverse impacts on any of the issue areas from designating the Initial Boundary Alternative or any of the action alternatives; however, there would be adverse impacts that are less than significant (i.e., negligible, minor, or moderate). The Initial Boundary Alternative and Alternative 1, Bank to Coast, would adversely affect offshore energy development the most, but impacts would be less than significant. Alternative 2, Cropped Bank to Coast, would lessen adverse (but less than significant) impacts on the installation and operation of subsea electrical transmission cables from offshore wind energy projects developed outside of the sanctuary. Alternative 3, Diablo to Gaviota Creek, would lessen and Alternative 4, Combined Smallest, would eliminate any adverse (but less than significant) impacts on offshore wind development. Compared to the Initial Boundary Alternative, alternatives 1, 2, 3, and 4 would each lessen the adverse (yet still less than significant) impacts on marine transportation. These minor adverse effects would be offset by the substantial aggregate beneficial effects of the proposed sanctuary's regulatory and management plan resource protections. Some of the adverse impacts on topics such as marine transportation, commercial fishing operations, and

future offshore energy activities would be reduced under the action alternatives when compared to the Initial Boundary Alternative.

NOAA's Final Preferred Alternative

Based on public comments on the draft designation materials, government-to-government consultation, cooperating agencies input, and further review, NOAA has revised its Agency-Preferred Alternative and now identifies its Final Preferred Alternative as Alternative 4, plus Sub-Alternative 5b, plus a small area analyzed as part of the Initial Boundary Alternative in the center of the Santa Lucia Bank, thereby creating a straight line across the northern section of the proposed sanctuary (see Figure ES-1). NOAA considers its identification of the Final Preferred Alternative as Phase 1 for sanctuary protection along this important coast. NOAA intends to initiate a “Phase 2” evaluation process in the future to consider options for protecting nationally-significant resources in areas beyond the sanctuary’s boundary, as discussed further in the EIS Section 3.2.3 and the final management plan’s Boundary Adjustment Action Plan.

The Final Preferred Alternative provides significant beneficial effects on cultural heritage and maritime heritage resources. It provides numerous other beneficial (but less than significant) impacts in almost every issue area, such as physical resources, biological resources, commercial fishing and aquaculture, cultural heritage and maritime heritage resources, socioeconomics, human uses, environmental justice, and DoD and homeland security activities. These benefits would largely result through sanctuary regulations that would limit the scale and scope of offshore development activities and other human uses that could harm natural, historical, and cultural resources. NOAA has considered the adverse impacts of the Final Preferred Alternative and finds them to be an acceptable balance between resource use and conservation of sanctuary resources. This alternative would have no significant adverse impacts and the least amount of adverse but less than significant impacts on development of offshore renewable energy, telecommunications and submarine fiber optic cables, and marine transportation (compared to the Initial Boundary Alternative).

Including the Gaviota Coast Extension (Sub-Alternative 5b) within the Final Preferred Alternative would provide additional protection of important coastal resources. It would include beaches, kelp forests, and rocky and soft substrate reefs, as well as waters off three popular state beaches and parks—Gaviota, Refugio, and El Capitán. It would ensure that all of the Kashtayit and Naples SMCAs are within the sanctuary. Also, the extension would include the portion of the Gaviota Coast that was home to numerous, large Chumash villages at the time of European first contact. Ensuring conservation of these resources is an important benefit to including this sub-alternative in the Final Preferred Alternative.

Chapter 1: Introduction

The National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries (ONMS) proposes to designate a portion of the central California coast and offshore waters as Chumash Heritage National Marine Sanctuary (CHNMS). This final environmental impact statement (EIS) analyzes the impacts on the human environment⁵ of the proposed action and a range of alternatives for sanctuary designation, including regulations for managing the new sanctuary. A final management plan will be published concurrently with the final rule, and will include information about the proposed sanctuary’s priority management goals, strategies, and actions proposed to address them over the next five years.

This document describes the proposed sanctuary’s environment, resources, regulations, and boundaries. This chapter provides background information on ONMS and the authorities for establishing and managing national marine sanctuaries. Chapter 3 of this EIS describes the proposed action and several alternative actions. NOAA is the lead agency for this proposed sanctuary designation, and cooperating agencies include the Bureau of Ocean Energy Management (BOEM), Bureau of Safety and Environmental Enforcement (BSEE), Department of Defense (DoD), and the Santa Ynez Band of Chumash Indians. This EIS was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code (U.S.C.) § 4321 *et seq.*) and its implementing regulations (40 Code of Federal Regulations (C.F.R.) Parts 1500–1508). More specifically, NOAA prepared this EIS under the 2020 Council on Environmental Quality (CEQ) NEPA regulations. This EIS applies CEQ’s 2020 NEPA regulations because review of this proposed action began on November 10, 2021, which preceded the effective date of CEQ’s Phase 2 NEPA regulations (July 1, 2024). This EIS is consistent with the Phase 1 rulemaking that went into effect on May 20, 2022. NOAA prepared this final EIS in compliance with NOAA Administrative Order 216-6A, which describes NOAA requirements, policies, and procedures for implementing NEPA; and the National Marine Sanctuaries Act (NMSA, 16 U.S.C. 1431 *et seq.*).

This EIS presents, to the decision makers and the public, information required to understand the potential environmental consequences of the proposed action and alternatives. This EIS also serves as a resource assessment under the NMSA (NMSA; 16 U.S.C. § 1434(a)(2)(B)), documenting (i) present and potential uses of the areas considered in the alternatives, and (ii) commercial, governmental, or recreational resource uses in the area. As required by NMSA 304(a)(2)(B), the resource assessment also documents “information prepared in consultation with the Secretary of Defense, the Secretary of Energy, and the Administrator of the Environmental Protection Agency, on any past, present, or proposed future disposal or discharge of materials in the vicinity of the proposed sanctuary.” See Section 4.2.1 for details on disposal and discharge sources in the study area.

⁵ The CEQ definition of “human environment” is “comprehensively the natural and physical environment and the relationship of present and future generations of Americans with that environment.” 40 C.F.R. § 1508.1(m).

1.1 Management of the National Marine Sanctuary System

ONMS serves as the trustee for the National Marine Sanctuary System, a network of underwater parks encompassing more than 620,000 square miles (1,605,793 square kilometers) of marine and Great Lakes waters from Washington state to the Florida Keys and from New England to American Samoa. The National Marine Sanctuary System includes a system of 16 national marine sanctuaries and Papahānaumokuākea and Rose Atoll marine national monuments. (see Figure 1-1).

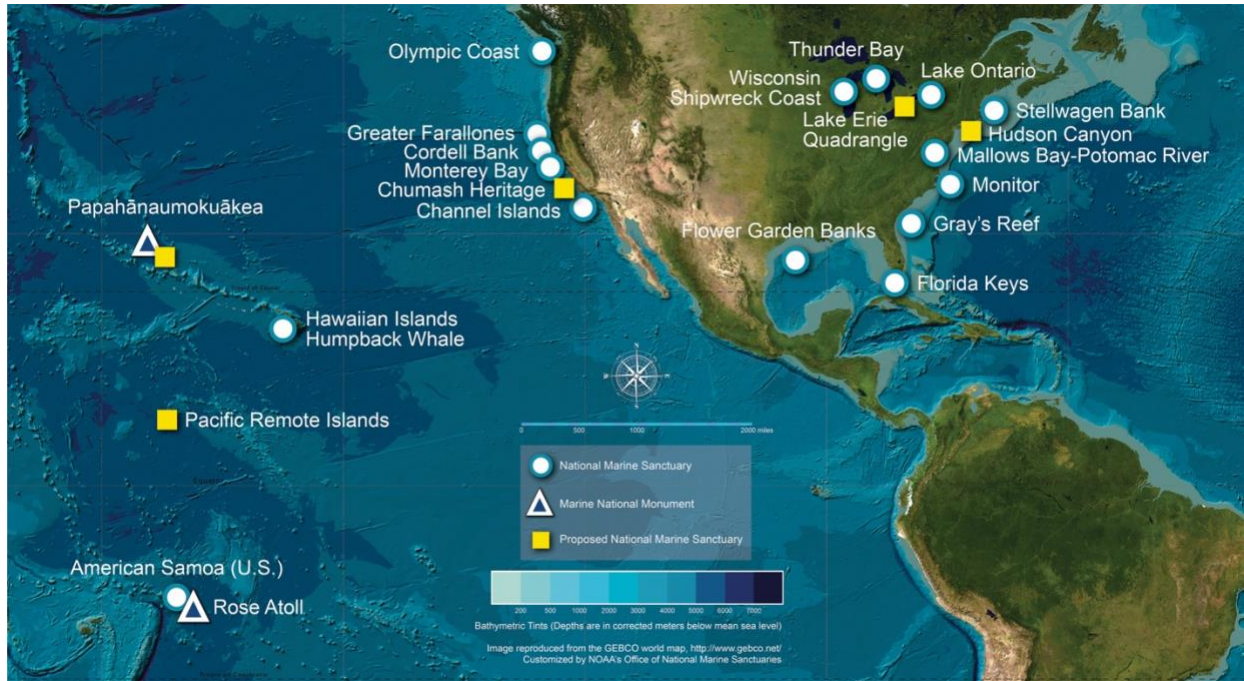


Figure 1-1. The National Marine Sanctuary System. Image: NOAA

1.1.1 National Marine Sanctuaries Act of 1972

The NMSA (16 U.S.C. § 1431 *et seq.*) is the legislation that governs management of the National Marine Sanctuary System. The NMSA authorizes the Secretary of Commerce to identify and designate as a national marine sanctuary any discrete area of the Great Lakes or marine environment that is of special national—or in some cases international—significance and to manage these areas as the National Marine Sanctuary System. An area may be of special national significance due to its value for conservation; recreational, ecological, historical, scientific, educational, cultural, archaeological, or aesthetic qualities; the communities of living marine resources it harbors; or its resource or human-use values. Day-to-day management of national marine sanctuaries is delegated by the Secretary of Commerce to ONMS. Among the purposes and policies of the NMSA are mandates to:

- Identify and designate as national marine sanctuaries areas of the marine environment that are of special national significance and to manage these areas as the National Marine Sanctuary System.

- Provide authority for comprehensive and coordinated conservation and management of these marine areas, and activities affecting them, in a manner that complements existing regulatory authorities.
- Maintain national marine sanctuaries' natural biological communities, and to protect, and where appropriate, restore and enhance natural habitats, populations, and ecological processes.
- Enhance public awareness, understanding, appreciation, and wise and sustainable use of the marine environment, and the natural, historical, cultural, and archeological resources of the National Marine Sanctuary System.
- Support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas.
- Facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities.
- Develop and implement coordinated plans for protecting and managing these areas with appropriate federal agencies, state, and local governments, Native American Tribes and organizations,⁶ international organizations, and other public and private interests concerned with the continuing health and resilience of these marine areas.

Establishing the proposed sanctuary is consistent with and would further these NMSA purposes and policies, and would more comprehensively provide for coordinated conservation and management of this area of special national significance and the resources within it.

1.1.2 Sanctuary Nomination Process

On June 13, 2014, NOAA published a rule (79 Fed. Reg. 33851) to re-establish the process by which communities may submit nominations to NOAA to consider designating areas of the marine and Great Lakes environments as new national marine sanctuaries. This rule contained the criteria and considerations NOAA uses to evaluate nominations, described the process for submitting nominations, and promulgated regulations necessary to implement this action. Nominations must describe the area that the community is interested in seeing designated as a national marine sanctuary, including the resources that make the area special and how the community would like to see the area managed. When NOAA receives nominations, it reviews them against established evaluation criteria and either accepts the nomination or returns it to the community for further development. Once NOAA accepts a nomination, it is placed on an inventory of successful nominations that NOAA may consider for designation as a national marine sanctuary. Addition to the inventory does not guarantee that a nominated area will become a national marine sanctuary. National marine sanctuary designation is a separate process, which is highly public and participatory.

Nominations on the inventory expire after five years if NOAA does not decide to begin a designation process for that area. On November 13, 2019, NOAA established a process to evaluate whether nominations that are approaching this expiration date should remain on the inventory for another five years (84 Fed. Reg. 61546). All [nominations are available online](#).

⁶ Terminology from the NMSA.

1.2 Project Location and Background on the Nomination for the Proposed Chumash Heritage National Marine Sanctuary

1.2.1 Project Location

The Initial Boundary Alternative generally represents the boundary option that was originally proposed to NOAA in the nomination process for national marine sanctuary designation and included in NOAA's Notice of Intent (NOI) to conduct scoping and prepare an EIS ([86 Fed. Reg. 62512; November 10, 2021](#)) (see Figure 1-2). See Section 3.2 for details on how the Initial Boundary Alternative for this EIS differs from the original proposed boundary in the nomination and NOI. The proposed sanctuary area in the NOI includes the coastline of California from approximately Cambria at the terminal boundary of Monterey Bay National Marine Sanctuary (MBNMS), south along the San Luis Obispo County coast and a portion of the Santa Barbara County coast to Gaviota Creek, then offshore along the western end of Channel Islands National Marine Sanctuary (CINMS) and north back to the southern end of MBNMS, to include the Santa Lucia Bank, its escarpment, Rodriguez Seamount, Arguello Canyon, and other offshore features and resources to approximately 78 miles offshore.

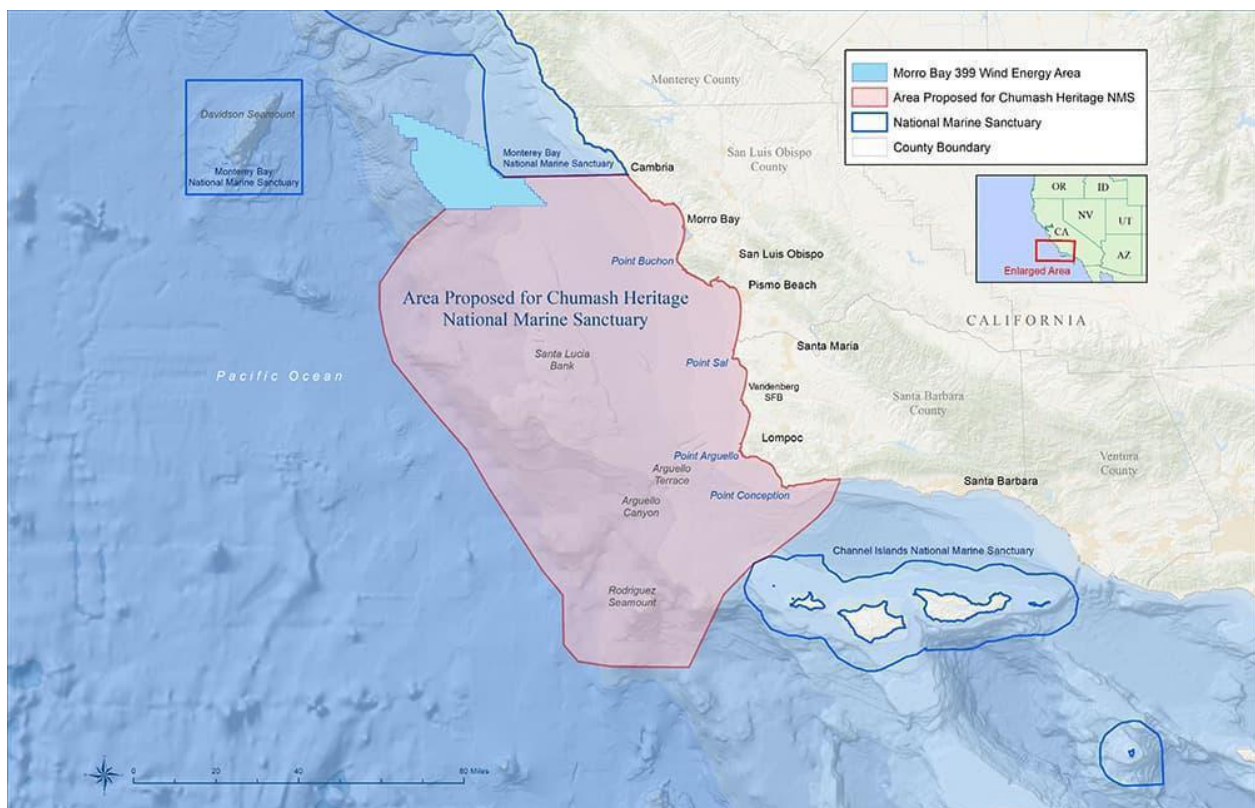


Figure 1-2. Area proposed for CHNMS in NOAA's NOI to conduct scoping and prepare an EIS (see Chapter 3 for maps and descriptions of boundary alternatives that NOAA has identified in this EIS). Image: NOAA

The area contains unique and diverse ecosystems, cultural significance, and historical importance that is essential to the Indigenous cultural heritage of Chumash and Salinan Peoples. The marine environment also provides a special sense of place to coastal communities and visitors because of its significant historic, archaeological, cultural, aesthetic, and biological resources. The area has special ecological qualities as well, shaped by significant offshore geologic features (e.g., Rodriguez Seamount, Santa Lucia Bank, and Arguello Canyon). Seasonal upwelling serves as the engine of the area's high biological productivity, supporting dense aggregations of marine life. Furthermore, strong winds in the proposed sanctuary offshore of Point Arguello/Point Conception also initiate a powerful upwelling process that nourishes other productive nearby ecosystems such as CINMS. The presence of a biogeographic transition zone, where temperate waters from the north meet the subtropics, creates an area of nationally significant biodiversity in sea birds, marine mammals, invertebrates, and fishes.

1.2.2 Project Background

In July 2015, a broad community consortium led by the Northern Chumash Tribal Council submitted a nomination to NOAA through the Sanctuary Nomination Process, asking NOAA to consider designating an area on the central California coast as a national marine sanctuary. The nomination asked NOAA to protect this nationally significant area for its biologically and culturally important resources. The nomination also identified opportunities for NOAA to expand upon existing local and state efforts to study, interpret, and manage the area's unique cultural and biological resources.

The nomination also highlighted the maritime history and cultural heritage of the Chumash People. Some of the earliest documented human habitation of North America is in this region. The federally recognized Santa Ynez Band of Chumash Indians and several other non-federally recognized Tribes and Indigenous groups have deep cultural connections to this coastal area of central California. Historical records and studies show that much of the current coast of San Luis Obispo and Santa Barbara counties contained thriving settlements and villages occupied by Tribes and Indigenous communities. These coastal sites contain cultural artifacts and remains and are extremely valuable to Indigenous Peoples. Dating back thousands of years, offshore submerged continental shelf areas and unsurveyed paleoshorelines also likely contain archaeological resources of great significance to local Tribes and are worthy of acknowledgement, protection, and culturally appropriate study.⁷

This final EIS uses "Tribes and Indigenous communities" and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms "federally recognized Tribe(s)" or "federally recognized Tribal Nation(s)." As such, use of the term "Tribe" or "Tribal" is not intended to refer only to federally recognized

⁷ See Section 4.5.1 for more information about paleoshoreline areas within the proposed sanctuary area and refer to the Indigenous Cultural Heritage Action Plan in the final management plan (published separately) for details related to strategies and specific activities directing future cultural resource surveys in the sanctuary.

Tribes unless otherwise specified. A diverse coalition of organizations and individuals at Tribal, local, state, regional, and national levels endorsed the nomination. The [submitted nomination package](#) is available. NOAA added the area to the inventory of nominations that are eligible for designation in October 2015 and extended it on the inventory on October 1, 2020, for an additional five years after a review of the nomination (85 Fed. Reg. 61935).

NOAA formally commenced a designation process for the proposed sanctuary in November 2021. Process steps from that point forward are described below in sections 1.3.1 and 1.3.2.

1.3 Sanctuary Designation and Environmental Review Process

Section 304(a) of the NMSA, 16 U.S.C. § 1434(a), describes the sanctuary designation process, including several analyses and activities that provide a basis for the sanctuary designation and opportunities for public participation. The main activities and analyses include the following:

- A notice of proposed rulemaking in the Federal Register including proposed regulations.
- A resource assessment that describes present and potential uses of the area (see Chapter 4).
- A draft management plan for the proposed national marine sanctuary, which outlines the proposed goals, objectives, and strategies for managing sanctuary resources for the next five years, as described in Section 304(a)(2)(C) of the NMSA (see draft management plan published separately).
- Maps depicting the proposed sanctuary boundaries (see Chapter 3).
- An assessment and basis for why the proposed sanctuary meets the designation standards and factors to consider, as described in sections 303(a) and 303(b) of the NMSA (discussed throughout the EIS; in particular, see chapters 2 and 3 and Appendix E.1).

In addition, Section 304(a)(2) of the NMSA requires NOAA to prepare an EIS pursuant to NEPA as part of the sanctuary designation process. NEPA requires that federal agencies include in their decision-making processes appropriate and careful consideration of all potential environmental effects of proposed actions and analyze them and their alternatives. The NEPA process is intended to encourage and facilitate public involvement in decisions that affect the quality of the human environment.

1.3.1 Public Involvement and Scoping

An important component of the sanctuary designation and environmental review process is public involvement. This section describes public involvement in the sanctuary designation and environmental review process.

The first step of NOAA's environmental review process for the proposed CHNMS designation was issuing an NOI on November 10, 2021, to conduct scoping and prepare an EIS ([86 Fed. Reg. 62512](#)). Scoping included an 83-day period during which NOAA solicited public comments related to the scale and scope of the proposed sanctuary, including ideas presented in the sanctuary nomination. In addition, NOAA hosted three virtual public meetings in December 2021 and January 2022 and accepted comments through a web-based portal and by traditional

mail until January 31, 2022.⁸ All comments received—through any of these formats—are available to the public through [Regulations.gov](https://www.regulations.gov).

During the scoping period, 1,190 individuals provided written input—some commenters attached thousands of nearly identical comment letters and signatures from other members of the public. At the three scoping meetings, in total 100 people provided oral comments. NOAA has studied the scoping comments closely, relying on them to inform decisions about alternatives to consider and potential impacts of the alternatives, potential regulations, and the scope and substance of the action plans in the draft management plan. The majority of comments supported the goals of sanctuary designation, including protecting the cultural heritage of Chumash Tribal communities and protecting the coastal California ecosystem’s health and resilience. Many commenters also noted the importance of managing the area to promote recreation and tourism to support the local economy, to foster education and research programs, and to establish a shared management approach with Tribes and Indigenous communities. Commenters also voiced concerns about overlapping existing and potential uses of the area, such as fishing and offshore energy development. Section 3.11 and Appendix B provide more detail about scoping comments.

1.3.2 Review of Draft EIS

The next step of public involvement was to circulate the draft EIS, draft management plan, and proposed rule and to solicit public comments on these designation materials. A public review and comment period of 60 days followed publication of the Notice of Availability of the draft EIS. Availability of the draft EIS was announced in the Federal Register on August 25, 2023, on various e-mail lists, on the project website, and in local newspapers. In addition, copies of the draft EIS were available for review in numerous locations, such as libraries, throughout central California. Three public hearings to receive comments on the draft EIS were held, two in person and one online, scheduled no sooner than 30 days after the notice was published in the Federal Register.

During the public comment period, NOAA received over 110,000 comments from federal, state, and local agencies and officials, the federally recognized Santa Ynez Band of Chumash Indians, several local Indigenous groups and organizations, and interested individuals. After the public comment period closed, the comments were carefully reviewed and cataloged, by substantive issues contained in the comments. A summary of these comments and the corresponding responses from NOAA are provided in Appendix A of this final EIS. In preparing the final EIS, final management plan, and final rule, NOAA considered all substantive issues raised in the comments. At appropriate points in this final EIS, NOAA discusses opposing views and indicates NOAA’s response to the issues raised. Changes were made to the EIS, as well as the management plan, as a result of the public, Tribal, and agency comments (see Section 1.5 for a summary list of changes). The final rule would be consistent with these changes. Under NEPA, there is no public review period for the final EIS. Therefore, NOAA is not required to or planning to respond to comments on the final EIS. If NOAA moves forward with a final action, a 30-day mandatory waiting period will occur after issuance of the final EIS, and then NOAA may issue its Record of

⁸ The initial NOI established a comment deadline of January 10, 2022; a notice published on December 16, 2022 (86 Fed. Reg. 71422) extended this deadline to January 31, 2022.

Decision. See 40 C.F.R. § 1506.11. In addition, a final rule that promulgates sanctuary regulations and terms of designation would be published in the Federal Register.

1.3.3 Relationship to Other Applicable Laws, Regulations, and Executive Orders

In addition to NEPA, NOAA must comply with several related statutes, regulations, and executive orders (E.O.s) as part of this federal action, including, but not limited to, the Endangered Species Act (ESA); Migratory Bird Treaty Act (MBTA); Marine Mammal Protection Act (MMPA); Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA); National Historic Preservation Act (NHPA); Coastal Zone Management Act ; E.O. 13175 on consulting and coordinating with federally recognized Indian Tribal Governments;⁹ and E.O.s 12898 and 14096 on addressing environmental justice. Appendices E and F describe the requirements of the statutes, E.O.s, and other regulations applicable to the proposed sanctuary designation and NOAA’s compliance with these applicable laws and policies. Appendix E.8 provides additional details on the Tribal consultation process.

1.4 Scope of the Environmental Review

This EIS evaluates the environmental impacts associated with the range of alternatives under consideration for designating the proposed sanctuary. Chapter 3 describes in detail the alternatives, including the Initial Boundary Alternative, other boundary alternatives, and a No Action Alternative, and Chapter 4 analyzes the affected environment and potential impacts associated with each alternative. This EIS specifically evaluates how implementing the proposed sanctuary boundaries, regulations, and management plan could affect the environment. The range of spatial alternatives bounds the environmental analysis. The geographic scope (referred to as the “study area” in this EIS) of the affected environment and analysis of environmental consequences in Chapter 4 is composed of the waters and submerged lands offshore from Cambria, south along the San Luis Obispo County and Santa Barbara County coastline to Naples, including the western portion of the Santa Barbara Channel, out to approximately 75 miles offshore (see Section 4.1.2 for a more detailed discussion of the study area). The timeframe for this environmental analysis evaluates current conditions and would be relevant for approximately the next five years.

Some sanctuary management activities that may occur within the proposed sanctuary, including issuing permits for specific future activities, are outside the scope of the proposed action described in this EIS. In the event that the sanctuary is designated, NOAA would review these future management activities to ensure that those actions are addressed under NEPA and other applicable environmental laws. CEQ’s NEPA regulations and NOAA NEPA [guidance](#) describe strategies that allow NOAA to build upon and incorporate this EIS’s analysis when preparing future environmental compliance documentation.

⁹ In support of implementation of E.O. 13175, on January 26, 2022, President Biden issued a Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships. Available [online](#).

It is important to note that the scope of the EIS is focused on impacts of the proposed sanctuary on the human environment. Numerous scoping comments and draft EIS comments requested analysis of impacts of future uses, threats, and activities on sanctuary resources. A detailed analysis of the impacts of other actions and activities on the environment is outside the scope of this EIS analysis. The cumulative impacts analysis (Section 4.10) addresses impacts of other activities that may combine with impacts associated with the proposed sanctuary designation.

1.5 Revisions to the Draft EIS

Public and agency comments on the draft EIS, draft management plan, and proposed rule were considered by NOAA but no new significant adverse impacts were identified. The following minor changes have been incorporated into the draft designation materials, consistent with modifications made to the Agency-Preferred Alternative (now the Final Preferred Alternative), the sanctuary management plan, and other clarifications requested by comments. These do not constitute substantial changes relevant to environmental concerns. Nor has NOAA determined that there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

The draft EIS and the proposed rule alerted the public that, based on public comments received on the draft designation documents and NOAA's experience administering the National Marine Sanctuary System, pursuant to NEPA and the Administrative Procedure Act, NOAA may choose to select an alternative in the final rule and final EIS that is within the geographic and regulatory scope of the alternatives considered in the draft EIS. The minor changes to boundary Alternative 3 and Alternative 4 are minor variations of alternatives 3 and 4 presented in the draft EIS that are consistent with the purposes of these alternatives as described in the draft EIS. The Final Preferred Alternative, as well as minor changes to boundary Alternative 3 and Alternative 4, are within the geographic and regulatory scope of the alternatives considered and analyzed in the draft EIS and would not lead to new environmental impacts that were not already fully considered in the range of alternatives analyzed in the draft EIS. As such, the changes described here, including identification of the Final Preferred Alternative, do not require preparation of a supplemental EIS.¹⁰

EIS

- The Agency-Preferred Alternative has been revised. NOAA has identified a Final Preferred Alternative sanctuary boundary (Alternative 4, Combined Smallest, plus Sub-Alternative 5b, Gaviota Coast Extension, and plus another small area to more fully protect the Santa Lucia Bank that had been part of the Initial Boundary Alternative). See Figure 5-1a in Section 5.4.9 of the final EIS. This final boundary is different from the draft EIS Agency-Preferred Alternative (Alternative 2, Cropped Bank to Coast, combined with Sub-Alternative 5b, Gaviota Coast Extension). However, the Final Preferred

¹⁰ 40 C.F.R. 1502.9(d) directs preparation of a supplemental EIS if a major federal action remains to occur, and the agency makes substantial changes to the proposed action that are relevant to environmental concerns, or there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.

Alternative and each of its elements is within the geographic and regulatory scope of the alternatives addressed in the draft EIS.

- Discussion of the Final Preferred Alternative was added to the comparison of alternatives in Section 5.4.9.
- Minor adjustments to boundary Alternative 3 and Alternative 4 have been made (see Figure 3-7a). Specifically, the small adjustments to the northern, nearshore boundaries were made for both alternatives to facilitate subsea electrical transmission cable landings at Diablo Canyon Power Plant (DCPP). This shifts the point where the sanctuary boundary connects to the coast one mile further southeast compared to the draft EIS boundary alternatives (see sections 3.5, 3.5.1, and 3.6.1 for more information). These minor adjustments constitute minor changes to alternatives 3 and 4, as presented in the draft EIS.
- The Initial Boundary Alternative has been modified to include a fourth harbor exclusion for the harbor area at Vandenberg Space Force Base (VSFB) (totaling approximately 0.03 square miles). This is a technical change to correct an inadvertent omission in the draft EIS, and the change is a minor variation of the boundary alternatives previously presented.
- Information about the draft EIS public review process has been added to Section 1.3.
- Additional information regarding the scope of this EIS is provided in Section 1.4.
- Additional clarification on sanctuary designation criteria (Section 2.2), approach to sanctuary management (Section 2.2.2), and additional background information on the area's Indigenous history and culture (Section 2.1) is provided in Chapter 2: Purpose and Need.
- Chapter 2 sections were minorly re-structured. The draft EIS' Section 2.2.2, Approach to Management of the Proposed Sanctuary, was removed from the Need for the Proposed Action section (Section 2.2), and became standalone Section 2.3 in the final EIS.
- Information on NOAA's Memoranda of Agreement (MOA) with Partner Agencies was added under a new header in Section 3.2.2 (Proposed Regulations under the Initial Boundary Alternative).
- An update on the special use permit category was added to Section 3.2.2.
- Section 3.9 regarding alternatives eliminated from detailed study was modified to provide additional clarification.
- Information was added to Section 4.2.1 regarding geological resources, and a minor clarification was made regarding water quality.
- Information on sanctuary benefits in relation to climate mitigation and resiliency was added to Section 4.2.3.
- Information was added to Section 4.3.4 regarding hot spots of seabird diversity and density west of Santa Lucia Bank.
- Section 4.4, Commercial Fishing and Aquaculture, was revised to clarify that recreational fishing is addressed in Section 4.6 rather than Section 4.4.
- Revisions were made to Section 4.5.1 (Cultural Heritage and Maritime Heritage Resources) to better describe Indigenous history and heritage, as well as existing cultural resources and Indigenous values.

- Section 4.6 (Socioeconomics, Human Uses, and Environmental Justice) was modified to: provide a stand-alone section regarding submarine fiber optic cables and permitting processes; clarify impacts on submarine fiber optic cables; provide additional information on recreational fishing; and clarify impacts on recreational vessels. Section 4.6 explains why NOAA does not consider the overall impact on socioeconomics, human uses, or environmental justice to be significantly different in manner or extent from those already considered in the draft EIS.
- Baseline information regarding existing offshore oil and gas operations, DCP, and offshore Morro Bay Wind Energy Area was updated in Section 4.7 (Offshore Energy). Assumptions regarding future subsea electrical transmission cables (related to offshore wind energy development) were updated pursuant to industry comments. Clarifications were provided throughout the section to better describe sanctuary permit processes for offshore energy development, operations, and decommissioning, including subsea electrical transmission cables. Section 4.7 explains why addition of this information does not lead to new environmental impacts other than what was already considered in the draft EIS.
- Text and figures in Section 4.8, Marine Transportation, were revised to reflect the final Pacific Coast Port Access Route Study (PAC-PARS) recommendations and to incorporate technical and clarifying changes suggested in public comments.
- Minor updates were made to the DoD exemption and the exempted activities (see Section 4.9 and Appendix I)
- A new Appendix A, Responses to Comments on Draft EIS, Proposed Rule, and Management Plan, was added to address all substantive comments received on the draft designation documents.
- Appendix C, Best Management Practices, was updated to include guidance regarding nesting shorebirds.
- Appendix E, Compliance with Additional Regulatory Requirements, was updated to reflect consultations that have occurred since publication of the draft EIS.
- Appendix F, Analysis of Relevant Federal and State Statutes, several federal and state statutes were added, and one was removed.
- Appendix G, Biological Species List, was updated to change effect determinations for several species not likely to occur in sanctuary boundaries based on ESA Section 7 informal consultation discussions with U.S. Fish and Wildlife Service (USFWS).
- Appendix H, Known Permitted Infrastructure and Activities, list of known permits was updated with additional permit information from the California State Lands Commission (CSLC), Central Coast Regional Water Quality Control Board (CCRWQCB), U.S Army Corps of Engineers (USACE), and California Coastal Commission (CCC).
- Technical corrections, clarifications, and updates were made in several places in the EIS.

Sanctuary Regulations

Section 3.2.2 outlines the revisions to the proposed regulations, with minor changes to the following provisions:

- The exception for the oil and gas prohibition is changed to clarify that leaseholders for offshore development have a right to develop any reservoir or formation within the lease or lease unit in effect at the time of final sanctuary designation (15 C.F.R. 922.232(a)(1)).
- NOAA has made a technical clarifying revision to 15 C.F.R. 922.232(a)(2)(iii) to more accurately describe the nature of exceptions to this regulation.
- The process within CHNMS for permit certifications has been improved and clarified. See “Regulatory Changes Between Draft and Final” in Section 3.2.2.
- NOAA has added Section 922.235: Memoranda of Agreement with partner agencies, regarding introduced species aquaculture projects and the Sunken Military Craft Act.

These regulatory changes constitute minor technical updates and conforming corrections, and do not constitute substantial changes relevant to environmental concerns (see subject-specific chapters for more discussion of the regulations pertaining to oil and gas and certifications).

Management Plan

The following changes were made to the draft management plan, as reflected in the final management plan and described in more detail in EIS Section 3.2.3:

- The “Framework for Indigenous Collaborative *Co-Management*” as titled in the draft management plan and draft EIS was re-named to “Framework for Indigenous Collaborative *Co-Stewardship*.” The name of the Framework was changed to improve clarity of intent by aligning with principles within the Joint Secretarial Order on *Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters*, signed by the Secretary of Commerce in 2022.¹¹ This document is available [online](#).
- The Framework for Indigenous Collaborative Co-Stewardship in the Introduction was revised to better clarify collaborative roles and responsibilities.
- At the request of various agencies and organizations, additional partners were named in several action plans.
- Numerous action plans were enhanced with new or clarified activities, based on public comments. Modifications were made to the following action plans: Indigenous Cultural Heritage, Climate Change, Maritime Heritage, Offshore Energy, Water Quality, Blue Economy, Education and Outreach, Resource Protection, and Operations and Administration.
- A Boundary Adjustment Action Plan was added that calls for a process to consider, analyze, and support future decision-making on possible expansion of the boundary of

¹¹ On November 21, 2022, in coordination with the Department of Interior and the Department of Agriculture, the Joint Secretarial Order (JSO 3403) was amended to include the Department of Commerce. See: <https://www.noaa.gov/legislative-and-intergovernmental-affairs/noaa-tribal-resources/upcoming-past-consultations>

the sanctuary. Strategy RP-7 (Consider expanded conservation in Morro Bay Estuary) was removed from the Resource Protection Action Plan and integrated into the Boundary Adjustment Action Plan.

Proposed Rule

The final rule reflects changes made to the Agency-Preferred Alternative and proposed regulations.

1.6 Organization of the EIS

This final EIS is organized as follows:

Chapter 1: Provides background on the National Marine Sanctuary System, the sanctuary nomination for CHNMS, and the sanctuary designation and environmental review processes under NMSA and NEPA.

Chapter 2: Outlines the purpose and need for the proposed designation of a national marine sanctuary offshore of California’s central coast.

Chapter 3: Describes the Initial Boundary Alternative, the Final Preferred Alternative, other boundary action alternatives, the process to develop alternatives, proposed final regulations, and a summary of action plans from the draft management plan. Further, it includes the no action alternative, and the alternatives considered but eliminated from detailed evaluation.

Chapter 4: Describes the existing conditions in the study area to provide a baseline for assessing environmental impacts. The chapter includes an evaluation of potential impacts on the physical and biological environment, cultural maritime seascape, and human uses, including socioeconomic impacts that may occur as a result of implementing the proposed action. Direct, indirect, short-term, long-term, and cumulative impacts are evaluated.

Chapter 5: Describes the unavoidable adverse impacts, the relationship of short-term and long-term productivity, and irreversible or irretrievable commitment of resources associated with the alternatives, per NEPA’s requirements. This chapter also compares the impacts of the proposed action and all alternatives and provides the basis for identification of the Final Preferred Alternative.

The full set of responses to comments on the draft designation materials is provided in Appendix A.

Chapter 2: Purpose and Need for Action

2.1 Purpose of the Proposed Action

The National Oceanic and Atmospheric Administration's (NOAA) action under consideration is to designate a national marine sanctuary in the coastal and offshore waters of central California. The purpose of this action is to increase protection of the ecological, historical, and cultural qualities of the central California coastal marine environment. The proposed designation would provide conservation and comprehensive ecosystem-based management to address threats to the nationally significant biological, cultural, and historical resources of the proposed sanctuary, supported by an Indigenous collaborative co-stewardship approach. By implementing a management plan that includes a variety of strategies and actions, the sanctuary would (1) develop coordinated and collaborative marine science, education and outreach, and cultural heritage programs to assist in managing the area's nationally significant resources; (2) respond to interest for a community-based, Indigenous-inspired, ecosystem-based management regime to address threats to the natural environment, wildlife, and cultural resources of the area; and (3) highlight the area's diverse human activities, Indigenous cultures and knowledge, and compelling maritime heritage.

The proposed designation of a national marine sanctuary located along the coast and offshore of central California would fulfill the purposes and policies of the National Marine Sanctuaries Act (NMSA) by (1) increasing protection of the marine environment; (2) enhancing public awareness and appreciation of the environment; and (3) facilitating compatible public and private use of the resources of these marine areas that are not prohibited pursuant to other authorities.

Protecting this area as a national marine sanctuary would conserve and manage its special ecological qualities, shaped by significant offshore geologic features (e.g., Santa Lucia Bank, Rodriguez Seamount, and Arguello Canyon). Seasonal upwelling supports the area's high biological productivity, promoting dense aggregations of marine life. The existing biogeographic transition zone, where temperate waters from the north meet the subtropics, creates an area of nationally significant biodiversity in sea birds, marine mammals, invertebrates, and fishes. The area is also composed of extensive kelp forests, seagrass beds, and wetlands that serve as nurseries for numerous commercial fish species and as important habitat for many threatened and endangered species, such as humpback whales, blue whales, the southern sea otter, black abalone, snowy plovers, and leatherback sea turtles.

The unique and diverse ecosystem components are essential to the proposed sanctuary and also to the culture, identity, and heritage of the Indigenous Peoples of this area. Along the coast adjacent to and north of the proposed sanctuary, Chumash and Salinan Peoples lived in harmony and reciprocity with nature for millennia, stewarding the abundant natural marine and terrestrial resources. Chumash and Salinan Peoples thrived during their thousands of years of coastal and inland habitation before the 17th century arrival of Europeans. A time of great hardship followed for these coastal Peoples, but they did not succumb. Today, the federally recognized Santa Ynez Band of Chumash Indians maintains an ongoing government-to-

government relationship with the United States, while multiple non-federally recognized Chumash and Salinan groups in the region have maintained and revitalized themselves as California Native American Tribes. Importantly, the Chumash and the Salinan are still in the region within and beyond the study area, and are still dedicated to the ongoing stewardship of their cultures, lands, traditions, resources, and sacred sites. See Section 4.5 for more information.

A key intent of the proposed Chumash Heritage National Marine Sanctuary (CHNMS) is for NOAA to provide support for Tribes and Indigenous communities¹² to meaningfully participate in the care and co-stewardship of their maritime cultural heritage through sanctuary protections and programs. It is also NOAA's intent to respectfully and appropriately highlight and honor this Indigenous cultural heritage, and to welcome the application of Indigenous Knowledge to help meet marine shared conservation goals. This collaborative approach is consistent with the Joint Secretarial Order on *Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters*, signed by the Secretary of Commerce in 2022. This document is available [online](#).

The proposed action of designating a sanctuary in this area would also provide increased protection and foster understanding of historic resources. More than 200 ship and aircraft wrecks have been reported in the region; several vessels were later salvaged or were reported as not being a total loss. Twenty shipwreck locations are known, three are listed on the National Register of Historic Places (NRHP), see Table 4.5-1, Known Shipwreck Sites, page 162. The area off Point Conception is a significant feature in California's long maritime history, with vessels regularly traversing the coast and, on occasion, sinking in this region. This collection of shipwrecks and overall maritime landscape are nationally significant because of the representativeness of the shipwrecks. Further research in the proposed sanctuary may facilitate discovery of other shipwrecks and submerged pre-contact cultural sites. See Section 4.5 for more detail with regard to shipwrecks and other historic resources in the study area.

2.2 Need for the Proposed Action

When initially considering this area for potential national marine sanctuary designation in 2015, NOAA reviewed the community-based nomination to assess whether it was relevant and responsive to 11 sanctuary nomination process criteria (four national significance and seven management considerations based on a series of criteria). This information is available [online](#). The criteria are derived from the NMSA. National significance criteria evaluated by NOAA for the proposed sanctuary involved an assessment of the area's natural resources and ecological qualities, submerged maritime heritage resources of special significance, potential economic uses dependent on conservation and management of the area's resources, and publicly-derived benefits of the area. Management criteria evaluated by NOAA included an assessment of

¹² This final EIS uses "Tribes and Indigenous communities" and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms "federally recognized Tribe(s)" or "federally recognized Tribal Nation(s)." As such, use of the term "Tribe" or "Tribal" is not intended to refer only to federally recognized Tribes unless otherwise specified.

proposed sanctuary opportunities for research and education, adverse impacts from current or future uses and activities, ability to provide unique conservation and management value for the area, existing regulatory and management authorities for the area that could be supplemented or complemented, partnership opportunities to aid conservation or management programs, and community-based support for the nomination expressed by a broad range of interests.

The nomination met these criteria and was accepted by NOAA to the inventory of areas for potential designation as a national marine sanctuary on October 5, 2015. In 2020, NOAA used the same criteria to guide a second review of the CHNMS nomination when it was submitted to NOAA in July 2015 (NOAA, 2020b). Overall, NOAA's evaluation process substantiated the national significance of this coastline and offshore region while demonstrating many valuable uses of the area and marine ecosystem threats.

The area proposed for national marine sanctuary designation is an important and vibrant ecological transition zone with high biological productivity that supports dense aggregations of marine life including nationally significant biodiversity of sea birds, marine mammals, invertebrates, and fishes. It serves as “headwaters” for upwelling that nourishes important ecosystems down current of the proposed sanctuary; however, due to the myriad ongoing and emerging threats to the area from consumptive and non-consumptive human uses and climate change, additional protections are needed. Threats facing these increasingly vulnerable coastal and offshore ecosystems specifically include direct and indirect impacts from offshore energy development, pollution from offshore and onshore sources, increased vessel traffic and transportation, increased coastal development, and other stressors to the ecosystem that compromise its resiliency, especially acute and cumulative impacts from climate change. Moreover, there is a need to recognize and respectfully protect the Indigenous cultural heritage of this area, drawing on Indigenous Knowledge¹³ and working in partnership and collaborative co-stewardship with the federally recognized and other Indigenous groups, including individuals and communities with knowledge of or experience in the local Indigenous culture, history, and experience.

NOAA aims to address these threats by:

- Conserving and managing the diverse ecological resources in the area by protecting these environments from harm caused by human uses.
- Researching and monitoring these environments and cultural seascapes to gain a deeper understanding of them and their responses to a changing ocean.
- Partnering with local communities to provide interpretation of the biological, cultural, and maritime heritage values of the area while promoting responsible recreation.
- Developing a management framework that fosters ongoing collaboration with Tribes and Indigenous communities to preserve and promote Indigenous cultural heritage, and that upholds NOAA's trust responsibilities to federally recognized Tribes.

¹³ In the [2022 Guidance for Federal Departments and Agencies on Indigenous Knowledge](#), the Council on Environmental Quality describes Indigenous Knowledge as “a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through interaction and experience with the environment” (see also: Office of Science and Technology Policy & CEQ, 2022)

2.2.1 Complementing and Supplementing Existing Regulatory Authorities

Legal protection pursuant to NMSA along with other complementary and supplementary regulatory authorities provide needed protections for otherwise vulnerable ocean resources. Congress has clarified that one purpose of NMSA is to provide coordinated and comprehensive management of special areas of the marine environment that would complement other existing regulatory authorities (16 United States Code (U.S.C.) § 1431(b)(2)), and NOAA has determined that these additional authorities are needed for the study area.

By designating this area as a national marine sanctuary, NOAA would implement site-specific regulations to complement and supplement existing federal and state statutes designed to protect marine resources and fill current legal gaps to ensure this area of special national significance is recognized, managed, researched, interpreted, and accessible to the public. See Section 3.2.2 for an overview of proposed final sanctuary regulations and appendices E and F for a comprehensive list of existing federal and state authorities that NMSA would complement and supplement. A summary is provided below.

Existing federal statutes that provide some level of protection for biological resources include the Endangered Species Act (ESA) (16 U.S.C. § 1531 *et seq.*), Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. § 1801 *et seq.*), Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361 *et seq.*), Migratory Bird Treaty Act (MBTA) (16 U.S.C. § 703 *et seq.*), and Coastal Zone Management Act (16 U.S.C. § 1451 *et seq.*). See Section 4.3 for further discussion of protected species and habitats in the proposed sanctuary. With additional, comprehensive protection provided by the proposed action under the NMSA, including proposed prohibitions on new oil and gas development and production and restrictions on seabed disturbance, vulnerable biological resources in the proposed sanctuary would be protected from potential industrial impacts such as petroleum exploration and development and other activities that could disturb the seabed. Additionally, proposed discharge regulations to protect water quality under NMSA would bolster existing authorities under the Clean Water Act (CWA) (33 U.S.C. § 1251 *et seq.*) and Vessel Incidental Discharge Act (Title IX of the Frank LoBiondo Coast Guard Authorization Act of 2018, Pub. L. 115-282), which would further protect these nationally significant habitats. Proposed seabed disturbance regulations throughout the sanctuary and in the Rodriguez Seamount Management Zone would bolster existing authorities, such as Section 10 of the Rivers and Harbors Act (33 U.S.C. § 403), to provide more comprehensive protection of the sanctuary's submerged lands and benthic habitats.

The state of California has also enacted several laws protecting biological resources within its coastal waters including the state of California Endangered Species Act (California ESA) (California Fish and Game Code § 2050 *et seq.*), Fish and Wildlife Protection and Conservation (California Fish and Game Code § 1600 *et seq.*), and California Coastal Act (California Public Resources Code § 30000 *et seq.*). While these state laws provide some protection for vulnerable species and protect important habitats from industrial development, they generally extend only three miles from the coastline, leaving areas further offshore only protected by federal authorities. In addition, state and federal fishery managers have implemented spatial

management measures that limit fish harvest and protect marine habitats. Within state waters of the study area, there are eight state marine protected areas (MPAs) that restrict some to all commercial and recreational activities. There are currently four designated EFH areas that protect rocky benthic habitat and associated fragile benthic fauna such as deep-sea corals and sponges from bottom trawl gear. While the state and federal authorities described in this section provide some protection to physical, biological, commercial fishing, and cultural and maritime heritage resources in the proposed sanctuary area, sanctuary designation would provide additional, more comprehensive protections throughout the geographic scope of the designated area. The proposed complementary protections of these ecologically significant sites under NMSA, including prohibitions on injuring sanctuary resources, proposed discharge prohibitions, and restrictions on seabed disturbance, would increase the resilience of marine ecosystems, and enhance the sustainability of Central California's thriving recreational, tourism, and commercial economies.

Archaeological sites and other cultural resources, such as shipwrecks and Native American artifacts, are protected under state and federal law, including the National Historic Preservation Act (NHPA) (54 U.S.C. § 300101 *et seq.*). In addition to these and other relevant federal and state provisions, under NMSA, historical and cultural resources would have additional protection. NMSA would supplement existing protections by applying to activities conducted by federal, state, and private citizens and would protect all shipwrecks and other cultural underwater resources within sanctuary boundaries from injury or salvage, regardless of whether they are eligible or listed on the State Register of Historic Places and NRHP. The Sunken Military Craft Act (10 U.S.C. § 113 note) protects sunken military craft from injury, removal, or disturbance. Under the Sunken Military Craft Act and its implementing regulations, a number of federal agencies have jurisdiction and management over sunken military craft, including statutory authority to conduct and permit specific activities directed at sunken military craft. Sunken military craft fall under the jurisdiction of a number of federal agencies such as the U.S. Navy and the U.S. Coast Guard (USCG). NOAA would coordinate with the U.S. Navy and any other applicable federal agency, or state agency if found within state waters, regarding activities directed at sunken military craft discovered within the sanctuary. By proposing to prohibit disturbance to historical resources, NOAA would directly protect underwater cultural and maritime heritage resources in the proposed sanctuary from injury and disturbances by developing and enforcing regulations and by implementing a long-term, comprehensive management plan. See Section 4.5 for more details with regard to characterization and analysis of cultural heritage and maritime heritage resources.

In August, 2023, NOAA invited the federally recognized Santa Ynez Band of Chumash Indians into consultation pursuant to Section 106 of the NHPA concerning the identification of historic properties and NOAA's assessment of any effects on historic properties from the proposed action. NOAA also invited several non-federally recognized Tribes and Indigenous groups, as additional interested parties to the NHPA Section 106 consultation. See Appendix E for details.

In summary, ongoing and emerging human-caused impacts can more effectively be addressed within the proposed sanctuary through the comprehensive habitat conservation and management authorities under NMSA. Moreover, research, exploration, and education opportunities related to these significant ocean resources are critical for understanding changes

occurring in the environment, as well as fostering a stewardship ethic and an understanding of the cultural heritage and ecosystem services the proposed sanctuary area provides for communities along and offshore the Central California coast. For these and other reasons, a comprehensive management approach offered by national marine sanctuary designation is needed.

2.3 Approach to Management of the Proposed Sanctuary

NOAA would manage the sanctuary in close collaboration with federal, state, Tribal, and local governments. Through the management plan, NOAA would also partner with community organizations to carry out ongoing research, monitoring, education and outreach, resource protection, cultural and maritime heritage, and recreation and tourism activities. Sanctuary priorities would also be aligned with and informed by the Office of National Marine Sanctuaries (ONMS) Strategic Plan (available [online](#)), an Intergovernmental Policy Council, a Sanctuary Advisory Council, and an Indigenous Cultures Advisory Panel, all three of which would be formed following the proposed sanctuary's designation. To facilitate collaborative co-stewardship and meaningful engagement with the Santa Ynez Band of Chumash Indians and other Indigenous groups, NOAA is also proposing an Indigenous Collaborative Co-Stewardship Framework, of which the Intergovernmental Policy Council, Sanctuary Advisory Council, and Indigenous Cultures Advisory Panel are components (details are in the introduction to the management plan and in the environmental impact statement (EIS) Section 3.2.3). More details on strategic goals, strategies, and activities that would guide sanctuary management are discussed in the management plan.

2.4 Decisions to be Made and Agency Coordination

Decisions related to the proposed action of designating a new sanctuary include the following:

- Whether or not to designate the new national marine sanctuary.
- The new sanctuary's boundaries.
- Terms of designation for the new sanctuary.
- Regulations applicable to the new sanctuary.
- The management plan for the sanctuary.

The Council on Environmental Quality (CEQ) defines the roles and responsibilities of cooperating agencies in Section 1501.8 of its NEPA regulations. Upon the request of the lead agency, any federal agency with jurisdiction by law shall be a cooperating agency. In addition, any other federal agency with special expertise with respect to any environmental issue may serve as a cooperating agency. State, Tribal, or local agencies with similar qualifications may also be cooperating agencies by agreement of the lead agency. Prior to release of the draft EIS, the Bureau of Ocean Energy Management (BOEM), the Bureau of Safety and Environmental Enforcement (BSEE), Department of Defense (DoD), and the Santa Ynez Band of Chumash Indians requested cooperating agency status, which NOAA approved. NOAA also worked closely with various other pertinent resource agencies and agencies with authorities to permit activities occurring in the sanctuary area on the development of this EIS, the management plan, and the proposed regulations. In preparing this EIS, NOAA sought the input of numerous federal, state, and local officials and agencies, and NOAA is conducting government-to-government

consultation with the Santa Ynez Band of Chumash Indians under Executive Order (E.O.) 13175 regarding the proposed designation (see Appendix E).

Chapter 3: Alternatives

In addition to mandating consideration of the No Action Alternative, National Environmental Policy Act (NEPA) Regulations (40 Code of Federal Regulations (C.F.R.) § 1502.14) require the evaluation of a reasonable range of alternatives that meet the proposed action's purpose and need, and the comparative assessment of the alternatives' impacts which allow for public disclosure and informed decision-making. This chapter includes a description of the components of the Initial Boundary Alternative and identifies alternatives (including the No Action Alternative) and the process used to develop them. The National Oceanic and Atmospheric Administration (NOAA) developed its reasonable range of alternatives as required by the Council on Environmental Quality's (CEQ) NEPA regulations and the NOAA NEPA Companion Manual.

The proposed action is to establish a new sanctuary, with terms of designation, regulations, and a management plan. The Initial Boundary Alternative represents the boundary option that was originally proposed to NOAA in the nomination, with small modifications, as well as the proposed final regulations NOAA would adopt if that option were approved (see Section 3.2). This chapter also contains a description of the other alternatives, including four smaller boundary alternatives, two larger boundary sub-alternatives,¹⁴ the No Action Alternative, and a description of the alternatives that were initially considered but eliminated from detailed study. NOAA has carefully considered state and federal authorities in proposing new regulatory oversight to ensure protection and management of sanctuary resources.

The boundary alternatives include the following:

- Initial Boundary Alternative, generally consistent with the action described in the Notice of Intent (NOI) ([86 Fed. Reg. 62512; November 10, 2021](#)) but with some minor modifications.
- Alternative 1, "Bank to Coast," focuses on the Santa Lucia Bank to the coast, but excludes most deep-water portions west of Santa Lucia Bank.
- Alternative 2, "Cropped Bank to Coast," focuses on the Santa Lucia Bank to the coast, but excludes most deep-water portions west of Santa Lucia Bank similar to Alternative 1, and also excludes the northern portion of the Initial Boundary Alternative from Cambria to the northern portion of Montaña de Oro State Park at Hazard Canyon Reef.
- Alternative 3, "Diablo to Gaviota Creek," excludes the Diablo Canyon Call Area and coastal waters from Cambria to near the marina at Diablo Canyon Power Plant (DCPP), leaving areas for power cables to connect to shore at DCPP and potential additional future development of an offshore wind energy area out of sanctuary boundaries. NOAA has made a small adjustment to the orientation of the boundary between the draft environmental impact statement (EIS) and final EIS just south of DCPP to allow access to DCPP grid connections for subsea electrical transmission cables, a key outcome originally envisioned in this alternative (see Section 3.5).

¹⁴ The EIS uses the term "Sub-Alternative" to distinguish alternatives that do not stand alone, rather are additive to other boundary alternatives.

- Alternative 4, “Combined Smallest,” excludes the same areas as are excluded in both alternatives 1 and 3, and therefore represents the smallest proposed sanctuary area. NOAA has made a small adjustment to the orientation of the boundary between the draft EIS and final EIS just south of DCPD to allow access to DCPD grid connections for subsea electrical transmission cables, a key outcome envisioned via this alternative (the same adjustment that was made for Alternative 3; see Section 3.5).
- Sub-Alternative 5a, “Morro Bay Estuary,” includes the tidally-influenced areas of the estuary (applicable to the Initial Boundary Alternative and Alternative 1).
- Sub-Alternative 5b, “Gaviota Coast Extension,” includes state waters offshore much of the Gaviota Coast (applicable to the Initial Boundary Alternative and any action alternative).

Under each of the action alternatives, NOAA would designate a national marine sanctuary and implement regulations and a management plan for the sanctuary. The terms of designation are part of the proposed action, but they are generally consistent across all alternatives.¹⁵ The action alternatives considered are alternative means of meeting the purpose and need for the action, as described in Chapter 2.

Each of the action alternatives has three components, including sanctuary boundaries, regulations, and non-regulatory management plans (including action plans) and field activities.

NOAA has identified a Final Preferred Alternative in Section 5.4.9, which combines Alternative 4 (Combined Smallest) (as adjusted in the final EIS, see Figure 3-8 and Section 3.6.1), Sub-Alternative 5b (Gaviota Coast Extension), plus a small area to more fully protect the Santa Lucia Bank that is part of the Initial Boundary Alternative. See Figure 3-1 for a map of the Final Preferred Alternative and Chapter 5 for a comparison of the environmental impacts of all the alternatives, as well as details explaining the basis for identifying the Final Preferred Alternative.

¹⁵ The terms of designation would differ for each alternative only to the extent necessary to reflect the different boundaries. The terms of designation are included in the final rule and as an appendix to the final management plan and correspond to the boundary and regulatory framework proposed by NOAA.

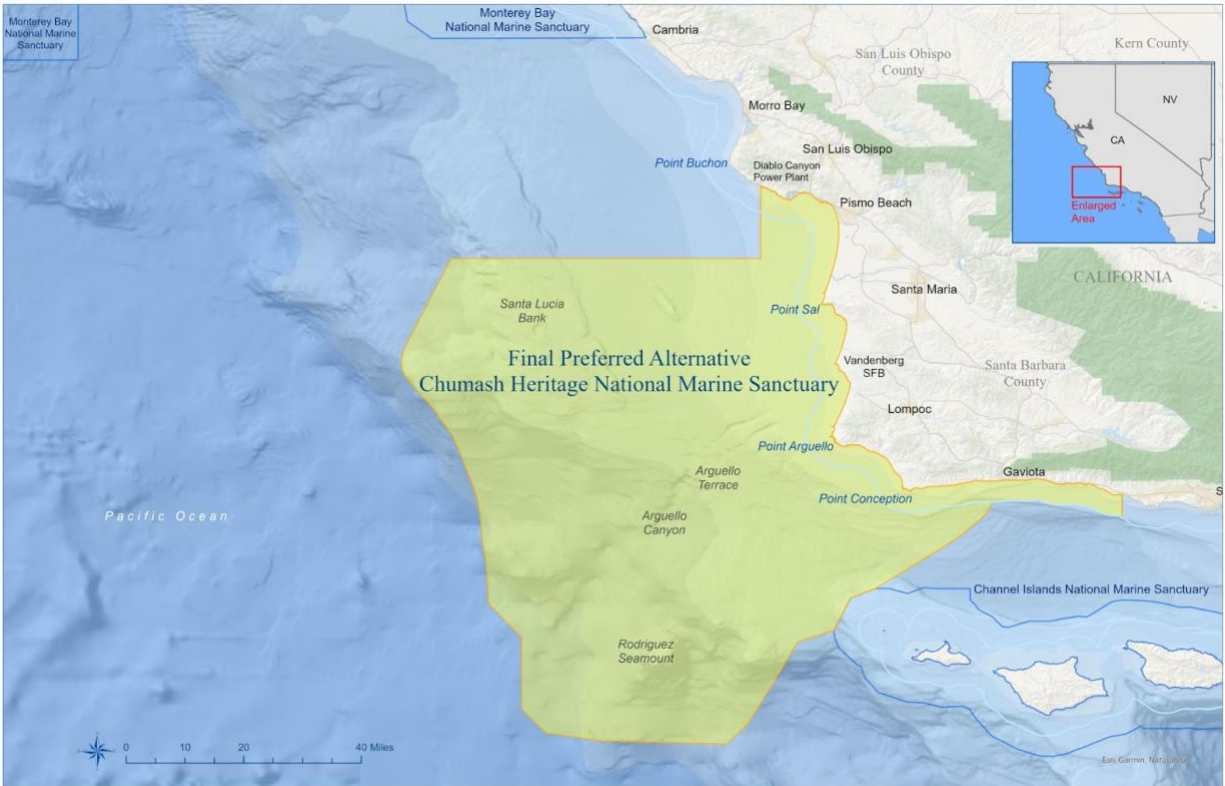


Figure 3-1. Final Preferred Alternative boundary for the proposed CHNMS. Image: NOAA

As required by the NEPA regulations (40 C.F.R. 1505.2(a)(2)), in any forthcoming Record of Decision for the proposed action, NOAA would also specify the alternative or alternatives considered environmentally preferable, which result(s) in the least damage to the biological and physical environment and best protect(s), preserve(s), and enhance(s) historical, cultural, and natural resources.

This EIS focuses on those components of the proposed action and alternatives that could potentially result in impacts on the human environment. The EIS does not include a detailed assessment of the entire set of individual issue-based action plans that are contained in the proposed sanctuary management plan. The action plans within the management plan involve goals, strategies, activities, and planning tools for resource protection, education, research, and monitoring programs and sanctuary administration. The EIS analysis of the management plan focuses on those management plan elements with the potential to affect the environment (see Chapter 4). The final management plan is available as a separate document. The EIS also considers the potential effects of implementing the final regulations as applied to each boundary alternative (see Chapter 4).

3.1 Development of Proposed Action and Alternatives

As described in Chapters 1 and 2, in 2015, NOAA received the community-based nomination to consider designation of the proposed Chumash Heritage National Marine Sanctuary (CHNMS), and some portions of this area have been recommended by the community for national marine sanctuary designation for more than 40 years. The community-based nomination (NCTC, 2015), the five-year review (NOAA, 2020b), and the NOI published on November 10, 2021 ([86 Fed. Reg. 62512](#)) provide extensive background information on resource importance within the proposed sanctuary area. Developing alternatives requires assessing a range of technically and economically feasible options that meet the purpose and need of the proposed action of designating a new sanctuary, which in this case means ensuring that the cultural, biological, and physical resources of the proposed sanctuary area are best protected from existing and future threats. At the same time, the alternatives acknowledge existing and future activities that may occur within sanctuary boundaries in consideration of the National Marine Sanctuaries Act (NMSA) policy to facilitate, to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of the area not prohibited under other authorities (16 United States Code (U.S.C.) § 1431(b)(6)). In developing alternatives, NOAA considered the following questions:

- Does NOAA have the institutional responsibility and/or authority to address identified issues pursuant to the NMSA?
- Does addressing these issues have positive benefits for natural resources/ecosystems, cultural resources, habitat protection, protection of biodiversity, or resolving user conflicts of the sanctuary?
- What is the urgency of these issues?
- What is the feasibility of implementing an alternative boundary or regulation?
- Would the alternative meet the purpose and need for establishing a new sanctuary?
- Would the alternative be consistent with statutory requirements?

3.1.1 Development of Proposed Boundaries

A wide range of boundaries was suggested in scoping comments from a variety of interested parties. Many comments suggested extending the eastern boundary to include waters offshore different portions of Santa Barbara County all the way to Malibu in Los Angeles County. Other comments suggested excluding potential wind energy areas and some harbor areas to facilitate wind energy development or general harbor activities. To determine the appropriate boundary alternatives, the Office of National Marine Sanctuaries (ONMS) focused on the purpose and intent of establishing sanctuaries, as set forth in the NMSA. The NMSA, [16 U.S.C. 1431 et seq.](#), authorizes the Secretary of Commerce to designate and manage as national marine sanctuaries areas of the marine environment that are of special national significance due to their conservation, recreational, ecological, historical, scientific, cultural, archeological, educational, or aesthetic qualities. Section 303(b)(1)(F) of the NMSA requires that when designating a sanctuary, the Secretary of Commerce consider “the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries...” among many other factors.

Initially, the nominators for the sanctuary identified a broad boundary in the 2015 nomination for sanctuary designation. This boundary, which was presented in the NOI, was slightly modified for the Initial Boundary Alternative (see Section 3.2.1) to exclude any geographical overlap of the boundary proposed for the Morro Bay Wind Energy Area. NOAA also made a small adjustment to create a more complete alignment with the western boundary of Channel Islands National Marine Sanctuary (CINMS). For the boundary alternatives, ONMS researched the need for both larger boundaries to include special resources and smaller boundaries that would still protect the resources identified as being potentially threatened.

Sections 3.2–3.7 describe the boundary alternatives NOAA is considering for the proposed designation of the sanctuary. Table 3-2 at the end of Section 3.7 provides comparative statistics for all boundary action alternatives. The alternatives chosen for full evaluation in this EIS cover a broad range of potential sanctuary configurations, with the intent to allow flexibility in the final selection of the boundaries and to ensure that the various interests are represented. Following public comment on the draft designation documents, pursuant to NEPA, NOAA has made minor adjustments to the northeastern, nearshore boundaries of both Alternative 3 and Alternative 4 to facilitate subsea electrical transmission cable landings at DCP. This shifts the point where the sanctuary boundary would connect to the coast one mile southeast compared to the draft EIS boundary alternatives (see Figure 3-7a, and descriptions in Section 3.5 and Section 3.6). See sections 3.5 and 3.6 for additional explanation as to why these minor adjustments are consistent with the original purpose of alternatives 3 and 4 and why the adjustments constitute a minor variation qualitatively within the spectrum of alternatives assessed in the draft EIS.

The draft EIS and the proposed rule alerted the public that, based on public comments received on the draft designation materials and NOAA's experience administering the National Marine Sanctuary System, pursuant to NEPA and the Administrative Procedure Act, NOAA may identify one or more additional alternatives in the final EIS. When considering additional alternatives, NOAA must determine whether any new alternative represents a substantial change to the proposed action that is relevant to environmental concerns (40 C.F.R. 1502.9(d)(1)(i)). In cases where such substantial changes are identified, NOAA would be required to prepare a supplemental EIS.

The Final Preferred Alternative introduced in this final EIS would designate an area comprising Alternative 4, Sub-Alternative 5b, and the small area that is part of the Initial Boundary Alternative, all of which were analyzed in the draft EIS. Based on the matching geography and regulatory approach, NOAA determined that the impacts of the Final Preferred Alternative were thoroughly discussed in the draft EIS. Therefore, preparation of a supplemental EIS is not required. See Section 5.4.9 for a detailed discussion of the Final Preferred Alternative.

3.1.2 Development of Proposed Final Regulations

The NMSA authorizes NOAA to establish site-specific regulations at each national marine sanctuary. The purpose and need of the proposed sanctuary designation (see Chapter 2) provides the overarching basis for developing the proposed final regulations. Scoping comments from Tribal and Indigenous community representatives, governmental agencies, the fishing industry, offshore wind energy industry representatives, telecommunications companies, other interested organizations, and the public addressed the need for regulations and exemptions for

certain activities. Some of these comments conflicted with each other (see Section 3.11 and Appendix B for more information related to public scoping comments). ONMS consulted with offshore wind energy representatives, government entities, the federally recognized Santa Ynez Band of Chumash Indians, Tribal and Indigenous community groups, fishing industry representatives, and other interest groups to clarify issues and concerns associated with establishing sanctuary regulations. ONMS consulted with the Pacific Fishery Management Council (PFMC) as required under NMSA Section 304(a)(5). ONMS also surveyed existing regulations of nearby national marine sanctuaries on the West Coast, including Monterey Bay, Greater Farallones, Channel Islands, and Olympic Coast national marine sanctuaries, and developed a set of proposed regulations that are generally consistent with other sanctuary provisions in resource areas that are similar. In developing the proposed final regulations, ONMS evaluated resource sensitivity, industry practices, and feasibility of implementing certain regulations, to balance resource protection regulations with existing and future compatible activities that may occur in the sanctuary. NOAA has made changes to the proposed final regulations based on public comment received on the draft designation materials (see Section 3.2.2 for more discussion of these changes and why they do not require preparation of a supplemental EIS).

3.1.3 Development of Management Plan

Management plans are sanctuary-specific planning and management documents used by all national marine sanctuaries. Management plans fulfill many functions, including: describing non-regulatory programs; outlining collaborations with partners; setting priorities for resource protection, research, and education programs; and guiding development of future budgets, staffing needs, and management activities. The final management plan charts the course for the proposed sanctuary over the next five to 10 years.

Numerous issues were identified during the scoping process that are appropriately addressed in the management plan rather than in sanctuary regulations. NOAA studied these issues to determine which ones were best addressed through a sanctuary management regime. In consultation with cooperating agencies, the federally recognized Santa Ynez Band of Chumash Indians, and Tribal and Indigenous community groups, NOAA developed and refined a suite of action plans with strategies and activities to address the most pressing issues, given likely sanctuary management staffing limitations. These action plans are included in the draft management plan (see Section 3.2.3). The NMSA requires NOAA to review sanctuary-specific management plans every five years; additional issues identified during the EIS scoping process and during the initial five years of sanctuary operation would likely be addressed during the management plan review process in the future. NOAA has made changes to the final management plan based on public comment received on the draft designation materials (see Section 3.2.3 for more discussion of these changes and why they do not require preparation of a supplemental EIS).

3.2 Initial Boundary Alternative

This section describes the Initial Boundary Alternative, which includes a proposed boundary, proposed final regulations, and implementation of a final management plan for the proposed CHNMS.

3.2.1 Boundary (Initial Boundary Alternative)

Under the Initial Boundary Alternative, the sanctuary boundary would include the waters along and offshore of the central coast of California, largely consistent with the boundary suggested by sanctuary proponents and included in NOAA's NOI ([86 Fed. Reg. 62512; November 10, 2021](#); see Figure 1-2), with several adjustments (see Figure 3-2). The proposed boundary would be located along the mean high water line from approximately Cambria at the terminal boundary of Monterey Bay National Marine Sanctuary (MBNMS), south along the San Luis Obispo County coast, excluding Morro Bay Harbor and Port San Luis (boundaries are at the COLREGS demarcation lines (33 C.F.R. 80.1132 and 80.1130 respectively)), the private marina at DCP, and the harbor area at Vandenberg Space Force Base (VSFB) (see Figure 3-3).¹⁶ The boundary would continue further south and east to include the coast of Santa Barbara County to Gaviota Creek (approximately 0.1 mile east of Gaviota Pier), offshore in a southwest direction along the western end of CINMS, southward to include Rodriguez Seamount and shifting to the northwest to include the waters and seabed west of Santa Lucia Bank, and reconnect with the boundary for MBNMS offshore Cambria.

¹⁶ The exclusion of VSFB is a technical change to ensure consistency in the approach to harbors (namely, excluding existing coastal harbors from the boundaries of the sanctuary). This is also a minor variation of the boundary alternatives previously presented, the impacts of which are encompassed in the scope of alternatives evaluated in the draft EIS. For more information and a detailed discussion of this point, see responses to comments BO-14 and BO-15 in Appendix A.

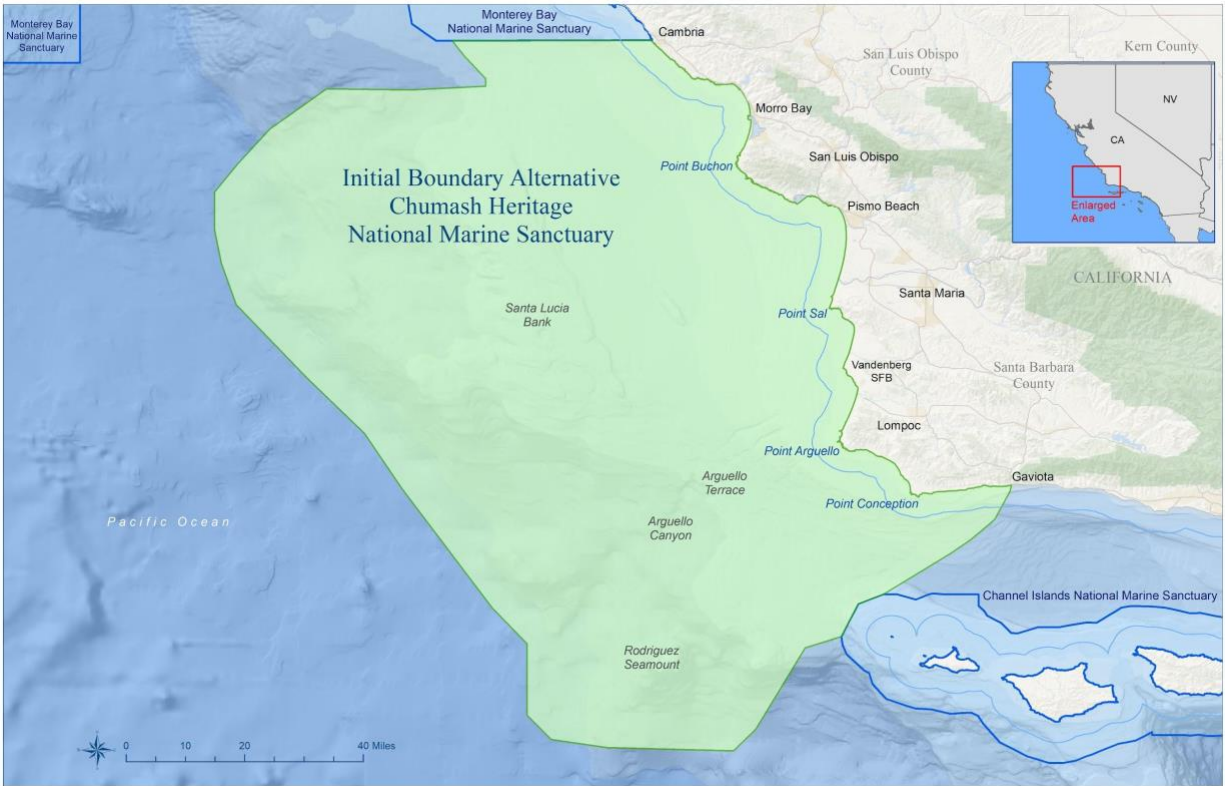


Figure 3-2. Initial Boundary Alternative. Image: NOAA

Among various jurisdictional overlays, the Initial Boundary Alternative includes seven state-designated marine protected areas (MPAs) from Cambria to Gaviota Creek. ONMS and the California Natural Resources Agency have recognized the synergistic benefit of state MPAs within the broader conservation benefits of national marine sanctuaries.¹⁷

Compared to the boundary described in the EIS NOI ([86 Fed. Reg. 62512; November 10, 2021](#)), the Initial Boundary Alternative was adjusted as follows:

- Exclude the proposed 376 Morro Bay Wind Energy Area rather than the 399 Wind Energy Area, which results in moving the boundary three miles to the west from that described in the NOI.
- Align the boundary more fully with the western edge of CINMS boundary.

NOAA estimates the area encompassed in the Initial Boundary Alternative is approximately 7,573 square miles and would protect approximately 152 miles of mainland coastline (202 miles when the shoreline of offshore rocks and islands are included).

¹⁷ Additionally, the federally recognized Santa Ynez Band of Chumash Indians plays a sovereign role in independently managing the Tribe's fishing and resource collection activities through its state-approved exemption for subsistence and cultural fishing in one of the state MPAs encompassed within the Initial Boundary Alternative boundary, the Kashtayit State Marine Conservation Area (SMCA).

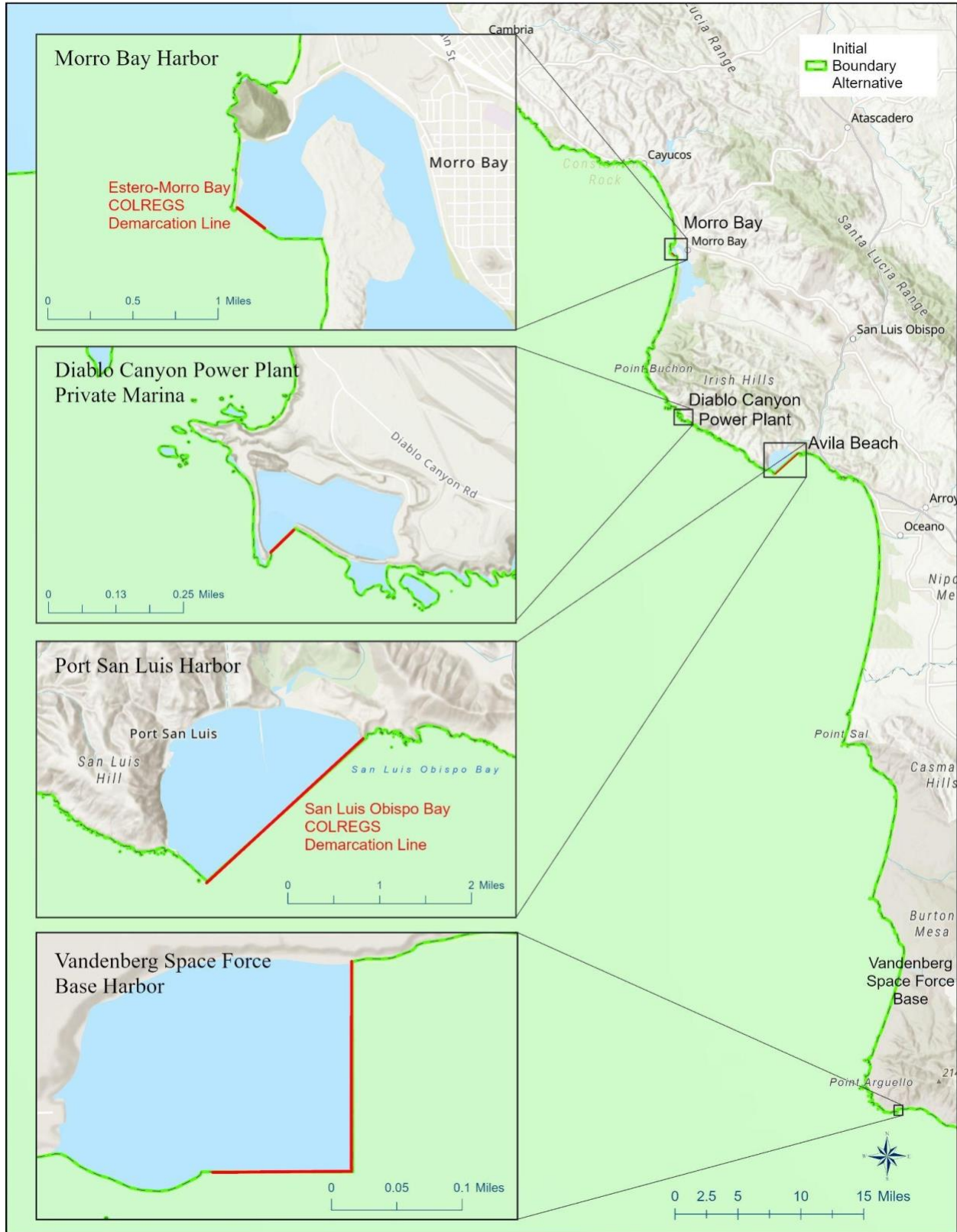


Figure 3-1. Initial Boundary Alternative at four harbor mouths. Note: COLREGS refer to the International Regulations for Preventing Collisions at Sea demarcation lines. Image: NOAA

3.2.2 Proposed Final Regulations (Initial Boundary Alternative)

For purposes of this final EIS, NOAA uses the term “proposed final regulations” to identify regulations NOAA proposes to be adopted as part of the Initial Boundary Alternative, and, unless otherwise specified, any of the other action alternatives. In the subsection below, “Regulatory Changes Between Draft and Final EIS,” NOAA summarizes how the regulations changed between the draft EIS and final EIS.

The text of the proposed final regulations is shown in Table 3-1. Under the Initial Boundary Alternative, the sanctuary regulations would closely track regulations for other national marine sanctuaries offshore of California, thus addressing the full range of conservation issues, with standard exemptions and permit processes. In general, regulations for national marine sanctuaries are written as “prohibitions” that restrict or limit an activity. If an activity is not covered by a prohibition, it may occur within a sanctuary. Activities that are described as prohibited by a sanctuary regulation may still occur provided:

- The regulatory prohibition includes an **exception** in the language itself; for instance, the proposed CHNMS regulation prohibiting seabed disturbance contains an exception for anchoring of a vessel.
- One or more broad **exemptions** apply. For instance, most of the proposed CHNMS regulations would not apply to activities necessary to respond to an emergency threatening life, property, or the environment.
- The sanctuary superintendent takes one of three permit actions for an activity that is otherwise prohibited. The superintendent can issue a **sanctuary general permit** to allow someone to conduct an activity otherwise prohibited. The proposed final regulations include the ability to issue an **ONMS authorization** for an activity conducted pursuant to another agency’s permit, lease, license, or other approval. The NMSA allows issuance of a **special use permit** for certain activities. A sanctuary superintendent can impose conditions on a sanctuary general permit, an ONMS authorization, or a special use permit that are necessary to ensure protection of sanctuary resources.
- Immediately after a sanctuary is designated, someone would receive a **certification** from NOAA for an activity that is otherwise prohibited under the sanctuary regulations has a valid federal, state, or local permit, lease, or license at the time of designation; for CHNMS, NOAA is proposing that anyone with such a permit, lease, or license come forward within 120 days of sanctuary designation for a certification.

NOAA has revised its national program regulations to include procedures for applying for a sanctuary general permit, the review process, and appeal procedures into 15 C.F.R. 922, subpart D. The revised subpart D also provides the application procedures and review criteria for ONMS authorizations, as well as the special use permit process and fee structure. Permit processes for CHNMS, as noted in Table 3-1, reference and rely upon subpart D for most permitting issues related to CHNMS. The process for a certification in CHNMS is included in site specific regulations in Table 3-1. Unless it is critical for a specific issue to delineate the type of permit, hereafter use of “permit” in this EIS is meant to convey granting approval for an activity from a

sanctuary superintendent or NOAA via a sanctuary general permit, ONMS authorization, certification, or special use permit.

Definitions

National Marine Sanctuary System-wide regulations include the definition of terms used in site-specific regulations, such as the prohibitions and permit processes. See 15 C.F.R. 922.11. For CHNMS, a number of terms defined in the national program regulations are pertinent to the proposed final regulations for the sanctuary; for instance, definitions for: “sanctuary resource,” “take of a marine mammal, sea turtle, or bird,” “attract or attracting,” “introduced species,” “harmful matter,” and “cruise ship,” among others. NOAA proposes to adopt two site-specific definitions to guide regulations for CHNMS. One definition would cover beneficial use of dredged material to allow consideration of permitting the discharge of material dredged from public harbors adjacent to the sanctuary, specifically Morro Bay and Port San Luis in the Initial Boundary Alternative, that is determined by the director to be suitable for habitat protection and restoration purposes.

“Beneficial use of dredged material means the use of dredged material removed from either of the two public harbors adjacent to the sanctuary - Morro Bay and Port San Luis - that is determined by the Director to be suitable as a resource for habitat protection or restoration purposes. Beneficial use of dredged material is not disposal of dredged material.”

The second proposed definition provides a description of Rodriguez Seamount Management Zone:

“Rodriguez Seamount Management Zone means the area bounded by geodetic lines connecting a heptagon generally centered on the top of the Rodriguez Seamount, and consists of approximately 570 mi² (430 square nautical miles) of ocean waters and the submerged lands thereunder. The northeast corner of this zone is located approximately 27 miles southwest of Point Conception off the coast of Santa Barbara County. Exact coordinates for the Rodriguez Seamount Management Zone boundary are provided in Appendix B to this subpart.”

Prohibitions

Similar to other sanctuaries, the proposed final regulations for CHNMS identify prohibited uses rather than allowed uses. The following activities would be prohibited within the sanctuary, subject to specified exceptions and exemptions:

- Oil, gas, and minerals exploration,¹⁸ development, and production, except for continued oil and gas production, including well abandonment, pursuant to existing leases or lease units in effect on the date that sanctuary designation takes effect.
- Discharges within or into the sanctuary, with some exceptions.
- Cruise ship discharges, with limited exceptions.

¹⁸ Exploration for oil and gas resources would include disturbing the seabed by drilling an exploration well, as well as high energy seismic testing conducted for the purpose of locating potential oil and gas reserves.

- Discharging or depositing from beyond the boundary of the sanctuary any material or other matter that enters the sanctuary and injures a sanctuary resource or quality, with some exceptions.
- Disturbing the seabed, with some exceptions.
- Disturbing a historical resource, with limited exception.
- Taking or possessing a marine mammal, sea turtle, or bird, with limited exception.
- Deserting a vessel.
- Attracting a white shark.
- Disturbing resources deeper than 1,500 feet within the Rodriguez Seamount Management Zone, other than from fishing activities, with limited exception.
- Introducing or otherwise releasing an introduced species, with limited exception.
- Interfering with an enforcement investigation or action.

Exceptions

Most of the proposed final regulations listed in Table 3-1 contain exceptions that apply to the activities that would otherwise be prohibited.

Exemptions

The proposed final regulations include an exemption clarifying that most of the regulatory provisions would not apply to activities necessary to respond to an emergency threatening life, property, or the environment. Existing Department of Defense (DoD) activities specifically identified in Section 4.9 or Appendix I to the final EIS would also be broadly exempted from the proposed final regulations, which also describe a process for considering exemption of new DoD activities.

Sanctuary General Permits

The proposed final CHNMS regulations would establish a permit process to allow most prohibited activities under certain conditions via a national marine sanctuary general permit pursuant to 15 C.F.R. 922 subpart D and the site-specific regulations proposed for this sanctuary (15 C.F.R. 922.232(d) and § 922.233). Under the proposed final regulations, sanctuary general permits may be issued if the ONMS director (typically delegated to the sanctuary superintendent) determines that the proposed activities fall within one of three categories in the national regulations (15 C.F.R. 922.30(b)) relevant to this proposed sanctuary: (1) Research – activities that constitute scientific research or scientific monitoring of a national marine sanctuary resource or quality; (2) Education – activities that enhance public awareness, understanding, or appreciation of a national marine sanctuary or national marine sanctuary resource or quality; or (3) Management – activities that assist in managing a national marine sanctuary.

NOAA is proposing an additional category for issuance of a sanctuary general permit for CHNMS for an activity that “will promote or enhance local Native American cultural or ceremonial activities; or will promote or enhance education and training related to local Native American cultural or ceremonial activities” (15 C.F.R. 922.30(b)(7)).

The proposed final CHNMS regulations include procedures regarding a sanctuary general permit in § 922.233; however, subpart D to 15 C.F.R. 922 includes more information about the application requirements and procedures. Per § 922.33 of the national program regulations, the director must make findings prior to issuing a sanctuary general permit, including such factors as the proposed activity will be conducted in a manner compatible with the primary objective of protection of national marine sanctuary resources and qualities, and it is necessary to conduct the proposed activity within the national marine sanctuary to achieve its stated purpose. Appeal procedures are described in 15 C.F.R. 922.37.

Under the proposed final CHNMS regulations, the ONMS director may not issue a sanctuary general permit (or ONMS authorization or special use permit) for new exploration, development, or production of oil, gas, or minerals within the sanctuary; or a new discharge of untreated or primary-treated sewage within the sanctuary; or a new site for disposal of harbor dredge material other than at sites already approved at the time of sanctuary designation. The ONMS director may permit the beneficial use of dredged material relating to dredging activity at Port San Luis, which is not a type of disposal.

ONMS Authorizations

Under the proposed final regulations, activities that are otherwise prohibited may be authorized by the sanctuary superintendent if the activities are allowed pursuant to a separate federal, state, or local agency permit, lease, license, or other approval, and if the applicant complies with applicable regulatory provisions. “ONMS authorizations” would be guided by program-wide regulations at 15 C.F.R. 922.36 for certain prohibited activities as allowed for in regulations specific to CHNMS, and would often involve close coordination with the federal, state, or local agency whose permit would be authorized. Under 15 C.F.R. 922.36, the ONMS authorization process allows ONMS to impose terms and conditions on the activity that it deems reasonably necessary to protect sanctuary resources and qualities. ONMS may recommend that the partner agency impose any necessary mitigation measures in that agency’s permit, however ONMS may also impose mitigation measures and other conditions itself, through the authorization that it issues. As an example, NOAA has relied on U.S. Army Corps of Engineers (USACE) permits to approve, via authorization, the construction of submarine fiber optic cables within other sanctuaries. As discussed in more detail in Section 4.7, a similar permit process could be used to permit construction of subsea electrical transmission cables from offshore wind energy development that pass through the proposed CHNMS to onshore substation(s), provided that the developer receives all other necessary permits or authorizations from other applicable authorities.

Under the proposed final regulations, ONMS could authorize the introduction of an introduced species of shellfish that is cultivated in state waters as part of commercial shellfish aquaculture activities only if NOAA and the state of California determine that the species is non-invasive and will not cause significant adverse effects to sanctuary resources and qualities. NOAA has previously adopted a memorandum of agreement (MOA) with the state of California for considering introduced species aquaculture projects in state waters of MBNMS and intends to update that MOA to address consideration of ONMS authorizations for future introduced species aquaculture projects that may be proposed within CHNMS.

Special Use Permits

Section 310 of the NMSA (16 U.S.C. § 1441) states that special use permits may be issued to authorize the conduct of specific activities in a national marine sanctuary under certain circumstances. This provision for special use permits applies to any national marine sanctuary. A special use permit is the only permit issued through the sanctuary program that allows the agency to recover some or all of the cost of reviewing and issuing the permit, including recovery of a fair market value for use of sanctuary resources. By statute, special use permits may be issued only for five years but may be renewed. Past practice by ONMS has allowed continued renewals of some special use permits. ONMS has issued notices in the Federal Register that describe the categories of activities that are currently eligible for special use permits (78 Fed. Reg. 25957 (May 3, 2013); 82 Fed. Reg. 42298 (Sept. 7, 2017)). Special use permit categories that are potentially relevant to the proposed CHNMS include the continued presence of commercial subsea cables, discharge of cremated human remains, and discharges from fireworks displays. For some submarine fiber optic cables, ONMS has issued authorizations for construction of a cable and also issued a special use permit for continued presence of that same cable on or in the sanctuary seabed for the cable's operational life. As discussed in more detail in Section 4.7, a similar permit process could be used to permit continued operation of subsea electrical transmission cables from offshore wind energy development that pass through the proposed CHNMS to onshore substation(s). Procedures for special use permits are governed by several sections of 15 C.F.R. 922 subpart D.

However, NOAA issued a Federal Register notice on August 16, 2024 that modified the special use permit category for the continued presence of commercial submarine cables in the following way: for a two-year period beginning on August 16, 2024, the special use permit category does not apply to sanctuaries designated after August 16, 2024, including the proposed CHNMS. In other words, for the duration specified in the notice, the continued presence of commercial submarine cables in CHNMS is not subject to the requirements of Section 310 of the NMSA. The purpose of this modification is to afford NOAA adequate time to evaluate the need for updating this special use permit category, to publish any proposed updates to the category and/or to implementing guidance for the category, to consider and respond to public comment, and to finalize any updates to the category. NOAA will publish Federal Register notices of any such subsequent proposed or final updates. See the notice ([89 Fed. Reg. 66689](#)) for more information.

As further described in the August 16, 2024 Federal Register notice, the modification of the special use permit category for the continued presence of commercial submarine cables was effective immediately, however, at the time of modification, NOAA also initiated a request for public comments on its evaluation of this special use permit category generally. Any comments received pursuant to that request will be considered and addressed when NOAA publishes any proposed updates to the special use permit category and/or to implementing guidance for the category. See [89 Fed. Reg. 66689](#) for additional information.

Certifications

Similar to authorizations, NOAA proposes to establish a process applicable at the time of CHNMS designation whereby existing activities specifically authorized by a valid lease, permit, or other approval could be “certified” and allowed to continue, subject to any terms and conditions consistent with the purposes for which the sanctuary was designated, as allowed for in 15 C.F.R. 922.10. For example, existing legal wastewater discharges into or within the sanctuary may be allowed to continue through the certification process. As described in more detail below, certification procedures included in the proposed final regulations for CHNMS have been adjusted based on public comment on the draft designation materials. These amendments are consistent with the issues, policies, and purposes discussed in the proposed rule, are minor, technical clarifications, and respond to public input. The changes ensure the CHNMS certification process is consistent with NMSA § 304(c). The NMSA does allow NOAA to impose reasonable conditions on the exercise of a pre-existing lease, permit, license, or right consistent with the purpose of the sanctuary. Also, to clarify an internal inconsistency between the draft EIS and draft management plan, NOAA has changed the time period to 120 days after sanctuary designation to allow permit holders to seek a certification (15 C.F.R. 922.234). See comment FC-11 in Appendix A, Response to Comments, for more information on the certification language.

Memoranda of Agreement with Partner Agencies

NOAA is proposing a regulation as part of the CHNMS designation, at 922.235, regarding entering into an MOA with partner agencies, in particular regarding (i) introduced species aquaculture projects and (ii) the Sunken Military Craft Act (see Table 3-1). This regulation acknowledges that sunken military craft in CHNMS will continue to be administered by the respective Secretary concerned pursuant to the Sunken Military Craft Act. NOAA will enter into an MOA with the appropriate agencies regarding collaboration on implementing the Sunken Military Craft Act (10 U.S.C. § 113 *et seq.*).

Rodriguez Seamount Management Zone

NOAA is proposing to include a Rodriguez Seamount Management Zone within the sanctuary boundary to enhance management of nationally significant resources at that seamount. As noted in Table 3-1, several proposed final regulations apply and some proposed final regulatory exceptions would not apply within the zone. Figure 3-4 shows the location of this zone, which would be applicable to and wholly within the Initial Boundary Alternative and all action alternatives, including the Final Preferred Alternative.

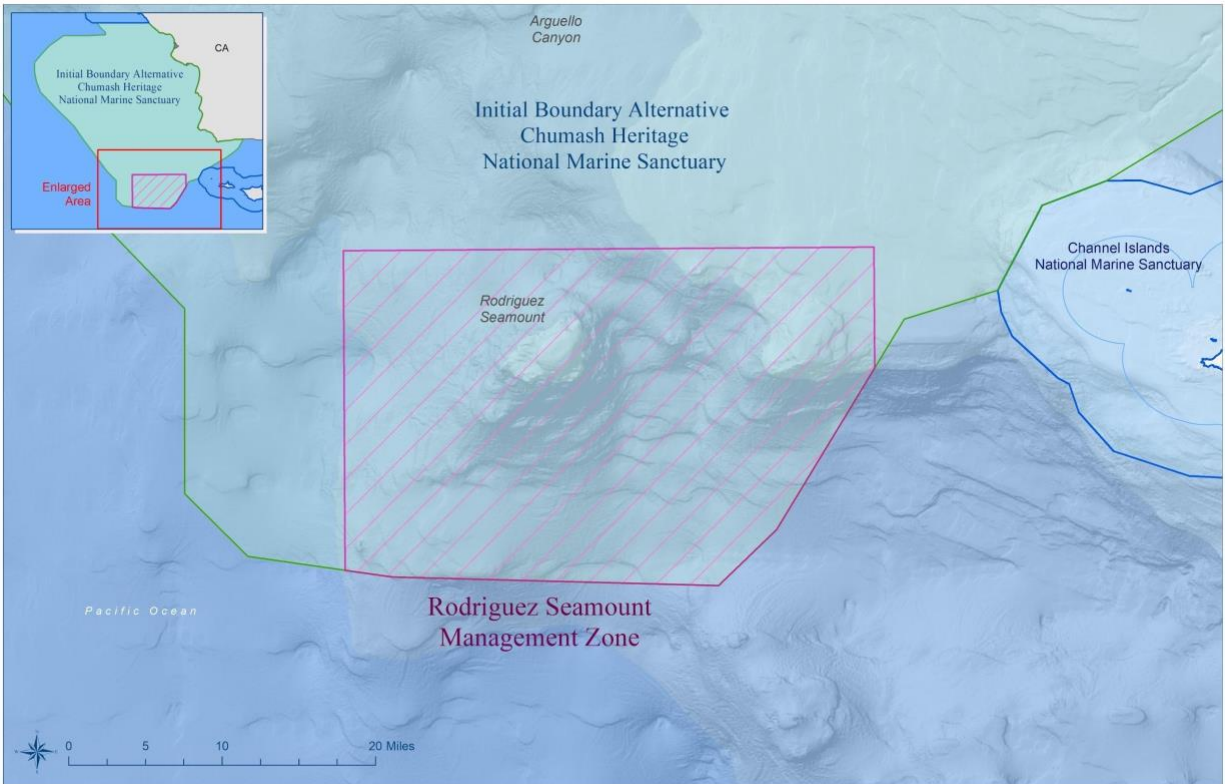


Figure 3-4. Rodriguez Seamount Management Zone. Image: NOAA

Terms of Designation

Section 304(a)(4) of the NMSA requires that the terms of designation for national marine sanctuaries include: (1) the geographic area included within the sanctuary; (2) the characteristics of the area that give it conservation, recreational, ecological, historical, research, educational, or aesthetic value; and (3) the types of activities subject to regulation by NOAA to protect those characteristics. The full text of the final terms of designation will be in the final rule.

The proposed final terms of designation establish the authorities to regulate and prohibit activities listed in more detail in Table 3-1, to the extent necessary and reasonable to ensure the protection and management of the area's conservation, ecological, recreational, research, educational, historical, and aesthetic resources and qualities.

Regulatory Changes Between Draft and Final EIS

NOAA made the following changes to the proposed final regulations compared to those presented in the draft EIS:

- The exception for the oil and gas prohibition is changed to clarify that leaseholders for offshore development have a right to develop any reservoir or formation pursuant to leases in effect on the date of final sanctuary designation (15 C.F.R. 922.232(a)(1)). NOAA had proposed in the draft EIS that the exception be limited to continued production from existing reservoirs in production at the time of final sanctuary

designation. Similar changes are necessary to the exceptions for the discharge prohibition (§ 922.232(a)(2)(i)(H)) and the submerged lands disturbance prohibition (§ 922.232(a)(3)(vi)). These changes reflect technical corrections and clarifications, based on discussions with the expert agency (Department of the Interior) that are consistent with the proposed rule and that reflect the intended scope of the proposed rule.

- NOAA has made a technical clarifying revision to 15 C.F.R. 922.232(a)(2)(iii) to more accurately describe the nature of exceptions to this regulation. This change is a minor conforming amendment consistent with the intent, purposes, and policies of the proposed rule.
- Because the Initial Boundary Alternative would include the waters off Morro Bay (but not the waters within the harbor), the definition for Beneficial Use of Dredged Material (§ 922.231) and § 922.232(f)(1)(iii) has been modified to indicate that Morro Bay, as well as Port San Luis, is a public harbor that could serve as a source of dredge material as a resource for permitted habitat protection or restoration purposes. NOAA is also including a new subsection of its regulations to denote the location of existing dredge material disposal sites off Morro Bay that would be excepted from the discharge prohibition under any boundary alternative that is adjacent to the harbors (§ 922.232(2)(i)(G)). This is a minor conforming change based on the boundary of the Initial Boundary Alternative and consistent with the scope and purpose of the proposed rule.
- In response to public comments and to implement technical corrections and clarifications consistent with the purposes and of the proposed rule, the process within CHNMS for certifications has been improved and clarified. These changes use “permits or rights” to apply consistently to “a valid Federal, State, or local lease, permit, license, approval, other authorization or right of subsistence use or access.” Another change removes the authority for the ONMS director to hold a hearing when considering a certification request. Amended language ensures consistency with NMSA § 304(c) by clarifying that the ONMS director may impose appropriate conditions on a valid permit or right in effect at the time of designation. NOAA is also streamlining what situations would allow it to re-open, revoke, or alter an approved certification. Lastly, NOAA is extending, from 90 days to 120 days, the time period after final sanctuary designation to request a certification (see § 922.232(g) and § 922.234).
- NOAA has added Section 922.235: Memoranda of Agreement with partner agencies, regarding (i) introduced species aquaculture projects and (ii) the Sunken Military Craft Act. This addition is a clarification of intended agency procedures on coordination and is not expected to lead to any new or different environmental impacts.

These regulatory changes constitute minor technical and procedural updates and conforming corrections, do not result in environmental impacts not previously considered, and do not constitute substantial changes relevant to environmental concerns (see subject-specific chapters for more discussion of the regulations pertaining to oil and gas, beneficial use, and certifications). As such, the regulatory changes do not require preparation of a supplemental EIS.

Table 3-1. Proposed final regulations for the Initial Boundary Alternative.

Regulation	Prohibited or Otherwise Regulated Activities
15 C.F.R. 922.232	(a) Except as specified in paragraphs (b) through (e) and paragraph (g) of this section, the following activities are prohibited and thus are unlawful for any person to conduct or to cause to be conducted:
Oil, Gas, Minerals	(1) Exploring for, developing, or producing oil, gas, or minerals within the Sanctuary, except for oil and gas production, which includes well abandonment, pursuant to existing leases or lease units in effect on the effective date of Sanctuary designation.
Discharges into the Sanctuary	(2)(i) Discharging or depositing from within or into the Sanctuary, other than from a cruise ship, any material or other matter, except:
	(A) Fish, fish parts, chumming materials, or bait used in or resulting from lawful fishing activities within the Sanctuary, provided that such discharge or deposit is during the conduct of lawful fishing activities within the Sanctuary; (B) For a vessel less than 300 gross registered tons (GRT), or a vessel 300 GRT or greater without sufficient holding tank capacity to hold sewage while within the Sanctuary, clean effluent generated incidental to vessel use by an operable Type I or II marine sanitation device (MSD) (U.S. Coast Guard (USCG) classification) approved in accordance with section 312 of the Federal Water Pollution Control Act, as amended (FWPCA), 33 U.S.C. 1322. Vessel operators must lock all MSDs in a manner that prevents discharge or deposit of untreated sewage; (C) Clean vessel deck wash down, clean vessel engine cooling water, clean vessel generator cooling water, clean bilge water, or anchor wash; (D) For a vessel less than 300 GRT, or a vessel 300 GRT or greater without sufficient holding capacity to hold graywater while within the Sanctuary, clean graywater as defined by section 312 of the FWPCA; (E) Vessel engine or generator exhaust; (F) Beyond 3 nautical miles from shore, sewage and non-clean graywater as defined by section 312 of the FWPCA generated incidental to vessel use by a USCG vessel without sufficient holding tank capacity and without a Type I or II MSD; and beyond 12 nautical miles from shore, ammunition, pyrotechnics or other materials directly related to training for search and rescue and live ammunition activities conducted by USCG vessels and aircraft; (G) Dredged material deposited at disposal sites within the Sanctuary authorized by the U.S. Environmental Protection Agency (USEPA) (in consultation with the USACE) prior to the effective date of Sanctuary designation; or (H) Discharges incidental and necessary to oil and gas production within or into reservoirs contained within existing leases or lease units in effect on the effective date of Sanctuary designation from Platform Irene or Platform Heritage, including well abandonment.
Cruise Ships	(ii) Discharging or depositing from within or into the Sanctuary any material or other matter from a cruise ship except clean vessel engine cooling water, clean vessel generator cooling water, vessel engine or generator exhaust, clean bilge water, or anchor wash.
Enter and Injure	(iii) Discharging or depositing from beyond the boundary of the Sanctuary any material or other matter that subsequently enters the Sanctuary and injures a Sanctuary resource or quality, except material or other matter listed as exceptions in paragraphs (a)(2)(i)(A) through (F) and (a)(2)(ii) of this section.

Regulation	Prohibited or Otherwise Regulated Activities
Seabed Disturbance	(3) Drilling into, dredging, or otherwise altering the submerged lands of the Sanctuary; or constructing, placing, or abandoning any structure, material, or other matter on or in the submerged lands of the Sanctuary, except as incidental and necessary to:
	(i) Conduct lawful fishing activities or lawful kelp harvesting; (ii) Anchor a vessel; (iii) Install or maintain an authorized navigational aid; (iv) Repair, replace or rehabilitate an existing dock, pier, breakwater, or jetty; (v) Conduct maintenance dredging of entrance channels for harbors in existence prior to the effective date of Sanctuary designation; or (vi) Drill, maintain, or abandon a well necessary for purposes related to oil and gas production pursuant to existing leases or lease units in effect on the effective date of Sanctuary designation from Platform Irene or Platform Heritage. The exceptions listed in paragraphs (a)(3)(ii) through (a)(3)(vi) of this section do not apply in the Rodriguez Seamount Management Zone, the boundary of which is defined in appendix B to this subpart.
Disturbing a Historical Resource	(4) Moving, removing, or injuring, or attempting to move, remove, or injure, a Sanctuary historical resource; or possessing or attempting to possess a Sanctuary historical resource, except as necessary for valid law enforcement purposes. This prohibition does not apply to, moving, removing, or injury resulting incidentally from lawful kelp harvesting or lawful fishing activities.
Take of Marine Mammal, Sea Turtle, or Bird	(5) Taking any marine mammal, sea turtle, or bird within or above the Sanctuary, except as authorized by the Marine Mammal Protection Act (MMPA), as amended, 16 U.S.C. 1361 <i>et seq.</i> , Endangered Species Act (ESA), as amended, 16 U.S.C. 1531 <i>et seq.</i> , Migratory Bird Treaty Act (MBTA), as amended, 16 U.S.C. 703 <i>et seq.</i> , or any regulation, as amended, promulgated under the MMPA, ESA, or MBTA.
Possession of Marine Mammal, Sea Turtle, or Bird	(6) Possessing within the Sanctuary (regardless of where taken, moved, or removed from), any marine mammal, sea turtle, or bird, except as authorized by the MMPA, ESA, MBTA, by any regulation, as amended, promulgated under the MMPA, ESA, or MBTA, or as necessary for valid law enforcement purposes.
Deserting a Vessel	(7) Deserting a vessel aground, at anchor, or adrift in the Sanctuary or leaving harmful matter aboard a grounded or deserted vessel in the Sanctuary.
White Shark Attraction	(8) Attracting any white shark within the Sanctuary.
Rodriguez Seamount	(9)(i) Moving, removing, taking, collecting, catching, harvesting, disturbing, breaking, cutting, or otherwise injuring, or attempting to move, remove, take, collect, catch, harvest, disturb, break, cut, or otherwise injure, any Sanctuary resource located more than 1,500 ft. below the sea surface within the Rodriguez Seamount Management Zone, as defined in appendix B to this subpart. This prohibition does not apply to lawful fishing, which is regulated pursuant to 50 C.F.R. part 660 (Fisheries off West Coast States).

Regulation	Prohibited or Otherwise Regulated Activities
	(ii) Possessing any Sanctuary resource, the source of which is more than 1,500 ft. below the sea surface within the Rodriguez Seamount Management Zone, except as necessary for valid law enforcement purposes. This prohibition does not apply to possession of fish resulting from lawful fishing, which is regulated pursuant to 50 C.F.R. part 660 (Fisheries off West Coast States).
Introduced Species	(10) Introducing or otherwise releasing from within or into the Sanctuary an introduced species, except striped bass (<i>Morone saxatilis</i>) released during catch and release fishing activity.
Interfering with an Investigation	(11) Interfering with, obstructing, delaying, or preventing an investigation, search, seizure, or disposition of seized property in connection with enforcement of the Act or any regulation or permit issued under the Act.

	Permits and Other Exemptions
Emergency Exemption	(b) The prohibitions in paragraphs (a)(2) through (7) and (a)(9) of this section do not apply to an activity necessary to respond to an emergency threatening life, property, or the environment.
Department of Defense	(c)(1) The prohibitions in paragraphs (a)(2) through (7) and (a)(9) and (10) of this section do not apply to existing activities carried out or approved by the DoD, that were conducted prior to the effective date of this designation, as specifically identified in Section 4.9 or Appendix I to the final EIS for CHNMS (for availability, see webpage). New activities may be exempted from the prohibitions in paragraphs (a)(2) through (7) and (a)(9) and (10) of this section by the Director after consultation between the Director and the DoD. All DoD activities must be carried out in a manner that avoids to the maximum extent practicable any adverse impacts on Sanctuary resources and qualities.
... in the event of harm	(2) In the event of threatened or actual destruction of, loss of, or injury to a Sanctuary resource or quality resulting from an untoward incident, including but not limited to spills and groundings caused by the DoD, the DoD shall promptly coordinate with the Director for the purpose of taking appropriate actions to respond to and mitigate the harm and, if practicable, restore or replace the Sanctuary resource or quality.
Sanctuary General Permit	(d) The prohibitions in paragraphs (a)(2) through (9) of this section do not apply to any activity conducted under and in accordance with the scope, purpose, terms, and conditions of a National Marine Sanctuary general permit issued pursuant to subpart D of this part and 922.233, or a special use permit issued pursuant to subpart D of this part.

	Permits and Other Exemptions
ONMS Authorizations	(e) The prohibitions in paragraphs (a)(2) through (a)(9) of this section, and (a)(10) of this section regarding any introduced species of shellfish that NOAA and the state of California have determined is non-invasive and will not cause significant adverse effects to Sanctuary resources or qualities, and that is cultivated in State waters as part of commercial shellfish aquaculture activities, do not apply to any activity authorized by any lease, permit, license, approval, or other authorization issued after the effective date of Sanctuary designation and issued by any Federal, State, or local authority of competent jurisdiction, provided that the applicant complies with 15 C.F.R. 922.36, the Director notifies the applicant and authorizing agency that the Director does not object to issuance of the authorization, and the applicant complies with any terms and conditions the Director deems necessary to protect Sanctuary resources and qualities. Amendments, renewals, and extensions of authorizations in existence on the effective date of designation constitute authorizations issued after the effective date of Sanctuary designation.
Limitations on Issuing Permits	(f) Notwithstanding paragraphs (d) and (e) of this section, in no event may the Director issue a National Marine Sanctuary general permit under subpart D of this part and 922.233, or an ONMS authorization or special use permit under subpart D of this part, authorizing, or otherwise approve: (1) the exploration for, development, or production of oil, gas, or minerals within the Sanctuary; (2) the discharge of untreated or primary-treated sewage within the Sanctuary (except by certification, pursuant to 15 C.F.R. 922.10 and 922.234, of valid authorizations in existence prior to the effective date of designation and issued by other authorities of competent jurisdiction); or (3) the disposal of dredged material within the Sanctuary other than at sites authorized by the USEPA prior to the effective date of designation. For the purposes of this subpart, the disposal of dredged material does not include the beneficial use of dredged material, as defined at 15 C.F.R. 922.231, related to dredging activity at Morro Bay or Port San Luis. Any purported authorizations issued by other authorities within the Sanctuary shall be invalid.
Certifications	(g) A person may conduct an activity prohibited by § 922.232 (a)(2) through (10) within the Sanctuary if such activity is specifically authorized by a valid Federal, State, or local lease, permit, license, approval, other authorization or right of subsistence use or of access that is in existence on the effective date of Sanctuary designation and within the sanctuary designated area, and complies with § 922.10, provided that the holder of the lease, permit, license, approval, other authorization or right of subsistence use or of access complies with the certification procedures for CHNMS as outlined in § 922.234.

Regulation	Permit and Certification Procedures
Process for sanctuary general permit (15 C.F.R. 922.233)	(a) A person may conduct an activity prohibited by § 922.232(a)(2) through (9), if such activity is specifically authorized by, and conducted in accordance with the scope, purpose, terms, and conditions of, a sanctuary general permit issued under this section and subpart D of this part.
	(b) Applications for permits should be addressed to the West Coast Regional Office, Office of National Marine Sanctuaries; ATTN: Superintendent, Chumash Heritage National Marine Sanctuary, 99 Pacific Street, Suite 100F, Monterey, CA 93940.
Process for certification (15 C.F.R. 922.234)	(a) To obtain a certification of an activity that is specifically authorized by a valid Federal, State, or local lease, permit, license, approval, other authorization or right of subsistence use or access (hereafter in this subsection “permit or right”) in existence on the effective date of Sanctuary designation and within the sanctuary designated area, pursuant to § 922.10 and § 922.232(g), the holder of such permit or right shall: (1) Notify the Director, in writing, within 120 days of the effective date of Sanctuary designation of the existence and location of such permit or right and request certification of such permit or right; and (2) Comply with any terms and conditions on the exercise of such permit or right imposed as a condition of certification, by the Director, to achieve the purposes for which the Sanctuary was designated. (3) Address any requests for certifications to West Coast Regional Office, Office of National Marine Sanctuaries; ATTN: Superintendent, Chumash Heritage National Marine Sanctuary, 99 Pacific Street, Suite 100F, Monterey, CA 93940, or send by electronic means as defined in the instructions for the ONMS permit application. A copy of the permit or right must accompany the request. (b) A holder requesting certification of a permit or right described in paragraph 922.232(g) may continue to conduct the activity without being in violation of Sanctuary prohibitions pending the Director’s review of and decision regarding the holder’s certification request, provided the holder is otherwise in compliance with this section. (c) The Director may request additional information from the holder requesting certification as the Director deems reasonably necessary to condition appropriately the exercise of the certified permit or right to achieve the purposes for which the sanctuary was designated. The Director must receive the information requested within 45 days of the date of the Director’s request for information. Failure to provide the requested information within this time frame may be grounds for denial by the Director of the certification request. (d) In considering whether to impose appropriate conditions when issuing a certification, the Director may seek and consider the views of any other person or entity. (e) Upon completion of review of the permit or right and information received with respect thereto, the Director shall communicate, in writing, any decision to impose appropriate conditions on a certification request or any action taken with respect to any certification made under this section, in writing, to both the holder of the certified permit or right, and the issuing agency, and shall set forth the reason(s) for the decision or action taken. (f) The Director may amend, suspend, or revoke any certification issued under this section whenever continued operation would otherwise be inconsistent with any terms or conditions of the certification, or whenever the underlying permit or right

Regulation	Permit and Certification Procedures
	on which the certification was issued has been amended, suspended or revoked.. Any such action shall be forwarded in writing to both the certification holder and the agency that issued the underlying permit or right, and shall set forth reason(s) for the action taken. (g) The holder may appeal any action conditioning a certification, or after issuance of a certification amending, suspending, or revoking any certification, in accordance with the procedures set forth in § 922.37. (h) Any time limit prescribed in or established under this section may be extended by the Director for good cause. (i) It is unlawful for any person to violate any terms and conditions in a certification issued under this section.
Memoranda of Agreement with partner agencies (922.235)	(a) Introduced species aquaculture projects (1) NOAA would describe in an MOA with the state of California how NOAA will coordinate review of any proposed introduction of non-invasive introduced species from a proposed commercial shellfish aquaculture activity in State waters when considering an authorization under § 922.232(e). (2) The MOA would specify how the process of § 922.36 in subpart D will be administered within State waters within the sanctuary in coordination with State permit and lease programs as administered by the California Fish and Game Commission, the Department of Fish and Wildlife (CDFW) and the California Coastal Commission (CCC). (b) Sunken military craft are administered by the respective Secretary concerned pursuant to the Sunken Military Craft Act. The Director will enter into an MOA regarding collaboration with other federal agencies charged with implementing the Sunken Military Craft Act that may address aspects of managing and protecting sunken military craft. The Director will request approval from the Secretary concerned for any terms and conditions of ONMS authorizations that may involve sunken military craft.

3.2.3 Management Plan and Field Activities (Initial Boundary Alternative)

Under the Initial Boundary Alternative, NOAA would implement a sanctuary management plan that describes the goals, strategies, and activities intended to help conserve and protect the resources in the proposed sanctuary. NOAA developed the draft management plan to apply to the Initial Boundary Alternative and received public comments on it during public review of the designation materials. NOAA prepared a final management plan with changes and adjustments that are based on public comments and on NOAA's Final Preferred Alternative. The final management plan is published as a separate document to the final EIS.

The summaries for each action plan below include a brief description of how the action plan changed between draft and final. Nearly all action plans have had additional potential partners noted. For the Initial Boundary Alternative and in Section 3.3 through Section 3.8, NOAA

explains how strategies and activities in the management plan would differ under each alternative.

These action plan modifications largely constitute clarifications to the action plans outlined in the draft management plan, do not lead to environmental impacts not previously considered, and do not constitute substantial changes relevant to environmental concerns addressed in Chapter 4 (see subject-specific sections of Chapter 4 for more information). As such, the management plan changes do not require preparation of a supplemental EIS.

Action Plans

The final management plan consists of the following action plans:

- Indigenous Cultural Heritage
- Climate Change
- Maritime Heritage
- Offshore Energy
- Water Quality
- Blue Economy
- Wildlife Disturbance
- Boundary Adjustment
- Education and Outreach
- Resource Protection
- Research and Monitoring
- Operations and Administration

As summarized below, most action plans include activities that would either have no environmental impacts or would have only beneficial effects on the environment. Any anticipated environmental impacts of the final management plan's action plans are discussed below in Chapter 4. Most of the activities involve research, education, collaboration, and public outreach. Some activities may require research or monitoring surveys conducted by vessels.

An introductory section provides background information on the sanctuary and a description of a collaborative co-stewardship framework for Indigenous engagement and participation in sanctuary management.

Framework for Indigenous Collaborative Co-Stewardship

A key intent of the proposed sanctuary is to invite and support meaningful Indigenous community participation in the care and stewardship of maritime cultural heritage through sanctuary protections and programs. The introduction of the management plan describes an Indigenous Collaborative Co-Stewardship Framework containing organizational elements and opportunities that would support participation of the Santa Ynez Band of Chumash Indians and

local Tribes and Indigenous groups,¹⁹ including individuals and communities with knowledge of Indigenous culture, history, and environment. In the draft management plan, these opportunities were shown and described as a series of interconnected elements, including: (1) sanctuary management by NOAA pursuant to its federal agency responsibilities; (2) required government-to-government Tribal consultation with the Santa Ynez Band of Chumash Indians; (3) an Intergovernmental Policy Council; (4) the Sanctuary Advisory Council; (5) an Indigenous Cultures Advisory Panel; and (6) a nonprofit foundation (or foundations). In the final management plan, NOAA made the following important changes to this Framework in response to a variety of comments and suggestions received (as detailed in the Indigenous Collaborative Co-Stewardship Framework section):

- Clarified description of NOAA’s intent for the proposed Indigenous Cultures Advisory Panel.
- Use of the term “collaborative co-stewardship” rather than “collaborative management” to more accurately describe the nature of the arrangement, and to align with terminology used in the Joint Secretarial Order on *Fulfilling the Trust Responsibility to Indian Tribes in the Stewardship of Federal Lands and Waters*, signed by the Secretary of Commerce in 2022. This document is available [online](#).
- Explanation of the opportunity for non-federally recognized Tribes, as potentially interested parties, to consult with NOAA under Section 106 of the National Historic Preservation Act (NHPA).
- Clarification of NOAA’s intent to take an inclusive approach to working with all types of local stakeholders and groups, residents, the Santa Ynez Band of Chumash Indians, and local Tribes and Indigenous groups.
- Clarification that NOAA does not have the authority to adjudicate claims of authenticity or disputes between groups with claims of Tribal ancestry.

Indigenous Cultural Heritage Action Plan

The purpose of this action plan is to work in partnership with Indigenous communities along the California central coast to honor, celebrate, and protect the unique Indigenous cultural heritage and resources connected to the proposed sanctuary. Priorities focus on understanding and protecting cultural resources within the proposed sanctuary, appropriately applying Indigenous Knowledge, giving prominence to local Indigenous culture through sanctuary programs, and carrying out cultural outreach and education opportunities to serve Indigenous communities and the general public.

Compared to the draft management plan, this action plan has been revised to reflect the work needed to understand, refine, adopt, and implement the proposed organizational Framework for Indigenous engagement and collaboration, including developing necessary agreements, policies,

¹⁹ This final EIS uses “Tribes and Indigenous communities” and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms “federally recognized Tribe(s)” or “federally recognized Tribal Nation(s).” As such, use of the term “Tribe” or “Tribal” is not intended to refer only to federally recognized Tribes unless otherwise specified.

and procedures to support implementation of the Framework described in the introduction of the plan.

Climate Change Action Plan

The purpose of the Climate Change Action Plan is to protect and enhance ecosystem function and resilience from climate change through five strategies that include: climate research and monitoring, assessment and adaptation, mitigation actions, education and outreach, and community partnerships. Through climate mitigation measures, ONMS would investigate the application of blue carbon habitat protection and enhancement and marine carbon dioxide removal approaches.

Compared to the draft management plan, this action plan has been changed in Activity CC-1.4 to prioritize nature-based solutions, incorporate Indigenous Knowledge, reflect and detail inclusive community engagement, and provide for appropriate Tribal collaboration and consultation.

Maritime Heritage Action Plan

The Maritime Heritage Action Plan's goal is to identify, protect, and raise awareness of the proposed sanctuary's maritime, historical, and archaeological resources and to collaborate with community partners engaged in maritime traditions, Indigenous Knowledge, and protection of sanctuary waters. Prior to the sanctuary designation proposal, ONMS had already carried out many successful missions to understand and conserve the maritime heritage in the study area, but the long history of maritime activity in the area indicates more could be done with a sanctuary designation.

Compared to the draft management plan, one change was made to expand Activity MH-1.3 to include documentation of environmental change around known shipwrecks that could lead to pollution. Returning to the *Pacbaroness* shipwreck site has been included.

Offshore Energy Action Plan

This action plan's goal is to aid long-term management of proposed sanctuary resources, ecosystem services, and cultural heritage by informing the management of offshore energy activities occurring in or adjacent to the proposed sanctuary, conducting necessary research and monitoring, and coordinating with other agencies and affected stakeholders. Moreover, this action plan would support coordinated planning and monitoring of offshore energy activities occurring, and anticipated to occur, within the broader region. Effectively implementing this action plan would require active participation in federal, state, and local agencies' regulatory actions. The action plan itself would not govern offshore energy activities but may inform future regulatory actions.

Several changes to this action plan have been made between the draft and final. First, a new Strategy OE-3 has been added regarding improving, clarifying, and communicating the sanctuary's permit process for submarine cables (Activity OE-3.1) and for decommissioning and removal of offshore facilities in the sanctuary (Activity OE-3.2). Also, a new activity, Activity OE-4.4, calls for a collaborative process to consider the many existing and proposed uses of the sanctuary seafloor for submarine fiber optic cables, subsea electrical transmission cables, and other uses, to consider routing, mitigation, and project design approaches to wisely ensure space

for all users. The initiative will work through the Sanctuary Advisory Council to bring together Tribes and Indigenous groups; local, state, and federal agency leaders; and industry representatives from the telecommunications and offshore wind energy companies, as well as other affected users.

Water Quality Action Plan

This action plan's goal is to promote stewardship of water quality while accommodating many diverse uses. Examples of key strategies and activities include improving understanding of water quality conditions in adjoining watersheds that drain to the proposed sanctuary; coordinating with other federal, state, and local agencies, the Santa Ynez Band of Chumash Indians, local Tribes and Indigenous groups, businesses, and interest groups; and collaborating on solution-focused watershed activities across the diverse landscapes of the proposed sanctuary.

Compared to the draft management plan, this action plan now clarifies that one of the sanctuary's first steps will be to complete a watershed-level assessment of conditions, flows, and threats from onshore flows (Activity WQ-1.2). Also, more detail is provided in Activity WQ-2.3 about examples of actions from other agencies that the new sanctuary may want to comment on, for the purpose of enhancing water quality in the sanctuary. NOAA has also added a commitment to participate in statewide desalination planning (Activity WQ-2.7), and develop dredged material beneficial use permitting guidelines for the new sanctuary based on MBNMS' guidelines (Activity WQ-2.8). A suggestion has been added to Activity WQ-5.1 regarding reducing marine debris that may enter the sanctuary from onshore sources.

Blue Economy Action Plan

The Blue Economy Action Plan primarily focuses on tourism and recreation. The sustainable tourism and recreation strategies and visitor use addressed in this plan are aimed to support a viable economy, while protecting sanctuary resources and supporting the broader community. The action plan envisions promoting the proposed sanctuary as an iconic travel destination and cultivating a generation of visitors with a strong ocean stewardship ethic. This action plan also includes support for advancing the marine technology sector in the region. Sanctuaries as place-based organizations, are uniquely positioned to use a destination stewardship approach to work collaboratively with communities to promote sustainable tourism and contribute to local economies, while also protecting sensitive marine wildlife and habitats. Sanctuaries are managed to protect and conserve their resources and to allow uses that are compatible with resource protection.

The final management plan contains two new activities in the Blue Economy Action Plan, Activity BE-2.5 and Activity BE-3.4. Activity BE-2.5 articulates a need to collaborate with the recreational fishing community to improve understanding of the sanctuary and explore ways to promote responsible recreational fishing and stewardship opportunities. Activity BE-3.4 calls for work with local, state, and federal agencies, the telecommunications industry, and offshore wind industry to investigate and document industry's economic value and contribution to the local blue economy and use this information to develop programs that support the sanctuary mission and inform its management plan implementation.

Wildlife Disturbance Action Plan

This action plan's purpose is to assess and mitigate wildlife disturbance within proposed sanctuary boundaries. Example strategies in the action plan include evaluating wildlife disturbance by visitors and recreational users; evaluating aircraft disturbance; and establishing partner relationships with law enforcement agencies to ensure effective means to protect wildlife.

No substantive changes have been made to the Wildlife Disturbance Action Plan between draft and final.

Boundary Adjustment Action Plan

Between draft and final, NOAA has added a new Boundary Adjustment Action Plan, the goal of which is to consider, analyze, and support future decision-making on expanding the sanctuary boundary. This action plan calls for NOAA to initiate, no later than January 2032, a process that NOAA refers to as "Phase 2," which calls to consider providing sanctuary protection for the resources beyond the initial sanctuary boundaries, should NOAA establish CHNMS. For the Initial Boundary Alternative, this would involve consideration of the waters of the Morro Bay Estuary and the Gaviota Coast adjacent to the sanctuary (note that for other alternatives, as described in this chapter, the Boundary Adjustment Action Plan will consider different outlying areas for possible sanctuary inclusion). Soon after sanctuary designation, NOAA intends to commence various assessments necessary to inform agency decision-making with regard to potentially initiating a boundary adjustment process by January 2032. Importantly, implementation of this action plan would not in and of itself result in an expansion of the sanctuary boundaries, but rather would set the stage for NOAA to gather information to ultimately decide if pursuing such a change is warranted.

Education and Outreach Action Plan

The Education and Outreach Action Plan's purpose is to promote and encourage appreciation of cultural and natural resources of the proposed sanctuary by building greater public understanding, engagement, and stewardship. The action plan seeks to inspire ocean and climate literacy and conservation ethics through collaboration with community partners and programs. Similar to other national marine sanctuaries, this action plan shows how establishing durable and flourishing partnerships would be a key to the success of proposed CHNMS education and outreach initiatives.

NOAA has made two changes between draft and final to the Education and Outreach Action Plan. Activity EO-2.3 now specifically calls for a social media plan to reach diverse audiences directly and through partners. Activity EO-3.1 has been added to invite input from Tribes and Indigenous groups on core programs and messaging on conservation of coastal ecosystems and cultural and historical resources.

Resource Protection Action Plan

This action plan's goal is to maintain and improve the proposed sanctuary's natural biological and ecological processes and maritime and cultural resources by evaluating and addressing adverse impacts from human activities and applying Indigenous Knowledge and perspectives. Like with other national marine sanctuaries, a considerable amount of interagency coordination

and cooperation, as well as partnerships, would be necessary to help ensure conservation of proposed sanctuary resources.

Between draft and final, the Resource Protection Action Plan has been revised to include a provision in Activity RP-6.3 that if ONMS determines that NOAA voluntary vessel speed reduction programs are insufficient at protecting whales from vessel strikes, ONMS will evaluate the need for and scope of a regulatory restriction on vessel speed, vessel routing, or other non-voluntary measures. An entire strategy, Strategy RP-7 (Consider expanded conservation in Morro Bay Estuary), has been removed from the Resource Protection Action Plan in the final management plan and has been integrated into the Boundary Adjustment Action Plan.

Research and Monitoring Action Plan

This action plan's goal is to ensure the best available science is accessible to address current and projected sanctuary and resource management needs. Strategies would include the national marine sanctuary science team carrying out research, as well as developing partnerships to help mobilize the research capacity already in the region. The action plan also provides some examples of needed research and long-term monitoring known at this time, and the kinds of infrastructure that would help achieve long-term management goals.

There are no substantive changes between the draft and final management plan.

Operations and Administration Action Plan

This action plan's purpose is to create sanctuary infrastructure, staffing, advisory groups, and program support to ensure the management plan is effectively implemented. Strategies include developing a "NOAA presence" within sanctuary communities that support the proposed sanctuary's mission; establishing a Sanctuary Advisory Council; developing infrastructure to aid management such as vessels, offices, and related facilities, or partnerships to help bring that infrastructure to life; and developing sanctuary volunteer program(s) for key priorities.

Changes in the Operations and Administration Action Plan between draft and final include: Strategy OA-2 was added, focusing on the establishment and support of a Indigenous Community Advisory Panel; Activity OA-4.1 now indicates the importance of hiring critical staff at the time of or soon after sanctuary designation is finalized; and Activity OA-4.2 emphasizes the importance of establishing a paid internship program to provide support to core sanctuary programs.

Field Activities Common to Initial Boundary Alternative and All Action Alternatives

As part of NOAA's management responsibilities for the proposed CHNMS, NOAA would conduct routine field activities in proposed sanctuary waters and in vessel transit routes to the proposed sanctuary. Field activities aim to further resource protection goals, promote stewardship among local stakeholders, and educate the public and research community on the proposed sanctuary. The typical activities to be conducted include operating sanctuary vessels, scuba operations, deploying equipment on the seafloor, and deploying remotely operated vehicles (ROVs) and other uncrewed systems. Deployment of equipment on the seafloor includes the deployment and maintenance of mooring buoy systems. NOAA expects the type and

intensity of activities that would be conducted would be the same under the Initial Boundary Alternative and all action alternatives; however, a different, perhaps larger, or smaller, area may be subject to these activities under each action alternative.

Mitigation Measures for Field Activities

NOAA would conduct all field activities in accordance with ONMS best management practices (see Appendix C) and standing orders to minimize impacts on proposed sanctuary resources, including living marine resources, seafloor habitat, and cultural and historical resources. NOAA would comply with all NOAA Small Boat Program guidelines (NOAA Administrative Order 209-125) and any applicable laws regarding interactions with protected species and habitats. All research on marine mammals would be conducted in accordance with permits issued by NOAA's National Marine Fisheries Service (NOAA Fisheries).

3.3 Alternative 1 – Bank to Coast

This section describes the components of Alternative 1, “Bank to Coast,” which includes a smaller boundary than the Initial Boundary Alternative. The boundary includes adjustments in response to scoping comments. The regulations and management plan would be the same as described in the Initial Boundary Alternative.

The primary difference between Alternative 1 and the Initial Boundary Alternative is that the western boundary line would be moved eastward in response to scoping comments that the proposed sanctuary size is unnecessarily large for purposes of sanctuary resource protection or the ecosystem elements that are nationally significant, and strays from the original intent and purpose of the sanctuary to concentrate on ecosystem features that have been historically important to Tribes and Indigenous communities. NMSA Section 303(b)(1)(F) states that one of the factors that shall be considered in determining whether a sanctuary meets the standards for designation is “the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities.”

Under Alternative 1, the western-most and deepest portions of the escarpment and abyssal plain west of Santa Lucia Bank would be excluded from the proposed sanctuary, but Rodriguez Seamount and Arguello Canyon would be included. This smaller boundary could allow ONMS to focus protection on the most productive and nationally significant areas from Santa Lucia Bank east to the coast. The boundary area would still cover the physical features and important resources identified in the purpose and need statement (see Chapter 2).

3.3.1 Proposed Boundary (Alternative 1)

Under Alternative 1, Bank to Coast, the proposed sanctuary boundary would be the same as the Initial Boundary Alternative in both the north and south. The western boundary would shift to the east to roughly the escarpment at the edge of Santa Lucia Bank (see Figure 3-5), reducing the size of the proposed sanctuary by about 1,500 square miles (see Table 3-2). The southern portions of this alternative would still include Santa Lucia Bank, much of Arguello Canyon, and Rodriguez Seamount. The approximate size would be 6,098 square miles and 152 miles of coastline.

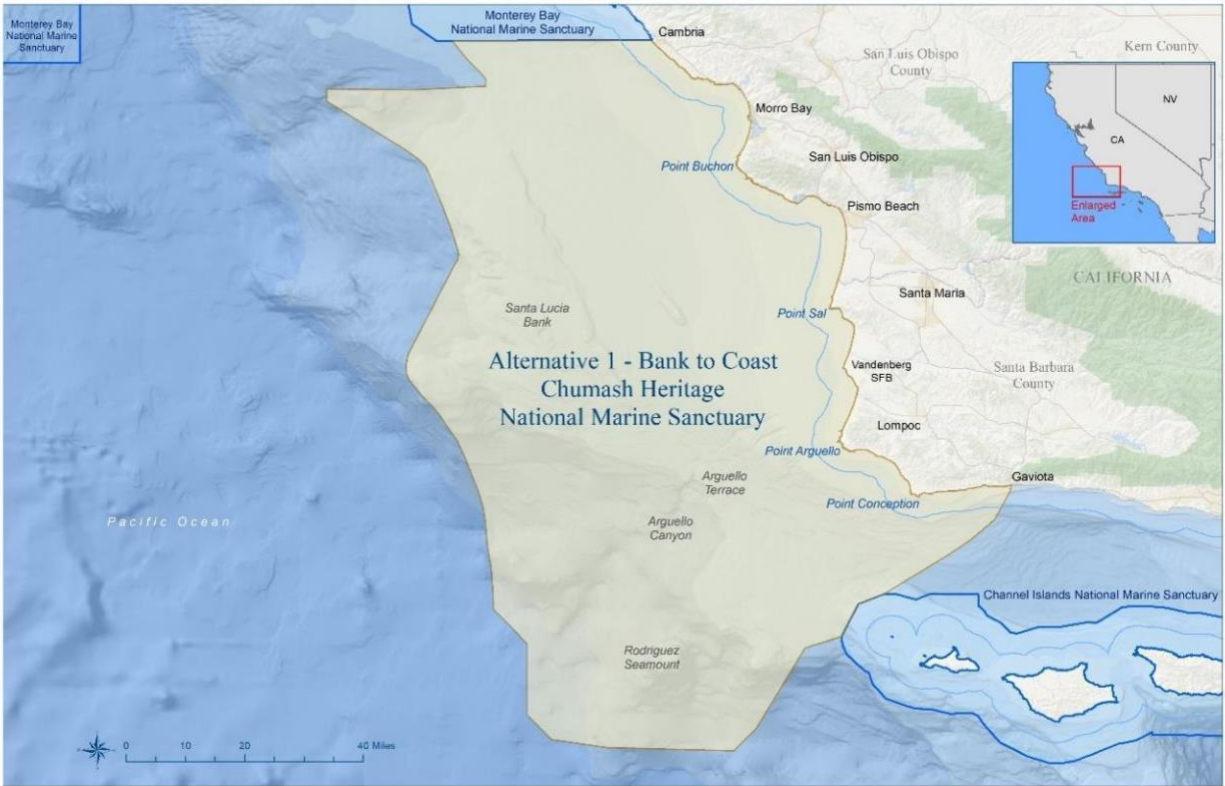


Figure 3-5. Boundary for Alternative 1, Bank to Coast. Image: NOAA

3.3.2 Proposed Final Regulations (Alternative 1)

The proposed final regulations under Alternative 1 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.2).

3.3.3 Proposed Management Plan and Field Activities (Alternative 1)

In general, the action plans and field activities under Alternative 1 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.3). NOAA's level of effort could be reduced for management plan activities that concentrated on areas west of the Santa Lucia Bank outside of the sanctuary in this alternative. However, with this alternative NOAA would add an additional strategy to the Boundary Adjustment Action Plan to evaluate those same offshore waters for potential sanctuary inclusion in the future.

3.4 Alternative 2 – Cropped Bank to Coast

This section describes the components of Alternative 2, “Cropped Bank to Coast,” which includes a smaller boundary than the Initial Boundary Alternative. It is similar to Alternative 1 except that it excludes the northern part of Alternative 1; its northern boundary along the coast originates at Hazard Canyon Reef. The boundary includes adjustments in response to scoping comments, cooperating agency comments, and comments from the Santa Ynez Band of Chumash Indians through government-to-government consultation, as well as input received

from other Tribal groups. The regulations and management plan would have modifications to remove certain regulations and strategies in the Initial Boundary Alternative, as noted below.

Alternative 2 incorporates elements of Alternative 1 by moving the western boundary line eastward in response to scoping comments as explained for Alternative 1. Alternative 2 also incorporates portions of the objectives described for Alternative 3 below, in that it would exclude from sanctuary designation an area from Cambria to the northern portion of Montaña de Oro State Park. One assumption for Alternative 2 that was used in the draft EIS analysis was that subsea electrical transmission cables from the Morro Bay lease areas in the Morro Bay Wind Energy Area could be designed and built in this area from offshore lease areas to the most likely landfall at or near Morro Bay Harbor and the grid connections north of the harbor without going through the sanctuary and requiring an ONMS authorization. However, comments received on the draft designation materials questioned how effective this alternative would be at avoiding impacts on future cable infrastructure. Offshore wind energy development companies believe they will need to route about half of the subsea electrical transmission cables from the Morro Bay lease areas in the Morro Bay Wind Energy Area to the DCPD grid connection, thus requiring cables to pass through the sanctuary, under this alternative. Also, the distance required between cables (three times the water depth) would require placement of cables outside of this alternative's exclusion zone and likely inside the sanctuary.²⁰

Alternative 2 would exclude some portions of existing submarine fiber optic cables and a large portion of at least one new cable proposed by the telecommunication industry.

This alternative removes all or portions of two state MPAs from the boundary of the proposed sanctuary: Cambria State Marine Conservation Area (SMCA), and White Rock SMCA. In addition, this alternative excludes Morro Bay Harbor dredge disposal sites, which was requested during scoping by the city of Morro Bay.

3.4.1 Proposed Boundary (Alternative 2)

Under Alternative 2, Cropped Bank to Coast, the sanctuary boundary would begin along the coast at Hazard Canyon Reef in the northern portion of Montaña de Oro State Park and would follow the mean high water line as in the Initial Boundary Alternative and Alternative 1 south to Gaviota Creek. The offshore boundary from Gaviota Creek, to the southwest around CINMS and Rodriguez Seamount and then to the north would mirror that of Alternative 1 except that as the offshore boundary approaches the Morro Bay Wind Energy Area, the boundary for Alternative 2 would transit due east-west approximately 2.5 miles to the south of the boundary for the Initial Boundary Alternative. This would form a corridor of non-sanctuary waters between this alternative and the Morro Bay lease areas. At approximately 38 miles to the west of Morro Rock, the boundary would shift to the southeast returning to the point of origin at Hazard Canyon Reef (see Figure 3-6). The exclusion of this northern area from the proposed sanctuary would mean offshore wind developers could pursue easements from the Morro Bay lease areas to shore from Bureau of Ocean Energy Management (BOEM) as part of their construction and operations plan

²⁰ See Section 4.7.5 for a discussion of why this information received from offshore wind development companies during public comment does not alter NOAA's impact conclusion with respect to impacts of the proposed designation of Alternative 2 on offshore wind development in federal waters.

for subsea electrical transmission cables, rather than seek ONMS authorizations from NOAA (as would be required in the Initial Boundary Alternative and Alternative 1). The potential easements would be subject to review under the Outer Continental Shelf Lands Act (OCSLA), NEPA, and other applicable federal and state environmental statutes and consultations prior to their potential approval. Excluding the coastal waters and offshore portions west of the Santa Lucia Bank would reduce the size of the proposed sanctuary by about 2,000 square miles (see Table 3-2) compared to the Initial Boundary Alternative, and by 545 square miles compared to Alternative 1. The southern portion of this alternative would still include Santa Lucia Bank, Arguello Canyon, and Rodriguez Seamount. The approximate size of Alternative 2 would be 5,553 square miles and 115 miles of coastline (144 miles of shoreline if the offshore rocks and islands are included).

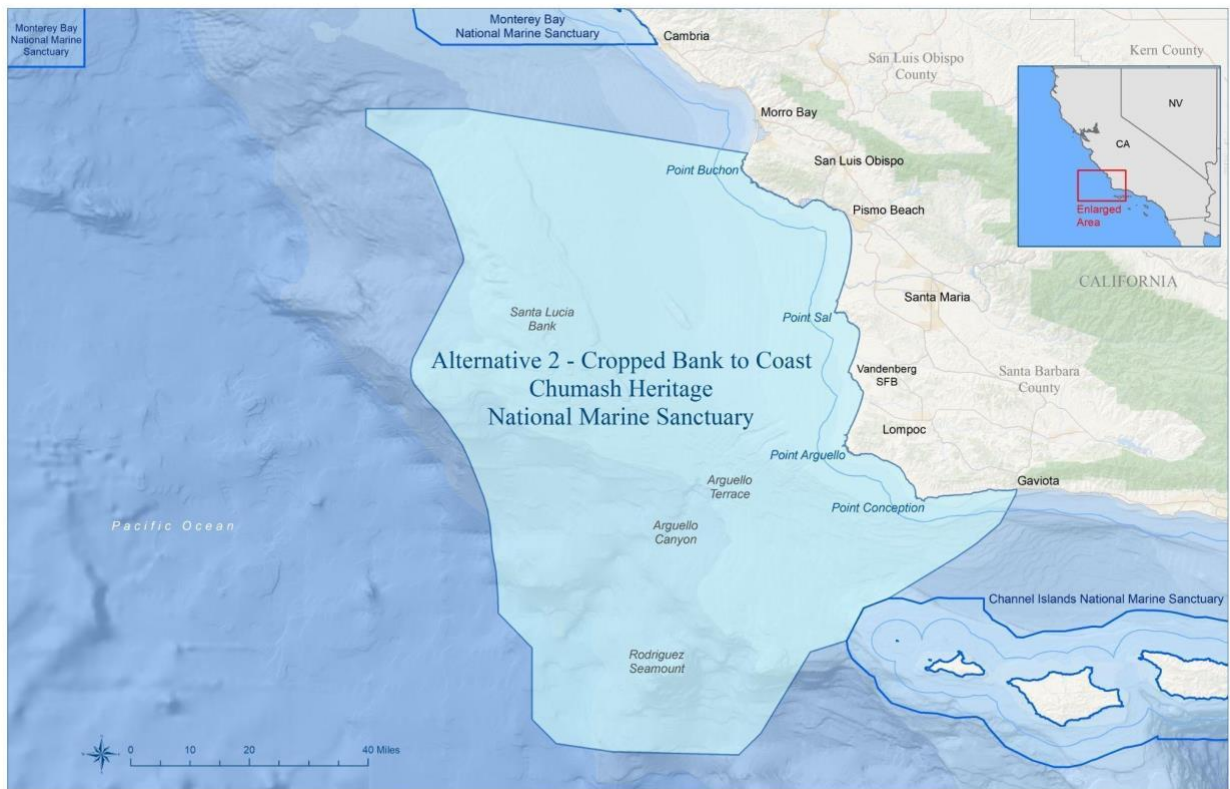


Figure 3-6. Boundary for Alternative 2, Cropped Bank to Coast. Image: NOAA

3.4.2 Proposed Final Regulations (Alternative 2)

The regulations under Alternative 2, Cropped Bank to Coast, would be the same as those described for the Initial Boundary Alternative (see Section 3.2.2) except that there would be no need to exempt or certify existing dredge disposal sites near Morro Bay Harbor, or include the harbor in the definition for public ports eligible for beneficial use of dredge material, because those sites and the harbor would not be located in or adjacent to CHNMS under this alternative. The reference to “Morro Bay” in 15 C.F.R. 922.232(f) would also be stricken.

3.4.3 Proposed Management Plan and Field Activities (Alternative 2)

In general, the action plans and field activities under Alternative 2 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.3). This alternative eliminates waters to the west and north from the Initial Boundary Alternative; therefore, NOAA's level of effort could be reduced for management plan activities that would occur in these waters, such as research, monitoring, and education and outreach. However, with this alternative, NOAA would add strategies to the Boundary Adjustment Action Plan to evaluate those western and northern waters for potential sanctuary inclusion in the future, as well as an associated sanctuary name change if needed.

3.5 Alternative 3 – *Diablo to Gaviota Creek*

This section describes the components of Alternative 3, “Diablo to Gaviota Creek,” which includes a proposed boundary encompassing a smaller area than the Initial Boundary Alternative. BOEM, as a cooperating agency, requested this alternative for the EIS, and it also responds to some offshore wind industry comments and offshore energy development goals adopted by the state of California and the federal government. The California Energy Commission has adopted targets for offshore wind power by 2030, escalating to higher levels by 2045. Additionally, the state has released a report identifying technically feasible production of 21.8–25 gigawatts (GW) of wind power from federal waters offshore California that could be developed by 2045, a portion of which could come from ocean waters outside of the sanctuary proposed by this alternative.

A primary purpose of this alternative was to exclude areas from the sanctuary identified or potentially necessary for offshore wind development, specifically an additional potential wind energy area in federal waters and corridors to allow subsea electrical transmission cables to connect to both Morro Bay and DCPD grid connections without passing through the sanctuary. Following public comment on the draft designation materials, pursuant to NEPA, minor alterations were made to the nearshore boundary of Alternative 3 (and Alternative 4, see Section 3.6) to ensure the intent of this alternative could be met by excluding nearshore areas from the sanctuary that encompass subsea electrical transmission cable points of interconnection to Morro Bay and DCPD (see Figure 3-7a). Concerns that drove this change include consideration of the following clarifying information received in public comments: the need for access to the DCPD grid connection and necessary landing site sufficient to allow for gentle turns (rather than sharp angles) for cables; the ability to cross existing submarine fiber optic cables at roughly right angles; regulatory challenges routing cables through the Point Buchon State Marine Reserve (SMR) and Point Buchon SMCA; space to make minor siting adjustments (“micro siting”) to cable routes to avoid sensitive resources or certain seafloor features or hazards; and space to achieve the offshore wind industry's intent for the distance between cables to be at least three times the water depth, in line with recommendations of the International Cable Protection Committee. See Figure 3-7a for a map and Section 3.5.1 below for a description of the specific boundary changes.

Outcomes relative to offshore development under Alternative 3 would be different from the Initial Boundary Alternative in several ways:

- The exclusion of the northern area from the proposed sanctuary, plus the additional area removed over the proposed Diablo Canyon Call Area to the DCPD onshore grid connection, would mean that offshore wind developers could pursue easements from offshore Morro Bay lease areas to shore from BOEM as part of their construction and operations plan for subsea electrical transmission cables, rather than seek ONMS authorization and a special use permit from NOAA (as required in the Initial Boundary Alternative, Alternative 1 and likely Alternative 2). The potential easements would be subject to review under OCSLA, NEPA, and other applicable federal and state environmental statutes and consultations prior to their potential approval.
- This alternative would exclude from sanctuary designation an area which was formerly proposed for additional wind farm development as the Diablo Canyon Call Area, including a geographic area that could accommodate necessary subsea electrical transmission cables from that development area to onshore transmission lines at the DCPD.
- The DCPD cove and marina area would be excluded from the proposed sanctuary. Thus, NOAA would not have permit authority over any future deep-water port in this area, as envisioned by offshore wind developers and the County of San Luis Obispo.
- Substantial portions of existing routes for submarine fiber optic cables in the northern corridor, most of which land at Los Osos, would be outside of the sanctuary and thus repair and maintenance and most removal activities, as well as new cable construction, would not require a sanctuary permit.

This alternative removes all or portions of four state MPAs from the boundary of the proposed sanctuary: Cambria SMCA, White Rock SMCA, Point Buchon SMR, and Point Buchon SMCA. In addition, this alternative excludes Morro Bay Harbor dredge disposal sites requested during scoping by the City of Morro Bay and also excludes from the proposed sanctuary about a dozen trans-Pacific fiber optic cables that land at Montaña de Oro/Los Osos.

3.5.1 Proposed Boundary (Alternative 3)

Under Alternative 3, Diablo to Gaviota Creek, the proposed sanctuary boundary would exclude areas identified for offshore wind development (see Figure 3-7b), compared to the Initial Boundary Alternative.

The boundary for Alternative 3 excludes the coastal waters from Cambria to Morro Bay, the area identified for new subsea electrical transmission cables from the Morro Bay lease areas within the Morro Bay Wind Energy Area to shore. The boundary also excludes a large area on the Santa Lucia Bank known as the Diablo Canyon Call Area, as well as a broad coastal area to route electrical cables from that call area and the Morro Bay Wind Energy Area to onshore transmission lines at the DCPD. For the final EIS, NOAA made a minor adjustment to the location of the shoreline boundary to the southeast of DCPD. The boundary along the shoreline would be the same as the Initial Boundary Alternative from approximately two miles southeast of the mouth of the DCPD marina, which is one mile farther to the southeast as compared to the draft EIS Alternative 3 boundary. From that shifted shoreline location, the boundary would extend due south for approximately 12 miles, and due west for approximately 18 miles and connect with the original boundary for Alternative 3 (see Figure 3-7a and Figure 3-7b).

The minor adjustment to the boundary along the shoreline is consistent with the purposes and policies of Alternative 3, as articulated in the draft EIS, and was made to ensure that an original intent of the alternative could be met, as described above. The boundary adjustment is a minor variation of Alternative 3, as discussed in the draft EIS, and is within the geographic and regulatory scope of alternatives assessed in the draft EIS. In addition, as described throughout Chapter 4, making this minor adjustment does not result in environmental impacts not previously considered. For these reasons, this does not constitute a substantial change relevant to environmental concerns and preparation of a supplemental EIS is not required.

Alternative 3 would encompass approximately 5,804 square miles and contains approximately 98 miles of coastline. Compared to the Initial Boundary Alternative, this alternative removes from the proposed sanctuary approximately 54 miles of coastline from Cambria to a point two miles southeast of the marina at DCPD (see Table 3-2). The small boundary adjustment noted above reduces this alternative, overall, by 148 square miles.

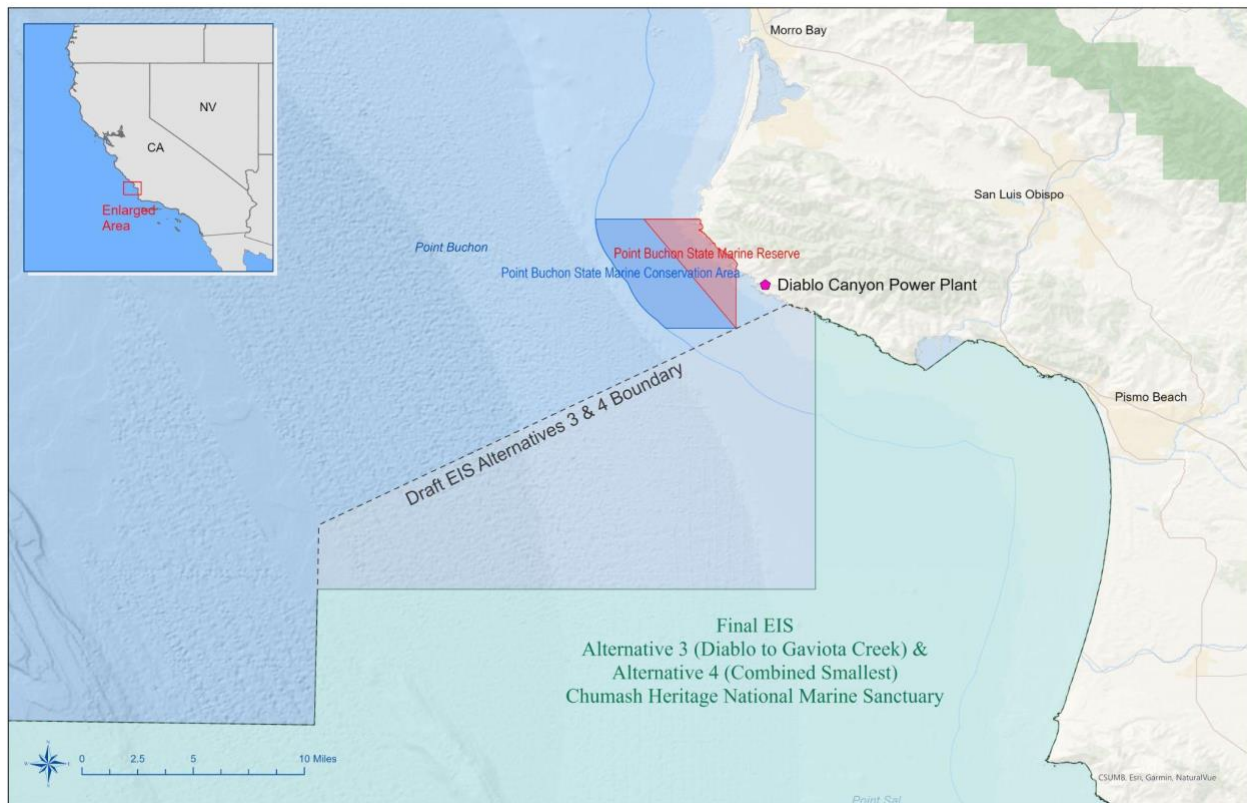


Figure 3-7a. Zoomed in view of the boundary adjustment made to Alternative 3 and Alternative 4 between the draft and final EIS. Image: NOAA

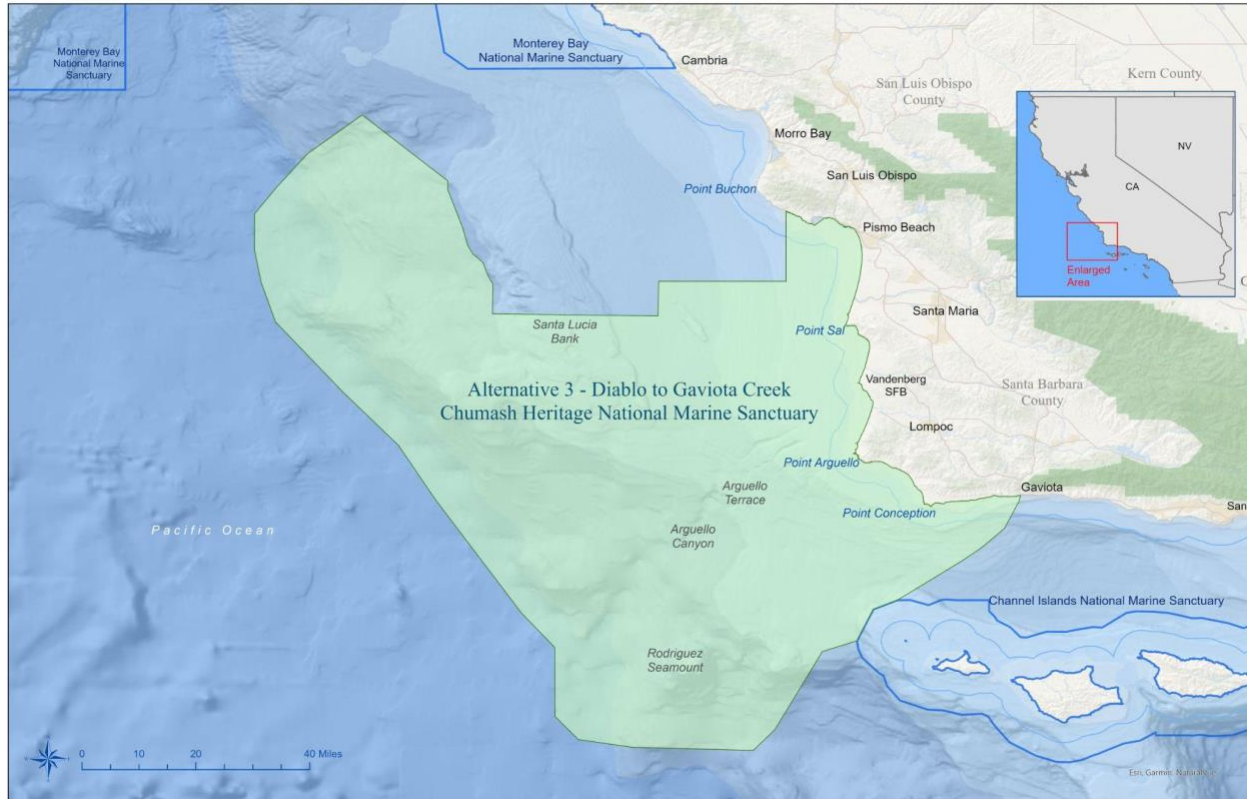


Figure 3-7b. Boundary for Alternative 3, Diablo to Gaviota Creek. This map reflects the minor change to the coastal boundary between the draft and final EIS (see Figure 3-7a). Image: NOAA

3.5.2 Proposed Final Regulations (Alternative 3)

The regulations under Alternative 3 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.2), except that there would be no need to exempt or certify existing dredge disposal sites near Morro Bay Harbor or include the harbor in the definition for public ports eligible for beneficial use of dredge material, because those sites and the harbor would not be located in or adjacent to CHNMS under this alternative. The reference to “Morro Bay” in 15 C.F.R. 922.232(f) would also be stricken.

3.5.3 Proposed Management Plan and Field Activities (Alternative 3)

In general, the action plans and field activities under Alternative 3 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.3). NOAA’s level of effort could be reduced for management plan activities that would occur in areas concentrated to the north of the sanctuary in this alternative. In particular, there would likely be a considerably reduced role for the future sanctuary staff within the Offshore Energy Action Plan, as development related to leases within the Morro Bay Wind Energy Area, such as subsea electrical transmission cables to shore, would be excluded from the proposed sanctuary. However, with this alternative, NOAA would add additional strategies to the Boundary Adjustment Action Plan to evaluate those same northern waters for potential sanctuary inclusion in the future, as well as an associated sanctuary name change if needed.

3.6 Alternative 4 – Combined Smallest

The boundary for Alternative 4, “Combined Smallest,” represents the smallest proposed sanctuary area being considered. The analysis of this alternative reflects the aggregate effects of excluding both the western swath of marine waters shown in Alternative 1 and the northern and central waters sought for potential wind energy development shown in Alternative 3 and comparing these impacts/benefits to the Initial Boundary Alternative.

3.6.1 Proposed Boundary (Alternative 4)

As noted for Alternative 3, NOAA has made a small adjustment to the orientation of the Alternative 4 boundary between the draft EIS and final EIS just south of DCPD to achieve one of the purposes of this alternative: to allow access to DCPD grid connections for subsea electrical transmission cables. Alternative 4, Combined Smallest, is a composite of the ocean area excluded in Alternative 1 and Alternative 3, as shown in Figure 3-8. The northern nearshore boundary of Alternative 4 was adjusted the same way and for the same reason as boundary Alternative 3, as described in Section 3.5 (see Figure 3-7a). Therefore, it includes a northern boundary that begins approximately two miles southeast of the marina at DCPD and mirrors the boundary of the Initial Boundary Alternative following the shoreline to Gaviota Creek. From Gaviota Creek, the boundary continues offshore to the southwest and around Rodriguez Seamount and Arguello Canyon. From there the boundary transits north consistent with Alternative 1 along the edge of Santa Lucia Bank to roughly the southern boundary of the Diablo Canyon Call Area. The boundary continues east paralleling the Diablo Canyon Call Area’s southern edge and turns north along its eastern edge. Similar to the alteration described in Section 3.5 for Alternative 3, the boundary continues due east for approximately 18 miles, turns due north for approximately 12 miles and connects to the shifted shoreline point where it began. Alternative 4 would protect approximately 4,328 square miles and 98 miles of coastline (see Table 3-2). The small boundary adjustment reduces this alternative, overall, by 148 square miles.

As described above for Alternative 3, the minor adjustment to the boundary along the shoreline made between the draft EIS and final EIS is consistent with the purposes and policies of Alternative 4, as articulated in the draft EIS, and was made to ensure that an original intent of the alternative could be met. The boundary adjustment is a minor variation of Alternative 4, as discussed in the draft EIS, and is within the geographic and regulatory scope of alternatives assessed in the draft EIS (including the action alternatives and the No-Action Alternative). In addition, as described throughout Chapter 4, making this minor adjustment does not result in environmental impacts not previously considered. For these reasons, this does not constitute a substantial change relevant to environmental concerns and preparation of a supplemental EIS is not required.

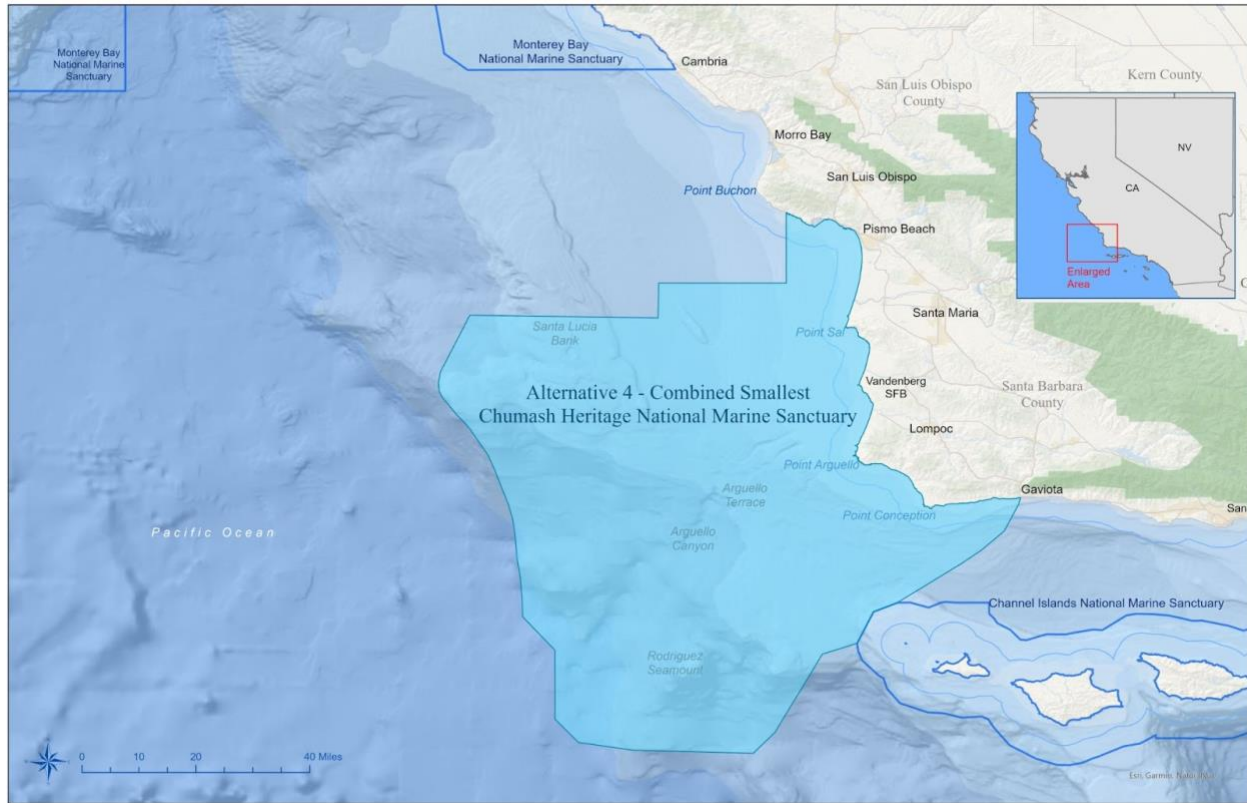


Figure 3-8. Boundary for Alternative 4, revised, Combined Smallest. This map reflects the minor change to the coastal boundary between the draft and final EIS (see Figure 3-7a). Image: NOAA

3.6.2 Proposed Final Regulations (Alternative 4)

The regulations under Alternative 4 would be the same as those described for the Initial Boundary Alternative (see Section 3.2.2), except there would be no need to exempt or certify the dredge disposal sites for Morro Bay Harbor, because those sites would not be located in CHNMS under this alternative. The reference to “Morro Bay” in 15 C.F.R. 922.232(f) would also be stricken. While NOAA would retain the regulations and permit processes for submarine cables, it anticipates very little if any sanctuary permitting would be expected for subsea electrical transmission cables to shore, and about half as much would be anticipated related to submarine fiber optic cables since about half of the cables would fall outside of the sanctuary.

3.6.3 Proposed Management Plan and Field Activities (Alternative 4)

In general, the action plans and field activities under Alternative 4 would be the same as those described for the Initial Boundary Alternative. NOAA’s level of effort could be reduced for management plan activities that would occur in areas concentrated in the west and north of the sanctuary. In particular, there would likely be a considerably reduced role for the future sanctuary staff within the Offshore Energy Action Plan, as development related to leases within the Morro Bay Wind Energy Area, such as subsea electrical transmission cables to shore, would be excluded from the proposed sanctuary. However, with this alternative NOAA would add additional strategies to the Boundary Adjustment Action Plan to evaluate those same western

and northern waters for potential sanctuary inclusion in the future, as well as an associated sanctuary name change if needed.

3.7 Sub-Alternatives 5a and 5b – Expanded Protection Areas

There are two boundary options that could be added to the Initial Boundary Alternative or one or more action alternatives to encompass a slightly larger proposed sanctuary area (Figure 3-9). These sub-alternatives are not mutually exclusive, as they address different geographical areas. Either of these sub-alternatives could be added to the Initial Boundary Alternative and Alternative 1. However, due to its location, Sub-Alternative 5a would not apply to alternatives 2, 3, or 4, as explained below.

3.7.1 Sub-Alternative 5a: Morro Bay Estuary

Sub-Alternative 5a, “Morro Bay Estuary,” represents an area that could be added to the proposed sanctuary boundaries under alternatives that include the coastal areas offshore Morro Bay, that is, the Initial Boundary Alternative and Alternative 1. NOAA has protected tidally influenced wetlands as national marine sanctuaries under the NMSA where those areas are linked ecosystem components of the coastal and marine waters protected in the body of the national marine sanctuary (see example of Elkhorn Slough within MBNMS). Alternatives 2–4 do not include coastal and marine waters immediately adjacent to Morro Bay Estuary.

This sub-alternative includes the tidally influenced portions of Morro Bay Estuary east and south of the harbor and tidelands grant line, as shown in Figure 3-10. Morro Bay Estuary is part of the National Estuary Program overseen by the USEPA.²¹ Including the Morro Bay Estuary would be consistent with how important estuaries are treated at other sanctuaries, and added protection of critical estuarine resources would be in line with the purpose and intent for establishing the proposed sanctuary. If Morro Bay Estuary is included in the proposed sanctuary boundaries, the regulations and management plan would generally remain the same as described for the Initial Boundary Alternative; however, one specific additional regulation is proposed for this sub-alternative to allow for existing aquaculture that farms an introduced species. California agencies and NOAA have collaborated to ensure oysters grown in estuarine aquaculture operations are genetically altered so as not to invade or reproduce if accidentally released. The regulatory language proposed under this sub-alternative would need to include an additional exception to the introduced species prohibition:

“Species cultivated by commercial shellfish aquaculture activities in Morro Bay Estuary pursuant to a valid lease, permit, license, or other authorization issued by the state of California prior to the effective date of Sanctuary designation. The coordinates for Morro Bay Estuary within the sanctuary are listed in appendix XXX to this subpart.”

The management plan may have adjustments to address the area included within this sub-alternative boundary. See Table 3-2 for area statistics for Sub-Alternative 5a.

²¹ See Section 4.3 for more details on the Morro Bay Estuary and the National Estuary Program.

3.7.2 Sub-Alternative 5b: Gaviota Coast Extension

The Initial Boundary Alternative ends at Gaviota Creek, which is consistent with the original sanctuary nomination. This configuration splits Kashtayit SMCA and Gaviota State Park and its watershed. ONMS sees benefits to including rather than splitting state MPAs in or adjacent to national marine sanctuaries. Scoping comments requested extension of the eastern boundary to include more of the area offshore the Gaviota Coast in Santa Barbara County to ensure coastal conservation of important ecological and recreational features, as well as expanding protection of areas important to the Chumash historically. Therefore, Sub-Alternative 5b, “Gaviota Coast Extension,” would move the proposed sanctuary boundary along the Gaviota Coast in state waters to the east end of Naples SMCA, east of Dos Pueblos Creek (see Figure 3-11). This would add to the proposed sanctuary:

- All of Gaviota State Park, as well as other high visitation state parks at Refugio and El Capitán.
- All of Kashtayit and Naples SMCAs.²²
- Coastal and offshore resources adjacent to historical Chumash village sites at Tajiguas and Dos Pueblos, in particular.

This area could be included in the Initial Boundary Alternative or any of the action alternatives (alternatives 1, 2, 3, or 4). Because Sub-Alternative 5b would include oil, gas, and produced water pipelines related to the Santa Ynez Unit, NOAA would ensure that regulatory language allowed continued operation of these facilities. The management plan may have adjustments to address the area included within this sub-alternative boundary. See Table 3-2 for area statistics for Sub-Alternative 5b.

²² The federally recognized Santa Ynez Band of Chumash Indians plays a sovereign role in independently managing the Tribe’s fishing and resource collection activities through its state-approved exemption for subsistence and cultural fishing in the Kashtayit and Naples SMCAs.

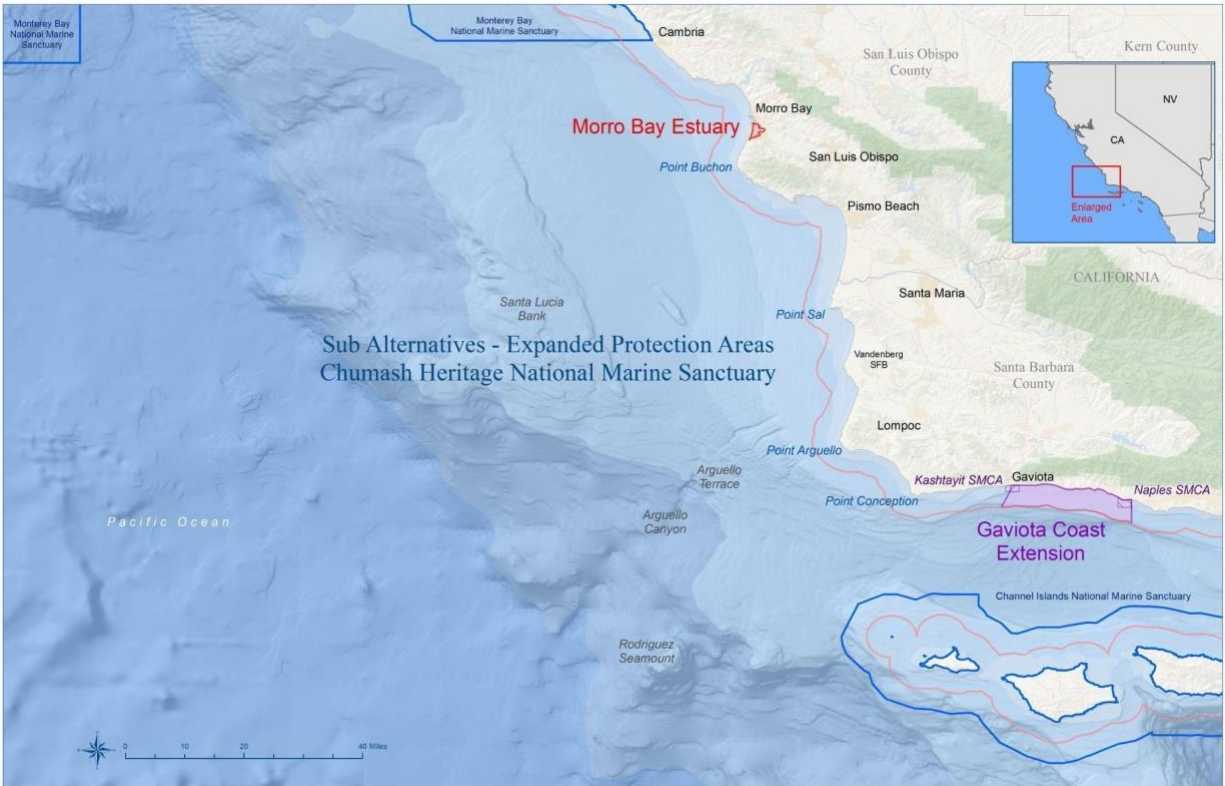


Figure 3-9. Boundaries for sub-alternatives. Image: NOAA

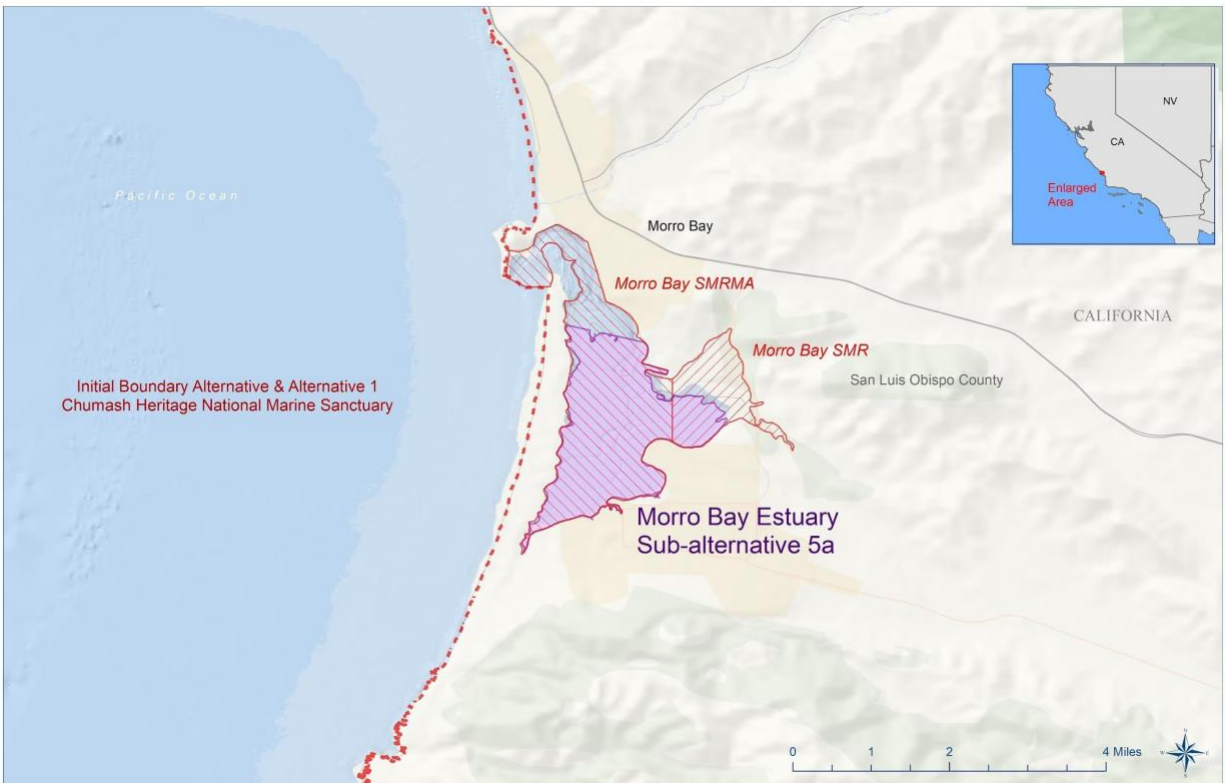


Figure 3-10. Boundary for Sub-Alternative 5a, Morro Bay Estuary. Image: NOAA.

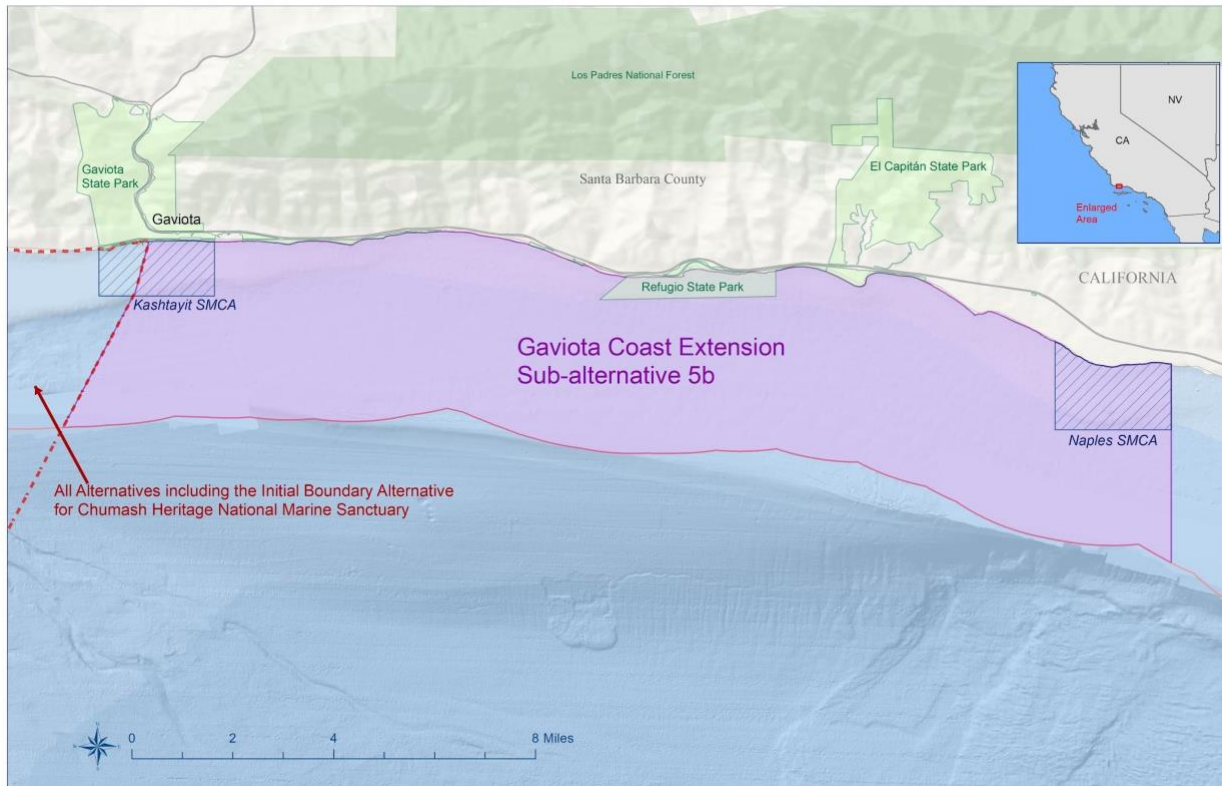


Figure 3-11. Boundary for Sub-Alternative 5b, Gaviota Coast Extension. Image: NOAA

Table 3-2. Comparison statistics for Initial Boundary Alternative and other action alternatives.

	Initial Boundary Alternative	Alt. 1, Bank to Coast	Alt. 2, Cropped Bank to Coast	Alt. 3, Diablo to Gaviota Creek	Alt. 4, Combined Smallest	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension**
Total Size	7,573 mi ² [5,718 nmi ²]	6,098 mi ² [4,605 nmi ²]	5,553 mi ² [4,194 nmi ²]	5,804 mi ² [4,382 nmi ²]	4,328 mi ² [3,268 nmi ²]	2.5 mi ² [1.9 nmi ²]	64 mi ² [48 nmi ²]
Total mi of shoreline with offshore rocks	202 mi	202 mi	144 mi	114 mi	114 mi	12 mi	18 mi
Total mi of mainland shoreline	152 mi	152 mi	115 mi	98 mi	98 mi	11 mi	18 mi
Max water depth	13,374 ft	11,580 ft	11,580 ft	13,374 ft	11,580 ft	24 ft	480 ft
Max distance from shore	78 mi (1) [68 nmi]	60 mi (2) [52 nmi]	60 mi (2) [52 nmi]	78 mi (1) [68 nmi]	60 mi (2) [52 nmi]	--	3.5 mi [3.0 nmi]

mi = miles; nmi = nautical miles

* Sub-Alternative 5a could be added to the Initial Boundary Alternative or to Alternative 1.

** Sub-Alternative 5b could be added to the Initial Boundary Alternative or any of the other action alternatives.

Notes: (a) Estero Bay WSW to western boundary; (b) Between Shell and Pismo Beaches WSW to western boundary.

3.8 No Action Alternative

NEPA requires evaluation of a No Action Alternative. The No Action Alternative is equivalent to the status quo. Under the No Action Alternative, NOAA would not designate the proposed sanctuary in central California waters. Future development and activities in the proposed sanctuary area would continue to be subject to existing federal and state authorities. The long-term protection and management of biological and cultural resources, water quality, and the seabed would remain under existing state and federal authorities and programs. No added protection of these resources under the NMSA would be provided and the various educational and monitoring programs outlined in the proposed sanctuary management plan would not be implemented in the proposed sanctuary area.

Under this alternative, existing legal protection now provided by state and federal laws would not be strengthened by complementary sanctuary regulations. Without designation of the proposed CHNMS, NOAA resources would not be available to strengthen partnerships that

assist in the comprehensive management of the offshore environment, or to provide additional resources for education, research, monitoring, and enforcement in the study area.

3.9 Alternatives Eliminated from Detailed Study

This section addresses alternatives that were considered and may have informed the formulation of the alternatives analyzed in this EIS but were not carried forward for detailed evaluation in this EIS. As described in Section 3.1, a broad range of potentially reasonable alternatives was considered. Numerous boundary alternatives were suggested during the scoping process and comment period on the draft EIS by the public, Tribal representatives, and government entities. In addition, suggestions were made regarding alternative regulations that could be applied to the proposed sanctuary. The boundary and regulatory options discussed in this section were carefully considered but eventually not carried forward for full EIS analysis for various reasons, including lack of feasibility, lack of relevance to the purpose and need, or redundancy with other alternatives.

There are many sanctuary boundary adjustments that could be considered. NOAA believes that the boundary alternatives evaluated in this EIS cover a wide spectrum of alternatives for the proposed designation of the sanctuary and adequately address the impacts associated with potential other boundary configurations that are within the geographic scope of the alternatives studied in Chapter 4 of this EIS. NEPA requires the agency to consider reasonable alternatives in an EIS, 40 C.F.R. 1502.14(a), but to limit the consideration to a reasonable number of alternatives, 40 C.F.R. 1502.14(f). Please note that several additional alternatives (including alternative boundaries, alternative regulations, and alternative management plan provisions) were suggested in the public comments on the draft EIS. See Appendix A, Response to Comments, for additional information and NOAA's explanation of why it did not include these suggested alternatives for further detailed analysis.

3.9.1 Boundary Configurations

Larger Boundary Area

Numerous scoping and draft comments suggested consideration of a larger sanctuary boundary to the south and east. Suggestions were made to extend the boundary to Goleta Slough, to the City of Santa Barbara, to the Santa Barbara/Ventura county line, to Point Hueneme, and to Malibu. Other comments suggested including all of the area north and east of CINMS, creating a continuous sanctuary area from MBNMS throughout all of the Santa Barbara Channel to the eastern end of CINMS. Sub-Alternative 5a would include the tidally influenced areas of Morro Bay Estuary and Sub-Alternative 5b would include an extension further to the east offshore the Gaviota Coast in Santa Barbara County; however, expanding the boundaries beyond the area of the Initial Boundary Alternative and these sub-alternatives would be inconsistent with the purpose and need for the proposed sanctuary which is to protect coastal and marine resources in the waters along and offshore of the central California coast. The larger boundary alternatives all would expand the sanctuary well into southern California. Larger boundary alternatives well into the Santa Barbara Channel and east of that is a separate ecological unit (from the proposed action) and would pose different management challenges from a far more developed coastal environment. In consideration of these factors and the direction in NMSA Section 304(b)(1)(f)

to consider “the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities,” NOAA believes that the larger boundary area would not meet the purpose and need of the proposed designation.

Smaller Boundary Area

One comment on the draft EIS requested that NOAA consider a much smaller alternative that included the shoreline of Alternative 4 and extended offshore to a line at approximately 120 ft water depth. The purpose would be to protect the coastline out to and including likely paleoshorelines. NOAA is not accepting this alternative for further study because it does not meet the purpose and need of designating a new sanctuary. The purpose and need includes not only protection and conservation of cultural heritage features, but also protection of ecological and ecosystem resources of the area. Please see Appendix A, Response to Comments (i.e., comment BO-20), for further explanation of why this suggested alternative was not studied in further detail.

Special Treatment Area

One comment on the draft EIS requested that NOAA designate a “special treatment area” between Morro Bay and Cambria (as part of the Initial Boundary Alternative or Alternative 1) that has different regulations to allow submarine cables and impose restrictions such as vessel speed reduction in this area. See Appendix A, Response to Comments (comment BO-3). Applying a different set of regulations to one spatial area was rejected because NOAA intends to impose the same regulations across the entire sanctuary area, to facilitate public understanding of sanctuary regulations and to assist enforcement.

3.9.2 Exclusion for Wind Energy Development Infrastructure

Multiple scoping comments requested exclusion of a northern segment from the proposed sanctuary in order to accommodate potential subsea electrical transmission cables and floating substations needed to connect the Morro Bay lease areas in the Morro Bay Wind Energy Area with onshore infrastructure. Alternative 2 excludes a corridor to Morro Bay onshore substation and grid connection. Alternative 3 excludes a larger area, including a wider corridor to the DCPD onshore grid connection and development of another wind farm. Based on comments regarding this northern area, NOAA evaluated other ideas to adjust the boundary and provide additional sanctuary protection.

One option involved adjusting the boundaries of Alternative 1 to create a smaller specific corridor, approximately 10 miles wide, within which offshore wind developers could build and operate cables under BOEM’s jurisdiction in federal waters. This option is a slight variation of either Alternative 1 or 2. This corridor would be excluded from the proposed CHNMS but would be bounded on both the north and south sides by the proposed sanctuary. In effect, a small section of CHNMS would be established between the corridor and existing MBNMS.

Figure 3.12, Point Estero Corridor, shows what this option could look like, with a shoreline boundary from Cambria to Elephant Rock south of the town of Cayucos.

Another option involved shifting the northern boundary of the proposed sanctuary south of DCP and Port San Luis so that there would be a corridor between the existing MBNMS and proposed CHNMS, wide enough to provide offshore wind developers with onshore interconnections at both Morro Bay and DCP without having to route cables through the new sanctuary. Close to shore, this alternative would include a wider corridor than achieved by Alternative 4, but further offshore its corridor would be smaller than that achieved by Alternative 4.

NOAA believes that the environmental implications of these potential configurations are covered in the impact analysis of several other alternatives in Chapter 4 of this EIS. The Initial Boundary Alternative and Alternative 1 evaluate impacts of including this northern area in the proposed sanctuary boundaries and alternatives 2, 3, and 4 address impacts of smaller boundaries that would exclude this area. Therefore, the impacts of adjusting the boundary to exclude the different corridor configurations for wind energy development infrastructure described here are adequately evaluated in other alternatives and it is not necessary to conduct a separate analysis of these alternatives. In order to limit the range of alternatives discussed in this EIS to a reasonable number that covers the full spectrum of possible boundary alternatives for the proposed sanctuary, NOAA has decided to eliminate these options from detailed study.

Comments on the scoping phase and the draft EIS also requested exclusion for the proposed floating wind project in state waters off VSFB. See Appendix A, Response to Comments, specifically the Boundaries and Offshore Wind Energy Development sections, for NOAA's explanation of why this exclusion was not included for further detailed analysis.

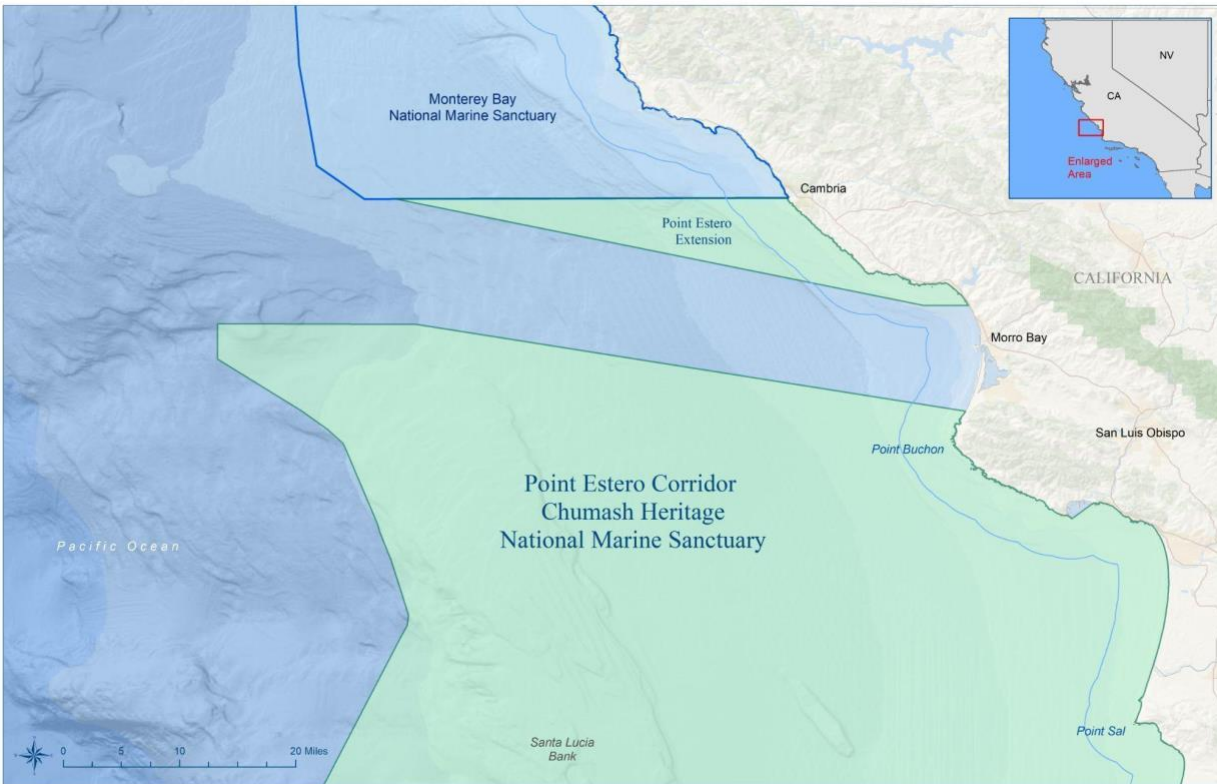


Figure 3-12. Point Estero Corridor Option, considered by NOAA to create a corridor within which subsea electrical transmission cables to shore could be installed and operated without having to cross national marine sanctuaries. Image: NOAA

3.9.3 Extension of MBNMS

Comments received from cooperating agencies and the wind industry have included suggestions that NOAA consider creating a corridor similar to the option described in Section 3.9.2, by extending the MBNMS boundary south (to Elephant Rock south of Cayucos) rather than including that section in the proposed CHNMS or excluding this entire northern segment, as depicted in Alternative 2 (see Figure 3-6, Section 3.4.1). Expansion of MBNMS would need to be governed by a separate process under Section 304 of the NMSA; however, it could rely heavily on this NEPA analysis. Therefore, this alternative is not further considered in this EIS. NOAA may, however, consider expanding MBNMS in the future if this area is not ultimately included within the final boundaries of CHNMS.

3.9.4 Exclusion/Exemption of Submarine Fiber Optic Cables

NOAA received comments asking that all submarine fiber optic cables be excluded by modifying the proposed sanctuary boundaries so that cables are not within the sanctuary or excepting submarine fiber optic cables from regulation. There are currently 14 submarine fiber optic cables, 10 of which are operational, that transit the area proposed for sanctuary designation and come ashore at two main landing sites. NOAA evaluated the request for excluding all of the cables and concluded it would shrink the proposed sanctuary to a size that would make it inconsistent with the purpose and need for the sanctuary. Nonetheless, some of the analyzed

alternatives exclude significant portions of existing, operational submarine fiber optic cables. Alternative 3 would exclude most of the cables landing at Los Osos, including the segments nearshore. All of the operational submarine fiber optic cables that land at Los Osos would be excluded incidentally from the proposed sanctuary in Alternative 4. NOAA intends to allow cables to remain on the seafloor after designation through the certification process outlined in the proposed final regulations. However, given that there is the potential for some seafloor disturbance or impacts on fishing from repair and replacement of submarine cables, or placement of a new structure, the repaired cable, on the seafloor, the proposed final regulations for CHNMS do not exempt repairing submarine fiber optic cables, but could allow it via a sanctuary general permit, ONMS authorization, or certification, as appropriate. This approach ensures the sanctuary superintendent can review and take action to adopt terms and mitigations necessary to protect sanctuary resources that are not required by partner agencies. For example, when authorizing submarine cable permits in national marine sanctuaries, NOAA has included terms requiring periodic surveys of a cable and detailed mapping of sections of a cable if it becomes unburied. If telecommunication companies and their submarine cables were exempted in the regulations, there would be no means for the sanctuary superintendent to ensure seafloor disturbances and other impacts on sanctuary resources were minimized. Because this alternative would not meet the purpose and need of the proposed designation, it was eliminated from detailed study.

3.9.5 Exclusion/Exemption of All Oil and Gas Facility Areas

Some comments from both the scoping and draft comment periods requested that the proposed sanctuary exclude existing oil and gas facilities or establish an exemption for existing facilities and activities related to decommissioning. Exclusion of the areas containing oil and gas facilities would remove areas of biological significance from the sanctuary boundaries and disrupt the cohesiveness of the sanctuary. It would complicate management programs and enforcement. To address the issue of existing oil and gas facilities, the Initial Boundary Alternative and all action alternatives provide a regulatory exception for ongoing oil and gas production (including pipeline transport to shore of oil and gas produced offshore) pursuant to leases or lease units in effect on the effective date of sanctuary designation from Point Pedernales Platform Irene and from Platform Heritage within the Santa Ynez Unit (however, incidents and accidents such as pipeline spills are not exempt). NOAA has changed this exception language between draft and final to recognize the development rights that a leaseholder has to produce from any formation or reservoir within a lease or lease unit. Abandonment, decommissioning, and removal of platforms Hidalgo, Harvest, and Hermosa (whose operations have permanently ceased), as well as pipelines and cables to shore, would be subject to the Bureau of Safety and Environmental Enforcement (BSEE) permits, and NOAA would have the ability to authorize BSEE permits for abandonment, decommissioning, and removal of these platforms. Because excluding or exempting all oil and gas facility areas would not meet the purpose and need of the proposed designation, and because the proposed final regulatory exception for continued oil and gas production from specified platforms furthers the NMSA policy of facilitating, to the extent compatible with resource protection, public and private uses of sanctuary resources, adjusting the sanctuary boundary to exclude oil and gas facilities or fully exempting all oil and gas activities including facility decommissioning and removal were not further considered.

3.9.6 Harbor and Shoreline Buffer Zones

Several scoping and draft EIS comments requested five-mile buffers or exclusion zones around existing harbors. NOAA staff met with Morro Bay and Port San Luis harbor masters to discern what activities were planned in these exclusion areas that would warrant a buffer from potential sanctuary management. Both harbor masters suggested dredge disposal activities outside of harbors may warrant these exclusion areas; no other potential, specific uses were identified. Wind energy developers sought exclusion zone(s) to allow development of a new deep-water port for construction of offshore wind facilities; DCPD has been identified as the most likely location for such a development. Also, the City of Pismo Beach requested a two-mile exclusion zone along the Pismo Beach shoreline. Consistent with its practice in other sanctuaries, ONMS intends to work closely with harbors to coordinate activities that could adversely affect proposed sanctuary resources while allowing for harbor operations. The proposed sanctuary regulations include an exception for the discharge of dredged material within the proposed sanctuary at disposal sites approved by USEPA prior to designation (consistent with historical practices at other sanctuaries). The proposed final regulations also include an exception for maintenance dredging of entrance channels for existing harbors. Maintenance of breakwaters, or piers in the case of Pismo Pier, would also be excepted. Setting sanctuary boundaries at the COLREGS demarcation lines as in the Initial Boundary Alternative effectively removes all of Morro Bay and Port San Luis from the new sanctuary (see Figure 3-3). Moreover, alternatives 2, 3, or 4, if selected, could exclude the shoreline area in and around Morro Bay Harbor, effectively achieving the goal sought by that City/Harbor. Because the goals sought by the harbors would be adequately addressed in the regulations under consideration, a separate boundary alternative solely to provide a buffer for harbors would be redundant and was not separately evaluated.

3.9.7 Alternative Regulations

Public scoping comments and comments on the draft EIS requested regulations regarding vessel speeds for large ships, fishing, submarine cables, motorized personal watercraft (MPWC), oil tankers, low flight zones, and other recreational activities. The proposed final regulations do not address these issues for the following reasons:

Vessel Speed Restrictions

Scoping and draft EIS comments suggested that NOAA impose vessel speed restrictions including implementing time and area closures, speed reduction zones, a mandatory 10-knot speed limit, and contended that the voluntary “Blue Whales and Blue Skies” program is insufficient. NOAA has established voluntary vessel speed reduction zones in places along the West Coast, after studies were conducted to assess wildlife risks. In addition, an incentive-based voluntary vessel speed reduction program, “Blue Whales and Blue Skies,” has been implemented by some West Coast sanctuaries in partnership with local air pollution control districts. See Blue Whales and Blue Skies website. However, none of the national marine sanctuaries on the West Coast currently regulate vessel speed within sanctuary boundaries. NOAA recognizes the concerns regarding vessel speed, but at this time, NOAA believes the best approach is to find regional solutions to vessel traffic impacts, rather than focus on mandatory speed restrictions in one sanctuary (CHNMS). The management plan contains strategies focused on working with entities already involved in slowing vessels to reduce vessel strike risk, air pollution, and ocean

noise. Refer to Activity WD-1.3 in the management plan's Wildlife Disturbance Action Plan for further discussion of how the proposed sanctuary would examine vessel strike risk and the potential need for vessel speed restrictions in the future. Refer to Activity RP-6.3 in the management plan's Resource Protection Action Plan for further discussion of how the proposed sanctuary would coordinate at a regional level on reducing the number of vessel strikes in California national marine sanctuaries. See Section 4.8 for additional details on vessel traffic in the region, including how vessels would be affected by the recently expanded "Area To Be Avoided" (ATBA) surrounding CINMS, as well as expected changes to vessel routing recommended by the USCG in their final Pacific Coast Port Access Route Study (PAC-PARS) (USCG 2023b).

Fishing Regulations

Consistent with Section 304(a)(5) of the NMSA, NOAA provided the PFMC with the opportunity to recommend any fishing regulations that PFMC deemed necessary to implement the proposed designation, and it declined to recommend or request any fishing regulations. The PFMC did say it was open to reconsidering the need for fishing regulations should new information suggest their need in the future. Also, some scoping comments and comments on the draft designation materials suggested establishing fishing regulations at the Rodriguez Seamount and elsewhere in the sanctuary. NOAA accepts the PFMC determination at this time, and separate from the PFMC, does not believe fishing regulations under the NMSA are warranted at this time based on the analysis in issue areas within this EIS regarding physical resources (Section 4.2), biological resources (Section 4.3), commercial fishing (Section 4.4), and socioeconomics (Section 4.6, which includes recreational fishing). Furthermore, NOAA has worked with federal and state fishing managers when issues have arisen at other sanctuaries on the West Coast and will mirror that approach for CHNMS.

Restrictions for Subsea Electrical Transmission Cables

The Initial Boundary Alternative includes the northern area between shore and the Morro Bay lease areas in the Morro Bay Wind Energy Area, which at the time of the draft EIS represented the most reasonable location for multiple subsea electrical transmission cables to connect offshore wind platforms to onshore grid connection. BOEM had estimated as many as 30 cables may be needed to connect the three Morro Bay lease areas in the Morro Bay Wind Energy Area with the grid connection landing site in Morro Bay. Due to the potential impacts of constructing up to 30 cables on the seabed, NOAA considered creating standards as a regulatory alternative, to limit the number and location of cables that could be allowed within the new sanctuary. However, creating limitations at this time for cable construction within the Initial Boundary Alternative or any of the alternatives would be premature, uncertain, and speculative, because potential cable locations are not known and seafloor survey data, engineering specifications, and other technical information are still being developed. Creating limitations without this information could inhibit the offshore wind industry's, the Biden-Harris Administration's, and the state of California's objectives to develop offshore wind at this location. NOAA has included a strategy in the Offshore Energy Action Plan (Strategy OE-4) to gather information, collaborate with partner agencies such as BOEM and the CCC, and work through the Sanctuary Advisory Council to evaluate this issue further after designation. (Note: during the public comment period on the draft EIS, the three leaseholders indicated the estimate of 30 cables to be inaccurate and

stated their cable needs would be closer to 15, and no more than 24 cables, with as many as half to be proposed to land at the DCPG grid location (see EIS sections 4.7.1 and 4.7.3; Appendix A, Response to Comments, comment OW-13). This demonstrates the fluidity of planning related to subsea electrical transmission cables, for instance the number needed, routing, and potential landing sites.)

Motorized Personal Watercraft Restrictions

Some scoping and draft EIS comments suggested limitations on motorized personal watercraft (MPWC) were needed, while other comments took the alternate position. Such an alternative would be uncertain, speculative, and unfeasible at this time because NOAA lacks sufficient information on existing MPWC use and/or localized threats to marine resources to identify whether MPWC regulation is warranted or to structure any such proposed regulation. Therefore, this alternative would be infeasible to consider implementing at this time. NOAA has included an activity under Strategy WD-1 in the management plan's Wildlife Disturbance Action Plan to gather information and work through the new Sanctuary Advisory Council to evaluate the need for MPWC regulation (see management plan, Wildlife Disturbance Action Plan, Activity WD-1.2).

Oil Tankers Restrictions

A suggestion called for restricting oil tankers in the sanctuary. The International Maritime Organization (IMO) is responsible for the safety and security of shipping and the prevention of marine and atmospheric pollution by ships. The IMO-adopted recommended vessel tracks applicable to this area were established in 2000 to reduce threats of spills by vessel traffic, including routing oil tankers far offshore, beyond any proposed boundary for the sanctuary. NOAA does not have data that suggests that there is an issue of oil tankers straying shoreward of these recommended tracks into the sanctuary, thus a sanctuary regulation would likely be fruitless. Nonetheless, compliance with these tracks is important to protecting sanctuary resources. Strategy RP-6, and specifically Activity RP-6.1, in the management plan's Resource Protection Action Plan contains discussion of how the proposed sanctuary would track and monitor oil tankers for compliance with IMO-recommended tracks. The potential future action of restricting oil tankers within the sanctuary could be addressed by the new sanctuary advisory council to evaluate the need for oil tanker restriction.

Low Flight Zones

Some scoping comments suggested regulations implementing low flight zones (meaning, zones where aircraft are prohibited from flying below a certain elevation). NOAA lacks information at this time that clearly identifies the distribution and abundance of marine wildlife, as well as the presence of low-flying aircraft in the study area, which demonstrate the likely need to protect marine resources from low-flying aircraft. Therefore, this alternative would be impracticable to consider implementing at this time. NOAA has included a strategy in the management plan's Wildlife Disturbance Action Plan to evaluate and address wildlife disturbance via aircraft in the proposed sanctuary area (see management plan, Wildlife Disturbance Action Plan, Strategy WD-2). Activity WD-2.3 in particular would conduct a specific assessment to determine the need for regulatory and/or non-regulatory actions regarding potential wildlife disturbance caused by low flying aircraft.

Recreational Activity Restrictions

Some scoping and draft EIS comments suggested restrictions on recreational activity in the proposed sanctuary. NOAA lacks information at this time that clearly identifies the distribution and abundance of marine wildlife, as well as the presence of recreational activities including motorized personal watercraft in the study area, which demonstrate the likely need to protect marine resources from recreational activities. Therefore, this alternative would be impracticable to consider implementing at this time. NOAA has included a strategy in the management plan's Wildlife Disturbance Action Plan to evaluate and address wildlife disturbance by visitors and recreational users in the proposed sanctuary area (see management plan, Wildlife Disturbance Action Plan, Strategy WD-1).

Although the proposed final regulations do not include prohibitions related to these topics, as noted, several action plans in the management plan identify further, in-depth analysis of many of these issues including coordinating with the Sanctuary Advisory Council and consulting and collaborating with Tribal entities. Should the studies conducted to implement the action plans determine that regulations are needed, NOAA would pursue a rulemaking with environmental review and public comment and Tribal and agency consultation and coordination.

3.10 Proposed Sanctuary Name

Scoping comments regarding environmental impacts are addressed in the relative topics in Chapter 4 of this EIS. However, the input received during the scoping process, draft EIS public comment period, and through NOAA's outreach to Tribes and Indigenous communities identified the name of the proposed sanctuary as an additional issue of concern.

In 2015, proponents for the proposed sanctuary nominated it with the name "Chumash Heritage" National Marine Sanctuary, as one element of the proposal for the sanctuary to help elevate and bring recognition to the Chumash Peoples who have called this area home for thousands of years. However, several Salinan Tribes also consider part of the area proposed for the new sanctuary to be part of their ancestral lands and Tribal identity. The Salinan Tribes have told NOAA that it would cause them deep pain to have "Chumash Heritage" in the name of a sanctuary that included this area with which they also identify.

NOAA received suggestions from thousands of commenters on the draft EIS, suggesting a variety of names (see Appendix A, Responses to Comments, comments SN-1–SN-4). Many commenters insisted that the proposed name not be changed in the final designation. Some suggestions focused on selecting a name that did not create divisiveness between or exclude any local Tribes or Indigenous groups. Some suggestions were consistent with the geographical nomenclature NOAA has typically used for new sanctuary names. While NOAA does not consider the name of the proposed sanctuary to have an effect or impact as defined in the CEQ NEPA regulations, it nonetheless sees the power that a name can have in the spirit of stewardship critical to the success of all units in the National Marine Sanctuary System.

NOAA has carefully considered all of these suggestions and factors noted above. With its identification of the boundary for the Final Preferred Alternative, NOAA believes the name for the sanctuary, "Chumash Heritage National Marine Sanctuary," is appropriate to reflect the importance of this region to and a boundary consistent with the ancestral coastline of the

Chumash People. As importantly, including “Heritage” in the name reflects a focus on understanding, educating, and honoring the heritage of Indigenous Peoples interested in seeing these resources conserved through a national marine sanctuary.

If NOAA were to adopt a larger area than the Final Preferred Alternative, and include the ancestral coastline of the Salinan People as well as the Chumash, it would consider a name for the sanctuary that is sensitive to the presence of Salinan coastal territory and heritage. Similar naming sensitivity would be exercised if NOAA were to consider a future sanctuary designation or expansion action following a Phase 2 evaluation of additional sanctuary protection measures for this area.

3.11 Submitted Alternatives, Information, and Analysis

This section summarizes the alternatives, information, and analyses submitted by Tribal, federal, state, and local governments and other public commenters during the scoping process and the draft EIS review process for consideration by the lead and cooperating agencies in developing the EIS (40 C.F.R. 1502.17).

Comments and any supplemental materials received during scoping are included in Appendix B and are available on [Regulations.gov](https://www.regulations.gov). NOAA invited public comments on this summary of submitted alternatives, information, and analyses during the public review period of the draft EIS.

NOAA received over 110,000 comments on the proposed rule, draft EIS, and draft management plan during the 60-day public comment period from August to October 2023. Some comments identified different boundary alternatives, or provided new information sources and related analyses. Substantive comments and responses to those comments are included in Appendix A. All individual comments and any supplemental materials received on the draft designation materials are available on [Regulations.gov](https://www.regulations.gov).

3.11.1 Comments on Alternatives

Many EIS scoping and draft EIS comments were submitted outlining potential boundary alternatives, as well as suggesting specific regulations to include for the proposed sanctuary. A summary of the topics addressed in these comments is provided below. Section 3.9 describes alternatives that were considered and may have informed the formulation of the alternatives analyzed in this EIS, but were not carried forward for full EIS analysis. Specific comments on the draft EIS and responses to those comments are discussed in detail in Appendix A; see Appendix B regarding a summary of comments received during the scoping period. Appendices A and B also address other comments (besides boundaries and regulatory alternatives) received during review of the draft EIS and during scoping.

Sanctuary Boundaries Comments – Scoping

- Extend boundaries to the Ventura County border and include waters around Carpinteria Valley (major Chumash site and harbor seal rookery).
- Historical boundaries of the Chumash People are from San Simeon in San Luis Obispo County to Malibu in Los Angeles County.

- Include additional waters that would connect its southern boundary with the northern and eastern boundaries of CINMS, given that about one-third of the current southern sea otter population is south of MBNMS.
- Expand boundary to include Morro Bay East Estuary SMR and the Morro Bay State Marine Recreational Areas.
- Include area from Hollister Ranch through Gaviota to Dos Pueblos Ranch.
- Expand to include Hueneme Beach as the southern corner.
- Include Goleta Slough and the waters around it.
- Approve the original proposal without the wind energy areas excluded.
- Extend boundary past Gaviota Creek, so that land drained by Gaviota Creek can be considered relating to the sanctuary footprint as well, while the entire mouth of Gaviota Creek (even during stormy times) must be included within the sanctuary's boundaries.
- Set boundaries at a minimum of a two- to five-mile radius around all ports and harbors.
- Reduce boundaries to a minimum size that is carefully justified as to the need for coverage, per the NMSA's language that "the manageability of the area, including such factors as its size, its ability to be identified as a discrete ecological unit with definable boundaries, its accessibility, and its suitability for monitoring and enforcement activities."
- Limit boundaries to federal waters.
- Establish the boundary two miles offshore so as not to impede existing uses.
- Narrow boundaries in size and scope to protect only those areas identified as essential to the cultural heritage of the Chumash Tribe.
- Exclude all tributaries, fishing, property, coastal beaches, and dunes between Point Buchon to the north and Point Sal to the south.
- The seaward boundary of the sanctuary should follow the 40-fathom curve from its northern to southern boundary.
- Exclude the eight known U.S. Navy sunken military crafts from the sanctuary boundary.
- Consider excluding submarine telecommunications cable landing sites and routes.
- Provide exclusion zones and buffers around offshore wind farms.
- Exclude area of offshore wind projects in state waters near VSFB.
- Shift the CHNMS northern boundary far enough south, and set it far enough back from the coast, to allow multiple power cables running from the Morro Bay Wind Energy Area to shore.
- Consider spatial needs of port access and a new deep-water port.
- Exclude these existing oil and gas leases: Santa Ynez Unit (platforms Heritage, Harmony, and Hondo), Point Pedernales Unit (Platform Irene); alternatively, grant exemptions or waivers for these platforms and associated activities.
- Reassess the purpose and need for a sanctuary of this size considering the panoply of existing federal, state, and local protections in the area.

Sanctuary Regulations Comments – Scoping

- Allow MPWC use.
- The sanctuary should not have any role in authorizing, permitting, or commenting on harbor dredging or dredged material disposal projects; all existing dredged material disposal sites must be exempted from sanctuary regulations.
- Exempt sediment management for habitat protection and restoration.
- Grant exclusions or exemptions to the DoD to account for current and future military operations inside of the sanctuary.
- Do not restrict or prohibit submarine telecommunication cable installation, maintenance, and repair, or existing or future submarine fiber optic cables transiting the proposed sanctuary boundaries, as with Hawaiian Islands Humpback Whale National Marine Sanctuary and Olympic Coast National Marine Sanctuary.
- Grandfather activities authorized by a valid lease, permit, license, approval, or other authorization in existence on the effective date of sanctuary designation.
- Allow access to everyone, including recreational boating, commercial, recreational, and municipal uses.
- Exempt shipping activities so as not to cause further delays to highly perishable produce or to create further disincentives to continue farming in Santa Barbara or San Luis Obispo counties.
- Protect wildlife, water quality, and cultural values.
- Reduce pollution from land and ocean-based sources.
- Prohibit discharging materials into the sanctuary to protect sanctuary resources.
- If the sanctuary moves forward with an agricultural water quality regulatory component, agricultural discharges from agricultural lands should be identified as compatible.
- Impose no prohibitions that would disincentivize desalination projects in the future; alternatively, exempt desalination or deem it as a compatible use within the sanctuary.
- Ensure strongest possible protection for Chumash sacred sites, cultural places, and cultural values.
- Regulate/restrict non-consumptive recreation activities when appropriate (e.g., to protect nesting birds, migrating/feeding whales, etc.).
- Prohibit disturbing the seabed.
- Prohibit disturbing cultural resources.
- Prohibit activities to procure oil, gas, and minerals from the proposed area.
- Regulate transit corridors and vessel speeds to reduce vessel strike risk for whales in the proposed area.
- Impose no future regulations on commercial or recreational fishing.
- Prohibit fishing in some areas to protect unique oceanographic features such as underwater seamounts, plateaus, and canyons.
- Include an alternative in the EIS that provides full protection (i.e., no fishing) around the Rodriguez Seamount from the bottom of the ocean to the top of the water column.
- Prohibit or at least strictly regulate any commercial harvesting of biological resources.
- Phase in (over a specified number of years) regulations that would at first encourage (with incentives) and ultimately require the use of “ropeless” gear for all fixed-gear

fisheries (e.g., pot, trap, and set-gillnet fisheries) operating within the sanctuary when large whales at greatest risk of entanglement are present.

- Require use of weak-line measures to mitigate risk of entanglement of humpback whales.
- Permanently ban use of all forms of gill nets within the sanctuary.
- Designate some areas of the sanctuary as marine reserves, where fishing/taking is restricted.
- Allow the establishment of no-take marine zones and the development of marine zoning strategies in the designation document to offset impacts on marine life from climate disturbance.
- If any MPA is implemented, recommend keeping it within Point Conception and Espada Bluff.
- Only allow small scale and family-based fishing industry (like in the central coast) to operate in the sanctuary; it should be off limits to large scale commercial fishing.
 - Do not interfere, directly or indirectly, with existing fishing access and practices: Exempt seafood industry from regulation of indirect activities that may fall outside of those managed through the Magnuson-Stevens Fishery Conservation and Management Act (MSA), such as vessel discharges, the use of certain fishing gears (or components thereof), vessel engine emissions, etc.;
 - Exempt scientific surveys (Exempted Fishing Permits) used to inform stock assessments, Fishery Management Plans.
- Prohibit offshore wind development and associated infrastructure from being allowed inside sanctuary boundary.
- Consider a ban on the construction of a deep-water port at the DCPD site.
- Ensure regulations and management plan allow for necessary activities and infrastructure for the Morro Bay Wind Energy Area, including surveys, vessel transit, activities related to subsea transmission power landings or upgrading port and harbor areas, to be leased, installed, maintained, repaired, and decommissioned within the proposed sanctuary, should the sanctuary be designated with the currently proposed boundary.

Additional, New Suggested Sanctuary Boundaries and Regulations – Draft EIS

Several new alternatives for boundaries and regulations were suggested in comments on the draft EIS during the public review period. Some of the new suggested alternatives are addressed in Section 3.9 of this final EIS. Otherwise, they are addressed in Appendix A, Response to Comments, primarily in the Boundaries and Regulations and Permitting sections. New suggested alternative regulations regarding specific issues are addressed under the various issue area sections in Appendix A. For example, comments specific to offshore energy or submarine fiber optic cables are in the Offshore Oil and Gas Development, Offshore Wind Energy Development, and Submarine Fiber Optic Cables sections in the Response to Comments.

3.11.2 Information and Analyses Comments

Many references to information sources and analyses were submitted to NOAA during the scoping process for consideration in developing the EIS. These data sources are included in Appendix B.2 in the scoping summary (Appendix B). In addition, many public comments on the draft EIS also identified information sources and analyses. The comments on the draft designation documents, including those comments that include information or analyses, are summarized in final EIS Appendix A, Response to Comments. After reviewing all comments, NOAA grouped substantive comments by issue and prepared written responses to each topic.

The topics identified in scoping and draft EIS comments related to information sources and/or analyses are listed below.

- Studies on whales, including vessel strikes, entanglement, and biologically important areas
- Studies of kelp forest animals, otters, cetaceans, threatened species, other marine biological resources, and biodiversity
- Native American cultural practices and historical information
- Climate change and climate resiliency
- MPAs
- Oil and gas decommissioning impact evaluations
- Offshore energy industry information, including existing lease rights and regulatory obligations
- Wind energy development and industry standards
- State and federal offshore wind project status updates
- Census data
- Marine transportation information, including PAC-PARS
- Commercial fishing landings and other fishing/fish resource data
- Geological and fault data
- Sanctuary co-management and other management guidance
- Undersea cables threats
- World ocean assessment
- Carbon removal
- Seamounts, including unique features of the Rodriguez Seamount
- Marine regulatory seascape information and maps
- Effects of protected federal lands on economics; coastal economics and marine resource protection benefits
- Environmental justice
- State tidelands
- Biogeography of Santa Barbara Channel area
- Ocean acidification
- Central coast water quality
- Homeland Security and military activities
- Space enterprises
- Shipwrecks

- Suggested sanctuary names
- Various reports, data, and information regarding the special features of the area between Morro Bay and Cambria
- Habitat information, migratory corridors, and seasonal migration paths
- Seabird hotspots
- Information on fish and shark species, including diversity, abundance, distribution, and density
- Recent explorations of the benthic environment and seafloor stratum
- Existing stressors on biological resources and species vulnerability
- Oceanographic effects of offshore wind, including upwelling
- Chumash culture, heritage, and locations of sacred sites and Ancestral villages
- Tribal consultation, Indigenous engagement, and inclusion guidance
- Tribal and Indigenous representation
- Submarine fiber optic cable industry information and maps
- Motorized personal watercraft use
- Fishing industry information; fishing gear and technique impacts
- Wildlife disturbance, including human activities and acoustics
- Dredging and coastal resiliency projects
- Marine transportation; vessel navigation and operation information
- DCPD operational status
- Local socioeconomic and recreational use information
- Water quality risks and agricultural regulations

Chapter 4:

Affected Environment and Environmental Consequences

This chapter describes the areas that could be affected by the proposed alternatives, and the potential environmental impacts of the proposed action and alternatives on the human environment.

This chapter also serves as:

- the resource assessment of present and potential uses of the area to meet the requirements of Section 304(a) of the National Marine Sanctuaries Act (NMSA); and
- the assessment and effect determinations for impacts on protected species, habitats, and historic properties.

See Appendix E for additional details related to the National Oceanic and Atmospheric Administration's (NOAA) compliance with applicable laws and regulations that intersect with designation of the proposed sanctuary, such as the Coastal Zone Management Act Section 307, National Historic Preservation Act (NHPA) Section 106, and Endangered Species Act (ESA) Section 7, among others.

4.1 Introduction and Methodology

This section summarizes NOAA's analytical approach to evaluating the anticipated environmental effects of the Initial Boundary Alternative and other alternatives described in Chapter 3.

4.1.1 Chapter Overview and Structure

The remainder of this chapter is organized by resource area or type of use that may be impacted by the proposed action or alternatives, as follows:

- Physical resources (including air quality and climate change, geology, oceanography, and water quality).
- Biological resources.
- Commercial fishing and aquaculture.
- Cultural heritage and maritime heritage resources.
- Socioeconomics, human uses, and environmental justice (including demographics, recreation and recreational fishing, tourism, land use, fiber optic cables, research, and education).
- Offshore energy (including oil and gas facilities, wind energy development, and Diablo Canyon Power Plant (DCPP)).
- Marine transportation.
- Department of Defense (DoD) and Homeland Security Activities

These subsections are also referred to as issue areas or topics. The subsection for each resource area contains:

- a description of the affected environment for the resource area to serve as the environmental baseline.
- a summary of any specific analytical assumptions, methodology, or significance criteria for the resource area.
- an analysis of the environmental consequences of implementing the Initial Boundary Alternative and each other alternative on the resource area.

The focus of the affected environment description is on those resources or uses that may be impacted by specific regulatory and/or management changes associated with sanctuary designation (the proposed action). As a result, some sections, such as air quality, provide only a general discussion of the resource conditions, while the biological resources section provides a more specific discussion of the resources.

The second part of each resource section describes the methodology used for impact analysis and factors used to determine the significance of the effects of the proposed action (sanctuary designation). The overall methodology for each issue area or topic is consistent with the Council on Environmental Quality (CEQ) guidance and NOAA National Environmental Policy Act (NEPA) guidelines (NOAA Administrative Order 216-6A available [online](#)).

The impact analysis for each issue area includes a description of how the Initial Boundary Alternative or other alternative would result in a change in the environment relative to existing conditions and the current regulatory framework. The analysis within each topic considers reasonably foreseeable environmental effects of the proposed agency action and alternatives, including direct and indirect impacts and focuses on components of the proposed or alternative actions that could result in potentially significant effects. Both adverse and beneficial impacts are identified, where relevant. Impacts in each issue area are addressed by alternative, starting with the Initial Boundary Alternative. For the No Action Alternative, the baseline conditions described in the affected environment sections would continue without the benefits of the sanctuary designation described in the action alternatives. Finally, the chapter concludes with a discussion of the possible cumulative impacts the proposed action may have when combined with reasonably foreseeable past, present, and future projects undertaken outside the scope of the proposed action. Based on the analysis in Chapter 4, a comparison of alternatives is provided in Chapter 5.

4.1.2 Scope of Study Area and Impact Analysis

For the purposes of this environmental impact statement (EIS), the study area for the affected environment is generally defined as the human uses of the environment, as well as the natural environment, within the boundaries of the proposed action and alternatives (the maximum area of the proposed action and alternatives is a combination of the Initial Boundary Alternative, Sub-Alternative 5a, and Sub-Alternative 5b). In some issue areas, the study area is necessarily larger than the proposed sanctuary area because there is potential for impacts to occur beyond the proposed boundary.

During the public scoping process and the subsequent public comment process on the draft EIS, numerous issues were raised. NOAA carefully reviewed these issues. To the extent that these issues are relevant to the EIS, they are included in the analysis. In some cases, the proposed sanctuary and implementation of sanctuary regulations do not affect these identified issues.

The analysis of the proposed sanctuary terms of designation is incorporated in the analysis of related proposed final regulations. Management plan actions that have no potential for impacts, such as administrative actions taking place in existing facilities, are not considered in this EIS. Many of the activities presented in the final management plan would not have an impact on the environment because they are administrative in nature.

Within each issue area, the impact analysis addresses only those elements of the proposed final regulations that have the potential to impact the specific resource or use. Where there is no potential for a specific proposed final regulation or activity to impact that resource or use, the regulation or activity is not discussed.

The nature of existing conditions is interpreted from available literature and summarized in the resource sections. Where sufficient location-specific information is available, these data are primarily utilized. Where location-specific data are lacking, general conditions for the study area are utilized with appropriate qualifications.

4.1.3 Determining Significance and Quality of Impacts

NOAA's analysis of the environmental consequences of the alternatives is based on review of existing literature and studies, information provided by experts, and the best professional judgment of NOAA staff.

The 2020 NEPA regulations issued by the CEQ define "effects" or "impacts" to mean:

Changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives, including those effects that may occur at the same time and place as the proposed action or alternatives and may include effects that are later in time or farther removed in distance from the proposed action or alternatives (40 Code of Federal Regulations (C.F.R.) 1508.1(g)).

To facilitate the most meaningful analysis and to provide clarity to the public about the nature of the potential effects considered in this EIS, NOAA has decided to divide the potential effects of the proposed action and alternatives into three categories: direct, indirect, and cumulative. NOAA applies the following meaning to these terms, based on historical practice and case law:

Direct Impact: A known or potential impact caused by the proposed action or project that occurs at the time and place of the action.

Indirect Impact: A known or potential impact caused or induced by the proposed action or project that occurs later than the action or is removed in distance from it but is still reasonably expected to occur.

Cumulative Impact: A known or potential impact resulting from the incremental effect of the proposed action added to other past, present, or reasonably foreseeable future actions.

NOAA uses these categories to describe the nature, timing, and proximity of reasonably foreseeable impacts on the affected resource area.

Consistent with the 2020 CEQ regulations, when evaluating significance, NOAA evaluated:

- the geographic scale and setting of the project.
- the occurrence and condition of environmental resources in the affected area, including resources protected by law (e.g., marine mammals, threatened and endangered species, Essential Fish Habitat (EFH), managed fisheries, national marine sanctuaries and marine national monuments, historic and archeological resources).
- the degree of effects on those environmental resources (e.g., minor, moderate, major) including consideration of:
 - the duration of the impact (long-term; short-term; permanent).
 - whether effects are beneficial and/or adverse.
 - the level of impacts on public health and safety.
 - whether there is the potential to violate federal, state, local, or Tribal law protecting the environment.
 - whether the proposed action is related to one or more “connected actions” with the potential for synergistic effects.

NOAA also considered any other factor that would meaningfully inform the “degree of effect,” including:

- effects that contribute to the introduction, continued existence, or spread of noxious weeds or nonnative introduced species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of the species.
- disproportionate adverse effects on communities with environmental justice concerns.
- effects to any other physical or biological resources where the impact is considered substantial in magnitude (e.g., substantial irreversible loss of coastal resource such as marshland or seagrass).
- effects that involve a high degree of scientific uncertainty or scientific disagreement.

NOAA describes the duration of potential impacts as either short term, long term, or permanent. This indicates the period of time during which the resource would be impacted. Duration considers the permanence of an impact and is defined as:

- **Short-Term Impact:** A known or potential impact of limited duration, relative to the proposed action and the environmental resource. For the purpose of this analysis, short-term impacts may be instantaneous or may last minutes, hours, days, or up to five years.
- **Long-Term Impact:** A known or potential impact of extended duration, relative to the proposed action and the environmental resource. For the purpose of this analysis, long-term impacts would last longer than five years.
- **Permanent Impact:** A known or potential impact that is likely to remain unchanged indefinitely.

The various levels of impact descriptor used in this analysis are

- **No Impact:** No effect would occur on the resource.
- **Negligible:** Impacts on a resource can barely be detected and are therefore discountable.
- **Minor:** Impacts on a resource that might be perceptible but are typically not measurable. Impacts would generally be localized and temporary and would not alter the overall condition of the resource from the status quo. For organisms, individuals may be affected but population-level impacts would not occur.
- **Moderate:** Impacts on a resource that are more perceptible and, typically, more amenable to quantification or measurement. They can be localized or widespread and could alter the overall, fundamental condition of the resource from the status quo. Impacts would not rise to the level of significance as defined below.
- **Significant:** Impacts resulting in a substantial structural or functional alteration in the state of a resource. Long-term or permanent impacts or impacts with a high intensity or frequency of alteration to a resource, whether beneficial or adverse, would be considered significant. For organisms, a significant impact may mean that population-level impacts would occur. The significance threshold is evaluated on a case-by-case basis, taking into consideration the potentially affected environment and degree of the impact(s).

Potential impacts are described as either beneficial or adverse as follows:

- **Beneficial Impact:** Impacts that promote favorable conditions for the resource.
- **Adverse Impact:** Impacts that are likely to be damaging, harmful, or unfavorable to one or more of the resources.

4.1.4 Guiding Questions and Assumptions for Impact Analysis

NOAA evaluated the impacts on each resource area in the context of each of the components of the alternatives: sanctuary boundary, sanctuary regulations, and the sanctuary management plan and field activities. In evaluating impacts, NOAA considered the following, inter-connected questions:

- **Boundary:** How does the spatial extent of the proposed sanctuary affect the resources, natural environment, cultural heritage, and human uses in and around the proposed sanctuary?
- **Regulations:** How do the type and amount of proposed final regulations to protect sanctuary resources affect the natural environment, cultural heritage, and human uses in and around the proposed sanctuary?
- **Management plan and field activities:** How do the activities to manage the proposed sanctuary affect the level of protection of the sanctuary's resources and public stewardship of those resources?

Based on NOAA's extensive experience in managing marine protected areas (MPAs), NOAA expects that designating a national marine sanctuary has the potential to result in the following impacts:

- **Minor increase** in on-water research activities as a result of sanctuary activities and collaboration with researchers and other resource management agencies.
- **Minor increase** in tourism or recreational use of sanctuary waters due to increased sanctuary visibility.
- **Change in the frequency or intensity** of other marine uses in the area as a result of the sanctuary designation.

4.1.5 Resources or Issues Areas Not Analyzed in Detail

Only the human environment conditions relevant to the proposed action of designating a new national marine sanctuary are analyzed in detail here. The following resource areas have been determined to have no potential for impacts by the proposed action and are not discussed in this EIS:

- **Noise** – None of the alternatives would have the potential to allow new noise-generating activities that are not currently allowed in the proposed sanctuary area under existing regulations.
- **Mineral Resources** – There are no existing or planned mineral extraction uses in the proposed sanctuary area.
- **Utilities** – None of the alternatives would directly affect utilities or infrastructure, with the exception of planned future wind energy (regulated and analyzed by the Bureau of Ocean Energy Management (BOEM)). Energy utilities are addressed in Section 4.7 (offshore energy). Therefore, the discussion below does not contain a separate section to analyze impacts on utilities.²³
- **Visual Resources** – None of the alternatives would cause adverse impacts on visual resources. If a visitor center or sanctuary office is proposed onshore adjacent to the proposed sanctuary area in the future, it would be subject to a separate review process (including environmental reviews through NEPA). Since no location has been identified for such a facility, it would be speculative to attempt to address it in this EIS.

In addition to the resources listed above, numerous resources discussed in Sections 4.2 through 4.9 would not be impacted by the proposed action or any of the action alternatives. These resources are included in the analysis to provide the public with a complete picture of the proposed sanctuary area.

²³ Utilities do not include submarine fiber optic cables. Submarine fiber optic cables are addressed in final EIS Section 4.6.

4.2 Physical Resources

The physical resources within the study area that may be affected by the Initial Boundary Alternative or action alternatives include air quality and climate change, geology (seabed/submerged land), oceanography, and water quality, which addresses issues such as marine water quality, land-based pollution runoff, vessel discharges (including cruise ships), and other existing sources of discharges. The existing conditions of these resources in the study area are generally described, and a summary of federal, state, and local authorities pertaining to these resources is provided in Appendix F. The impact analysis presents the standards used to evaluate impacts on physical resources and addresses potential effects of the Initial Boundary Alternative and other alternatives on each resource. The study area for physical resources is generally the waters along and offshore the central coast of California, as defined by the Initial Boundary Alternative combined with the areas in Sub-Alternative 5a and Sub-Alternative 5b, as described in Chapter 3.

The primary data sources used in this section are data managed by local, state, and federal agencies, documents reporting on air quality and climate change, geologic resources, oceanographic resources, and water quality conditions and impacts in the study area, and research conducted in the study area.

Scoping comments and comments raised during the draft EIS review period brought up concerns about protecting water quality and reducing pollution from land and ocean-based sources, and protecting the seabed and geological/oceanographic features through sanctuary regulations managing/preventing discharges of harmful materials; prohibiting disturbing the seabed; prohibiting activities to procure oil, gas, and minerals from the proposed sanctuary area; prohibiting fishing in some areas and offshore oil and gas drilling to protect unique oceanographic features such as underwater seamounts, plateaus, and canyons; prohibiting offshore wind development and associated infrastructure; including a vessel speed reduction plan; and addressing threats of climate change, offshore renewable energy, commercial shipping, and harmful algal blooms to physical resources through regulations and/or management activities. These concerns are addressed below, as well as in the proposed final regulations and final management plan.

4.2.1 Regional Overview of Affected Environment (Physical Resources)

The following regional overview is divided by physical resource topic.

Air Quality and Climate Change

The study area for the air quality analysis varies according to the type of air pollutant being discussed; some pollutants, such as carbon monoxide, have a localized area of effect, while other pollutants, such as ozone, have a regional area of effect.

The study area is located off the coast of San Luis Obispo and Santa Barbara counties and is within the South Central Coast Air Basin (California Air Resources Board, 2014). The South Central Coast Basinwide Air Pollution Control Council promotes coordination of air pollution control efforts throughout the South Central Coast Air Basin and is comprised of three air

districts: the San Luis Obispo County Air Pollution Control District, Santa Barbara County Air Pollution Control District, and Ventura County Air Pollution Control District (San Luis Obispo County Air Pollution Control District, 2022b).

The climate off the California coast is influenced primarily by two natural phenomena: the El Niño-Southern Oscillation and the Pacific Decadal Oscillation, which affect weather along the entire U.S. West Coast (NOAA Fisheries, 2019). These phenomena are discussed in more detail in the oceanography subsection below. The summer climate of the West Coast is dominated by a semi-permanent high-pressure cell centered over the northeastern Pacific Ocean. Because this high-pressure cell is quite persistent, storms rarely affect the California coast during the summer. Thus, the conditions along the California coast during summer are a northwest air flow and negligible precipitation. The steady northwesterly flow around the eastern edge of the Pacific high-pressure cell exerts a stress on the ocean surface along the West Coast. This induces upwelling of cold water from below. See additional details regarding upwelling in the oceanography and water quality subsections below, as well as in Section 4.3. Coastal fog and low clouds are a prominent feature of the central coast in the late spring and early summer, due to cool and moisture-laden air approaching the California coast from across the Pacific Ocean being further cooled as it flows across this cold bank of upwelled water near the coast, accentuating the temperature contrast across the coastline and producing condensation. From early winter through spring, the Pacific high-pressure cell weakens and shifts southward, upwelling minimizes, and storms occur. The speed and direction of winds in the study area are controlled by the location and strength of the Pacific high-pressure system and other global patterns (San Luis Obispo County Air Pollution Control District, 2001).

The extent and severity of the air pollution issues in the South Central Coast Air Basin is a function of the area's natural physical characteristics (weather and topography), as well as human-created influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the South Central Coast Air Basin area. In general, the air pollution potential of the coastal areas is relatively low due to persistent winds.

The federal Clean Air Act (42 United States Code (U.S.C.) § 7401 *et seq.*) requires the U.S. Environmental Protection Agency (USEPA) to set National Ambient Air Quality Standards for commonly found air pollutants, or “criteria pollutants”—pollutants that are regulated by developing human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels. National Ambient Air Quality Standards have been established for ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, 10-micron particulate matter, 2.5-micron particulate matter, and airborne lead.

In addition, the California Air Resources Board has established California Ambient Air Quality Standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, 10-micron particulate matter, airborne lead, hydrogen sulfide, and vinyl chloride at levels designed to protect the most sensitive members of the population, particularly children, the elderly, and people who suffer from lung or heart diseases.

Areas with air pollution levels above these national or state standards are considered “nonattainment areas” and are subject to planning and pollution control requirements that are

more stringent than normal requirements. Both state and national ambient air quality standards consist of two parts: an allowable concentration of a pollutant, and an averaging time over which the concentration is to be measured. For some pollutants, there is more than one air quality standard, reflecting both its short-term and long-term effects. The California Ambient Air Quality Standards are generally set at concentrations that are lower than the national standards and, in some cases, have shorter averaging periods.

The entire South Central Coast Air Basin is currently designated as nonattainment for state ozone and 10-micron particulate matter standards (California Air Resources Board, 2020a, 2020b, 2022), and designated as attainment/unclassified for all other state criteria pollutants (California Air Resources Board, 2022). The entire South Central Coast Air Basin is currently designated as attainment/unclassified for all federal criteria pollutants, with the exception of the eastern part of San Luis Obispo County, which is designated as nonattainment for federal ozone standards (USEPA, 2022b; 2022d).

Recent wildfires have led to increased particulate matter and ozone concentrations across the state, including San Luis Obispo and Santa Barbara counties. Wind-blown dust from the Oceano Dunes State Vehicular Recreation Area has continued to cause elevated 10-micron and 2.5-micron particulate matter in South San Luis Obispo County and remains the predominant air quality challenge affecting this area, even with mitigation measures in place (San Luis Obispo County Air Pollution Control District, 2022a). Santa Barbara County Air Pollution Control District continues to focus efforts on achieving particulate reductions in the marine shipping sector, which produces a large percentage of ozone precursor emissions in Santa Barbara County (Santa Barbara County Air Pollution Control District, 2019).

The largest sources of air pollution in the study area originate from diesel exhaust from ship engines, oil and gas industry operations, and surrounding large agricultural or industrialized areas, such as the cities of San Luis Obispo, Santa Maria, and Santa Barbara.

The greatest risks of air pollution at open sea are from cruise ships and other large commercial vessels that might cross the study area. Vessel traffic is a significant source of air pollutants, such as sulfur dioxide, nitrogen dioxide, greenhouse gases, diesel particulate matter, and common products of combustion such as carbon monoxide, carbon dioxide, and hydrocarbons. Large ships traveling along the coast of Santa Barbara County produce significant air emissions and are responsible for 51.87 tons per day of nitrogen oxide emissions, or 77% of the county's nitrogen oxide emissions in 2017, making marine shipping the single largest source of nitrogen oxide emissions in the county (Santa Barbara County Air Pollution Control District, 2019). Regulations under the Clean Air Act, and regulations issued by the International Maritime Organization (IMO) and the USEPA now require lower nitrogen oxide standards for newly built vessel engines. However, it will take 10–20 years to phase out the older, higher-emitting engines being used on most ships today. For this reason, Santa Barbara County Air Pollution Control District, in partnership with Channel Islands National Marine Sanctuary (CINMS) and other partners, continues to pursue voluntary Vessel Speed Reduction incentive programs that achieve near-term nitrogen oxide reductions in marine shipping emissions (Santa Barbara County Air Pollution Control District, 2019).

The oil and gas platforms offshore California contribute approximately 1% of the total nitrogen oxide emissions in Ventura, Santa Barbara, and San Luis Obispo counties. Controls to minimize emissions from platform operations have been instituted by the local air pollution control districts (BSEE, 2022). There have been recent emission decreases from oil and gas facilities off the coast of Santa Barbara County. Some of these reductions can be attributed to the shutdown of the Plains All American Pipeline in 2015, which has consequently prevented oil production from multiple offshore facilities. Planned decommissioning and removal of three offshore platforms in the study area will reduce emissions further when complete (Santa Barbara County Air Pollution Control District, 2019).

According to the USEPA, global climate change refers to the long-term and irrevocable shift in weather related patterns, including the rise in the Earth's temperature due to an increase in greenhouse gases in the atmosphere. Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases that contribute to climate change have a broader, global impact. The principal greenhouse gases contributing to global warming are carbon dioxide, methane, nitrous oxide, and fluorinated gases (USEPA, 2022e). Since the industrial revolution, people have added a substantial amount of greenhouse gases into the atmosphere by burning fossil fuels, land use changes, and other activities. As a result of human activities, these greenhouse gases are entering the atmosphere more quickly than they are being removed by chemical reactions or emission sinks, such as the ocean absorbing greenhouse gases from the atmosphere. Thus, concentrations of these gases are increasing (USEPA, 2021b).

As a result of global climate change, the Earth is experiencing sea level rise, and adverse impacts on water supply, water quality, agriculture, and both marine and terrestrial habitats. Ozone and air pollutants can have harmful impacts on marine life, often through sedimentation and nutrients carried into surface waters. Coastal environments are an important ecological resource that provide habitat for many marine and terrestrial species. Increase in atmospheric temperature is correlated with increased sea surface temperature, indicating that there could be changes to the community structure of marine organisms (Hanak & Moreno, 2011). The biological consequences of climate change of the atmosphere and oceans are unknown because there are many variables involved (McGowan et al., 1998), including anomalous events such as El Niño Southern Oscillation and naturally occurring oceanographic patterns. However, by understanding the effects of increased sea surface temperature on marine organisms, we can predict the outcomes and prevent further damage to marine species populations and the environment.

Climate change is also leading to ocean acidification, as the ocean absorbs increasing concentrations of carbon dioxide released through human activities. This leads to lower pH and greater acidity, causing a fundamental change in the chemistry of the ocean (NOAA, 2022a). Ocean acidification has many harmful effects; it can create conditions that eat away at minerals used by marine life to build their shells and skeletons, lead to harmful algal blooms that can contaminate shellfish eaten by humans and sicken fish and marine mammals and affect normal behavior of non-calcifying organisms like some fish species (NOAA, 2020a; NOAA Fisheries 2020). Warming of the ocean due to climate change will also lead to decreases in dissolved oxygen concentrations, with implications for productivity, nutrient and carbon cycling, and habitat in the study area (Keeling et al., 2010).

Climate drivers are currently the most concerning threat to water quality. Global climate change has affected water quality (e.g., sea surface temperatures, pH, etc.) and the animals associated with the proposed sanctuary (e.g., urchins, deep-water corals, and other habitat-forming species). For example, a warm water event unprecedented in size and duration occurred from 2013–2016, which led to anomalously warmer waters, a coastwide toxic algal bloom, reduced mixing of surface waters, reduced nutrient delivery via upwelling, and ultimately resulted in low productivity in the study area (Cavole et al., 2016; Jacox et al., 2020; McCabe et al., 2016). Research suggests that such marine heat waves and other changing oceanographic conditions are likely related to climate change (Li & Donner, 2022; Sen Gupta et al., 2020; Smale et al., 2019).

Geology

The geophysical features in the study area include seamounts, canyons, reefs, and many types of sediment. Shoreline environments include rocky or eroding bluffs with intermittent beaches in the northern third of the study area, vast expanses of sandy beaches and coastal dunes with occasional rocky shores in the central part of the study area, and eroding bluffs and intermittent beaches in the southern third of the study area. Offshore features include rocky reefs, soft sediment areas, a large bank, marine canyons, several seamounts, an escarpment west of the bank, and the abyssal plain beyond that.

Many dozens of rocks and small islands of varying sizes dot the coastline throughout the study area due to different geological processes, the most active process being erosion along the coast. The physical formation of the California shoreline north of Point Conception is dynamic and constantly changing because of coastal erosion. In general, the strong waves and wind north of Point Conception have caused numerous rocks and cliffs to form, while rocks and islands tend to be less abundant and the coastline sandier south of Point Conception. The rate of shoreline change is determined by natural processes, such as rough seas, sea level rise, high tides, nearshore currents, rainfall, runoff, landslides, and earthquakes. Extensive human developments have also significantly altered the natural flow of sediment to and along the coast in the study area (Bureau of Land Management, 2005).

The sand transport pattern along the shoreline of Estero Bay, which has rocky headlands at both ends and sandy beaches within it, produces a littoral cell within Estero Bay even though there is no submarine canyon in the area (Dingler et al., 1982). Morro Bay developed behind a large coastal spit within the onshore extension of Estero Bay, and sits atop a subsiding sedimentary basin bounded by two faults (Simms et al., 2016).

The study area sits on the Pacific Plate near where it meets the North American Plate. Geologists now believe the Farallon Plate was subducted beneath the two plates hundreds of millions of years ago, and now lies beneath the study area. All land and seafloor west of the San Andreas Fault that was once part of the North American Plate became part of the Pacific Plate (García & Mahan, 2012; Nicholson et al., 1992). This subduction and faulting have led to moderate amounts of volcanic activity in the area, and helped form Morro Rock, an ancient volcanic plug, and the most prominent geological feature along the coast. Fossils and oil and gas reserves in the area also reflect a region with considerable marine deposits millions of years ago. The extensive rupturing in this geologically active area allows oil and gas from these subterranean

reservoirs to seep up to the seafloor and out through fractures and sediments into the ocean and atmosphere. The study area contains numerous natural oil seeps (Marine Cadastre, 2016; NOAA, 2015).

Special offshore features include the Santa Lucia Bank, a 56-mile by 12-mile uplift block which reaches within 1,100 feet of the ocean's surface and extends from 20–50 miles offshore. Recent exploration off Santa Lucia Bank revealed interesting geological features of the bank and identification of a petrale sole aggregation and a coral garden on the bank (Duncan et al., 2023). The Arguello Canyon (which may play an important role in upwelling) has walls that reach 1,500 feet from rim to floor and originates in 400-foot water depth six miles off Point Arguello. Arguello Canyon extends to the southwest in the proposed sanctuary to a depth of 11,000 feet (Tréhu, 1991). The southern portion of the proposed sanctuary includes Rodriguez Seamount, a nearly mile-tall extinct volcano that rises to a depth of 2,100 feet below sea level (see Figure 4.2-1).

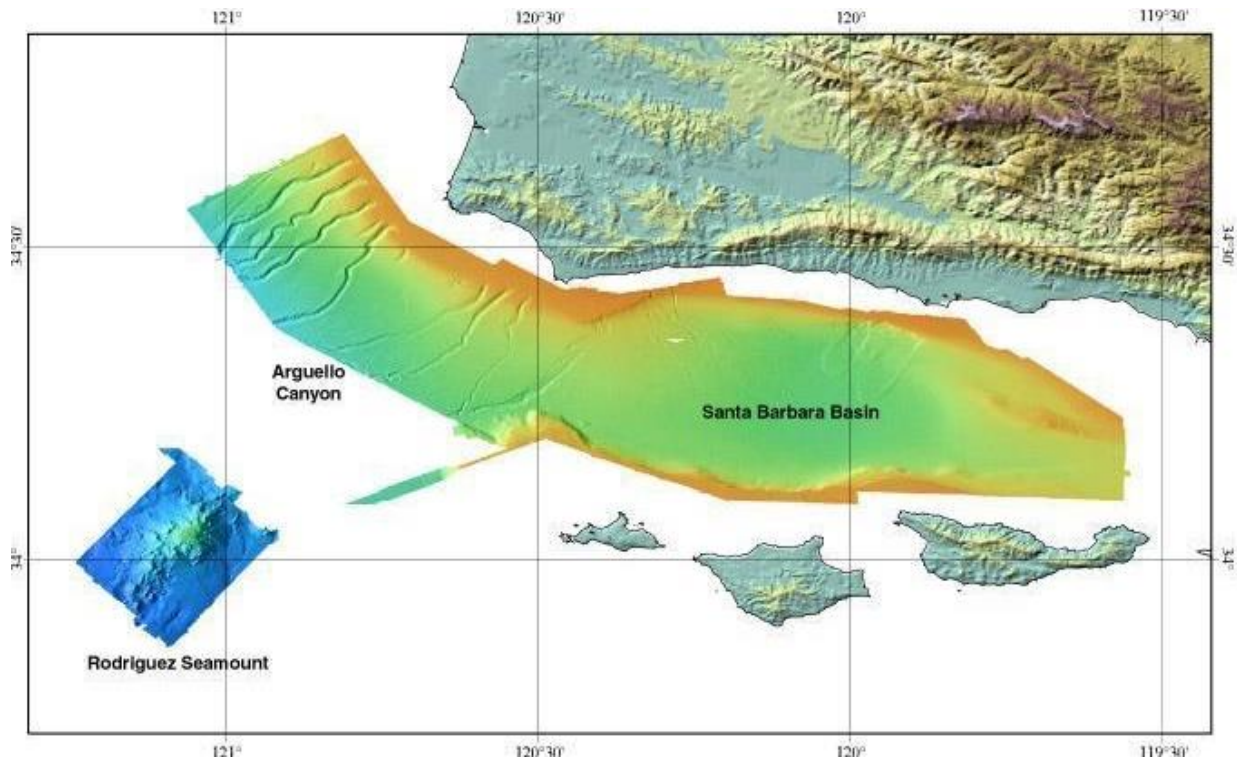


Figure 4.2-1. Arguello Canyon and Rodriguez Seamount. Image: Monterey Bay Aquarium Research Institute, 2016

The combination of Arguello Canyon, Rodriguez Seamount, and another adjacent, unnamed seafloor feature creates ideal conditions for significantly high biodiversity and are all associated with upwelling. Exploration of Rodriguez Seamount by the Monterey Bay Aquarium Research Institute in 2003 provided intriguing evidence that the seamount may once have been an exposed volcano before the seafloor subsided, making this a rare feature within the California Current Large Marine Ecosystem (Marine Conservation Institute, 2022). Sampled rocks from Rodriguez Seamount were found to be encrusted with manganese oxide, a potential target for deep-sea mining operations (Davis et al., 2022).

The Big Sur pockmark field is the largest known pockmark field in North America and extends into the northern region of the study area (Paull et al, 2002, BOEM, 2021b). This important geological feature is located within an approximately 1,300 km² area of soft substrata containing several thousand seafloor depressions (“pockmarks”), which average 175 meters in diameter and 5 meters deep (Lundsten et al., 2019; Paull et al., 2002; 2020; BOEM, 2021a). Pockmarks are relatively common features worldwide, and generally attributed to some form of fluid and/or gas discharge, but are poorly understood (BOEM, 2021b). Research is ongoing to better understand these pockmarks, their properties, and their effects on species composition (BOEM, 2021a).

Seismic activity in the area creates regular earthquakes, submarine landslides, turbidity currents, flood discharges, and coastal erosion.

Oceanography

The study area is part of the California Current Large Marine Ecosystem, which spans 1,864 miles from British Columbia, Canada to Baja California, Mexico and includes the U.S. Exclusive Economic Zone. As one of four eastern oceanic boundary currents in the world, the California Current System within the California Current Large Marine Ecosystem is highly productive and hosts various marine ecosystems and a large diversity of marine organisms (Checkley & Barth, 2009). The California Current System is an offshore, near-surface equatorward flow characterized by low salinity and low temperature (Lynn & Simpson, 1987), which includes the California Current, the Davidson Current, the California Undercurrent, and the Southern California Undercurrent (Hickey, 1998) (see Figure 4.2-2).



Figure 4.2-2. The California Current System. Image: (Cormorant24, 2020), distributed under a [CC BY-SA 4.0 license](#). Source: Checkley et al., 2009; Checkley & Barth, 2009; Hickey et al., 2019; Talley et al., 2011

The central coast of California is widely known for its high volume of upwelling that occurs seasonally in the spring, with upwelling zones stretching from Oregon to Point Conception (Cudaback et al., 2005). Upwelling is related to wind stress and bottom slope (Chen et al., 2013), bringing cold, nutrient-rich waters from the ocean bottom to the surface (see Figure 4.2-3).

Upwelling provides increased nutrient availability which contributes to the natural growth of phytoplankton and primary production in the coastal marine environment. In the San Luis Obispo Bay, phytoplankton growth is affected by both upwelling and a lee that prevents direct disturbance to a body of water, leading to phytoplankton blooms (Tognazzini, 2009). The Point Arguello–Point Conception area is also an upwelling zone with its nutrient-enriched waters flowing south, offshore, and across CINMS. The eastern end of the study area, especially along the Gaviota Coast, is also affected by the Southern California Eddy and Countercurrent as part of the Southern California Bight, wherein surface water flows north along the coast, creating a recirculation within the Santa Barbara Channel. Upwelled waters are an energy source for phytoplankton, which make up the base of many ecosystem food webs, supporting zooplankton populations and fisheries production (Kudela et al., 2008; NOAA, 2022b).

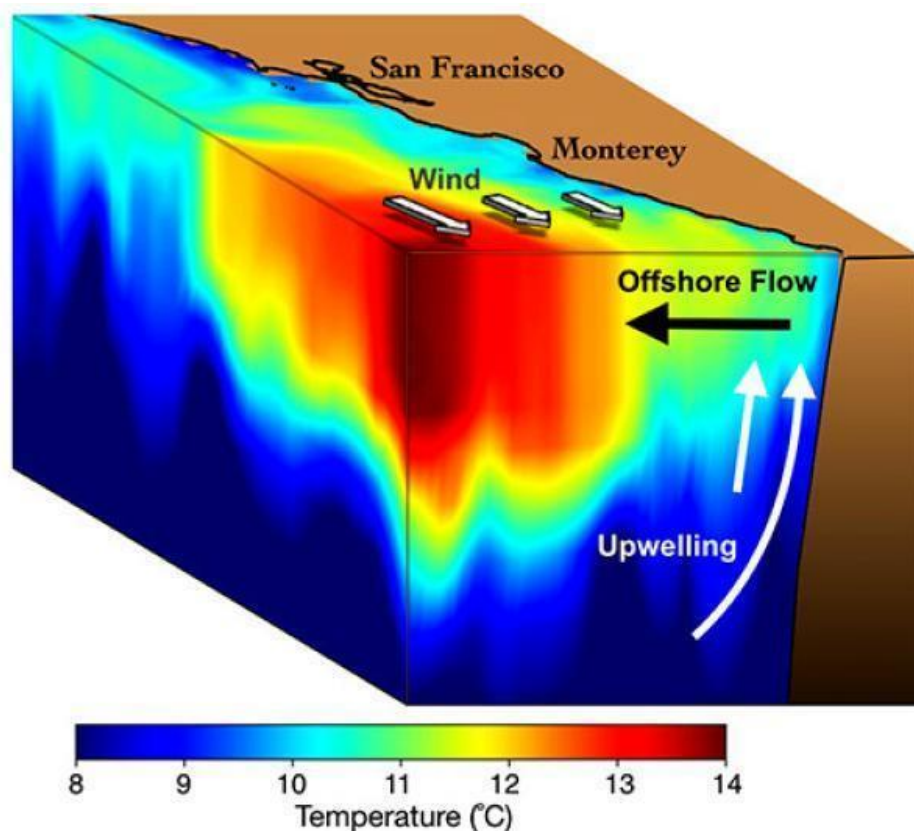


Figure 4.2-3. Upwelling process along the California coast. Winds blowing to the south, especially in spring and summer, drive water offshore near the ocean surface. As water moves offshore, it is replaced by cold, nutrient-rich water from below. Image: NOAA, 2019

The California Current System is subject to changing oceanic conditions that affect biological productivity and entire trophic levels (Checkley & Barth, 2009). El Niño Southern Oscillation events occur every 2–7 years, bringing increased sea surface temperatures and increased precipitation. Pacific Decadal Oscillation events occur every 20–30 years. These phases affect ocean conditions that are drivers for wind and current patterns, nutrient availability and abundance, and fluctuations in sea surface temperature. During El Niño Southern Oscillation events, flow in the California Current is anomalously weak, the California Undercurrent is anomalously strong, and the sea surface temperature is anomalously warm (Hickey, 1998). With increased sea surface temperature, there is a decrease in phytoplankton biomass, which in turn affects the biomass of zooplankton and other marine organisms, altering the community structure.

Along with these anomalies, the California central coast experiences seasonal variation in oceanic patterns and oceanographic chemistry. These patterns are categorized into three seasons: oceanic period (July/August to mid-November), the Davidson Current period (mid-November to mid-February), and the upwelling period (mid-February to July/August). Each season is associated with a different wind speed, which also affects the chemical oceanography such as the temperature, salinity, nutrient availability, level of oxygen, and turbidity (Checkley & Barth, 2009).

Water Quality

The affected water quality environment area extends beyond the study area due to potential impacts outside the proposed sanctuary boundaries. For example, pollutants may be carried by ocean currents, and there are freshwater inputs from rivers and creeks. Therefore, the study area for freshwater input comprises more than 20 coastal streams and two rivers (Santa Maria and Santa Ynez rivers) that directly contribute to the nearshore chemical characteristics of the study area.

These rivers and streams are affected by multiple activities in the watersheds including but not limited to agriculture, rock and gravel mining, grazing, logging, land development, and septic system leakage. The freshwater inputs from the many coastal creeks are minor sources of chemical constituents and nutrients to the study area. In total, the water quality study area includes oceanic waters in the proposed sanctuary boundaries, the marine areas adjacent to the boundaries, and the watersheds contributing to the marine water quality in the proposed boundary area.

Bacteriological contamination of coastal surface waters has been a problem in Morro Bay and South Santa Barbara County, and eutrophication occurs in the lower reaches of San Luis Obispo Creek (Central Coast Regional Water Quality Control Board, 2019). Water pollution containing nutrient and organic carbon can also exacerbate ocean acidification conditions at local scales, where runoff and ocean discharges cause excessive algal growth and breakdown of carbon-containing materials by bacteria (California Ocean Protection Council, 2018). Additional sources of marine water pollution include vessel sewage and gray water discharges, engine emissions, illegal dumping, spill incidents, and oil from natural seeps (NOAA, 2015).

Stormwater can increase sedimentation runoff into the ocean, as well as increase concentration of harmful pollutants. Section 402 of the Clean Water Act (CWA) (33 U.S.C. § 1251 *et seq.*)

establishes the National Pollutant Discharge Elimination System (NPDES) to regulate point sources that discharge pollutants to waters of the United States, including municipal stormwater discharges and construction/industrial activities. There are eight NPDES-permitted onshore sources of discharge into the study area:

1. The Abalone Farm, Inc. (Aquaculture General Permit) – discharges into Pacific Ocean at Estero Bay.
2. Chevron Estero Marine Terminal – discharges into Pacific Ocean at Morro Bay.
3. Cayucos Sanitary District Wastewater Treatment Facility – discharges into Pacific Ocean near mouth of Toro Creek into Morro Bay.
4. Avila Beach Community Service District Wastewater Treatment Plant – discharges into Pacific Ocean at San Luis Obispo Bay.
5. South San Luis Obispo County Sanitation District Wastewater Treatment Facility – discharges into Pacific Ocean at Oceano Dunes near mouth of Arroyo Grande Creek.
6. City of Pismo Beach Wastewater Treatment Plant – discharges into Pacific Ocean at Oceano Dunes near mouth of Arroyo Grande Creek.
7. Phillips 66 Company, Santa Maria Refinery – discharges into Pacific Ocean north of Oso Flaco Beach.
8. Cultured Abalone Farm, LLC (Aquaculture General Permit) – discharges into Pacific Ocean at Rancho Los Dos Pueblos.

The following NPDES permits are for onshore facilities outside of the study area, but close enough to potentially impact water quality:

1. San Simeon Wastewater Treatment Plant – discharges to Pacific Ocean south of Pico Creek Beach.
2. California Men's Colony Wastewater Treatment Plant – discharges to Chorro Creek, which drains into Morro Bay Estuary.
3. Mission Hills Community Services District Wastewater Treatment Plant – discharges to ponds 9.5 miles inland from the Pacific Ocean; some ponds are located adjacent to the Santa Ynez River, which drains into the Pacific Ocean near Surf Beach.
4. Goleta Sanitary District Water Resource Recovery Facility – discharges into Pacific Ocean at Goleta Slough.

There is an NPDES General Permit for Offshore Oil and Gas Exploration, Development, and Production Operations off Southern California, which authorizes discharges to federal waters from all exploratory facilities operating within the permit area and development and production facilities which are not new sources. The General Permit also covers any potential well/pipeline repairs and abandonment operations (USEPA, 2021a).

Pacific Gas & Electric (PG&E) discharges 2.5 billion gallons of seawater daily through a shore-side outfall at approximately 20 degrees above ambient temperatures (see Section 4.7.1 for more details on PG&E operations in the study area). PG&E also discharges treated sewage, storm runoff, and desalination brine from this same outfall.

Vessel discharges in the study area are regulated under the Vessel Incidental Discharge Act, detailed in Appendix F (USEPA, 2021c).

Both of the rivers (Santa Maria and Santa Ynez) and the majority of creeks and other waterbodies feeding into the study area (including Morro Bay) do not meet established water quality standards under the CWA (State Water Resources Control Board, 2022). When this occurs, a water body is placed on an impaired waters list mandated by Section 303(d) of the CWA. Under Section 305(b) of the CWA, states are required to update this list every two years and work to resolve the water quality problems. A total maximum daily load (“TMDL”) or other regulatory action must be developed to address the impaired waterbodies on the 303(d) list (State Water Resources Control Board, 2022). Also, California Coastal Commission’s (CCC) Critical Coastal Areas program aims to protect high resource-value coastal waters from polluted runoff. The following Critical Coastal Areas are within the water quality study area (1) Cambria, (2) Chorro Creek, (3) Morro Bay, (4) Los Osos Creek, (5) San Luis Obispo Creek, (6) Santa Maria River Estuary, (7) Santa Ynez River, (8) Kashtayit, (9) Naples, (10) Goleta Slough, and (11) San Miguel, Santa Rosa, and Santa Cruz Islands (California Coastal Commission, 2019).

Key sources of water pollution in the study area originate from land-based pollution (point or nonpoint sources), cruise ship and other vessel discharges, spill incidents, and dredge disposal. These sources are detailed below.

Land-based pollution comes from either point or nonpoint sources. Point source pollution originates from known sources such as industrial facilities or wastewater treatment plants. Nonpoint source pollution comes from many different diffuse sources. It includes pollutants such as oil, grease, toxic chemicals, fertilizers, bacteria, nutrients, and sediments that are carried by runoff into streams and coastal waters (USEPA, 2022a). Typical sources of land-based pollutants entering the study area include livestock grazing, agriculture, and land development.

Cruise ships and other vessels (e.g., shipping, fishing, recreational, etc.) also discharge directly into the marine environment. During normal operations, vessels can potentially discharge sewage, graywater, bilge water, ballast water, hazardous wastes, and solid wastes into the study area. Sewage from vessels is generally more concentrated than sewage from land-based sources, as it is diluted with less water when flushed. Large cruise ships can carry thousands of passengers and can generate several million gallons of waste per day (USEPA, 2022c). Sewage discharge may contain bacteria or viruses that can cause disease in humans and wildlife. High concentration of nutrients from sewage can lead to eutrophication, causing excessive growth and decomposition of oxygen-depleting plant life, resulting in harm or death to organisms. Discharges of ballast water have led to the introduction of invasive species, which are considered a threat to water quality and marine ecosystems. The volume of discharges from large cruise ships and the nutrients and compounds in these discharges that remain in the waste streams even after treatment (USEPA, 2008) are of particular concern, as cruise ships regularly transit the study area. See Section 4.8 for more details on vessel operations, and Appendix F for relevant state and federal regulations regarding vessel discharges in the study area.

Discharges from offshore energy facilities also have potential to impair water quality in the study area, especially in the case of an accidental oil or chemical spill. See Section 4.7 for more details on discharges related to offshore energy facilities, and Appendix F for relevant state and federal regulations.

The Morro Bay Maintenance Dredging Program regularly dredges the federal channel at Morro Bay to allow safe passage for vessels transiting in and out of Morro Bay. This maintenance dredging has been performed routinely since the 1960s, historically dredging approximately 150,000–200,000 cubic yards (4,050,000–5,400,000 cubic feet) per year, with potential to dredge up to 1,111,800 cubic yards (30,018,600 cubic feet) per year. Dredged materials are placed either in the near shore area off Morro Bay State Park sand spit or in the surf zone at Morro Strand State Beach (see Figure 4.2-4) (U.S. Army Corps of Engineers, 2013). Disposing of dredged material in the ocean has the potential to increase water column turbidity. As detailed in Appendix F, the U.S. Army Corps of Engineers (USACE) is responsible for permitting ocean disposal of dredged material.



Figure 4.2-4. Morro Bay dredge disposal sites. Source: NOAA

The Port San Luis Maintenance Dredging and Beach Nourishment Project regularly dredges the local harbor district of Port San Luis. The Port San Luis Harbor District submitted an application to renew a USACE dredging permit in 2024, which would allow for up to 250,000 cubic yards of dredge material per year or 2.5 million cubic yards over the 10-year permit lifetime. The dredged materials from Mobile Hoist Pier and Sport Launch-Trailer Boat Basin would be used for beach replenishment on local beaches in the town of Avila Beach, San Luis Obispo County including: West Bluff Beach, Fisherman’s Beach, and/or Olde Port Beach, and Avila Beach (U.S. Army Corps of Engineers, 2024). All of these sites are located outside of the potential sanctuary area because they either lie above the mean high water line and are therefore outside sanctuary jurisdiction, or fall within the Port San Luis Harbor District, which is excluded from all proposed boundary alternatives considered in this EIS (see Figure 3-3 in Chapter 3 for the Port San Luis area excluded from all sanctuary boundary alternatives).

4.2.2 Impact Assessment Methodology (Physical Resources)

The impact assessment methodology for physical resources generally follows NOAA's analytical approach to evaluating environmental effects as described in Section 4.1. The following significance criteria specific to air quality and climate change, geology and oceanography, and water quality are also used in the analysis. Most impacts from the Initial Boundary Alternative and action alternatives are beneficial, and the other alternatives would reduce the level of beneficial impact as compared to the Initial Boundary Alternative. Subsection headers guide whether impacts are adverse or beneficial.

Air Quality and Climate Change

Criteria to determine the significance of air quality and climate change impacts are based on federal, state, and local air pollution standards and regulations. Impacts are considered to be significant if project emissions would result in the following:

- Increase ambient pollutant levels from an attainment or nonattainment-transition status to nonattainment under the National Ambient Air Quality Standards or California Ambient Air Quality Standards.
- Exceed the thresholds the regional air agencies use for determination of significance for California Environmental Quality Act purposes (thresholds are based on the amount of emissions projected to be generated by a project and are expressed in terms of either pounds per day or tons per quarter).

For the purposes of this analysis, major factors considered in determining whether the Initial Boundary Alternative or another alternative would have a significant impact on air quality and climate change include any of the following:

- The amount of net increase in emissions per year of criteria pollutants within a given air basin or offshore sanctuary.
- Whether relatively high emissions would occur on a continuing basis for periods longer than the timeframe of relevant ambient air quality standards (e.g., 8-hour periods for ozone precursors; 3-hour and 24-hour periods for sulfur oxides; 24-hour periods for 10-micron particulate matter).
- Whether emissions of precursors to ozone or other secondary pollutants would occur in such quantities and at such locations as to have a reasonable potential to cause or contribute to a violation of federal or state ambient air quality standards.
- Whether emissions of hazardous air pollutants could exceed state standards or other hazardous air pollutant exposure guidelines at locations accessible to the general public.

Pursuant to the above criteria, substantial adverse air quality and climate change impacts were not identified for the Initial Boundary Alternative or action alternatives. Therefore, regional and state thresholds regarding air emission quantities are not discussed in the impacts section since the proposed and alternative actions would not result in substantial increases in daily, monthly, or annual emission volumes.

Geology and Oceanography

Impacts on the geologic and oceanographic resources are considered to be significant if the Initial Boundary Alternative or other alternatives result in any of the following:

- Allows for exploitation of geologic resources inconsistent with the purposes and policies of the NMSA and its implementing regulations.
- Degrades the physical structure of any geologic resource (seabed/submerged lands) that is measurably different from pre-existing conditions.
- Alters any oceanographic process, such as sediment transport, that is measurably different from pre-existing conditions.

Water Quality

Criteria to determine the significance of water quality impacts are based on federal, state, and local water quality standards and regulations. Impacts are considered to be significant if the Initial Boundary Alternative or another alternative would:

- Alter the bacterial, physical, or chemical characteristics of near-shore ocean waters (not including enclosed bays or estuaries) so that they exceed effluent limitations established under the California Ocean Plan.
- Alter the bacterial, physical, or chemical characteristics of near-shore ocean waters so that they violate requirements or exceed effluent limitations established by the Central Coast Regional Water Quality Control Board.
- Result in ocean discharges not allowed by an NPDES permit, or which do not meet discharge criteria established under the CWA.
- Increase the discharge or deposition of unauthorized waste into the study area or in an area outside the study area that could migrate into the study area and affect its resources (including onshore urban or agricultural runoff).
- Increase the likelihood of exposing the environment to any hazardous conditions through release or disposal of oil, fuel, or hazardous substances.
- Conflict with guidelines provided for by the Nonpoint Source Pollution Control Program's Management Measures.

The methodology used to determine whether the Initial Boundary Alternative or any of the alternatives would have a significant impact on water quality is as follows:

- Review and evaluate existing and past baseline activities to identify the Initial Boundary Alternative or another alternative's potential to impact water quality.
- Review and evaluate the Initial Boundary Alternative and each alternative to identify potential to increase marine pollution or otherwise impact water quality within the study area.
- Assess the compliance of the Initial Boundary Alternative and alternatives with applicable federal, state, or local water quality regulations, guidelines, and pollution prevention measures.

4.2.3 Environmental Consequences of the Initial Boundary Alternative (Physical Resources)

This section evaluates the impacts on physical resources from implementing the Initial Boundary Alternative, as described in Section 3.2.

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

The application of regulations addressing seabed disturbance, development of oil, gas, and minerals, and discharges would likely result in reduced potential commercial development within the sanctuary boundaries over the long term, and thus reductions in vessel traffic or future oil and gas leasing and development in the area. This reduction in vessel activity and emissions related to construction and operation of potential new oil and gas development projects, which contribute to ozone production, would result in **indirect, long-term, moderate beneficial impacts** on air quality and climate change from avoided emissions due to non-attainment status of the region for ozone; for all other pollutants, the beneficial impacts would be **minor**.

The sanctuary regulations mentioned above would provide additional seafloor protections that would likely result in beneficial impacts on climate change. Hutto et al. (2023) demonstrates the significant climate mitigation service provided by marine sediments and the critical role sanctuary protections provide for continued carbon accumulation on the seafloor. Activities that disturb or alter the seabed resuspend carbon-rich sediments, potentially remineralizing the carbon into carbon dioxide, decreasing the pH of the surrounding waters, and reducing the ocean's capacity to absorb atmospheric carbon dioxide (Hutto et al., 2023). Sanctuary regulations would reduce such activities, and therefore result in **indirect, long-term, moderate beneficial impacts** on climate change from avoided disturbance of sedimentary carbon stocks.

Sanctuary regulations and management plan action plans focused on protecting and restoring habitats and living marine resources such as kelp, seagrasses, salt marshes, and whales, may bolster climate resilience and likely increase carbon sequestration and immobilization. Some research indicates that oceanic carbon capture and storage, via the sinking of marine animals and vegetation to the deep sea, is likely far more significant than previously estimated (Hutto et al., 2021a; Pearson et al., 2023). However, it is important to note that there are still data gaps and uncertainties regarding the carbon sequestration benefits of marine mammals (Pearson et al., 2023; Howard et al., 2023; Meynecke et al., 2023; Christianson et al., 2022). Hutto et al. (2021b) highlights the value of MPAs such as the sanctuary, where efforts to protect water, habitat, living, and maritime heritage resources also maintain carbon sequestration processes and ensure that stored carbon stays where it is, namely in the habitats and animals the MPA protects. The Climate Change Action Plan (Strategy CC-2) in the sanctuary management plan would support climate mitigation measures by investigating the application of blue carbon habitat protection and enhancement and marine carbon dioxide removal approaches. The Resource Protection Action Plan would strive to maintain and improve the sanctuary's natural biological and ecological processes and Indigenous and maritime resources. Activity RP-6.3

would focus on reducing whale ship strikes in national marine sanctuaries in California by coordinating at a regional level. Voluntary vessel speed reduction programs for the existing California national marine sanctuaries have resulted in air quality and climate benefits through slowing ships down; slower ships contribute considerably to a direct regional reduction in NO_x and greenhouse gas emissions.²⁴ In addition, slower ships may generate indirect climate benefits by reducing the probability of a whale strike, which may result in possible carbon sequestration benefits (Hutto et al., 2021b).²⁵ However, as noted above, the carbon sequestration benefits of whales is a developing area of research, and there are still uncertainties about the extent of these potential benefits. The Climate Change Action Plan would also investigate the feasibility of implementing marine carbon dioxide removal approaches and applications in the sanctuary, including macroalgal aquaculture, direct ocean capture, marine spatial planning, and other potential strategies and technologies. Similar beneficial impacts on air quality and climate change would result from any increase in the uptake of atmospheric contaminants such as carbon dioxide and mercury due to increased biological productivity resulting from protections under the Initial Boundary Alternative. In addition, the Climate Change Action Plan would strive to minimize the sanctuary's own contribution to climate change from any new infrastructure or operations in support of the new sanctuary by minimizing greenhouse gas emissions and contributing to atmospheric carbon dioxide sequestration and storage. These **beneficial impacts** would be **indirect, long-term, and minor**.

Adverse Impacts on Air Quality and Climate Change

The Diablo Canyon Call Area, which has the potential for future offshore wind energy development (see Section 4.7), is within the Initial Boundary Alternative area. However, as further detailed in Section 4.7.3, developing an offshore wind project in this area is not reasonably foreseeable for purposes of this NEPA review. Nonetheless, NOAA is presenting an assessment of the impacts from the sanctuary designation on climate change because, as outlined in Section 4.7.3, designating the Initial Boundary Alternative could impede development, one day, of a future offshore wind project which could delay achieving renewable energy goals to combat climate change. Therefore, this impediment could have **indirect, long-term, minor adverse impacts** on climate change. NOAA believes this potential adverse impact on climate change would be minor because there are other potential areas offshore California that could be considered for wind farm development to achieve renewable energy development goals (see Section 4.7.3).

Any increase in vessel traffic related to enforcement, research, education, recreation, or other similar activities in the study area resulting from sanctuary designation under the Initial Boundary Alternative would have **direct, long-term, minor adverse impacts** on air quality and climate change from increased vessel emissions.

²⁴ See results from the voluntary vessel speed reduction program, Blue Whales Blue Skies, related to reductions in regional greenhouse gas and NO_x emissions [online](#).

²⁵ See NOAA's [webpage](#) for more information on how whales contribute to carbon storage.

Geology

Beneficial Impacts on Geologic Resources

Under the Initial Boundary Alternative, NOAA would apply sanctuary regulations prohibiting disturbance of the seabed, as well as oil, gas, and minerals exploration, development, and production. These regulations would reduce the amount of activities that could adversely affect geologic features and substrate, including the submerged lands, within the study area. Any potential reduction in these activities would provide **direct, long-term, localized, moderate beneficial impacts** on geologic resources.

As described further in Section 4.7, construction of subsea electrical transmission cables from the Morro Bay lease areas through the proposed sanctuary would likely violate the proposed seabed disturbance prohibition. Proposed sanctuary regulations include provisions whereby the Office of National Marine Sanctuaries (ONMS) could review, approve, and condition specific cables within the sanctuary, including authority to impose mitigation measures reasonably necessary to protect geologic resources within the sanctuary. Any future ONMS permitting decision (and potential impacts of that decision and permitted activity) would be subject to project-specific environmental review processes. Any such future project-specific environmental review processes would consider mitigation measures imposed through ONMS' regulatory authority under the Initial Boundary Alternative.

Oceanography

Beneficial Impacts on Oceanographic Resources

As described above and in Section 4.7.3, designating the Initial Boundary Alternative could limit the potential to develop wind energy within proposed sanctuary boundaries as BOEM lacks regulatory authority to issue any leases for production of offshore wind inside a national marine sanctuary; moreover, the proposed prohibition on disturbance of the seabed would not allow development of offshore wind infrastructure under a separate regulatory authority without an authorization from ONMS. A preliminary study funded by the California Energy Commission and California Ocean Protection Council evaluated the effects of full buildout of offshore wind turbines in the Morro Bay and Diablo Canyon Call Areas, which are located directly adjacent to and within the study area, respectively. While the study is ongoing and currently in preparation for peer review, the preliminary findings suggest that wind speeds would be reduced by approximately 5–10% in the lee (sheltered side away from the wind) of wind farms in the Morro Bay and Diablo Canyon Call Areas. This reduction would be most pronounced in the spring and summer, when wind speeds are the highest and, in turn, upwelling is the strongest. The study concluded that with both wind farm areas developed, upwelling could be reduced by 10–15% around and beyond the upwelling center of Point Arguello–Point Conception, greater than the inter-annual variability that has been observed (California Ocean Protection Council, 2021). Development of only the Morro Bay Wind Energy Area was not modeled in the study but would represent fewer than half as many turbines as could be installed in the Diablo Canyon Call Area and is 20–40 miles further away from the upwelling center at Point Arguello–Point Conception, potentially lessening impacts on upwelling. Note that studies in the North Atlantic Ocean have partially affirmed these same projections while others have rejected any potential impacts from wind farms on upwelling (Golbazi et al., 2022; Johnson et al., 2021). Research focused on North

Atlantic Ocean systems may have limited applicability to this region as upwelling processes can function differently in the two ocean basins and this leads to differences in the relative importance of upwelling to pelagic ecology. The potential impacts on upwelling in the temperate Eastern Pacific is an area of research where the science is not yet settled, and as more information is developed, the analysis in this chapter may be revised in the future (Hogan et al., 2023).

As detailed above and in Section 4.7.3, application of sanctuary regulations would likely result in **indirect, long-term, significant beneficial impacts** on upwelling in the study area, as the Initial Boundary Alternative may impede the potential for future additional wind energy development and its additive impacts on upwelling reduction. These benefits would be both **localized** and **extend beyond the proposed sanctuary boundaries**, to the extent that upwelling in the study area affects oceanographic conditions throughout the California Current System.

Water Quality

If continued operations of DCPD were approved by federal, state, and local regulators and PG&E elected to continue operations, extended operation of the DCPD would include discharge of a very large volume of cooling water at a temperature well above ambient. For more than a decade, California agencies have adopted policies and regulations to ban or phase out once through cooling water discharges because of impacts of both entrainment via intake systems and heat-related impacts on organisms and nearshore habitats from the discharges. Extending operations of DCPD would need to comply with these state policies and regulations related to once through cooling water. NOAA would have the ability at the time of sanctuary designation to review and certify ongoing discharges like those at DCPD, as long as such discharges were subject to any valid lease, permit, or license in existence on the date of sanctuary designation, considering and possibly mirroring mitigations and phase-out requirements state agencies would have imposed. This certification process would mean designation of the Initial Boundary Alternative would likely have no more than negligible adverse impacts on discharges resulting from continued DCPD operations. See Section 4.7 for more details regarding DCPD.

In the proposed final regulations, NOAA is excepting from the discharge prohibition dredged material deposited at disposal sites within the sanctuary authorized by USEPA (in consultation with USACE) prior to the effective date of sanctuary designation (see Figure 4.2-4). Therefore, the Initial Boundary Alternative would likely have **no impact** on the Morro Bay Maintenance Dredging Program.

Beneficial Impacts on Water Quality

Under the Initial Boundary Alternative, NOAA would apply a sanctuary regulation prohibiting discharge and deposit of material within the proposed sanctuary boundaries and would apply a sanctuary regulation prohibiting discharges outside the sanctuary that subsequently enter the sanctuary and injure sanctuary resources, with some exceptions to both regulations. These proposed discharge regulations would establish more comprehensive water quality protection across the geographic range proposed for sanctuary protection and would bolster existing authorities. This would reduce the amount of discharges from vessels, new oil and gas facilities, or other activities occurring in the proposed sanctuary boundaries, providing **direct** and

indirect, long-term, moderate beneficial impacts on water quality. These benefits would be both **localized** and **extend beyond the proposed boundaries**, to the extent that such prevented discharges and deposits could have been carried by currents, animals, vessels, etc. outside those proposed boundaries and because NOAA would also regulate discharges outside the sanctuary that enter the sanctuary and injure sanctuary resources. In addition, the Water Quality Action Plan in the proposed sanctuary management plan would promote stewardship of water quality in the proposed sanctuary while accommodating diverse uses.

4.2.4 Environmental Consequences of Alternative 1 (Physical Resources)

This section evaluates the impacts on physical resources from implementing Alternative 1, Bank to Coast, as described in Section 3.3.

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

Alternative 1 would include the same regulations as the Initial Boundary Alternative (Section 3.2), but would affect a smaller spatial area. The beneficial impacts on air quality and climate change described in Section 4.2.3 related to reductions in vessel activity and emissions associated with construction and operation of potential new oil and gas development projects would be similar under Alternative 1, because there is little commercial development anticipated in the waters west of the Santa Lucia Bank. Therefore, these beneficial impacts would largely be the same as described in Section 4.2.3, that is, impacts for ozone would be **indirect, long-term, moderate beneficial impacts**; for other pollutants, the **beneficial impacts** would be **minor**.

Beneficial impacts related to avoided disturbance of sedimentary carbon stocks would be reduced, especially as it is likely that the bulk of carbon protected in national marine sanctuaries lies offshore in continental shelf sediments (Hutto et al., 2021b), and Alternative 1 would reduce the amount of offshore sediments included in sanctuary boundaries. Because of the exclusion of these offshore sediments under Alternative 1, the **indirect, long-term beneficial impacts** would be reduced from those described in Section 4.2.3 to a **minor** level.

Beneficial impacts related to regulations and management plan actions contributing to the increase of carbon sequestration and immobilization, as well as minimizing the sanctuary's greenhouse gas emissions, would be similar under Alternative 1, but reduced due to the smaller spatial area compared to the Initial Boundary Alternative. These **beneficial impacts** would be reduced compared to those described in Section 4.2.3, but would remain **indirect, long-term**, and **minor**.

Adverse Impacts on Air Quality and Climate Change

Alternative 1 would have the same level of potential **indirect, long-term, minor adverse impacts** on climate change as the Initial Boundary Alternative due to the potential impediment on development of an additional wind farm area. Alternative 1 would also have potential adverse impacts on air quality and climate change due to an expected increase in vessel traffic emissions related to enforcement, research and education, recreation, or other activities resulting from

sanctuary designation; however, these adverse impacts would be less than those expected for the Initial Boundary Alternative because of the smaller overall area of the sanctuary and shorter transits from shore to the sanctuary areas within Alternative 1. While reduced, these **adverse impacts** would remain **direct, long-term, and minor**.

Geology

Beneficial Impacts on Geologic Resources

Under Alternative 1, the western-most and deepest portions of the escarpment and abyssal plain west of Santa Lucia Bank would be excluded from sanctuary boundaries and regulations, therefore leaving that area open to potential seabed disturbance and/or oil, gas, and minerals exploration, development, and production. Therefore, the beneficial impacts on geologic resources described in Section 4.2.3 related to general reduction of seabed-disturbing activities and their effects (i.e., oil, gas, and minerals development and Morro Bay lease areas subsea electrical transmission lines) would be reduced under Alternative 1. These **beneficial impacts** would be **direct, long-term, localized, and minor to moderate**.

Oceanography

Beneficial Impacts on Oceanographic Resources

Under Alternative 1, the same conditions potentially reducing a future decline in upwelling due to wind energy production would be in place as under the Initial Boundary Alternative. At this time, the only potential wind development considered by BOEM, the state, or industry has focused on waters shallower than about 4,200 feet. The area west of Santa Lucia Bank is deeper than that, and thus NOAA does not anticipate the exclusion of that area would open it up to future potential wind energy development. Therefore, the **beneficial impacts** for Alternative 1 would be the same as for the Initial Boundary Alternative and would remain **indirect, long-term, and significant**.

Water Quality

Beneficial Impacts on Water Quality

Alternative 1 would include the same regulations and Water Quality Action Plan as under the Initial Boundary Alternative but would affect a smaller spatial area. Therefore, the beneficial impacts on water quality described in Section 4.2.3 would be similar, but reduced to a lesser level under Alternative 1, due to the potential for vessel discharges in the waters west of Santa Lucia Bank that would be excluded from sanctuary boundaries under Alternative 1. These beneficial impacts, while reduced slightly, would remain the same as described in Section 4.2.3. Therefore, Alternative 1 would have **direct and indirect, long-term, moderate beneficial impacts** on water quality.

4.2.5 Environmental Consequences of Alternative 2 (Physical Resources)

This section evaluates the impacts on physical resources from implementing Alternative 2, Cropped Bank to Coast, as described in Section 3.4.

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

Alternative 2 would include the same regulations as the Initial Boundary Alternative (see Section 3.2) but would exclude the northern part of Alternative 1 above Hazard Canyon Reef. This excluded area would be available over the long-term for potential future offshore energy development, including offshore wind energy development related to the Morro Bay lease areas. However, new oil and gas development in the area north of Hazard Canyon Reef is not anticipated; therefore, the **indirect, long-term beneficial impacts** on air quality and climate change described in Section 4.2.3 for ozone related to preclusion of new oil and gas facilities would be reduced slightly but still considered moderate under Alternative 2. For other pollutants besides ozone, the **beneficial impacts** described in Section 4.2.3 would be reduced slightly but still considered **minor** under Alternative 2.

The beneficial impacts described in Section 4.2.3 related to avoided disturbance of sedimentary carbon stocks would be reduced due to the smaller spatial area of Alternative 2; these **indirect, long-term beneficial impacts** would remain **minor**.

The other beneficial impacts described in Section 4.2.3 related to regulations and management plan actions contributing to an increase in carbon sequestration and immobilization, as well as minimizing the sanctuary's emissions, would be reduced compared to the Initial Boundary Alternative due to the smaller spatial area of Alternative 2. These **indirect, long-term beneficial impacts** would remain **minor**.

Adverse Impacts on Air Quality and Climate Change

Alternative 2 would have the same potential **minor adverse impacts** on climate change as the Initial Boundary Alternative due to the potential impediment of future offshore wind energy development within sanctuary boundaries, including at the Diablo Canyon Call Area, if its development were ever proposed. Alternative 2 would also have potential adverse impacts on air quality and climate change due to an expected increase in vessel traffic emissions related to enforcement, research and education, recreation, or other activities resulting from sanctuary designation; however these adverse impacts would be less than those expected for the Initial Boundary Alternative and Alternative 1 because of the smaller overall area of the sanctuary and shorter transits from shore to the sanctuary areas within Alternative 2. These **adverse impacts** would remain **indirect, long-term, and minor**.

Geology

Beneficial Impacts on Geologic Resources

Under Alternative 2, an area from Cambria to Hazard Canyon Reef would be excluded from the sanctuary boundary, thereby opening this area to potential seabed disturbance by subsea

electrical transmission cables connecting the Morro Bay lease areas to shore at or near Morro Bay Harbor and grid connections north of the harbor. Therefore, the beneficial impacts on geologic resources described in Section 4.2.3 related to general reduction of seabed disturbing activities (i.e., oil, gas, and minerals development and subsea electrical transmission lines) would be reduced under Alternative 2 to a minor level compared to the Initial Boundary Alternative and Alternative 1. Under Alternative 2, these **beneficial impacts** would be **direct, long-term, localized, and minor**.

Oceanography

Beneficial Impacts on Oceanographic Resources

Under Alternative 2, the same conditions potentially reducing a future decline in upwelling due to wind energy production would be in place as under the Initial Boundary Alternative and Alternative 1 (see sections 4.2.3 and 4.2.4). Therefore, the **beneficial impacts** for Alternative 2 would be the same as for the Initial Boundary Alternative and Alternative 1, and would remain **indirect, long-term, and significant**.

Water Quality

Beneficial Impacts on Water Quality

Alternative 2 would include the same regulations and Water Quality Action Plan as under the Initial Boundary Alternative but would affect a smaller spatial area compared to the Initial Boundary Alternative and Alternative 1. Therefore, the beneficial impacts on water quality described in sections 4.2.3 and 4.2.4 would be similar, but reduced to a minor level under Alternative 2, due to the potential for vessel discharges in the waters between Cambria and Hazard Canyon Reef that would be excluded from sanctuary boundaries under Alternative 2. This excluded area includes the Morro Bay area, which has a significant amount of vessel traffic and discharges from land-based sources. Under Alternative 2, **minor beneficial impacts** on water quality related to the proposed discharge regulations within sanctuary boundaries would be **direct** and **indirect, long-term**, and both **localized** and **general**.

4.2.6 Environmental Consequences of Alternative 3 (Physical Resources)

This section evaluates the impacts on physical resources from implementing Alternative 3, Diablo to Gaviota Creek, as described in Section 3.5. The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) between the draft and final EIS does not alter the level of beneficial or adverse impacts on physical resources. The boundary area excluded is too small, and the physical resources within the excluded area are not sufficiently distinct enough from the rest of Alternative 3, to meaningfully affect the impact of sanctuary designation on physical resources. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

Alternative 3 would include the same regulations as the Initial Boundary Alternative (Section 3.2) but would exclude the northern portion of the study area and much of the Santa Lucia Bank, including an area previously identified by BOEM for a potential offshore wind energy development area (Diablo Canyon Call Area). The excluded area would also be available over the long-term for potential future oil and gas development. Therefore, the beneficial impacts on air quality and climate change described in Section 4.2.3 for ozone related to preclusion of new oil and gas facilities would be reduced to **indirect, long-term, minor beneficial impacts**; for other pollutants, the **beneficial impacts** would be reduced but still considered **minor** under Alternative 3.

The beneficial impacts described in Section 4.2.3 related to avoided disturbance of sedimentary carbon stocks would be reduced due to the smaller spatial area of Alternative 3; these **indirect, long-term beneficial impacts** would remain **minor**.

The beneficial impacts described in Section 4.2.3 related to regulations and management plan actions contributing to an increase of carbon sequestration and immobilization as well as minimizing the sanctuary's emissions would also be reduced due to the smaller spatial area of Alternative 3; these **indirect, long-term, beneficial impacts** would remain **minor**.

Adverse Impacts on Air Quality and Climate Change

Because the Diablo Canyon Call Area or other areas outside sanctuary boundaries could be developed by BOEM for offshore wind power generation, Alternative 3 would have **no adverse impact** on climate change, compared to the minor adverse impact described for the Initial Boundary Alternative. Compared to the Initial Boundary Alternative, Alternative 3 would also have less of an adverse impact on air quality and climate change attributed to emissions from enforcement, research, education, and other activities necessary for sanctuary management due to a smaller area under management, but they would still be considered **indirect, long-term, minor adverse impacts**.

Geology

Beneficial Impacts on Geologic Resources

Compared to the Initial Boundary Alternative, the beneficial impacts on geologic resources under Alternative 3 would be reduced to **direct, long-term, minor beneficial impacts** because a smaller Chumash Heritage National Marine Sanctuary (CHNMS) would potentially allow for comparatively more extensive offshore energy development.

Under Alternative 3, the northern portion of the study area and much of the Santa Lucia Bank would be excluded from sanctuary boundaries and regulations, thereby leaving that area open to potential seabed disturbance or oil, gas, and minerals exploration, development, and production, or development of an additional wind farm in the area.

Further, it is far less likely there would be construction of subsea electrical transmission cables through the proposed sanctuary in Alternative 3 because this alternative, with the minor modifications to the northern boundary described in Chapter 3, does not overlap with the area

between the Morro Bay Wind Energy Area and potential onshore connections at Morro Bay Harbor or at grid connection points through DCP. If cables were to be routed through the sanctuary under Alternative 3 to a landing site other than Morro Bay or DCP, any future ONMS permitting decision would be subject to project-specific environmental review processes.

Oceanography

Under Alternative 3, areas excluded from sanctuary boundaries—in particular the Diablo Canyon Call Area—could potentially be developed with wind turbines (however, see response to comment OW-6 in Appendix A for information about the likelihood of this area being developed). Therefore, the beneficial impacts described in Section 4.2.3 on oceanographic resources (by protecting the upwelling center) would not apply under Alternative 3. Alternative 3 would have **no impact** on oceanographic resources.

Water Quality

Beneficial Impacts on Water Quality

Alternative 3 would include the same regulations and Water Quality Action Plan as under the Initial Boundary Alternative but would affect a smaller spatial area. Furthermore, the area excluded, if developed for offshore wind (or possibly one day for oil and gas development) would be expected to have a large number of vessels transiting or otherwise active in the excluded area. Therefore, the beneficial impacts on water quality as described in Section 4.2.3 would be reduced under Alternative 3, due to the potential for discharges in the northern area of the study area. Therefore, NOAA determines Alternative 3 would have **direct and indirect, long-term, minor beneficial impacts** on water quality.

4.2.7 Environmental Consequences of Alternative 4 (Physical Resources)

This section evaluates the impacts on physical resources from implementing Alternative 4, Combined Smallest, as described in Section 3.6.

As was the case for Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the level of beneficial or adverse impacts on physical resources. The boundary area excluded is too small, and the physical resources within the excluded area are not sufficiently distinct enough from the rest of Alternative 4, to meaningfully affect the impact of sanctuary designation on physical resources. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

Alternative 4 would include the same regulations as the Initial Boundary Alternative (Section 3.2) but would affect the smallest spatial area of all the action alternatives. The beneficial impacts on air quality and climate change described in Section 4.2.3 would therefore be reduced due to the exclusion of the waters west of the Santa Lucia Bank and northern area of the study area (the areas excluded in alternatives 1, 2, and 3). The excluded areas would remain available

over the long-term for potential future oil and gas development and other development under this alternative. Therefore, the beneficial impacts on air quality and climate change described in Section 4.2.3 for ozone related to preclusion of new oil and gas facilities would be reduced to **indirect, long-term, minor beneficial impacts**; for other pollutants, the **beneficial impacts** would be reduced but still considered **minor** under Alternative 4.

The beneficial impacts described in Section 4.2.3 related to avoided disturbance of sedimentary carbon stocks would be reduced due to the smaller spatial area of Alternative 4; these **indirect, long-term beneficial impacts** would remain **minor**.

The beneficial impacts described in Section 4.2.3 related to regulations and management plan actions contributing to an increase of carbon sequestration and immobilization as well as minimizing the sanctuary's emissions would also be reduced due to the smaller spatial area of Alternative 4; these **indirect, long-term, beneficial impacts** would remain **minor**.

Adverse Impacts on Air Quality and Climate Change

Similar to Alternative 3, Alternative 4 would have **no adverse impacts** on climate change related to restrictions on wind energy development, as areas outside sanctuary boundaries could eventually be developed for offshore wind power generation. Any **adverse impacts** on air quality and climate change due to increased emissions from vessel traffic related to sanctuary operations would be reduced to a **negligible** level under Alternative 4, due to the significantly smaller area.

Geology

Beneficial Impacts on Geologic Resources

Under Alternative 4, the western-most and deepest portions of the escarpment and abyssal plain west of Santa Lucia Bank, and northern areas of the study area poised for potential wind energy development would be excluded from sanctuary boundaries and regulations, thereby leaving that area open to potential seabed disturbance or oil, gas, and minerals exploration, development, and production, as described in sections 4.2.4, 4.2.5, and 4.2.6 above. Therefore, compared to the Initial Boundary Alternative, the beneficial impacts on geologic resources described in Section 4.2.3 would be further reduced to **direct, long-term, minor beneficial impacts** under Alternative 4.

Oceanography

Under Alternative 4, waters excluded would be potentially open to future wind energy development, just as under Alternative 3. Therefore, the beneficial impacts described in Section 4.2.3 on oceanographic resources (by protecting the upwelling center) would not apply under Alternative 4. Alternative 4 would have **no impact** on oceanographic resources.

Water Quality

Beneficial Impacts on Water Quality

Alternative 4 would include the same regulations and Water Quality Action Plan as the Initial Boundary Alternative but would affect the smallest spatial area of all action alternatives. Therefore, compared to the Initial Boundary Alternative, the beneficial impacts on water quality

described in Section 4.2.3 would be further reduced under Alternative 4, due to the potential for discharges in the waters excluded from this alternative, as described in Sections 4.2.4, 4.2.5, and 4.2.6. Alternative 4 would have **direct and indirect, long-term, minor beneficial impacts** on water quality.

4.2.8 Environmental Consequences of Sub-Alternatives 5a: Morro Bay Estuary and 5b: Gaviota Coast Extension (Physical Resources)

This section evaluates the impacts on physical resources from implementing Sub-Alternative 5a, Morro Bay Estuary and Sub-Alternative 5b, Gaviota Coast Extension, as described in sections 3.7.1 and 3.7.2, respectively. The same regulations, Climate Change Action Plan, and Water Quality Action Plan would apply to both sub-alternatives as described for the Initial Boundary Alternative.

Sub-Alternative 5a: Morro Bay Estuary

Sub-Alternative 5a would add the Morro Bay Estuary to sanctuary boundaries under either the Initial Boundary Alternative or Alternative 1. Therefore, this section only analyzes the incremental impacts associated with protecting the Morro Bay Estuary area as shown in Figure 3-10.

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

As it is not reasonably foreseeable that any potential oil and gas activities would occur in the Morro Bay Estuary, the beneficial impacts described in Section 4.2.3 with regard to preventing oil and gas activities would not apply to the area added to the proposed sanctuary boundaries under Sub-Alternative 5a. Thus, there would be **no incremental impacts** on air quality and climate change related to reduced potential commercial development under Sub-Alternative 5a.

The beneficial impacts on air quality and climate change related to avoided disturbance of sedimentary carbon stocks would be negligible under Sub-Alternative 5a due to the small area of Morro Bay Estuary. Therefore, these **incremental beneficial impacts** would be **negligible**.

The other beneficial impacts related to regulations and management plan actions contributing to an increase of carbon sequestration and immobilization as well as minimizing the sanctuary's emissions would be negligible under Sub-Alternative 5a, due to the waters within Morro Bay Estuary comprising a very small area. Therefore, the **incremental beneficial impacts** on air quality and climate change would be **negligible** under Sub-Alternative 5a.

Adverse Impacts on Air Quality and Climate Change

Any incremental **adverse impacts** on air quality and climate change due to increased emissions from vessel traffic related to sanctuary operations would be **negligible** under Sub-Alternative 5a, due to the small area.

Geology

Beneficial Impacts on Geologic Resources

The boundaries of Sub-Alternative 5a include the existing Morro Bay State Marine Reserve (SMR) and Morro Bay State Marine Recreational Management Area, within which California regulations: (1) prohibit injury, damage, take, or possession of any geological marine resource (California Department of Fish and Wildlife, 2021); and (2) generally prohibit take of marine resources (California Department of Fish and Wildlife, 2016); respectively. While these state regulations already provide some protection to geologic resources in the Morro Bay Estuary, Sub-Alternative 5a would provide additional protection due to the sanctuary regulation prohibiting disturbance of the estuary seabed. Therefore, Sub-Alternative 5a would have incremental **direct, long-term, localized, minor beneficial impacts** on geologic resources.

Oceanography

Because the shallow, sheltered waters of the Morro Bay Estuary do not include the same oceanographic upwelling conditions as the marine waters included in sanctuary boundaries under the Initial Boundary Alternative, Alternative 1, and Alternative 2, the beneficial impacts on upwelling described in sections 4.2.3, 4.2.4, and 4.2.5 would not be affected by the addition of this area to the proposed sanctuary boundaries under either of those alternatives, and Sub-Alternative 5a would have **no incremental impact** on oceanographic resources.

Water Quality

Beneficial Impacts on Water Quality

The beneficial impacts on water quality would be similar to those described in Section 4.2.3 and would represent a slight incremental increase in **direct and indirect, long-term, minor beneficial impacts** due to the small additional protected area.

In addition, inclusion of the Morro Bay Estuary within the proposed sanctuary boundaries under Sub-Alternative 5a would add water quality benefits that none of the other action alternatives or Initial Boundary Alternative can claim, due to the unique water filtration ecosystem service estuaries provide. These benefits would result from the proposed regulations that would further restrict discharges into, or habitat disturbance of, the estuary. Protecting this important ecosystem service under Sub-Alternative 5a would have **direct, long-term, minor incremental beneficial impacts** on water quality. These benefits would be both localized to Morro Bay Estuary and extend beyond the estuary into surrounding waters.

Sub-Alternative 5b: Gaviota Coast Extension

Sub-Alternative 5b would add the Gaviota Coast to sanctuary boundaries under the Initial Boundary Alternative or any of the action alternatives. Therefore, this section only analyzes the incremental impacts associated with protecting the Gaviota Coast Extension area shown in Figure 3-11.

Air Quality and Climate Change

Beneficial Impacts on Air Quality and Climate Change

Sub-Alternative 5b would extend the sanctuary along the Gaviota Coast, in state waters. While this area includes or is adjacent to existing oil and gas facilities related to the Santa Ynez Unit, the proposed sanctuary regulations contain exemptions that would allow existing oil and gas production from existing reservoirs to continue. Thus, there would be **no incremental impacts** on air quality and climate change related to emissions from existing oil and gas operations under Sub-Alternative 5b. Future oil and gas development in state waters along this coastline would be extremely unlikely due to existing state bans on oil and gas development. Thus, there would be **no incremental impacts** on air quality and climate change related to preventing new oil and gas activities in state waters under Sub-Alternative 5b.

The beneficial impacts on air quality and climate change related to avoided disturbance of sedimentary carbon stocks would be negligible under Sub-Alternative 5b due to the small area of the Gaviota Coast Extension. Therefore, these **incremental beneficial impacts** would be **negligible**.

The other beneficial impacts related to regulations and management plan actions contributing to an increase of carbon sequestration and immobilization as well as minimizing the sanctuary's emissions would be negligible under Sub-Alternative 5b due to the very small area of the Gaviota Coast Extension. Therefore, the **incremental beneficial impacts** on air quality and climate change would be **negligible** under Sub-Alternative 5b.

Adverse Impacts on Air Quality and Climate Change

Due to the small size of Sub-Alternative 5b, adding it to the proposed sanctuary boundaries under any of the action alternatives would have an incremental **negligible adverse impact** on air quality and climate change (as described in Section 4.2.3) from increased vessel traffic emissions related to enforcement, research and education, recreation, or other activities resulting from sanctuary designation.

Geology

Beneficial Impacts on Geologic Resources

As described in Section 4.2.3, the proposed regulations would reduce activities that could adversely affect geologic resources within the area protected under Sub-Alternative 5b, resulting in incremental beneficial impacts. While these beneficial impacts on geologic resources would be extended to a small additional area under Sub-Alternative 5b, this extension would represent a slight incremental increase in **direct, long-term, localized, and minor beneficial impacts**.

Oceanography

As it is not reasonably foreseeable that potential offshore wind farms would be developed in the Gaviota Coast Extension area without sanctuary protections, the impacts on upwelling described in Section 4.2.3 would not apply under Sub-Alternative 5b, and this alternative would have **no impact** on oceanographic resources.

Water Quality

Beneficial Impacts on Water Quality

The beneficial impacts on water quality described in Section 4.2.3 would be extended to the expansion area, representing slight additional **direct** and **indirect, long-term, minor beneficial impacts** on water quality.

4.2.9 Environmental Consequences of No Action (Physical Resources)

This section evaluates the impacts on physical resources from the No Action Alternative, in which the Initial Boundary Alternative or any action alternative described in Chapter 3 would not be implemented.

Under the No Action Alternative, the study area would remain the same as the status quo and would not be subject to the regulations and management plan described in Chapter 3. NOAA anticipates that implementing the No Action Alternative would be subject to the continuation of existing impacts, including ongoing impacts of climate change, and potential future impacts as described in Section 4.2.1.

No direct changes to air quality and climate change, geologic resources, oceanographic resources, or water quality are expected to result from the No Action Alternative. Failure to implement the regulatory protections and management actions in the study area would indirectly allow ongoing deleterious changes to these physical resources to continue from certain current and potential future uses. In general, none of the beneficial and adverse impacts of designating the proposed sanctuary described in sections 4.2.3–4.2.8 would occur under the No Action Alternative.

4.3 Biological Resources

The study area for biological resources includes the proposed sanctuary boundary in the Initial Boundary Alternative and all the action alternatives outlined in Chapter 3, including sub-alternatives that extend into Morro Bay Estuary and along the Gaviota Coast. Information presented here includes information from primary and gray literature, federal agency documentation, and expert opinion. Information was gathered with special attention to address the concerns regarding biological resources from the public scoping process and from a series of workshops held with local biological experts. The biological resources within the study area that may be affected by the Initial Boundary Alternative and range of alternatives include habitats, flora (e.g., macroalgae and plants), wildlife (e.g., fish, seabirds, marine mammals, sea turtles, and invertebrates), and protected species and habitats. The study area spans a strong ecological transition zone that encourages high biodiversity in the region.

4.3.1 Regional Overview of Affected Environment (Biological Resources)

Habitats

There are a variety of important marine habitats within the study area, including sandy beaches, rocky shores, kelp forests and rocky reefs, estuaries and seagrass beds, shallow sandy seafloor areas, deep seafloor environments, and pelagic habitats. These habitats support diverse algae, plants, invertebrates, fish, marine mammals, and seabirds (Figure 4.3-1). Connectivity between habitats is likely high and affected by spatial proximity.

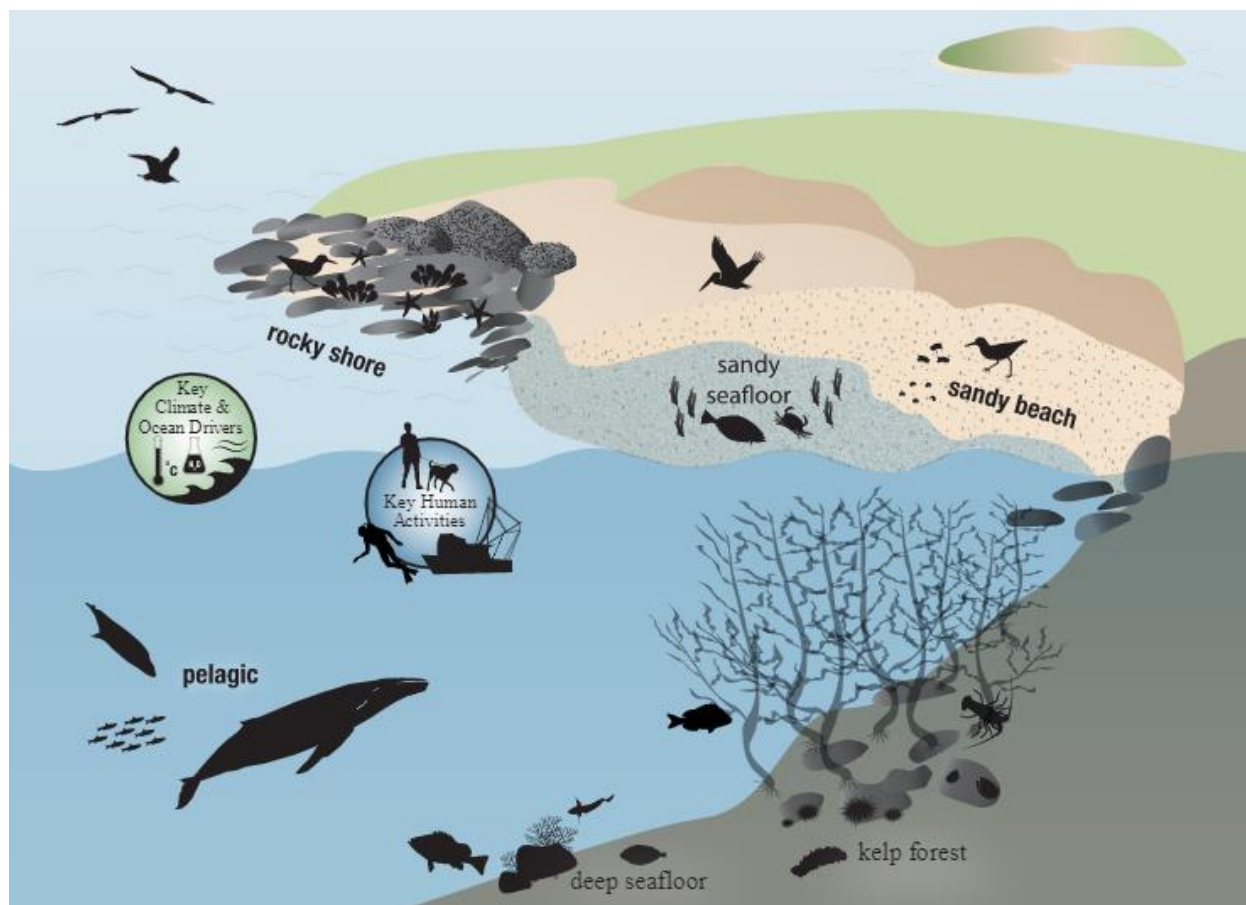


Figure 4.3-1. Some habitats of the study area. Source: [NOAA Sanctuary Watch, 2022](#). See more at: Marine Biodiversity Observation Network, 2022

Sandy Beach

Sandy beaches are high-energy coastal habitats that are periodically covered and uncovered by waves and daily tides—the height of the tides can be more than two meters (6.5 feet). Sandy beaches are a major component of the intertidal region of the study area. Sandy beaches are used by a wide variety of species for foraging, nesting, resting, and breeding.

Rocky Shore

Changing tides, steady waves, and competition for food and space are among many physical and biological factors that determine the nature of plant, algal, and animal communities along the study area's rocky shores. Similar to the sandy beach habitat, organisms here have adapted to thrive in this harsh and changing environment where they live part of their day under water and part of their day exposed to the air.

Shallow Sandy Seafloor

The nearshore shallow habitat extends from the surf out to waters that are approximately 30 meters (98 feet) deep. Waves and currents interact with the sandy seafloor in this relatively shallow zone, creating sand waves and ripples and organizing sediment particles into different group sizes (e.g., sand, gravel, cobble).

Kelp Forest and Rocky Reef

Rocky seafloor habitats are widespread within the study area and are vital habitats to supporting the region's biodiversity. These rocky underwater reefs are often characterized by dense patches of kelp, a structure-forming marine algae. Giant kelp (*Macrocystis pyrifera*) is the largest and most prominent species, but bull kelp (*Nereocytis luetkeana*) also appears in the study area.

Deep Seafloor

The deep seafloor habitat extends from about 30 meters (98 feet) to greater than 200 meters (656 feet) deep over the continental shelf and slope; the depth in some canyons may exceed 1,500 meters (4,921 feet). Many organisms live in and above the mud and sand, including clams, worms, sand crabs, sand dollars, sea stars, bottom-dwelling sharks, rays, and flatfishes. The less common rocky seafloor is made up of low-relief reefs less than one meter (3.3 feet) in height. Higher relief seamounts, pinnacles, and ridges occur in some areas, such as Rodriguez Seamount and Santa Lucia Bank. These high-relief volcanic reefs can include features such as walls, ledges, caves, pinnacles, boulders, and bedrock outcroppings. These rocky underwater environments provide habitat capable of supporting thousands of algal, invertebrate (most notably deep-sea corals and sponges), and fish species. Because of the difficulty in studying very deep habitats, less is known about these areas in the study area.

Pelagic Habitat

Pelagic habitat, the most extensive habitat in the study area, includes the oceanic water typically beyond two miles offshore. It is divided into sub-habitats based on depth, each of which has varying degrees of light penetration, temperature, oxygen concentration, and density. Light can penetrate the water's surface down to 200 meters (656 feet), known as the photic zone. This region of the water column is also called the epipelagic, and the base of its food webs are composed almost entirely of phytoplankton—tiny plants that turn sunlight into energy via photosynthesis. Zooplankton (i.e., tiny fish larvae and invertebrates) and small schooling fishes (e.g., anchovy and sardine) that feed on phytoplankton are in turn a major food source for larger fishes, seabirds, and marine mammals. In the midwater environment (200–1,000 meters; 656–3,281 feet), fishes and some invertebrates have developed special adaptations that enable them to live under higher water pressure, lower oxygen levels, and darkness. Many small midwater

fishes and zooplankton feed on phytoplankton by migrating hundreds of meters to the surface layer after sunset and then returning to their midwater habitat at dawn.

Estuarine Habitat and Seagrass Beds

An estuary is a water body that has regular exchange and interaction with ocean water, or a marine embayment with no more than a temporary separation from seawater (Airamé et al., 2003). Estuaries represent the confluence of terrestrial, freshwater, and marine ecosystems, creating multiple, unique habitats supporting highly diverse communities and providing important ecosystem services (Office of National Marine Sanctuaries, 2015). There are a few large and many small estuaries along the California central coast in the study area; however, Morro Bay Estuary is the largest in the study area and is an established unit of the NEP. Estuaries are among the most productive natural ecosystems. Their physical, chemical, and biological characteristics are critically important to sustaining living resources. Estuaries serve as important habitats for many fishes, birds, and mammals (Caffrey et al., 2002; Zedler, 1996; Zedler et al., 2001). They provide suitable microhabitats for reproduction, feeding, resting, and cover. Phytoplankton is the primary vegetation in the open water portion of these habitats, while seagrasses dominate the channels and benthos supporting a unique assemblage of invertebrates and fishes. Seagrasses also provide ecosystem services, including secondary production, habitat for many other species, shoreline protection, and carbon sequestration (Hughes et al., 2013). Many fishes spawn in seagrass beds and use the seagrass beds as a nursery habitat. Large numbers of shorebirds and waterfowl are attracted to seagrass beds, where they feed on the seagrass, fishes, and invertebrate eggs and young. Estuary habitats stock juvenile fish at high densities and act as critical nurseries for fish populations in surrounding coastal areas. Additionally, numerous predators come to estuaries to feed from nearby habitats. Morro Bay is also an important nesting habitat for birds that have linkages in other marine habitats. This makes Morro Bay a highly connected habitat to other locations along the coast regionally. That connectivity likely diminishes with distance so areas near the bay benefit most and decline toward Point Conception.

Continental Shelf and Slope

The continental shelf is the gradually-sloping submerged margin of a continent that extends from shore to the shelf break. The shelf break is where the continental slope descends off into a steep slope. This occurs in the study area west of Santa Lucia Bank as the depth drops significantly. Shelf and slope habitats are home to important resources like flatfish, grenadiers, angel sharks, and other fish species. The shelf edge is marked by the abrupt break in slope that occurs at a depth of approximately 99–124 meters (325–407 feet) (Greene et al., 2002). The continental slope usually begins at 131 meters depth and ends at approximately 3,000 meters (9,843 feet). The continental slope, together with the continental shelf, is called the continental margin.

Macroalgae and Plants

Macroalgae (i.e., seaweed) and marine plants (i.e., seagrasses) are habitat-forming primary producers that grow in intertidal and shallow subtidal waters, generally less than 30 meters (98 feet) deep, where enough light penetrates for photosynthesis. The study area supports a rich array of benthic algae and seagrasses. These algae and marine plants are critical to the life

history of many of the invertebrates, fishes, seabirds, and marine mammals found locally. For example, giant kelp and bull kelp form extensive underwater forests on rocky substrates at shallow subtidal depths. The study area's impressive kelp forests are important not only ecologically, but also for recreational and commercial activities including fishing, diving, and tourism. Kelp beds are highly productive habitats and serve as important nursery habitat for juvenile fishes in the upper canopy (Carr, 1994). They also provide food, attachment sites, and shelter for a diverse assemblage of invertebrates and other species of algae on the benthos, throughout the water column, and in the root-like structure called the kelp holdfast (Dayton, 1985; Graham, 2004).

There are two types of marine flowering plants in the proposed sanctuary. Surfgrass (*Phyllospadix* spp.) occurs in rocky intertidal and shallow subtidal areas. Eelgrass (*Zostera pacifica*) occurs in soft bottom subtidal areas. These plants form productive and complex habitats that provide food and refuge for a wide variety of marine species, including recreational and commercially important fish and invertebrates (den Hartog, 1970; Orth et al., 1984; Hemminga and Duarte, 2000). Seagrass beds provide nursery habitat (reviewed in Heck et al., 2003) and are important for nutrient cycling (Costanza et al., 1997) and substrate stabilization (Fonseca and Fisher, 1986). In Morro Bay, common California eelgrass (*Zostera marina*) has been shown to be critical to sustaining marine life abundance but has experienced extent declines of over 95% in the region (O'Leary et al., 2021).

Fish

More than 400 species of fish have been documented in the study area, which constitutes a greater species richness than nearby coastal regions due to its presence across a marine transition zone at Point Conception (Allen et al., 2006). The confluence of the warmer Davidson Current and cooler California Current creates a wide swath of environmental conditions that support fish with a diversity of thermal affinities (Freedman et al., 2020; Allen et al., 2006). Some of the common nearshore kelp bed- and rocky reef-associated fishes in the study area include bat rays, blacksmith, seniorita, kelp bass, garibaldi, and California sheephead. Common important groundfish found within the study area include but are not limited to bank rockfish, bocaccio, cowcod, chilipepper rockfish, Dover sole, English sole, sablefish, and widow rockfish. Coastal pelagic and highly migratory fish species include bonito, white sea bass, yellowtail, albacore, blue shark, jack mackerel, northern anchovy, opah, Pacific mackerel, Pacific northern bluefin tuna, Pacific sardine, shortfin mako shark, skipjack tuna, striped marlin, swordfish, thresher shark, white shark, and yellowfin tuna (Love, 2011). White sharks are a key top predator species in the study area and have additional protections from the state of California and other nearby national marine sanctuaries. The population status, structure, and connectivity of sub-adult and adult white shark aggregations are poorly understood; however, telemetry data suggest that the study area is an important foraging ground and experiences some connectivity with aggregation sites at CINMS, Monterey Bay National Marine Sanctuary (MBNMS), and Greater Farallones National Marine Sanctuary (GFNMS). White sharks are shown to use Morro Bay and Point Conception frequently on telemetry arrays, but limited coverage of receivers may mean research is missing some key other areas. Given that these sharks are likely using the area as a foraging ground due to the high abundance of marine

mammal prey, it is important to ensure these individuals are receiving sufficient protections to continue their recovery in the region.

Seabirds

The study area is located along the Pacific Flyway, a major migratory route for birds. The region acts as a stopover during the birds' northerly (i.e., April through May) and southerly (i.e., September through December) migrations. In addition, the diversity of habitats in the study area provides breeding and nesting sites for many resident species, which then forage in study area waters. Recent modeling indicates that birds in the study area are more species-rich than neighboring sanctuaries and represent a higher proportion of species that breed outside of the California Current than any other national marine sanctuary on the West Coast (Leirness et al., 2021; Russell et al., 2023).

Nearshore species generally occupy relatively shallow waters inshore of the continental slope waters. These species spend almost their entire time on the water surface. In the study area, common nearshore species include red-throated, Pacific, and common loons; western grebes; surf and white-winged scoters; and Brandt's and pelagic cormorants. Pelagic species generally occupy deeper waters over the continental shelf break (>200 meters (656 feet)) and can occur in substantial densities far from shore (Ainley & Terrill, 1996). Common offshore species include sooty, pink-footed, Buller's, and black-vented shearwaters; northern fulmars; and pomarine, parasitic, and long-tailed jaegers.

In addition to seabirds, numerous waterbirds and shorebirds occupy coastal and estuarine habitats in the study area. Morro Bay is an important wintering area for black brant, with as many as 5,000 individuals occurring there (Chiple et al., 2003). Other waterfowl present from fall through spring include Canada goose, blue-winged teal, cinnamon teal, northern shoveler, gadwall, American wigeon, mallard, northern pintail, green-winged teal, and bufflehead. Large numbers of shorebirds are present during much of the year with tens of thousands stopping over during migration (Chiple et al., 2003). Shorebirds wintering in large numbers include marbled godwits, willets, and long-billed curlews. Nearly 40 shorebird species use a variety of habitats in the Morro Bay area. Many of the locally occurring shorebirds are migratory in this area, with the majority occurring during the spring and fall migrations and during the winter; very few shorebirds breed in this area. Although most shorebirds occupy coastal wetlands, including estuaries, lagoons, and salt and freshwater marshes, they also utilize other coastal habitats, including sandy beaches, rocky shores, and open ocean.

Sea Turtles

Four sea turtle species have been reported in the offshore Southern California region and around the study area: green, leatherback, loggerhead, and olive ridley. All four sea turtle species are listed as endangered under the ESA (16 U.S.C. § 1531 *et seq.*), and three of the four species are rarely sighted within the study area because of range limits (green, loggerhead, and olive ridley), decreased populations, and their typical migratory habits.

Leatherback sea turtles have the most extensive range of any living reptile and have been reported circumglobally throughout the oceans of the world, but their migratory routes are not entirely known. The study area does include the main feeding habitat for leatherback sea turtles,

which stretches along the California coast from Point Arena to Point Arguello east of the 3,000-meter (9,843-foot) depth contour. There are numerous documented leatherback sea turtle sightings along the Pacific coast of North America during the summer and fall months, when large aggregations of jellyfish form, on which they prey.

Marine Mammals

The study area shoreline and surrounding waters support a great diversity of marine mammals, including whales, pinnipeds, and sea otters. These species depend on a large volume of seasonal food resources. The abundance and distribution of marine mammals can serve as an indication of the general health and ecological integrity of the study area's marine ecosystem. At least 33 species of cetaceans have been reported in the area (C.J. Rennie, Santa Barbara Museum of Natural History, personal communication; Leatherwood et al., 1987), with 18 regularly observed (Becker et al., 2020; Office of National Marine Sanctuaries, 2019). Prominent species include blue whale, fin whale, orca, bottlenose dolphin, California gray whale, humpback whale, Pacific white-sided dolphin, Risso's dolphin, beaked whales, and short-beaked and long-beaked common dolphin. The study area provides vital habitat for pinnipeds, offering important feeding areas, breeding sites, and haul outs. Six species of pinnipeds have historically occurred in the region: California sea lion, Guadalupe fur seal, northern fur seal, northern elephant seal, Pacific harbor seal, and Steller sea lion. The most common pinniped in the region is the California sea lion, with nearby San Miguel Island serving as one of the largest rookeries in the world. The least common pinniped in the proposed sanctuary is the Steller sea lion; the proposed sanctuary is at the southern edge of its range. Finally, the southern sea otter (*Enhydra lutris*) is listed as threatened under the federal ESA and is considered depleted and protected under the Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361 *et seq.*). In general, the California population of southern sea otter has been slowly increasing in recent years, particularly in the center portion of the mainland range (U.S. Fish and Wildlife Service, 2021). However, in the southern portion of the mainland range (Cayucos to Gaviota), the population has been slowly decreasing in recent years, likely a result of white shark predation (U.S. Fish and Wildlife Service, 2021; Tinker et al., 2015).

Invertebrates

The total number of marine invertebrate species in Southern California may be in excess of 5,000, not including microinvertebrates (Smith & Carlton, 1975; Straughan & Klink, 1980). Common and ecologically important invertebrates in the study area include abalone, anemones, barnacles, clams, corals, gorgonians, crabs, jellyfish, mussels, nudibranchs, prawns, salps, scallops, sea cucumbers, sea slugs, sea stars, sea urchins, snails, chitons, limpets, sponges, bryozoans, copepods, euphausiids, prawns, spiny lobster, squid, tunicates, and worms. The high biodiversity of invertebrates supports fisheries, provides ecological stability, and provides habitat to a number of species in the region.

The study area includes habitats for two endangered marine invertebrates: black abalone (*Haliotis cracherodii*, endangered) and white abalone (*Haliotis sorenseni*, endangered). Black abalone are typically found in intertidal areas where they feed on kelp and other drifting algae. Comparatively, white abalone are usually found at depths of 50–180 feet (making them the

deepest living abalone species) and have a diet consisting of a wide variety of algae. Both species have experienced declines from overfishing and diseases.

The study area is also home to numerous habitat-forming invertebrate species, most prominently in deep water with deep-sea corals and sponges that support groundfish populations. Deep-sea corals and sponges are poorly understood but occur in deep waters (typically > 100 meters (328 feet)) on rocky substrates. These deep-sea coral gardens are often protected as EFH under the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. § 1801 *et seq.*), but there is a large gap in knowledge about their extent.

Introduced Species

In the study area, numerous introduced species have been recorded. Introduced species are species that have appeared in habitats in which they have historically not been present due to human introduction, where the species also has the potential to degrade habitat, outcompete native species, and disrupt ecosystem processes. The most prominent introduced species in the study area is *Watersipora subtorquata*, which is a red encrusting red bryozoan. It is commonly found on piers and oil rigs, where it outcompetes native species. There have been individual *Watersipora* colonies spotted in Morro Bay (Cal Poly, 2022). There are two introduced algae species in the region that also extend into some sections of the study area: *Sargassum hornei* and *Undaria pinnatifida*. *Sargassum* has quickly spread in some parts of the Channel Islands to displace native species and has the potential to cause ecological and economic harm. All three of these introduced species are potentially spread by vessels and have proliferated in the Santa Barbara Channel. There are several ongoing monitoring programs that record observations of introduced species as part of their standard procedures, so ONMS is hopeful that early detection can be achieved (Office of National Marine Sanctuaries, 2019).

Protected Species and Habitats

This section describes biological species and associated habitats that are protected by the ESA (16 U.S.C. § 1531 *et seq.*), the MMPA (16 U.S.C. § 1361 *et seq.*), and the MSA (16 U.S.C. § 1801 *et seq.*). The MSA is administered by NOAA Fisheries. Both NOAA Fisheries and the U.S. Fish and Wildlife Service (USFWS) administer the MMPA and the ESA. Each set of species is sub-grouped for further description by jurisdiction.

Section 7 of the ESA requires federal agencies to consult with USFWS and/or NOAA Fisheries, as applicable, before initiating any action that may affect a listed species or designated critical habitat. This EIS provides information about the potential impacts of the Initial Boundary Alternative and alternatives on protected species and designated critical habitat in the study area. As discussed below, ONMS believes implementation of the Initial Boundary Alternative and other action alternatives identified in this EIS is not likely to adversely affect any species listed as threatened or endangered, or habitats critical to such species, under the ESA.

Concurrent with public review of this EIS, ONMS initiated informal consultation with NOAA Fisheries and USFWS under Section 7 of the ESA to ensure that the preferred alternative for sanctuary designation will be compliant with the ESA. See Appendix E for more details on ESA Section 7 consultation, and Appendix G for lists of protected species.

Species and Critical Habitat Protected Under the Endangered Species Act

Under the ESA, USFWS manages the protection of, and recovery effort for, listed terrestrial and freshwater species, and NOAA Fisheries manages the protection of, and recovery effort for, listed marine and anadromous species.²⁶ The ESA protects plant, fish, and wildlife species (and their habitats) that are listed as **endangered** and **threatened**. A species is defined as **endangered** if it is at risk of extinction throughout all, or a significant portion of, its range. A species is defined as **threatened** if it is likely to become endangered within the foreseeable future. When USFWS or NOAA Fisheries list a species under the ESA, they are required to determine whether critical habitat exists. **Critical habitat** is defined as (1) specific areas within the geographical area occupied by the species at the time of listing that contain physical or biological features essential to conservation of the species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species only upon a determination that such areas are essential for the conservation of the species (16 U.S.C. § 1532(5)(A)).

Species Protected Under the Marine Mammal Protection Act

The MMPA of 1972 (16 U.S.C. 1361 *et seq.*), as amended, prohibits, with certain exceptions, the “take” of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the country. The MMPA defines “take” as “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal” (16 U.S.C. § 1362). See Appendix G.3, Table G.3-1 for a list of species protected under the MMPA that could occur in the study area.

Species and Critical Habitat Under USFWS Jurisdiction

ONMS used the USFWS Environmental Conservation Online System Information for Planning and Conservation tool to search for ESA-listed species that may be present in the study area. The Environmental Conservation Online System Information for Planning and Conservation tool identified 38 species listed as endangered, threatened, proposed endangered, or candidate under USFWS jurisdiction that could occur in the study area, as well as designated critical habitat for six species (western snowy plover, California red-legged frog, tidewater goby, Morro shoulderband snail, Morro Bay kangaroo rat, and Gaviota tarplant) (U.S. Fish and Wildlife Service, 2022). See Appendix G.1, Table G.1-1, for all species with special protections under USFWS jurisdiction potentially present in the study area. See Appendix G.1, Table G.1-2 for ESA-listed species under USFWS jurisdiction with critical habitat in the study area.

Species and Critical Habitat Under NOAA Fisheries Jurisdiction

ONMS identified 22 ESA-listed species (or distinct population segments/evolutionarily significant units) under NOAA Fisheries jurisdiction that are expected to be present in the study area and could be affected by the Initial Boundary Alternative or action alternatives. Three of these species have designated critical habitat in the study area (humpback whale, black abalone, and leatherback sea turtle). See Appendix G.3, Table G.3-1 for the complete list of ESA-listed species under NOAA Fisheries jurisdiction, as well as species protected under other statutes

²⁶ There are exceptions to this general delineation of responsibilities. For example, USFWS has jurisdiction over the southern sea otter, which is a marine mammal species.

(e.g., MMPA). See Appendix G.3, Table G.3-2 for ESA-listed species under NOAA Fisheries jurisdiction with critical habitat in the study area.

Further, there are several dozen species or distinct population segments/evolutionarily significant units that, while present on the U.S. West Coast, are not expected to occur in the study area or that proposed sanctuary activities would not affect. Appendix G provides the names of those species not expected in the study area.

Essential Fish Habitat Protected by the Magnuson-Stevens Act

The study area overlaps with EFH and Habitat Areas of Particular Concern (HAPCs) for various federally managed fish species within the Pacific Coast Groundfish, Coastal Pelagic Species, and Highly Migratory Species Fishery Management Plans. EFH is defined as “those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 U.S.C. § 1802(10); Gulf of Mexico Fishery Management Council, 2005; NOAA Fisheries, 2009). NOAA Fisheries’ EFH regulations encourage regional Fishery Management Councils to designate HAPCs within areas identified as EFH to focus conservation priorities on specific habitat areas based on several factors, including importance of the ecological function of the habitat and threats and stressors to the habitat (50 C.F.R. part 600, subpart J). HAPCs help focus research and conservation efforts on localized areas that are especially important ecologically or are vulnerable to degradation. HAPCs are subsets of the total area necessary to support healthy stocks of fish throughout all of their life stages. HAPCs have been designated for various federally managed fish species within the Pacific Coast Groundfish Fishery Management Plan.

Among these, HAPCs found within the study area include eelgrass/seagrass, canopy kelp, rocky reefs, and a network of federal and state marine reserves and marine conservation areas. Regarding eelgrass/seagrass, it is NOAA Fisheries’ policy to recommend no net loss of eelgrass habitat function in California (NOAA Fisheries, 2014). Specifically, these groundfish EFH areas include Point Conception EFH (518,320,000 acres); East San Lucia Bank EFH Conservation Area (43,105,280 acres); Big Sur Coast/Port San Luis EFH (1,875,028,480 acres); Southern California Bight EFH Conservation Area (711,087,360 acres). In all of these EFH areas, use of bottom contact fishing gear is prohibited under the applicable fishery management plan.

Under the MSA, federal agencies must consult with NOAA Fisheries on any action that may adversely impact EFH. See details regarding EFH consultation in Appendix E.7. See Appendix G.4, Table G.4-1 for a list of EFH overlapping with the study area, and Appendix G.4, Table G.4-2 for a list of HAPCs overlapping with the study area.

Species Protected Under the Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. § 703 *et seq.*) authorizes federal protection for migratory birds in the U.S. The MBTA makes it unlawful without a permit from USFWS to pursue, hunt, take, capture, kill, or sell migratory birds (16 U.S.C. § 703). Of the over 800 listed migratory bird species protected under the MBTA (50 C.F.R. § 10.13), 53 species may be found transiting, resting, or foraging within the study area. See Appendix G.2, Table G.2-1 for a list of the migratory birds potentially present in the study area.

4.3.2 Impact Assessment Methodology (Biological Resources)

Criteria to determine the significance of impacts on biological resources are based on federal, state, and local standards and regulations. Impacts on biological resources were evaluated by determining the sensitivity, significance, or rarity of each resource that could be affected by the Initial Boundary Alternative or alternatives. A mix of expert knowledge, monitoring data, and published research were used to determine impacts on natural resources and thresholds of significance to determine if the impact constitutes a significant impact. The significance threshold may be different for each habitat type, species, or location. Impacts may be either direct or indirect.

Direct impacts on biological resources result when biological resources or important habitats are altered, destroyed, or removed during the course of implementation. Indirect impacts on biological resources may occur when project-related activities result in environmental changes that influence the survival, distribution, or abundance of native species (or increase the abundance of an introduced species) in ways that are further removed in time or distance. Examples of indirect impacts include effects of noise, presence of chemical contamination, or incidence of human activity (i.e., scuba and other non-extractive recreational activities) that influence species populations to move or change their behaviors over many years. It is also possible to have beneficial impacts, directly or indirectly. Finally, impacts may be short term or long term. Short-term impacts are less likely to be considered significant.

In sum, for this analysis an alternative was considered to have a significant adverse impact on the biological environment under any of the following circumstances:

- It would have an impact well outside the natural range of variability of a protected species' population, habitat, or the natural processes sustaining it. Impacts could include extensive (i.e., affecting a large proportion of the local population), life-threatening, or causing debilitating injury and mortality and substantial disruption of communication or time sensitive behaviors such as breeding so that the continued viability of the local population is seriously threatened.
- It would have a substantial adverse effect on a species, natural community, or habitat that is recognized for scientific, recreational, ecological, or commercial importance.
- Any fish, marine mammal, seabird, or wildlife migration routes would be impeded for a period that would significantly disrupt that migration.
- It would alter or destroy habitat in such a way that would prevent biological communities that inhabited the area prior to the project from reestablishing themselves.
- It would alter or aid the spread of invasive species into new habitats.
- It would impact habitat quality, ecosystem resiliency or ecosystem functionality in some way.
- It would extensively alter or cause the loss of biological communities in high-quality habitat for longer than one year.
- It would allow biological resources to be exploited in ways inconsistent with the plans and policies of the ONMS or would otherwise violate the ONMS or NOAA program regulations.

For beneficial impacts, ONMS considers such impacts to be significant if an alternative would result in long-term protection from harm, injury, or take; long-term protection of habitat; or other complementary support that would reasonably be expected to contribute to long-term viability or sustainability of a species, population, or biological setting.

For this analysis, assessing specific potential impacts on biological resources is based on looking at the biophysical implications of each proposed and alternative action considered in relation to the known presence and extent of biological resources in the relevant areas. Parameters for assessment include the following:

- Relative importance or value of the resource affected (e.g., its legal, commercial, recreational, ecological, Tribal community, or scientific value).
- The resource's relevant occurrence in the region.
- Sensitivity of the resource to the proposed action either directly or indirectly.
- Anticipated physical extent of the potential impact.
- Anticipated duration of the ecological ramifications of the potential impact.

Where relevant, the importance or value of each biological resource is evaluated based on the following criteria (listed in order of importance):

- Designation of the resource by federal or state resource agencies (e.g., NOAA Fisheries and USFWS) as a high value or sensitive resource.
- Known or presumed regional sensitivity and resilience of the resource.
- Known or presumed local significance of the resource.

The overall methodology, including data sources and assumptions, used to conduct the biological resources impact evaluation is consistent with NOAA NEPA guidelines (NOAA Administrative Order 216-6A).

4.3.3 Environmental Consequences of the Initial Boundary Alternative (Biological Resources)

Designation of a sanctuary, enacting the proposed regulations, and conducting supporting research would have beneficial and adverse impacts on the biological resources in the study area.

Beneficial Impacts of the Initial Boundary Alternative on the Biological Setting

The following direct and indirect beneficial impacts on the biological setting would result from implementing the proposed sanctuary regulations and management plan and conducting routine field activities.

Direct Protection Through Sanctuary Regulations or the Management Plan

Implementing the proposed sanctuary regulations outlined in Section 3.2.2 would protect marine habitats and species due to prohibitions on certain activities that would otherwise degrade habitats used by marine species or directly harm marine species, such as: (1) alteration of or construction on the seabed; (2) certain discharges into the sanctuary; (3) taking or

possessing any marine mammal, sea turtle, or seabird except as authorized by other federal statutes; (4) attracting any white shark; (5) deserting a vessel (see Section 4.4.3 for more discussion on the benefits of this prohibition); and (6) introducing an introduced species. Implementing these prohibitions would provide direct resource protection benefits by protecting important biological habitat for living resources in the proposed area and reducing direct disturbance of living resources. Through direct protection and permitting authority, the proposed sanctuary under the Initial Boundary Alternative could limit the spatial domain of wind energy impacts including inadvertent take of resources, impacts on upwelling (California Ocean Protection Council, 2021), and seafloor alteration from cable installation.

Marine species that make their home or forage within benthic habitats and sediment benefit from compliance with these regulatory prohibitions because of the avoidance of injury, habitat disturbance, or destruction. Additionally, many ecosystem engineers like kelp or seagrass would benefit from limited seafloor disturbance and continue to provide bottom-up ecosystem effects on other species. Some ecosystems would benefit from additional protections outlined in Section 3.2.2, most notably the Rodriguez Seamount. NOAA Fisheries, through EFH conservation actions under the MSA, has already prohibited bottom trawling on and around Rodriguez Seamount. Additional protections provided to the seamount by the proposed sanctuary regulations would protect the high biodiversity and deep-sea habitat on the seamount. Long life histories and slow growth of deep-sea resources mean direct adverse impacts have long recovery times in these habitats; so additional protections for resources 1,500 feet below sea level (roughly 750 ft above the top of the seamount) would add critical additional risk mitigation for these sensitive resources.

Beyond just habitat protection, white sharks, a species protected under the Convention on International Trade in Endangered Species of Wild Fauna and Flora and by the state of California, would also be protected under the Initial Boundary Alternative through the proposed regulatory prohibition on attracting any white shark (defined to include conducting any activity that lures or may lure a shark by using food, bait, chum, dyes, decoys, acoustics, or any other means except the mere presence of human beings). Telemetry data suggest that the coastal areas within the proposed boundary are important foraging grounds for young adult and adult white sharks. These populations likely experience connectivity with populations in other nearby national marine sanctuaries and warrant similar protections and rules to limit behavioral alteration and training of individuals to vessels. Attraction of white sharks is an issue that has been controlled through the sanctuary permit process at other national marine sanctuaries on the West Coast (i.e., GFNMS, MBNMS, and CINMS) and would be replicated here given the species' current recovery status and unknown population structure. Prohibition of attracting white sharks would limit the species training to cue on vessels and limit unregulated ecotourism or poaching that could negatively impact and harass individuals. There has been increased attention on white sharks in recent years in the scientific/research community and in popular media, and there is a significant risk to these animals from unregulated ocean use of attractants. Attraction of white sharks may also pose a risk to other ocean users, as sharks would be trained to approach people more often if they are in areas where attractant use is common. Activity WD-1.5 in the management plan's Wildlife Disturbance Action Plan would monitor white shark activity and potential disturbance (typically attraction), with the goal of better understanding

the white shark population, areas frequented by white sharks, and if attraction is occurring (usually associated with cage diving or viewing from boats).

Some historical resources function in the marine environment as structures that provide valuable three-dimensional habitat for marine life. Therefore, efforts to minimize or avoid disturbance of historical resources within the sanctuary (see Section 4.5) not only protect these important resources, but also reduce the likelihood of adverse impacts on marine biota using these sites as habitat. In addition, conducting a climate vulnerability assessment as part of the Climate Change Action Plan would provide sanctuary managers with tools to identify those living resources at greatest risk from a changing climate and better data to inform direct resource protection interventions.

The beneficial impacts of the Initial Boundary Alternative on oceanography and upwelling are described in Section 4.2.3.

Indirect Protection Through Enhanced Management and Stewardship

As part of the proposed sanctuary management plan, NOAA's implementing research and monitoring programs would provide sanctuary managers with information to guide decisions related to management of sanctuary resources, resulting in enhanced resource protection of marine species and their habitat. Specifically, supporting, promoting, and coordinating scientific research, characterization, and long-term monitoring in the proposed sanctuary would increase understanding of the structure, function, resilience, and status of the resources the proposed sanctuary would manage. An increased knowledge of the processes, dynamics, and responses of these systems to both human-induced and natural changes would improve long-term management of these resources and their habitats in the sanctuary. In addition, under the Initial Boundary Alternative, implementing resource protection and emergency response activities to remove hazards and introduced species from the waters of the sanctuary, would reduce or avoid disturbance of important habitats, reduce risk of collisions with or entanglement of marine species, and mitigate any adverse impacts from hazardous spills on living marine species in the sanctuary. Some additional specific benefits include:

- Developing management action plans on topics of emerging concern (e.g., climate change) and ongoing management efforts (e.g., research and monitoring).
- Facilitating the recovery of ESA-listed species.
- Limiting release and spread of introduced species via proposed regulatory prohibitions and via management actions to remove such species.
- Developing best management practices to mitigate impacts on sanctuary resources.
- Working with partners to further ecosystem-based management approaches.

Some of the proposed management plan's goals are to increase understanding of sanctuary resources, to maintain and improve the status of sanctuary resources, and to maintain or increase efforts to reduce threats to sanctuary resources. As detailed in the action plans for Climate Change, Research and Monitoring, and others, the proposed sanctuary management plan would focus on addressing emergent environmental concerns in the sanctuary (e.g., marine debris, ship strikes, installation of offshore wind energy infrastructure) as well as expanding

work in ongoing priority areas (e.g., wildlife entanglement, invasive species, ocean noise). The action plans propose various strategies and activities to help further these goals, for example:

- Evaluating impacts and vulnerability of resources to climate change.
- Assessing and facilitating local and regional ecosystem connectivity.
- Collaborating with fishery management agency partners to further ecosystem-based management approaches and advance understanding and management of fish aggregation sites.
- Continuing research on seabird ecology, habitat use, and contaminant loads as well as risk from offshore wind implementation.
- Expanding outreach programs to improve compliance with speed seasonal management areas for local cetaceans.
- Monitoring the sources and levels of noise producing activities and appropriate mitigation in the sanctuary.
- Monitoring, mitigating spread, and removing introduced species.
- Continuing research on habitat uses by living resources in the sanctuary and ecosystem service impacts of sanctuary management activities.

Through these efforts to expand research, outreach, and education activities, NOAA has the potential to expand the knowledge base and promote ocean stewardship principles among partners, Tribal and other local communities, and the general public. NOAA could achieve this through publishing scientific research findings, formal and informal education programming, and outreach programs. These activities create an opportunity to influence the behavior and decision-making of individuals, communities, organizations, and agencies in ways that could indirectly benefit living marine resources within the sanctuary. For example, NOAA staff would support regional coordination to share information, increase capacity, evaluate the effectiveness of relationships, strengthen Sanctuary Advisory Council relationships with partners, and engage with international groups, Tribes, Indigenous communities, nations, and organizations. This collaboration with agencies with overlapping management authority with NOAA would aim to further protection of sanctuary resources while allowing each agency to achieve their respective missions.

In addition, interpretive programming and citizen science programs like the Long-term Monitoring Program and Experimental Training for Students (LiMPETS) program would provide the public with valuable opportunities to collect data and learn about the sanctuary while experiencing it first-hand. This program would provide long-term benefits to efforts to protect biological resources, particularly coastal resources, by teaching people how to be coastal stewards. For example, educating the public about and promoting the responsible use of sanctuary resources could reduce habitat and/or wildlife disturbances from other recreational uses of the sanctuary by ensuring that the public is aware of the need to avoid or minimize impacts on habitat for marine species.

All of these activities are intended to provide beneficial impacts on the sanctuary's living marine resources and/or biological habitat, or to address ongoing impacts of climate change. The magnitude of the potential beneficial impacts of some of these specific activities would largely

depend on actions undertaken by partner agencies with direct regulatory authority over protection of certain species or habitat types.

Summary of Beneficial Impacts on the Biological Setting

Implementing the Initial Boundary Alternative would provide direct benefits from implementing the proposed regulations and indirect benefits through increased information to guide resource protection decisions, coordinate resource management, and promote ocean literacy and stewardship. Therefore, designating the Initial Boundary Alternative would have **long-term, significant beneficial impacts** on the living marine resources and habitats in the sanctuary.

Adverse Impacts of the Initial Boundary Alternative on the Biological Setting

Minor physical or acoustic disturbance, including temporary displacement of marine species could result from NOAA or its partners conducting research, monitoring, or resource protection activities to implement the proposed sanctuary management plan. These activities could include vessel use, scuba diving, deploying buoys and research or monitoring equipment, sampling organisms, removing materials (e.g., marine debris), deploying uncrewed underwater systems, deploying uncrewed aerial systems, deploying active acoustic equipment and towed instrument arrays, and seabird, fish and whale tagging studies. NOAA would avoid or minimize disturbance of living marine resources by applying the following measures (see Appendix C for a full list of best management practices):

- Posting a dedicated marine mammal observer during vessel operations to avoid collisions with marine mammals.
- Maintaining safe distances from any observed large whales and other protected species.
- Postponing deployment of equipment when marine species that could be potentially entangled are present.
- Supervising deployed instruments or instrument cables while they are deployed to minimize risk of collision or entanglement with marine species.
- Ensuring all NOAA divers are trained and follow NOAA protocols to avoid harming or otherwise disturbing habitat or living marine resources.

If living marine resources were present in close proximity to any equipment or an activity's location, NOAA anticipates that any disturbance of the individual would be brief due to the short period of time NOAA-led activities would occur at a single location. Any avoidance would be localized and temporary, animals are expected to return to the area quickly after the vessel leaves the area, and abandonment of habitat is not expected. NOAA would follow protocols to minimize the risk of vessel strike or entanglement, or other direct disturbance, of living marine species during vessel operations and other equipment used to support sanctuary research, monitoring, and resource protection activities. Therefore, no population-level impacts on living marine resources would be expected due to NOAA-led activities.

The contribution of noise to the sanctuary soundscape from conducting sanctuary management activities would be minor related to the scope of existing activities in the region. Therefore, any acoustics effects on living marine resources from engine noise, movement of equipment through

the water, and other underwater sound generated from propulsion machinery or depth sounders would be minor and temporary.

NOAA's National Ocean Service (NOS), of which ONMS is a part, completed the [Final Programmatic Environmental Impact Statement for Surveying and Mapping Projects in U.S. Waters for Coastal and Marine Data Acquisition](#) (the "NOS Survey EIS") in December 2022 (NOAA National Ocean Service, 2022).

Through quantitative acoustic impacts modeling, NOS determined that impacts on marine mammals by sonars used during field operations would be largely limited to temporary or short-term behavioral disturbances that would not be outside the natural range of variability of species' populations, their habitats, or the natural processes sustaining them. NOS concluded that potential impacts of underwater sound from active acoustic sources include injury exposures in the form of hearing loss, but such injury would be rare and confined to a few individuals of cetacean species with high-frequency hearing ranges. While more individual animals comprising cetaceans, pinnipeds, sirenians, and fissipeds are expected to be exposed to sound levels that could lead to behavioral disruption, the amount of time individuals would be exposed would last only a few minutes. Similarly, the potential for masking would continue to be minimal during sonar use because animals would not spend much time in ensonified zones. Overall, the potential impacts would likely continue to be limited to short-term disruption of acoustic habitat and behavioral patterns.

Due to the operational protocols adopted by NOAA (see Appendix C for more details on best management practices), and the low intensity of NOAA's planned activities within the sanctuary, the likelihood of disturbance of living marine resources through conducting sanctuary management activities would be very low and any adverse impacts would be temporary. Implementing the Initial Boundary Alternative would result in **negligible or minor adverse impacts** on living marine resources and the biological setting in the proposed sanctuary for the following reasons: (1) sanctuary-led field activities would occur infrequently (up to 120 days at sea per year), would be periodic, and spread out in space and time; and (2) all ONMS vessels must comply with the operational protocols and procedures in the NOAA Small Boats Policy (NOAA Administrative Order 209-125 available online) and ONMS best management practices, which reduce the risk of adverse impacts. Any future proposed NOAA field actions would be subject to the NEPA and environmental compliance process at the time, including any applicable NEPA reviews and statutory consultations.

Beneficial Impacts of the Initial Boundary Alternative on Protected Species and Habitats

This section summarizes the anticipated impacts of the Initial Boundary Alternative on the species and habitats that may occur in the sanctuary that are protected under the ESA, MMPA, MBTA, and the EFH provisions of the MSA, as detailed in Section 4.3. NOAA analyzed the potential impacts on ESA-listed species and designated critical habitat within the context of the ESA regulatory framework, including ESA-specific determinations regarding whether the proposed action may affect listed species and designated critical habitat (See Appendix E.4).

For the protected species described in Section 4.3.1, implementation of the proposed regulatory prohibitions would largely provide resource benefits by protecting biological habitat and reducing potential for direct disturbance or take. In addition, implementing resource protection, research, monitoring, outreach, and citizen science programs under the proposed sanctuary management plan would improve the understanding, management, and protection of sanctuary resources and therefore provide beneficial impacts on the living marine resources and habitats in the Initial Boundary Alternative area, including supporting recovery efforts for these ESA-listed species. Examples of both regulatory and non-regulatory benefits include:

- Regulatory prohibitions on taking or possessing any marine mammal, sea turtle, or bird, with limited exception, and attracting any white shark within the sanctuary – these species would benefit from the reduction in risk of disturbance or take through implementation of these prohibitions.
- Regulation protecting the submerged lands (seabed) – seafloor habitats would benefit from the significant reduction in area that could be developed for future offshore oil and gas development and from sanctuary management and the application of the proposed regulations to areas with the potential for additional offshore wind energy development. This would mean, for example, that potential future offshore wind farms may be impeded from being developed within the federal waters of the sanctuary, and that the sanctuary could adopt mitigation measures to reduce the potential impact of subsea electrical transmission cables on sanctuary resources and qualities through the ONMS authorization provision and special use permit provision in the proposed regulations (see Section 4.7.3). In addition, the decommissioning and removal of offshore oil and gas facilities could have reduced impacts based on potential mitigation measures imposed by the sanctuary.
- Resource Protection Action Plan – whales transiting the proposed sanctuary, including ESA-listed whale species, would experience beneficial impacts from implementation of the newly-expanded “Area to be Avoided” (ATBA) at CINMS and into the proposed CHNMS, as well as voluntary vessel speed reduction programs that currently exist on either side of the proposed sanctuary designed to reduce the risk of fatal ship strikes, and could be expanded into the proposed sanctuary in the future.
- Outreach Programs – initiatives such as “[Finding Hal](#)” (a CINMS program) would similarly generate more scientific information on, identify suitable habitat for, and support potential out-planting of ESA-protected abalone species.
- Resource Protection – ONMS’ response to sanctuary resource emergencies, including oil spills and whale entanglements, would augment existing efforts, or be “first-time” programs, and thus also provide beneficial impacts on ESA-listed species within the proposed sanctuary and adjacent region.

In aggregate these **long-term, beneficial impacts** would be **direct** and **indirect**, and range between **minor** to **significant** for protected species and sanctuary habitats.

Adverse Impacts of the Initial Boundary Alternative on Protected Species and Habitats

The potential adverse impacts of the Initial Boundary Alternative on these listed species would also be the same as those described for all biological resources above. However, ONMS would implement additional protective measures and standing orders designed to reduce the risk of interactions with ESA-listed species, such as potential strikes on blue whales, humpback whales, or leatherback sea turtles, during sanctuary management actions. Activities involved in implementing the sanctuary management plan that have the most potential to affect listed species are:

- Operating sanctuary vessels.
- Deploying mooring buoys and research or monitoring equipment.
- Deploying uncrewed underwater systems, specifically ROVs.
- Deploying uncrewed aerial systems and operating piloted aircraft.

ONMS research that may impact protected resources or habitat would be conducted in accordance with any applicable new or existing NOAA Fisheries and USFWS permits and with additional protective measures from any permits ONMS would issue to its own science staff, or standing orders to supplement protective measures in cases where there is increased risk to protected resources and habitats, including (see Appendix C for more detail):

- Following standing orders for vessel speed, operations around marine mammals, and nighttime operations.
- Posting at least one dedicated lookout for ESA and MMPA protected species during all vessel operations.
- Vessel operators remaining vigilant at helm controls and ready to take action immediately to avoid an animal.
- Slow deployment and constant supervision of equipment to minimize risks and avoid interaction with protected species.
- Using soft substrate areas for vessel anchoring and securing scientific equipment, avoiding hard substrate areas (potential abalone habitat).
- Securing NOAA authorization for any uncrewed aerial systems.
- Where direct take is involved, such as in whale-tagging operations, ensure that appropriate permits have been obtained from NOAA Fisheries or USFWS pursuant to ESA and MMPA.

Future proposed NOAA field actions would be subject to the NEPA and environmental compliance process at the time they are undertaken, including any applicable NEPA reviews and statutory consultations (and any additional mitigation measures arising out of those consultations, as applicable).

If any sanctuary management activities were to occur in close proximity to protected species, the activity could result in temporary disturbance. For example, a vessel or ROV could cause a whale or sea turtle to change swimming speed or direction, change vocalization rate or intensity, or have no reaction. This type of behavior modification would be temporary due to the limited number of ONMS planned activities, and the short period of time that such activities would

occur at a single location. As such, these sanctuary management activities could cause **direct, short-term, negligible adverse impacts** on a listed species due to disturbance.

As with any vessel operation, sanctuary vessel operations have the potential to result in a collision with ESA-listed species, or species protected by the MMPA. The severity of potential injuries from a vessel strike would depend on the speed of the vessel, the part of the vessel that strikes the animal, and the body part impacted. To minimize the risk of vessel collisions with whales or sea turtles, ONMS implements specific standing orders and protective measures for reducing vessel speed and spotting marine species from a distance. In addition, ONMS staff avoid running sanctuary vessels at night. On rare occasions when sanctuary vessels must be operated at night, staff do so at much lower speeds and with additional crew lookouts. As discussed in the prior section, any acoustics effects on living marine resources, including protected species, from engine noise, movement of equipment through the water, and other underwater sound generated from propulsion machinery or depth sounders would be minor and temporary.²⁷ As such, given the low level of vessel trips that would occur annually as part of sanctuary management activities and compliance with the standing orders and protective measures listed in this section, the risk of potential **adverse impacts** from a collision with a listed or protected marine species would be **negligible**.

As part of the Initial Boundary Alternative, ONMS staff would deploy research or monitoring equipment and some tethered ROVs or other uncrewed underwater systems. A listed or protected species could become entangled if an individual encounters buoy lines, ROV tethers, or other filamentous attachments associated with research and sampling activities (e.g., deploying a conductivity, temperature, and depth monitor). Entanglements can cause physical damage to an animal through constriction, which can partially sever limbs or flippers, create penetrating injuries, and potentially immobilize an animal (Andersen et al., 2008). If an entanglement is severe enough, it may also result in drowning. To minimize the risk of entanglement, ONMS staff would postpone deployment of short-term devices when marine species that could be potentially entangled are present, and staff would closely monitor the instrument cables at all times while they are deployed. For gear that requires a mooring system, staff generally deploy subsurface floats rather than surface floats. The subsurface floats are typically at 20 feet below the surface or deeper, causing the buoy line to be fully, vertically stretched out at all times, resulting in an extremely low risk of entanglement. Because of these measures, it would be extremely unlikely that any listed species would come into contact with instrument cables or buoys during sanctuary management activities. Therefore, the risk of

²⁷ ONMS' multibeam and other active acoustic activities have been assessed programmatically pursuant to NEPA with those of other NOS programs, including the Office of Coast Survey, which conducts the majority of echo sounder surveys for the NOS (NOS Surveying programmatic EIS). As part of that programmatic review, NOS has completed an informal Section 7 ESA consultation with NOAA Fisheries and has completed a formal Section 7 consultation with USFWS (the consultation with USFWS was informal consultation for all species occurring outside Alaska; in other words, for all non-Alaska species, USFWS concurred with NOS's conclusion that the proposed action was not likely to adversely affect listed species or designated critical habitat). NOS also requested authorization for incidental take of marine mammals under the MMPA from both USFWS and NOAA Fisheries. In response, USFWS and NOAA Fisheries indicated that the proposed NOS activities are not likely to result in the incidental take of marine mammals under USFWS' or NOAA Fisheries' jurisdiction, and that incidental take regulations are therefore not required.

potential **adverse impacts** from entanglement for listed or protected whales, sea turtles, and fish would be **minor**.

Due to these additional operational protocols and the low intensity of NOAA's planned activities, the likelihood of disturbance of living marine resources and their respective habitats would be very low and any adverse impacts would be temporary. Implementing the Initial Boundary Alternative would result in **negligible or minor adverse impacts** on living marine resources and their habitats in the proposed sanctuary for the following reasons: (1) sanctuary-led field activities would occur infrequently (up to 120 days at sea per year), would be periodic, and spread out in space and time; and (2) all ONMS vessels must comply with the operational protocols and procedures in the NOAA Small Boats Policy (NOAA Administrative Order 209-125 available [online](#)) and ONMS best management practices (see Appendix C), which reduces the risk of adverse impacts.

4.3.4 Environmental Consequences of Alternative 1 (Biological Resources)

Alternative 1, Bank to Coast, would establish the same regulatory protections for biological resources as the Initial Boundary Alternative but on a smaller spatial domain. The main difference between Alternative 1 and the Initial Boundary Alternative is that protections that would benefit biological resources would be absent for a swath of deep-water and pelagic habitat west of Santa Lucia Bank. However, the large spatial domain of Alternative 1 would still have **minor to significant beneficial impacts** on the living marine resources and habitats within the Alternative 1 action area. This section describes differences in impacts on biological resources between Alternative 1 and the Initial Boundary Alternative.

Beneficial Impacts of Alternative 1 on the Biological Setting, Protected Species, and Habitat

Alternative 1 would have similar beneficial impacts on biological resources to those described in Section 4.3.3, but on a reduced spatial domain. Data on what biological resources would lose this additional protection is limited; however, the geomorphology of the seafloor west of Santa Lucia Bank suggests potential areas for deep-sea corals and other sensitive habitats. Excluding this area from the sanctuary boundary under Alternative 1 would potentially leave this deep-water habitat open for extractive resource development over the long-term; however, data on the presence and abundance of sensitive habitats is limited and presently there are no known plans for extractive activities in this area. Additionally, data from the area shows high levels of seabird diversity and density west of Santa Lucia Bank that would be left out of sanctuary protection (T. Russell, Scripps Institution of Oceanography, personal communication, 2023). This far west seabird hotspot would not be protected under Alternative 1; however, reasonably foreseeable human activities in the area are likely limited and impacts on natural resources are likely kept to a minimum.

Significant beneficial impacts on species and habitats under the Initial Boundary Alternative related to sanctuary regulations and potential future voluntary vessel speed reduction programs that would reduce adverse effects from discharges, ship strikes with protected species, and noise pollution due to offshore shipping activities in the area west of Santa Lucia Bank, would be

reduced under Alternative 1. This reduction, compared to the Initial Boundary Alternative, is due to the smaller area that would be included in the proposed sanctuary boundaries and the absence of sanctuary jurisdiction in the high vessel traffic area west of Santa Lucia Bank. If the Pacific Coast Port Access Route Study (PAC-PARS) process ends up shifting shipping lanes further offshore over the next five years, the proposed sanctuary would not have future regulatory authority over those shipping lanes under Alternative 1. Therefore, **beneficial impacts** related to offshore shipping activities in this area would be reduced from significant to **moderate** under Alternative 1. See Section 4.8 for more discussion on the difference of impacts related to marine transportation between Alternative 1 and the Initial Boundary Alternative.

While there would be a spatial reduction and associated loss in sanctuary-regulated area for protected species and habitats such as deep-sea coral and side slope areas west of Santa Lucia Bank under Alternative 1 compared to the Initial Boundary Alternative, significant beneficial impacts would still exist for those species and habitats within the proposed sanctuary boundaries under Alternative 1, such as Rodriguez Seamount and other important habitats that would receive added protection from sanctuary regulations and management programs under Alternative 1. Therefore, although the overall level of beneficial impacts would be lessened compared to the Initial Boundary Alternative, the general **beneficial impacts** related to the biological setting, protected species, and habitats within the boundaries would still be **significant** under Alternative 1.

Adverse Impacts of Alternative 1 on the Biological Setting, Protected Species, and Habitat

Alternative 1 would have similar adverse impacts on biological resources described in Section 4.3.3, but on a reduced spatial domain. Adverse impacts associated with research in the offshore areas west of Santa Lucia Bank would likely be reduced under Alternative 1, as there would likely be a reduction of research effort in those areas due to their exclusion from the proposed sanctuary's boundaries. Alternative 1 would also require shorter vessel transits to conduct research in the rest of the sanctuary from Bank to Coast. However, research efforts in offshore areas are typically limited in comparison to nearshore areas due to expense and effort, so the reduction in adverse impacts associated with research activities would lead to **minor adverse impacts** under Alternative 1.

4.3.5 Environmental Consequences of Alternative 2 (Biological Resources)

Alternative 2, Cropped Bank to Coast, would establish the same regulatory protections for biological resources as the Initial Boundary Alternative but on a smaller spatial domain. The main difference between Alternative 2 and the Initial Boundary Alternative is that protections that would benefit biological resources would be absent for a swath of deep-water and pelagic habitat west of Santa Lucia Bank and nearshore habitats in Morro Bay. However, the large spatial domain of Alternative 2 would still have minor to moderate beneficial impacts on the living marine resources and habitats compared to the Initial Boundary Alternative. This section describes differences in impacts on biological resources between Alternative 2 and the Initial Boundary Alternative.

Beneficial Impacts of Alternative 2 on the Biological Setting, Protected Species, and Habitat

Alternative 2 would have similar beneficial impacts on biological resources to those described in Section 4.3.3, but on a reduced spatial domain. Data on what offshore biological resources would be excluded from Alternative 2 is limited; however, the geomorphology of the seafloor west of Santa Lucia Bank suggests potential areas for deep sea corals and other sensitive habitats. Excluding this area from the sanctuary boundary under Alternative 2 would potentially leave this deep-water habitat open for extractive resource development over the long-term; however, data on the presence and abundance of sensitive habitats is limited and presently there are no known plans for extractive activities in this area.

In addition, sanctuary protections would not occur in Morro Bay, an area with sensitive reefs, kelp forests, estuaries, seagrass beds, and other nearshore habitats. Although the area has some existing protection due to its status in the USEPA's National Estuary Program, the proposed sanctuary would have a reduced role in managing and protecting biological resources. Numerous nearshore habitats and biological resources in the biodiverse Morro Bay would not have sanctuary protection compared to the Initial Boundary Alternative. This includes critical habitat for ESA-listed sea otters, numerous protected marine mammals, and shorebirds. Morro Bay is home to one of the larger harbors on the central coast of California, experiences a large amount of pollution, and would be the likely landing location for offshore wind energy subsea electrical transmission cables, leaving it vulnerable to anthropogenic impacts.

Significant beneficial impacts on species and habitats under the Initial Boundary Alternative related to sanctuary regulations and voluntary vessel speed reduction programs that would reduce adverse effects from discharges, ship strikes with protected species, and noise pollution due to offshore shipping activities in the area west of Santa Lucia Bank and Morro Bay, would be reduced under Alternative 2 due to that area's exclusion from the proposed sanctuary boundaries. If the PAC-PARS process ends up shifting shipping lanes further offshore over the next five years, the proposed sanctuary would not have future regulatory authority over those shipping lanes under Alternative 2. Therefore, **beneficial impacts** related to offshore shipping activities in this area would be reduced from significant to **moderate** under Alternative 1, compared to the Initial Boundary Alternative. See Section 4.8 for more discussion on the difference of impacts related to marine transportation between Alternative 2 and the Initial Boundary Alternative.

While there would be a spatial reduction in sanctuary-regulated area for protected species and habitats such as deep-sea coral and side slope areas west of Santa Lucia Bank under Alternative 2 compared to the Initial Boundary Alternative, beneficial impacts would still occur for species and habitats such as Rodriguez Seamount and other important habitats in the area included in Alternative 2. The level of **beneficial impacts** would be **moderate** under Alternative 2, compared to "significant" for the Initial Boundary Alternative.

Adverse Impacts of Alternative 2 on the Biological Setting, Protected Species, and Habitat

Alternative 2 would have similar adverse impacts on biological resources described in Section 4.3.3, but on a reduced spatial domain. Adverse impacts associated with research in the offshore areas west of Santa Lucia Bank and in Morro Bay would likely be reduced under Alternative 2, as there would likely be a reduction of research effort in those areas due to their exclusion from the proposed sanctuary's boundaries. This reduction of research effort in Morro Bay would only contribute to a minor reduction in adverse impacts due to the relatively small size of the nearshore area compared to the proposed sanctuary area as a whole. Alternative 2 would also require shorter vessel transits to conduct research in the rest of the sanctuary from Bank to Coast. However, research efforts in offshore areas are typically limited in comparison to nearshore areas due to expense and effort, so there would be a moderate reduction in adverse impacts associated with research activities under Alternative 2. Therefore, **negligible adverse impacts** would be expected under Alternative 2.

4.3.6 Environmental Consequences of Alternative 3 (Biological Resources)

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) does not alter the level of beneficial or adverse impacts on biological resources. The boundary area excluded is too small, and the biological resources within the excluded area are not sufficiently distinct enough from the rest of Alternative 3, to meaningfully affect the impact of sanctuary designation on biological resources. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Alternative 3, Diablo to Gaviota Creek, would establish many of the same regulatory protections for biological resources as the Initial Boundary Alternative but on a substantially smaller spatial domain. The main difference between Alternative 3 and the Initial Boundary Alternative is that protections that would benefit biological resources would be absent for large swaths of nearshore, deep water, and pelagic habitats within areas identified for offshore wind development, which would be outside of the boundaries for Alternative 3. This reduction of protection means that Alternative 3 would have **minor to moderate beneficial impacts** in comparison to the minor to significant beneficial impacts of the Initial Boundary Alternative. The sub-sections below describe the differences in impacts on biological resources between Alternative 3 and the Initial Boundary Alternative.

Beneficial Impacts of Alternative 3 on the Biological Setting, Protected Species, and Habitat

Alternative 3 would have considerably fewer or reduced beneficial impacts on biological resources described in Section 4.3.3 due to this alternative's smaller spatial domain. The proposed sanctuary would have a reduced role in managing and protecting biological resources. Numerous nearshore habitats and biological resources would be excluded from sanctuary protection compared to the Initial Boundary Alternative. Habitats affected by the change in spatial scale under Alternative 3 would include: sandy beaches, rocky shores, and kelp forests

from Cambria to Diablo Canyon. Also, a large portion of the Santa Lucia Bank, and its sandy seafloor, pelagic and deep-water habitats would not be protected. The reduction of spatial protections under Alternative 3 would leave these habitats and the biological resources within them vulnerable to impacts that the Initial Boundary Alternative would prohibit or mitigate, including discharge, deposit, seafloor disturbance, take of marine mammals, sea turtles and birds, and other proposed regulations described in Section 3.2.2. The benefit for offshore upwelling provided by the Initial Boundary Alternative would likely be eliminated if Alternative 3 were selected because the Diablo Canyon Call Area could potentially be a large new offshore wind farm developed over part of the Santa Lucia Bank, directly upwind of the upwelling center at Point Arguello/Point Conception. However, see response to comment OW-6 in Appendix A for information about the likelihood of this area being developed. Consequently, **beneficial impacts** under Alternative 3 would be reduced to **minor** to **moderate**.

Adverse Impacts of Alternative 3 on the Biological Setting, Protected Species, and Habitat

Alternative 3 would have similar adverse impacts on biological resources described in Section 4.3.3 but on a reduced spatial domain. Additionally, research impacts would likely be reduced, compared to the Initial Boundary Alternative, as there would likely be a reduction of research effort by ONMS in those areas. Therefore, under Alternative 3, **negligible adverse impacts** are expected.

4.3.7 Environmental Consequences of Alternative 4 (Biological Resources)

As is the case for Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the level of beneficial or adverse impacts on biological resources. The boundary area excluded is too small, and the biological resources within the excluded area are not sufficiently distinct enough from the rest of Alternative 4, to meaningfully affect the impact of sanctuary designation on biological resources. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Alternative 4, Combined Smallest, would establish the same regulatory protections for biological resources as the Initial Boundary Alternative but on a much smaller spatial domain, excluding both nearshore and deep-water habitats in areas identified for offshore wind energy development. The main difference between Alternative 4 and the Initial Boundary Alternative is that protections that would benefit biological resources would be absent for areas excluded from the proposed sanctuary's boundary under alternatives 1, 2, and 3. The sub-sections below explain how designation of Alternative 4 would have **minor beneficial impacts** on biological resources.

Beneficial Impacts of Alternative 4 on the Biological Setting, Protected Species, and Habitat

Alternative 4 would have the fewest beneficial impacts on biological resources described in Section 4.3.3 because of its reduced spatial domain that combines the reductions in the proposed sanctuary's boundary from alternatives 1, 2, and 3. A large swath of habitats and biological resources would not have sanctuary protection under Alternative 4 and therefore would not benefit from the protections the Initial Boundary Alternative would provide (as described in Section 3.2.2). The proposed sanctuary would have a reduced role in managing and protecting biological resources. Numerous nearshore habitats and biological resources would not have sanctuary protection compared to the Initial Boundary Alternative. This includes sandy beaches, rocky shores, kelp forests, the continental slope, sandy seafloor, pelagic habitat, and deep-water habitat as well as the sensitive resources they contain including marine mammals, fish, and seabirds. The alternative lacks protection west of Santa Lucia Bank and toward the mainland coastline, an area which data show has some biodiversity hotspots for seabirds (Russel, unpublished data).

As with Alternative 3, the benefit for offshore upwelling provided by the Initial Boundary Alternative would likely be eliminated if Alternative 4 were designated due to potential future development of the Diablo Canyon Call Area for offshore wind energy (see response to comment OW-6 in Appendix A for information about the likelihood of this area being developed). Therefore, under Alternative 4, **minor beneficial impacts** are expected.

Adverse Impacts of Alternative 4 on the Biological Setting, Protected Species, and Habitat

Alternative 4 would have similar adverse impacts on biological resources described in Section 4.3.3 but on the smallest spatial domain. Research impacts would likely be reduced compared to the Initial Boundary Alternative, as there would likely be a reduction of research effort by ONMS in those areas. Under Alternative 4, **negligible adverse impacts** are expected.

4.3.8 Environmental Consequences of Sub-Alternatives 5a and 5b (Biological Resources)

The Sub-Alternative 5a, to include Morro Bay Estuary, and/or Sub-Alternative 5b, Gaviota Coast Extension would expand protections to biological resources on top of those from the Initial Boundary Alternative or other action alternatives within their respective spatial domains. The main difference between sub-alternatives and the Initial Boundary Alternative is that protections that would benefit biological resources would be expanded into Morro Bay Estuary under Sub-Alternative 5a, and along the state waters of the Gaviota Coast until Naples Point State Marine Conservation Area (SMCA) under Sub-Alternative 5b. The addition of these sub-alternatives to the Initial Boundary Alternative or another action alternative would have incremental **minor to moderate beneficial impacts** on biological resources. This section describes those incremental impacts.

Beneficial Impacts of Sub-Alternatives 5a and 5b on the Biological Setting, Protected Species, and Habitat

Sub-Alternative 5a (Morro Bay Estuary) could be added to the Initial Boundary Alternative or Alternative 1 and would extend the same protections to biological resources as the Initial Boundary Alternative or Alternative 1 into the estuarine habitat of Morro Bay Estuary. Morro Bay Estuary is one of the largest estuaries in California and has existing regulatory protections within the Morro Bay SMR and Morro Bay SMR Management Area. It also contains one of the largest seagrass beds in the area but that resource is experiencing declines in recent years (Walter et al., 2020). Large numbers of shorebirds and waterfowl are attracted to seagrass beds, where they feed on the seagrass, fishes, and invertebrate eggs, and young. The estuary would benefit from the additional protections including the proposed regulatory prohibition on seafloor disturbance, which may help seagrasses recover from its recent decline. Adding Sub-Alternative 5a to the Initial Boundary Alternative or Alternative 1 would therefore have incremental **minor to moderate beneficial impacts** on biological resources.

Sub-Alternative 5b (Gaviota Coast Extension) could be added to the Initial Boundary Alternative or to any other action alternative and would expand the proposed sanctuary's boundary to include state waters along the Gaviota coastline. The Gaviota coastline is a relatively uninhabited area that has healthy kelp forests, sandy beaches, rocky shores, reef habitats and soft bottom habitats. Most notably, the proposed sanctuary would extend protections to two state MPAs under Sub-Alternative 5b, enhancing the conservation benefits from these special areas. The area is also home to a number of robust and biodiverse kelp forests that would benefit from additional protection under Sub-Alternative 5b. These kelp forests are well studied due in part to the Santa Barbara Channel Long Term Ecological Research project. Under Sub-Alternative 5b, these and other sanctuary resources would benefit from proposed research actions, water quality improvement efforts, and indirect benefits from the proposed sanctuary's public education and outreach efforts. This could include activities that synthesize ecosystem status and trends in Condition Reports, increase efforts on ONMS identified research gaps with science needs assessments and reduce research impacts through ONMS permitting and coordination. These areas would stand to benefit from enhanced protection that the sanctuary would provide. Adding Sub-Alternative 5b to the Initial Boundary Alternative or any of the action alternatives would therefore have incremental **minor to moderate beneficial impacts** on biological resources

Adverse Impacts of Sub-Alternatives 5a and 5b on the Biological Setting, Protected Species, and Habitat

The sub-alternatives would have similar adverse impacts on biological resources described in Section 4.3.3 but on a substantially smaller spatial domain. Research impacts on resources would expand into Morro Bay Estuary and the Gaviota Coastline as the sanctuary would likely require the same information needs from that area. However, the sanctuary could partner with the Morro Bay National Estuary Program and other research partners to limit research and biological impacts by reducing duplicative efforts. Overall, the incremental **adverse impacts** would be **short-term** and **minor**.

4.3.9 Environmental Consequences of No Action (Biological Resources)

Under the No Action Alternative, NOAA would not designate a national marine sanctuary. Implementation of the No Action Alternative would not result in any change in the existing management of the biological resources in the study area or any change in the existing uses of the study area. The No Action Alternative would forgo the numerous beneficial impacts as well as the several adverse impacts from implementing the Initial Boundary Alternative or any of the action alternatives on the biological resources in and around the proposed sanctuary. The benefit of implementing the proposed sanctuary regulations and management plan to provide comprehensive, long-term management of biological resources located within the proposed sanctuary would not occur under the No Action Alternative. Therefore, the No Action Alternative would have **no beneficial or adverse impacts** on biological resources.

4.4 Commercial Fishing and Aquaculture

This section identifies commercial fishing resources and catch data, and assesses potential impacts on this resource from establishing the proposed sanctuary. The study area for commercial fisheries consists of the proposed CHNMS area as defined by the Initial Boundary Alternative combined with the area of Sub-Alternative 5a, Morro Bay Estuary, and Sub-Alternative 5b, Gaviota Coast Extension. The primary data source for the analyses are commercial fish landings data collected and managed by the California Department of Fish and Wildlife (CDFW); documents reporting on commercial fish activity, impacts and marine resource management by the Pacific Fisheries Management Council (PFMC), CDFW, and NOAA (NOAA, 2014); and research conducted in the study area. Aquaculture activity does not currently occur in the area of the Initial Boundary Alternative or any action alternative except the area of Sub-Alternative 5a, Morro Bay Estuary.

4.4.1 Regional Overview of Affected Environment (Commercial Fishing and Aquaculture)

Commercial Fishing

The waters within the study area support numerous types of commercial fisheries that are regulated by the PFMC, NOAA Fisheries, the California State Legislature and the California Fish and Game Commission. Coastal fisheries in state waters (up to 3 nautical miles from the shoreline) are generally managed by CDFW, while NOAA Fisheries and PFMC manage ocean fisheries beyond state waters (from 3 nautical miles offshore to the extent of the U.S. Exclusive Economic Zone, 200 nautical miles offshore). CDFW tracks California's commercial fish landings annually via [Reports of Final California Commercial Landings](#) containing data by species, weight, price paid to fishermen (i.e., ex-vessel value), type of gear used, and the area where the fish were caught including both state and federal waters. Reports are available online. The landings data record the location of harvest according to the state's fishing blocks, which are typically 10 by 10 minute "grid blocks." For details on recreational fishing, see Section 4.6.

Study Area

The majority of fish harvested in the study area, including the Morro Bay Estuary, (=62 CDFW grid blocks) are landed at the port complexes of Morro Bay, Santa Barbara, and Ventura (combined > 95% by value, and combined > 90% by weight). The landings at these port complexes are comparatively very different. According to the CDFW [Marine Region Year in Review Reports](#) 2017–2021 (available [online](#)), the Santa Barbara and Ventura harbor complexes combined consistently rank as number one among the state's nine harbor complexes, while the Morro Bay complex (including Avila/Port San Luis) ranks as the lowest. According to [fishing community vulnerability analyses](#) conducted by NOAA Fisheries socio-economists in 2018, the port complex of Morro Bay's engagement with commercial fishing is high with a medium level of reliance on commercial fishing. The port complexes of Santa Barbara and Ventura also have high engagement with commercial fishing, but low reliance on commercial fishing.

Between 2000 and 2020, approximately 118 million pounds of fish were harvested from the Initial Boundary Alternative and Sub-Alternative 5a areas, at a value of nearly \$92 million. In that period, 109 million pounds of commercial fish species were landed at the Morro Bay port complex (including Avila/Port San Luis, Guadalupe, Oceano, and San Simeon harbors) and the Santa Barbara and Ventura complexes (including Gaviota Beach, Oxnard, and Port Hueneme harbors). The ex-vessel value over this period sums to \$87.7 million (adjusted to 2020 dollars). Only 9.2 million pounds of harvested fish were landed at ports further north or south of the Morro Bay, Santa Barbara, and Ventura harbor complexes (e.g., Monterey and San Diego) at a value of \$4.3 million (see figures 4.4-1 and 4.4-2). Status and trends of California's commercial fisheries over the 20-year period are variable and influenced by the complex interplay among environmental, socioeconomic, and regulatory dynamics, such as climate change, a recent global pandemic, and catch shares (Free et al., 2022).

Historically, U.S. West Coast fisheries in the 1970s through mid-2000s were heavily reliant on deep-water species, particularly from the groundfish complex, valued at hundreds of millions of dollars, and supporting thousands of jobs. Due to intensive fishing effort many populations of groundfish species declined between 1980 and 2000. In response, starting in early 2000 fishery managers began imposing restrictive fishing regulations aimed at rebuilding fish stocks and protecting EFH of the groundfish complex from bottom trawl gear or bottom contact gear (e.g., traps). The combination of low fish stocks, restrictive regulations, rising costs, competition from inexpensive foreign imports, and loss and consolidation of processors, caused a precipitous drop in landings in 2006 and 2007 (Rigg and Pontarelli, 2016).

After the collapse of many groundfish stocks, fishermen diversified the catch to include other species with healthier stocks, such as sablefish, spot prawn, Dungeness crab, and shortspine thornyheads. There has been a decline in fish landed beginning in 2015, which is likely due to the two extreme warming events that occurred in that period: an El Niño phase in 2014–2015 coinciding with a lengthy marine heatwave in 2013–2016 (Frölicher et al., 2018; NOAA, 2016). A weaker marine heatwave emerged in mid-2019, similar in size and intensity to the 2013–2016 marine heatwave, but weakened by mid-December (NOAA, 2021). The first ocean warming of 2014 appears to have impacted ocean productivity more negatively than the weaker event in 2019. Finally, although 2020 saw a transition from El Niño conditions to cooler water La Niña conditions for the first time in many years, fishery landings and revenue appear to be

substantially lower in 2020 compared to 2019. The decline in landings and revenue in 2020 is possibly due to the COVID-19 pandemic (NOAA, 2021).

Between 2015–2019, NOAA estimates that an annual average of 245 commercial vessels fished in the Initial Boundary Alternative study area, including Morro Bay Estuary, predominantly targeting market squid, Pacific hagfish, sablefish, Dungeness crab, ocean shrimp, and shortspine thornyhead. A majority of these vessels land their harvest at the port complexes of Morro Bay, Santa Barbara, and Ventura. Less than 10% by ex-vessel value and 10% by weight of fish harvested from this area were landed in harbors further away, such as Moss Landing, Monterey, and San Diego (2015–2019).

Among the landed species, in the years 2015–2019, market squid and Dungeness crab have ranked among the top three in value, with sablefish and shortspine thornyhead on occasion also ranking in the top three. Market squid and Dungeness crab have been the highest ranked species in ex-vessel value for the state of California in the same time period. In 2015, commercial fishermen began landing Pacific hagfish in Port San Luis for the first time since 2009. By 2016, Port San Luis was the top performing Pacific hagfish port in California. In 2016, Wilcox Fisheries converted the old icehouse on Harford Pier into a hagfish offloading and processing facility. The hagfish fishery in 2018 directly employed approximately 10 people and was the second highest earning fishery in Port San Luis behind Dungeness crab (Lisa Wise Consulting Inc., 2018). Chinook salmon are ranked ninth in pounds landed but ranked fifth in terms of ex-vessel value because salmon have strong market value.

The species landed drive the fishing gear types used, with pots/traps to harvest Dungeness crab and sablefish, purse seine and seine/dipnets for market squid, and longline gear used for sablefish and shortspine thornyhead. The latter species is also harvested using bottom trawl gear. Hook and line/troll gear are used to harvest Chinook salmon.

State and federal fishery managers implemented two types of spatial management measures throughout the state that limit fish harvest and protect marine habitats and marine ecosystems (see Figure 4.4-3 for designated management areas within the study area). In 2012, the California Fish and Game Commission adopted the final plan for a statewide network of MPAs. Within the Initial Boundary Alternative area of the study area, there are seven state MPAs: Cambria SMCA, White Rock SMCA, Point Buchon SMR, Point Buchon SMCA, Vandenberg SMR, Point Conception SMR and Kashtayit SMCA (five in their entirety and two partly). SMRs restrict all commercial and recreational activities and are frequently referred to as no-take marine reserves; SMCAs have specific goals for conservation and activities are restricted to meet the conservation goals.

In federal waters, further offshore from the coastal network of state MPAs are the four much larger Groundfish EFH Conservation Areas. These EFH areas protect rocky benthic habitat and associated fragile benthic fauna such as deep-sea corals and sponges from bottom trawl gear. Within the study area, the EFH Conservation Areas protect these prominent geological features associated with upwelling: Santa Lucia Bank, Arguello Canyon, and Rodriguez Seamount. In addition, PFMC and NOAA Fisheries implemented the Deep-sea Ecosystem Conservation Area to protect fragile corals in habitat deeper than 3,500m from bottom contact gear.

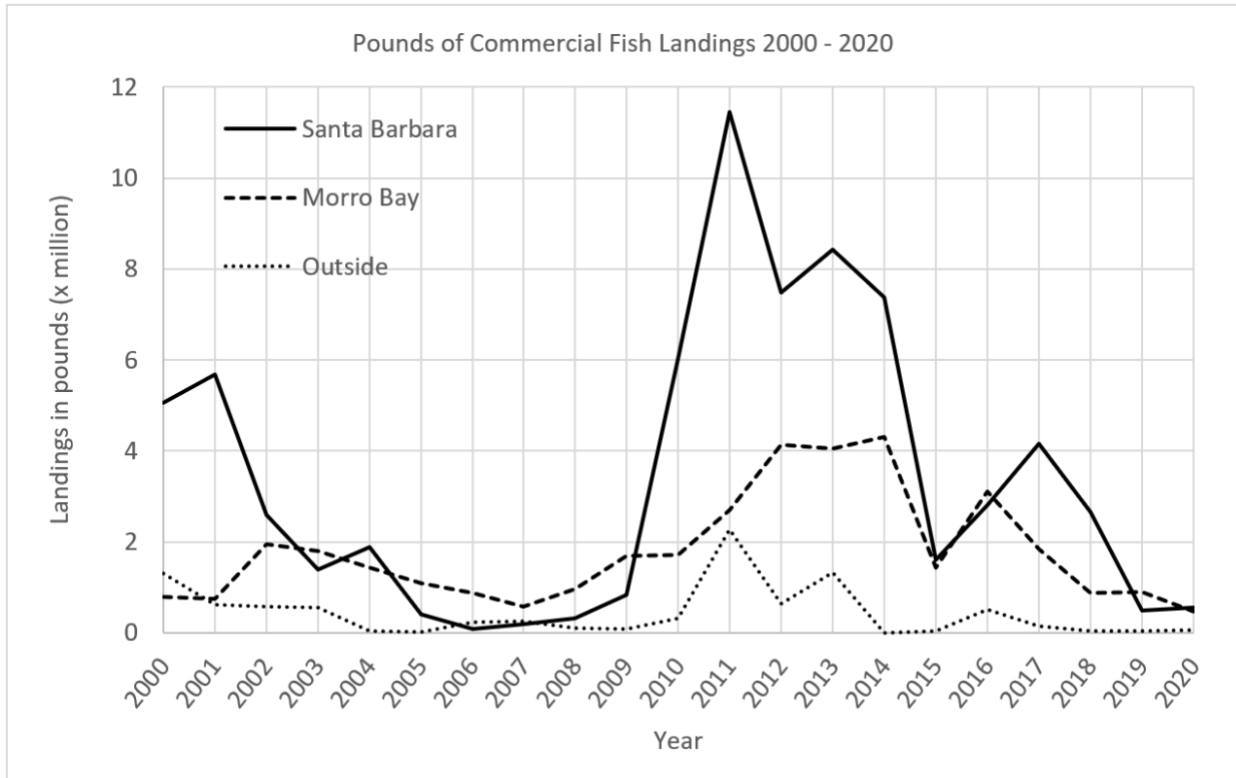


Figure 4.4-1. Pounds of commercial fish harvested within the proposed action and Morro Bay Estuary study area landing at Santa Barbara and Morro Bay port complexes (2000–2020).

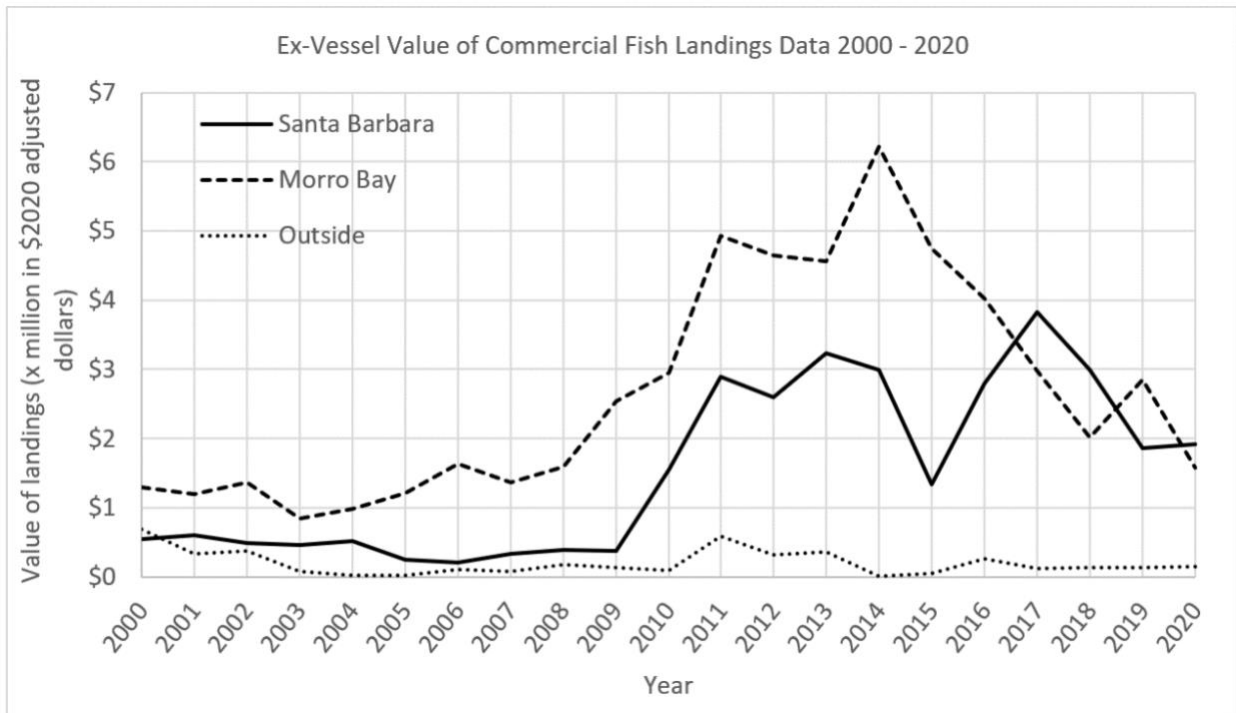


Figure 4.4-2. Value of commercial fish landings at Santa Barbara and Morro Bay port complexes (2000–2020).

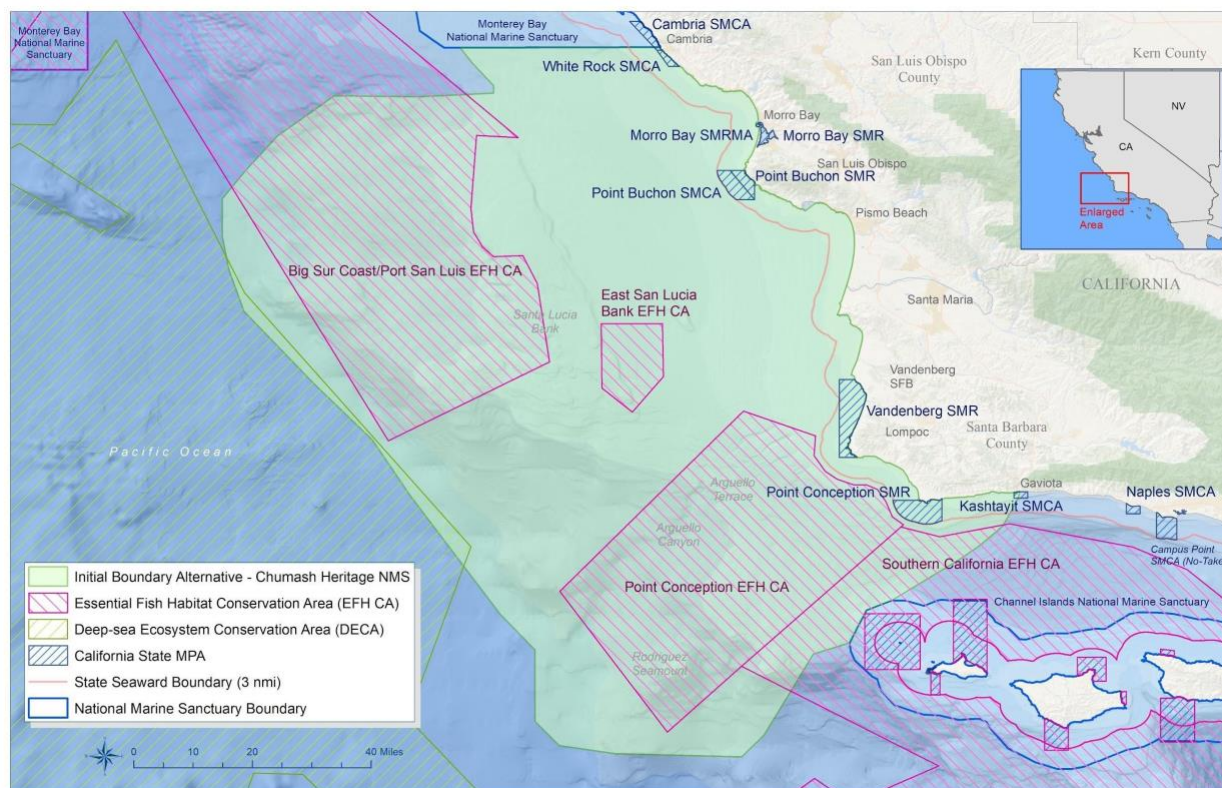


Figure 4.4-3. A map depicting the state network of MPAs, Groundfish EFH Conservation Areas, and Deep-sea Ecosystem Conservation Areas (DECAs) within the study area. Image: NOAA

Sub-Alternative 5a – Morro Bay Estuary

There is no separate catch data or characterization relevant to this sub-alternative. Landings from aquaculture in the Morro Bay Estuary are discussed below.

Sub-Alternative 5a also overlaps in part with two state MPAs: Morro Bay SMR and Morro Bay State Marine Recreational Management Area. In the latter, take of living marine resources is prohibited, except north of $35^{\circ}19.70'N$, where recreational take of finfish and oyster aquaculture is allowed; waterfowl hunting is allowed unless otherwise restricted by hunting regulations.

Sub-Alternative 5b – Gaviota Coast Extension

According to CDFW's landings data, fish are harvested off the Gaviota Coast in three grid blocks. Sub-Alternative 5b only overlaps a small portion of each of the three grid blocks, therefore the landings estimates reported for this sub-alternative are overestimates. Most of the fish harvested in this area are landed at the port complex of Santa Barbara and Ventura (> 95% by value, and nearly 95% by weight), which is not a surprise given the proximity of the port complex to the sub-alternative area.

Between 2000–2020, approximately 51 million pounds of fish were harvested from the three grid blocks along the Gaviota Coast, at a value of nearly \$33 million. Again, these are overestimates for the amount of fishing that occurs within the area that would be added to the proposed sanctuary's boundary in Sub-Alternative 5b, since the fish blocks are spatially at least

four times larger than that area. In that period, 49 million pounds of commercial fish species were landed at the Santa Barbara and Ventura port complex, with an ex-vessel value of nearly \$31 million (adjusted to 2020 dollars). Only 0.1 million pounds of harvested fish from the Gaviota Coast grid blocks were landed at the Morro Bay complex at a value of \$131,000.

Among the landed species, in the years 2015–2019, California spiny lobster, market squid, crab (various species, including yellow rock, red rock, and spider crab), sea cucumber, and prawns and shrimp (e.g., ridgeback prawns and pink ocean shrimp) ranked in the top five in value. This is also an active area for the California halibut trawl and sea urchin fisheries (ranked 6th and 7th in value respectively).

The species landed drive the fishing gear types used, with pots/traps to harvest lobster, crabs, and prawns, purse seine and seine/dipnets for market squid, and hookah/diving used to harvest urchins and sea cucumbers.

Within Sub-Alternative 5b lies the eastern portion of Kashtayit SMCA and Naples SMCA, within which special state regulations prohibit harvest of most species.

Aquaculture

Within the Initial Boundary Alternative and alternatives 1–4 there are no aquaculture projects. The only aquaculture currently conducted in the study area is within the area of Sub-Alternative 5a, which covers parts of the Morro Bay Estuary. The California Fish and Game Commission has issued leases for two aquaculture operations there: Morro Bay Oyster Company and Grassy Bar Oyster Company. The areas leased for the two operations total 290 acres; however, only 8 acres are actively cultivated (CDFW, 2020). These farms grow Pacific oysters (*Crassostrea gigas*) and Manila clams (*Venerupis philippinarum*), which are both species not native to the U.S. West Coast and would thus be considered an introduced species for purposes of the proposed CHNMS regulations. CDFW has determined that the oysters cultivated in aquaculture operations like those found in Morro Bay do not risk invasion into the ecosystem because their genetic makeup has been altered to prevent reproduction. Average annual harvest from 2019–2021 from leases in Morro Bay Estuary was 1.3 million oysters and 24,000 clams. The oyster farms in Morro Bay Estuary are regulated by CDFW, the California Department of Public Health, the Food and Drug Administration/U.S. Department of Agriculture Hazard Analysis and Critical Control Points Program; and for water quality standards by the Interstate Shellfish Sanitation Conference and the National Shellfish Sanitation Program. Also adjacent to Sub-Alternative 5b, the Gaviota Coast Extension, there is an onshore abalone farm in Dos Pueblos Canyon, The Cultured Abalone Farm, which takes water in from the ocean and has a discharge outfall (see Section 4.2.1 for details on the NPDES permit). They use kelp, *Macrocystis*, harvested from the local kelp beds, supplemented with various species of native algae which are cultivated in tanks on site. The Cultured Abalone Farm does not use composite feeds with terrestrial proteins or antibiotics. In general, the discharge returns water from the abalone and kelp tanks and contains waste from the animals.

4.4.2 Impact Assessment Methodology (Commercial Fishing and Aquaculture)

Criteria to determine the significance of impacts on commercial fisheries and aquaculture resources are based on fisheries population benchmarks as defined by federal and state standards and regulations and social and economic factors. Impacts are considered to be significant if the Initial Boundary Alternative or alternatives would result in the following:

- A reduced number of fishing vessels allowed to fish in the area.
- A substantial negative (or positive) population trend in one or more of the harvested species such that the population would be below (or improving towards) sustainable fishing levels, as defined by fishery management plans for that species.
- A substantial economic gain or loss to commercial fisheries and aquaculture.
- A conflict with the policies, fishery management plans, and regulations established under the MSA.

The impact analysis for the commercial fisheries and aquaculture resources considered the potential impacts of each relevant component of the Initial Boundary Alternative and other alternatives on population dynamics of commercial fish and aquaculture species and any operational, social, or economic impacts on the commercial fishery or aquaculture operation. Any potential impacts were compared to the significance criteria outlined above to determine if adverse impacts are expected from the Initial Boundary Alternative or other alternatives. For impacts on recreational fishing, see Section 4.6.

4.4.3 Environmental Consequences of the Initial Boundary Alternative (Commercial Fishing)

This section evaluates the impacts on commercial fishing from implementing the Initial Boundary Alternative, as described in Section 3.2. Currently no aquaculture operations exist within the boundaries of the Initial Boundary Alternative.

Beneficial Impacts on Commercial Fishing Resources

Implementing the Initial Boundary Alternative would have beneficial impacts on the commercial fishing resources in the proposed sanctuary from implementing activities related to the management plan and proposed regulations.

Management Plan

The management plan has the following action plans that would directly and indirectly enhance the status of commercial fishing, resulting in **indirect, minor to moderate beneficial impacts** (see Section 3.2):

- Blue Economy Action Plan: e.g., enhance visitation to local restaurants serving locally harvested fish.
- Climate Change Action Plan: e.g., enhance ecosystem function and resilience for fish resources.

- Water Quality Action Plan: e.g., promote healthy water quality conditions of the proposed sanctuary thereby enhancing healthy fish resources.
- Resource Protection Action Plan: e.g., collaborations on fishery management issues in support of sustainable fisheries and enhanced enforcement through partnerships.
- Research and Monitoring Action Plan: e.g., enhanced management of fishery resources by fishery managers through collaborative research and monitoring activities.
- Education and Research Action Plan: e.g., increased stewardship and heightened awareness of fishery resources.

Regulations

NOAA is not proposing to directly regulate lawful fishing activities (lawful fishing activities include both commercial and recreational fishing, authorized by a Tribal, state, or federal entity with jurisdiction over the activity). NOAA consulted with the PFMC under Section 304(a)(5) of the NMSA and the PFMC notified NOAA that it had determined that additional fishing regulations were not necessary at this time to implement the proposed sanctuary. NOAA accepts the PFMC's response relative to the proposed designation of CHNMS. Therefore, the Initial Boundary Alternative is not expected to cause significant adverse impacts on commercial fishing resources or cause significant economic loss to commercial fisheries. See Section 4.6 for discussion of impacts on recreational fishing. Direct protection of sanctuary resources through proposed federal regulations (see Section 3.2) are expected to provide **direct or indirect, long-term beneficial impacts** on ecosystem and habitat upon which healthy commercial fisheries depend. The relevant proposed regulatory prohibitions that would benefit commercial fishery resources are as follows and their potential impacts on commercial fishing are described in the following subsections:

- New oil, gas, and minerals exploration, development, and production.
- Discharges into the sanctuary, with exceptions (e.g., fish, fish parts, chumming materials, or bait used in or resulting from lawful fishing activities within the sanctuary are exempted from the discharge regulation).
- Cruise ship discharges.
- Discharges that enter and injure sanctuary resources.
- Submerged land disturbance with the exception as incidental and necessary to conduct lawful fishing activities or lawful kelp harvest and anchor a vessel.
- Deserting a vessel.
- Introduced species, with the exception of striped bass (*Morone saxitalis*) released during catch and release fishing activity.

Oil, Gas, Minerals

The proposed regulatory prohibition on exploring for, developing, or producing oil, gas, and minerals would safeguard the Initial Boundary Alternative from any new oil, gas, and mineral exploration, development, or production, with exceptions for production from several existing oil and gas platforms. Fewer oil, gas, and mineral exploration activities would lower the risk of detrimental environmental impacts from this type of activity and thus contribute to a healthy and thriving ecosystem that supports valuable commercial fisheries. Exploration and production of oil and gas operations may introduce toxins and oil into the marine environment (e.g.,

accidental spill, seepage during operations, etc.). Oil and other toxins are detrimental to most marine species, including fish. Oily and toxic waste discharges can have direct significant adverse impacts (e.g., death or illness) on fish populations or they can have indirect impacts from long-term habitat degradation and reduction in prey availability. Also, offshore oil and gas facilities can preclude fishing from areas where such facilities (e.g., platforms, pipelines, offshore storage, and treatment) are located. Thus, prohibiting future oil, gas, and minerals development within the proposed sanctuary's boundary would have the potential to protect habitat and water quality, benefit fish populations by maintaining ecosystem conditions within the sanctuary, and protect established fishing grounds (see Section 4.7 for more details). Therefore, the proposed regulatory prohibition on oil, gas, and minerals exploration and development would cause **indirect, long-term, significant beneficial impacts** on commercial fish species and their habitat.

Discharges

Current state and federal regulations limit different types of vessel discharges into the waters that would be within the proposed sanctuary's boundary under the Initial Boundary Alternative, so the application of sanctuary regulations to that area would represent an incremental increase in restrictions on vessel discharges. The proposed discharge regulations from shore or associated with vessel operations (e.g., prohibition on discharge of sewage, vessel wash down, oily bilge water, and graywater), cruise ship discharges, or discharges that enter and injure sanctuary resources would help maintain and may improve water quality and ecosystem health, on which thriving fish populations depend. Fish species would be exposed to fewer contaminants and bacteria within the proposed sanctuary, and would therefore potentially have a reduced risk of health problems. Better water quality would also create better habitats in the long term, which would benefit fish populations and potentially result in increased reproductive success and increases in population sizes. The proposed regulatory prohibition on discharges within and into the sanctuary would have **long-term, minor beneficial impacts** on fish species, which are harvested for commercial purposes, and their habitat.

Disturbance of Submerged Lands

The proposed regulatory prohibition on disturbance of submerged lands within the proposed sanctuary would not apply to commercial fishing operations since lawful fishing activities are excepted from the prohibition. The proposed regulatory prohibition on non-fishing activities that would disturb submerged lands would provide added protection to the benthic habitats of the Initial Boundary Alternative, would prevent a further loss and degradation of habitats, and improve the overall health of the ecosystem of the study area. Potential development that disturbed the seabed, including any possible new wind farm development in federal waters of the sanctuary, would be prohibited under the Initial Boundary Alternative unless authorized pursuant to the proposed regulations. Submarine cable repair or new submarine cable construction would also not be allowed unless authorized or permitted pursuant to the proposed regulations. New oil and gas development would not be allowed, as discussed above. Therefore, the prohibition on disturbing the seabed would cause **long-term, significant beneficial impacts** on commercial fishing from habitat enhancement and greatly lowered risk of use conflicts for commercial fishing activities.

Deserting a Vessel

The proposed regulations would prohibit vessels from being deserted within the proposed sanctuary and would prohibit leaving harmful matter (hazardous materials or wastes) aboard grounded or deserted vessels in the proposed sanctuary. Further, as described under the submerged land regulations (above), abandoning any structure, material, or other matter on or in the submerged lands in the study area would also be prohibited. The intent of this proposed regulatory prohibition would be to ensure that vessel owners take responsibility for their vessels before additional damage (e.g., release of harmful matter and marine debris) can be done to marine resources, including fishery resources, within the proposed sanctuary. Reducing the risks of hazards posed by abandoned vessels would have **indirect, long-term, minor beneficial impacts** on fisheries and fishing operations and activities.

Introduced Species

The proposed regulatory prohibition against introducing an introduced species into the proposed sanctuary could benefit commercial fisheries by limiting the potential for adverse competition between introduced and native species, thus improving the ongoing stability of the native fish populations, improving stability in the numbers of native fish species available for catch, and helping to stabilize the potential for future revenues derived from commercial catch. Furthermore, the proposed regulation would provide an exclusion for catch and release of an established introduced species, the striped bass. This exclusion, which does not adversely affect recreational (or commercial) fishing, has been requested by CDFW because the state has limits on the size of striped bass that can be retained; fish below that size limit must be released. NOAA finds that the proposed introduced species prohibition would have **indirect, long-term, moderate beneficial impacts** on commercial fisheries.

Adverse Impacts on Commercial Fishing Resources – Regulations

There are no adverse impacts related to the management plan.

While the proposed regulations would not directly regulate fishing activities, there could still be potential **adverse impacts**, which are detailed below, associated with proposed sanctuary regulations based on prohibitions that may be applicable to activities incidental to lawful fishing.

Discharges Within or Into the Sanctuary

The proposed sanctuary regulations on discharges of sewage and graywater may adversely impact commercial fishing operations under the Initial Boundary Alternative. For those vessels without a marine sanitation device (MSD) because for example they do not have an installed toilet, options to dispose of this waste under the Initial Boundary Alternative would include discharge of sewage outside of the proposed sanctuary boundaries, or discharge of sewage from a portable toilet or other sewage container into a dump station or other onshore sewage disposal facility. Pumping out a commercial fishing or recreational vessel at the harbors of Morro Bay, Santa Barbara, and Ventura is currently free. Dumping the contents of a portable toilet into a sewage receptacle (such as a toilet) is likely also free.

Should a vessel owner or operator choose to install an MSD or a portable toilet, there would be one-time costs for purchase of the device and installation, and periodic costs for maintenance.

While an MSD could be expensive to install because vessel renovations could be involved, the cost for a portable toilet can be a hundred dollars or less. There is no way to accurately estimate costs for installing MSDs or portable toilets due to the wide range of vessel and MSD/portable toilet designs and varying labor costs. Due to lack of data, it is not possible to estimate the number of commercial fishing owners or operators who would need to choose these options. NOAA believes with these uncertainties taken into consideration, the Initial Boundary Alternative has the potential to cause some **direct, short-term, minor to moderate adverse impacts** on individual commercial fishing operations.

Similar to the holding tank capacity issue for sewage discussed above, the proposed discharge prohibition would require commercial fishing vessels with holding tanks for graywater to store graywater that contained detectable levels of harmful matter in holding tanks and to access a pump-out facility to pump out graywater. Vessel owners without sufficient capacity to hold graywater, provided that it did not meet the definition of clean, could consider upgrading their holding tank capacity. Should a vessel owner or operator choose to upgrade holding capacity, there would be one-time costs for purchase of the equipment and installation, and periodic costs for maintenance. Similar to installation of an MSD, the number of vessel owners would likely be limited, and therefore the **adverse impacts** are considered **direct, short-term, and minor to moderate**.

In summary, the proposed discharge regulation may have **short-term, minor to moderate adverse impacts** on some individual commercial fishing operators, particularly due to proposed prohibitions of sewage discharges and, to a lesser extent, from the proposed prohibition on graywater discharges containing detectable levels of harmful matter. The proposed regulation has the potential to cause limited economic loss to individuals within the commercial fishing industry; therefore, it is considered to create **minor adverse impacts** on commercial fisheries.

Disturbance of Submerged Lands

The proposed regulation prohibiting disturbance to the submerged lands of the proposed sanctuary would apply to mooring installations. The proposed prohibition would provide an exception for moorings for navigational purposes. Moorings for vessels would be prohibited by this regulation because of the potential for disturbance of submerged lands and habitats, or possibly navigational threats. Fishing vessel owners in need of a mooring within the study area are already required to apply for a mooring lease from the California State Lands Commission (CSLC); under the proposed sanctuary regulations, ONMS could authorize a mooring within the proposed sanctuary if the mooring were permitted under a CSLC lease. Under the Initial Boundary Alternative, the additional requirement to obtain a sanctuary authorization of a CSLC mooring lease may pose a minor burden on boat owners requiring a mooring lease but would not cause a substantive economic loss to the commercial fishing industry. Any **adverse impacts** of the proposed regulatory prohibition on disturbing submerged lands would be **negligible**.

Deserting a Vessel

The proposed regulation prohibiting desertion of a vessel in the sanctuary under the Initial Boundary Alternative could place an additional economic burden on owners of vessels

abandoned at anchor but at risk of sinking, or vessels that are otherwise incapacitated and need to be moved or salvaged before sinking or running aground and causing greater environmental damage. The regulation is also designed to require immediate removal of any hazardous substances from an abandoned vessel. While this may be a burden for the vessel owner, the overall risk of an individual boat being abandoned is relatively small, and the **adverse impacts** on the commercial fishing industry as a whole are considered **short-term, indirect, and minor**.

Introduced Species

One of the pathways for the introduction of species can be through commercial fishing operations, specifically, baiting. In theory, the proposed regulatory prohibition on introducing non-native species into the proposed sanctuary, including by using introduced species for bait, may increase the burden on commercial fisheries, but no known non-native species are currently being used as bait in the area proposed for sanctuary designation. Therefore, this requirement may have either no impact or minor adverse impacts on commercial fisheries. The regulation could have an effect on commercial fishing vessels that might inadvertently transport an introduced species on the bottom of the vessel's hull. However, all vessel operators currently have an incentive to clean vessel hulls to maintain efficiency, and thus NOAA considers any **adverse impacts** from this regulation to be **negligible** on commercial fishing activities.

4.4.4 Environmental Consequences of Alternative 1 (Commercial Fishing)

This section evaluates the impacts on commercial fishing from implementing Alternative 1, Bank to Coast, as described in Section 3.3. Currently no aquaculture operations exist within the boundaries of Alternative 1.

Beneficial and Adverse Impacts on Commercial Fishing Resources

Under Alternative 1, NOAA would focus management plan activities and regulations that enhance the status of commercial fishing resources on a smaller area than in the Initial Boundary Alternative. Nonetheless, Alternative 1 would likely enhance management on the most productive and nationally significant areas from Santa Lucia Bank east to the coast. As a general matter when fishing effort is low or nil, CDFW will have no fish blocks or extremely large fish blocks to make data collection feasible. This is the case west of Santa Lucia Bank, where not many fish species are harvested in the deeper waters (maximum depth 13,374 feet) of the Initial Boundary Alternative compared to the maximum depth (11,580 feet) of Alternative 1. Therefore, excluding the western area from Alternative 1 would not alter the beneficial and adverse impacts on commercial fishing as compared to the Initial Boundary Alternative as sanctuary management would focus on the area most productive and important to commercial and recreational fishing.

4.4.5 Environmental Consequences of Alternative 2 (Commercial Fishing)

This section evaluates the impacts on commercial fishing from implementing Alternative 2, Cropped Bank to Coast, as described in Section 3.4. Currently no aquaculture operations exist within the proposed boundaries of Alternative 2.

Under Alternative 2, NOAA would focus management plan activities and regulations that enhance the status of commercial fishing resources on an area similar to Alternative 1 from Santa Lucia Bank east to the coast, excluding the deeper portions of the Initial Boundary Alternative west of Santa Lucia Bank. Alternative 2 also excludes an area south of the MBNMS boundary from deep waters to the coastline down to the northern portion of Montaña de Oro State Park at Hazard Canyon Reef.

Beneficial Impacts on Commercial Fishing Resources

Alternative 2 would focus sanctuary management on a smaller section of the area most productive to fishing, and benefits from the sanctuary regime would also affect a smaller area; therefore, compared to the Initial Boundary Alternative, Alternative 2 would have reduced beneficial impacts on the ecosystem and fishery resources that rely on a healthy and resilient ecosystem. Specifically, the area afforded the benefits of proposed sanctuary regulations prohibiting future oil, gas, and mineral development or seabed disturbance from offshore energy production would be reduced spatially, resulting in reduced benefits afforded by those regulations. Overall, the **beneficial impacts** on commercial fishing from the proposed regulatory prohibition on altering the seabed would be reduced from a significant level under the Initial Boundary Alternative to **moderate** under Alternative 2. The other beneficial impacts on commercial fishing from proposed sanctuary regulations prohibiting discharges, deserting a vessel, and introducing an introduced species would also be reduced under Alternative 2 given the smaller area of protection compared to the Initial Boundary Alternative, but these benefits would remain at the same level of impact as described in Section 4.4.3.

Adverse Impacts on Commercial Fishing Resources

NOAA finds that the adverse impacts on commercial fishing would be reduced under Alternative 2 compared to the Initial Boundary Alternative for the regulations discussed in Section 4.4.3, because a smaller area would be designated as a sanctuary and would therefore affect fewer commercial fishing vessels. While slightly reduced, these impacts would remain at the same level as under the Initial Boundary Alternative (see Section 4.4.3).

4.4.6 Environmental Consequences of Alternative 3 (Commercial Fishing)

This section evaluates the impacts on commercial fishing from implementing Alternative 3, Diablo to Gaviota Creek, as described in Section 3.5. Currently no aquaculture operations exist within the boundaries of Alternative 3.

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) does not alter the level of beneficial or adverse impacts on commercial

fishing. The boundary area excluded is too small, and commercial fishing activities within the excluded area are not sufficiently distinct enough from the rest of Alternative 3, to meaningfully affect the impacts from sanctuary designation. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Under Alternative 3, NOAA would focus management plan activities and regulations that enhance the status of commercial fishing resources on an area that encompasses the western and deeper portions of the Initial Boundary Alternative. This alternative excludes the area south of the MBNMS boundary to two miles south of DCP, as well as the Diablo Canyon Call Area, an offshore area that had been previously identified for possible offshore wind development by BOEM (Diablo Canyon Call Area), and that is located over part of the Santa Lucia Bank (see also response to comment OW-6 in Appendix A regarding the likelihood of wind energy leasing in this area).

Beneficial Impacts on Commercial Fishing Resources

Alternative 3 would focus sanctuary management on a smaller area, and benefits from the sanctuary regime would also affect a smaller area and, therefore, have fewer beneficial impacts on the ecosystem and fishery resources that rely on a healthy and resilient ecosystem. Specifically, the area afforded the benefits of proposed sanctuary regulations prohibiting future oil, gas, and mineral development would be significantly reduced, resulting in reduced benefits afforded by those regulations. Further, in contrast to the Initial Boundary Alternative, the proposed sanctuary regulation prohibiting seabed disturbance would not apply to the Diablo Canyon Call Area or other areas outside sanctuary boundaries, meaning that those areas could one day be developed for offshore wind energy production (however, see the response to comment OW-6 in Appendix A regarding the likelihood of this possibility). Therefore, the benefit for commercial fishing associated with proposed sanctuary management of these areas would not be achieved in Alternative 3. Overall, the **beneficial impacts** on commercial fishing from the proposed regulatory prohibition on altering the seabed would be reduced from significant for the Initial Boundary Alternative to **minor** for Alternative 3. The other benefits to commercial fishing from proposed sanctuary regulations prohibiting discharges, deserting a vessel, and introducing an introduced species would also be less under Alternative 3 given the much smaller area of protection compared to the Initial Boundary Alternative, but would remain at the same level of impact.

Adverse Impacts on Commercial Fishing Resources

NOAA finds that the adverse impacts on commercial fishing would be fewer or less in Alternative 3 compared to the Initial Boundary Alternative for the regulations discussed in that section because a much smaller area would be designated as a sanctuary and would therefore affect fewer commercial fishing vessels. These impacts would remain at the same level as under the Initial Boundary Alternative.

4.4.7 Environmental Consequences of Alternative 4 (Commercial Fishing)

This section evaluates the impacts on commercial fishing from implementing Alternative 4, Combined Smallest, as described in Section 3.6. Currently no aquaculture operations exist within the boundaries of Alternative 4.

The minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the level of beneficial or adverse impacts on commercial fishing. The boundary area excluded is too small, and commercial fishing activities within the excluded area are not sufficiently distinct enough from the rest of Alternative 4, to meaningfully affect the impacts from sanctuary designation. As such, this minor modification would not result in environmental impacts other than those already considered (and described in more detail below).

Beneficial Impacts on Commercial Fishing Resources

Under Alternative 4, the smallest area would be included in the proposed sanctuary. Like with Alternative 3, Alternative 4 would result in similar but substantially fewer and less beneficial impacts as compared to the Initial Boundary Alternative. This is because both deep waters elements excluded by alternatives 1 and 2, the nearshore areas excluded by alternatives 2 and 3, and northeast portion of Santa Lucia Bank excluded by Alternative 3, would not be included within the proposed sanctuary under Alternative 4, meaning that fewer beneficial impacts on the ecosystem and fishery resources that rely on a healthy and resilient ecosystem would accrue. The Initial Boundary Alternative would have a significant benefit to commercial fishing because potential development that disturbed the seabed, including any possible new wind farm development in federal waters of the sanctuary, would be prohibited unless authorized or permitted pursuant to the proposed regulations. This benefit would be reduced to a **minor** level of **beneficial impact** in Alternative 4, due to the smaller overall area of the sanctuary.

Adverse Impacts on Commercial Fishing Resources

The adverse impacts on commercial fishing under Alternative 4 would be fewer or less compared to the Initial Boundary Alternative because a much smaller area would be protected by the proposed sanctuary regulations and thus fewer fishing vessels and less fishing activity would be indirectly affected by the proposed sanctuary.

4.4.8 Environmental Consequences of Sub-Alternative 5a: Morro Bay Estuary and 5b: Gaviota Coast Extension (Commercial Fishing and Aquaculture)

Sub-Alternative 5a: Morro Bay Estuary

Sub-Alternative 5a may be added to the sanctuary boundaries under the Initial Boundary Alternative and Alternative 1. The type and level of beneficial and adverse impacts on commercial fishing resources under Sub-Alternative 5a are expected to be the same as outlined in the Initial Boundary Alternative (Section 4.4.3) and Alternative 1 (Section 4.4.4). However, because this is the only alternative that would include an existing aquaculture operation within

its boundary (those found within Morro Bay Estuary), this subsection focuses on the beneficial and adverse impacts on aquaculture resources under Sub-Alternative 5a.

Beneficial Impacts on Aquaculture Resources

Implementing Sub-Alternative 5a would have beneficial impacts on the aquaculture resources in Morro Bay Estuary due to the implementation of activities related to the management plan and proposed regulations. The same action plans listed in Section 4.4.3 would directly and indirectly enhance the status of aquaculture resources in the Morro Bay Estuary. As described in Section 4.4.3, the proposed sanctuary regulations would likely provide long-term beneficial ecosystem and habitat impacts, upon which aquaculture operations depend. In particular, the proposed regulatory limits on harmful discharges would potentially improve water quality. Improved water quality is known to enhance aquaculture production. The **beneficial impacts** on aquaculture from the proposed discharge prohibition would be **long term, indirect, and moderate**. The prohibition on introducing an introduced species would also provide **long-term, indirect, moderate beneficial impacts** on aquaculture by reducing the risk of competition or predation on aquaculture species.

Adverse Impacts on Aquaculture Resources

Discharges Within or Into the Sanctuary

Depending on the type of aquaculture practice, discharge of organic nitrogen and phosphorus may be present, leading to eutrophication and organic pollution. These harmful discharges would be prohibited for any new aquaculture operations within the proposed sanctuary. Currently, the type of aquaculture operational in the Morro Bay Estuary is of oysters, which typically do not produce harmful discharges and are known to deliver valuable ecosystem goods and services, including improved water quality and provision of new habitats for fish and mobile invertebrate species (Theuerkauf et al., 2021). Therefore, including Sub-Alternative 5a in the sanctuary boundaries would have **no adverse impact** on existing aquaculture operations due to discharges. New and expanded aquaculture operations within the proposed sanctuary, to the extent they create a discharge, could be considered via an ONMS authorization under the proposed regulations, and therefore the proposed regulatory prohibition on discharging into the sanctuary may have **negligible adverse impacts** on new or expanded aquaculture operations.

Submerged Lands

The current aquaculture operations in Morro Bay have a disturbance to the submerged lands due to anchors in the seafloor. However, these can be allowed via the certification process as an existing activity, and thus NOAA consideration of that certification would have **no impact** on existing aquaculture operations. As discussed above with respect to proposed discharge regulations, new and expanded aquaculture operations within the proposed sanctuary could be considered via an ONMS authorization under the proposed regulations and therefore the proposed prohibition on disturbing submerged lands may have **negligible adverse impacts** on new or expanded aquaculture operations.

Introduced Species

Currently, nonnative species (Pacific oyster and Manila clams) are cultivated in the Morro Bay Estuary. Under the regulations proposed for Sub-Alternative 5a (see Section 3.7.1), commercial shellfish aquaculture operations that are authorized by the state of California prior to the effective date of sanctuary designation would not be subject to the regulatory prohibition on introducing an introduced species. Therefore, the introduced species regulation would have **no adverse impact** on existing aquaculture operations in Morro Bay Estuary.

New aquaculture operations proposing to cultivate an introduced species would be prohibited by the proposed sanctuary regulations unless, pursuant to the memorandum of agreement (MOA) with the state of California (see Section 3.2.2), the project is approved by CDFW and cultivates a species that CDFW and NOAA determine is non-invasive and will not cause significant adverse effects on sanctuary resources or qualities and receives an ONMS authorization. The proposed regulations for ONMS authorizations also contain a provision that would allow NOAA to issue an authorization when NOAA and the state find that an introduced species of shellfish used in a new aquaculture project would be non-invasive to the ecosystem and would not cause significant adverse impact to sanctuary resources. The state normally conducts this very review for an introduced species aquaculture project outside of a sanctuary and there would not be an additional review for the state to conduct such an analysis in concert with NOAA for CHNMS. Therefore, the introduced species regulation would have **negligible adverse impacts** on future aquaculture operations in Morro Bay Estuary.

Sub-Alternative 5b: Gaviota Coast Extension

Sub-Alternative 5b may be added to the sanctuary boundaries under the Initial Boundary Alternative and any of the other action alternatives. The same type of beneficial and adverse impacts on commercial fishing described for the Initial Boundary Alternative (see Section 4.4.3) would be expected in this sub-alternative, just incrementally fewer and less impactful given the small size of this area. These impacts would remain at the same level as under the Initial Boundary Alternative.

Regarding aquaculture, currently the Cultured Abalone Farm lies adjacent to Sub-Alternative 5b (see Section 4.2.1); its outfall into the proposed sanctuary would be a prohibited discharge per the proposed regulations. As discussed in Section 3.2.2, NOAA would have the ability at the time of sanctuary designation to review and certify ongoing discharges like those by the Cultured Abalone Farm into sanctuary waters as long as such discharges were subject to any valid lease, permit, or license in existence on the date of sanctuary designation, considering and possibly mirroring mitigations and phase-out requirements state agencies would have imposed. This certification process would mean designation of the Sub-Alternative 5b would likely have **no impact** on discharges resulting from continued aquaculture operations at the Cultured Abalone Farm.

4.4.9 Environmental Consequences of No Action (Commercial Fishing and Aquaculture)

Under the No Action Alternative, no sanctuary would be designated and the status quo would be maintained. There would be no added beneficial impacts on commercial fish species or aquaculture operations due to no change in actions regarding water quality, benthic habitat, or ecosystem function; and there would not be any adverse economic or operational impacts on owners or operators of fishing vessels or aquaculture operations in the study area.

4.5 Cultural Heritage and Maritime Heritage Resources

Under the NMSA implementing regulations, a “cultural resource” is defined as any historical or cultural feature, including archaeological sites, historic structures, shipwrecks, and artifacts. 15 C.F.R. 922.11. “Historical resources” are defined as any resources possessing historical, cultural, archaeological, or paleontological significance, including sites, contextual information, structures, districts, and objects significantly associated with or representative of earlier people, cultures, maritime heritage, and human activities and events. Historical resources include “submerged cultural resources,” and also include “historical properties,” as defined in the NHPA, as amended, and its implementing regulations, as amended. 15 C.F.R. 922.11. For the purposes of this EIS, submerged cultural resources are defined loosely as archaeological or culturally significant sites over 50 years old that are located underwater.

Within the study area (inside the boundaries of the Initial Boundary Alternative and action alternatives), the cultural heritage and maritime heritage resources that may be affected by the Initial Boundary Alternative or range of alternatives include submerged shipwrecks, aircraft, and Native American cultural resources, artifacts, and values. The ONMS West Coast Region has developed and maintained a thorough database of submerged ship and aircraft wreck sites that serve as the primary data source for these resources within the study area (Schwemmer, R., 2022). Regarding cultural resources, affected environment information published in the Morro Bay Wind Energy Area Final Environmental Assessment by BOEM (BOEM, 2022), a cooperating agency in preparation of this EIS, serves as one data source for describing cultural resources in the region of the study area. Information published by the National Park Service in the Gaviota Coast Feasibility Study serves as another important source of cultural resource information (NPS, 2003). Other sources include published historic, ethnographic, and archaeological academic research. Additionally, NOAA draws on information from meetings with and draft comments from the Santa Ynez Band of Chumash Indians and Indigenous communities and groups.²⁸ Other information sources were identified in numerous EIS scoping comments and comments made on the draft EIS.

²⁸ This final EIS uses “Tribes and Indigenous communities” and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms “federally recognized Tribe(s)” or “federally recognized Tribal Nation(s).” As such, use of the term “Tribe” or “Tribal” is not intended to refer only to federally recognized Tribes unless otherwise specified.

4.5.1 Regional Overview of Affected Environment (Cultural Heritage and Maritime Heritage Resources)

Cultural Heritage Resources

For Chumash and Salinan Peoples, there is a deep history of connection with sections of the study area's coast and the adjacent marine waters. Native culture originates from and remains closely tied to this coastal area, which for millennia has supported values and traditions that are still practiced and honored today.

Tribal and Indigenous community interest and engagement in the proposed sanctuary has been high, underscoring both the unbroken ancestral connections to and cultural significance of the area considered for designation. Just prior to preparation of this EIS, BOEM also engaged Tribal communities in the region in preparation for leasing for offshore wind energy development in the above-referenced Environmental Assessment.

Pre-European Contact Historic Properties – Paleoshoreline Environments

Corresponding with lower global sea level during the Late Pleistocene, areas extending west from the present central California coastline that may have the potential to contain now submerged landform features extend less than three miles off the Big Sur coast, up to six miles just north and south of Point Piedras Blancas, and up to approximately nine miles offshore of Estero Bay (BOEM, 2022, p. 80). This corresponds to an area from the present-day shoreline out to a water depth of approximately 800 feet. Pre-European contact period (from a time before Indigenous People encountered a non-Indigenous colonial or settler culture) sites within this area would most likely be found in the vicinity of paleochannels or river terraces that offer the highest potential of site preservation; however, preservation conditions are variable and depend on local geomorphological conditions and the speed of sea level rise (BOEM, 2022, p. 73–74). Figure 4.5-1 depicts paleoshoreline contours along a segment of the central California coast. Numerous pre-contact archaeological sites have been documented along the central California coast, and a few nearby isolated artifact finds suggest human occupation in the area may date back at least 10,000 years (Jones et al., 2009).

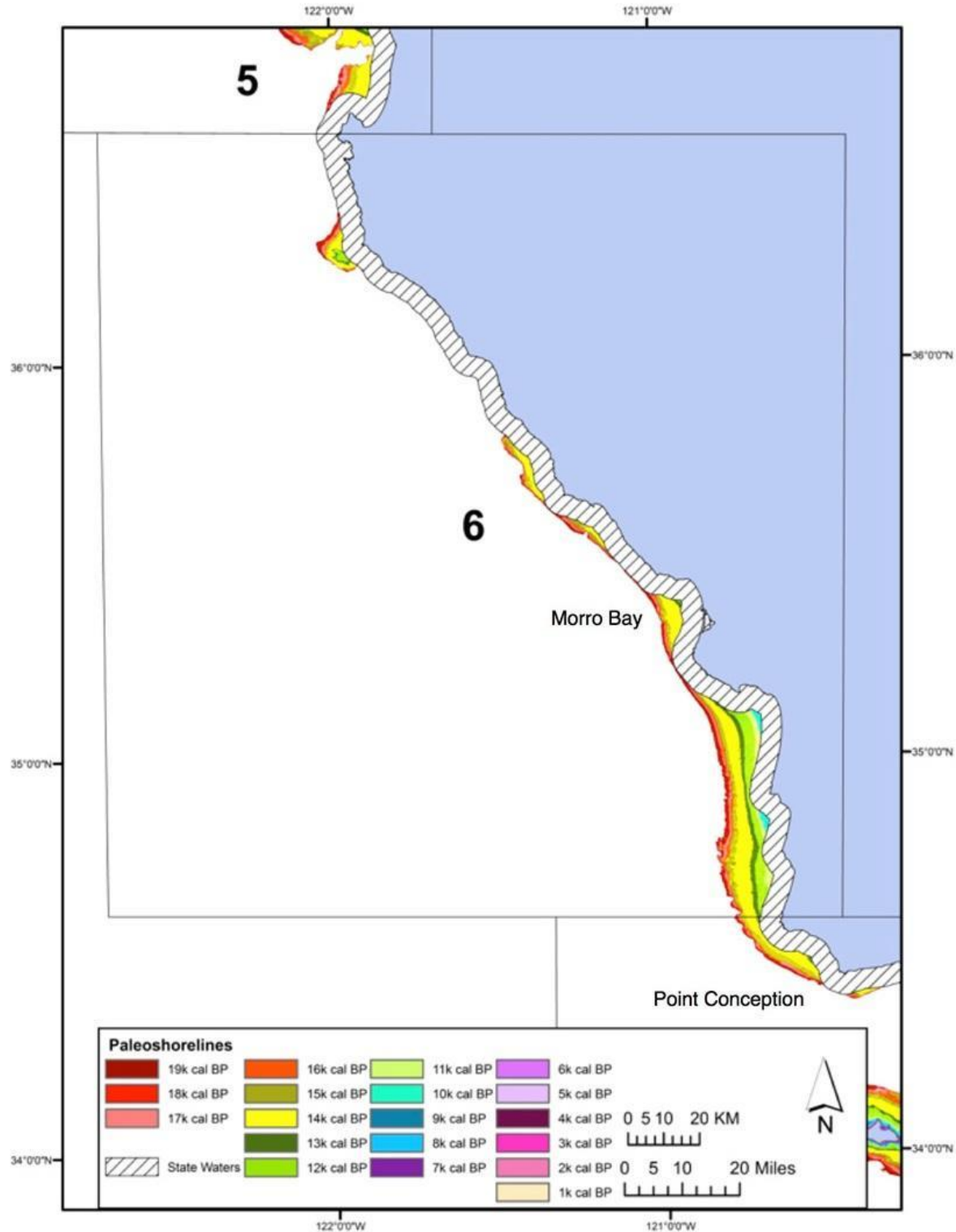


Figure 4.5-1. Paleoshoreline contours for a coastal landscape during the last glacial maximum time in federal waters of the Pacific Outer Continental Shelf. Source: ICF et al., 2013, p. 61.

Native American Cultural Resources

Cultural and Historic Context

The Santa Ynez Band of Chumash Indians and numerous Native American Indigenous communities have deep ties to the study area and its coast and have called this area home for thousands of years, or “since time out of memory.” Native American connections to the region include their traditional and ancestral homelands, customary uses of marine resources for food and cultural connections, and stewardship of resources and ecosystems within their ancestral homelands and waters. Coastal landscapes and seascapes, including viewsheds, are integral and sacred elements of Indigenous cultural connections to the region. Additionally, during the last glacial maximum, the region’s coastline extended beyond the present-day coast to include now-submerged areas that were likely inhabited by ancestors of California Tribes before the last sea level rise (BOEM, 2022, p. 79).

Coastal and offshore areas of the study area are within or near the traditional cultural regions of the federally recognized Santa Ynez Band of Chumash Indians and non-federally recognized Chumash and Salinan California Native Americans. For those groups listed by the California Native American Heritage Commission (NAHC), cultural affiliations are self-reported (NAHC, 2021). The Santa Ynez Band of Chumash Indians is the only federally recognized Tribe with ancestral lands in the study area (see the list of federally recognized Tribes maintained by the Bureau of Indian Affairs, 88 Fed. Reg. 2112 (Jan. 12, 2023)). NOAA acknowledges the unique legal relationship between the federal government and Indian Tribal governments and the Tribal consultation requirement as set forth in [Executive Order \(E.O.\) 13175](#), Consultation and Coordination with Indian Tribal Governments (November 6, 2000). Further, the Presidential Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships (January 26, 2021; available [online](#)) commits the federal government to fulfilling trust and treaty obligations and recognizes the need for frequent and robust consultation with Tribal Nations (The White House, 2021). Accordingly, NOAA is engaged in an ongoing formal government-to-government consultation process with the Santa Ynez Chumash (see Appendix E.8).

The trust responsibility of the federal government extends to federally recognized Tribes (such as the Santa Ynez Band of Chumash Indians); however, NOAA recognizes that many California Native American groups are listed on the California NAHC contact list and are regularly consulted as part of California state law in adherence with [E.O. B-10-11](#) issued in 2011 by Governor Edmund G. Brown, Jr., which committed the state of California to engaging in meaningful consultation with California Native American Tribes. In 2019, Governor Gavin Newsom issued [E.O. N-15-19](#) recognizing and apologizing for the legacy of violence and mistreatment by the state against California Native Americans. The order established a Truth and Healing Council to consult with Tribes and California Native Americans and to issue a report and findings clarifying the historical record, in cooperation with a governing council composed of delegates from both federally recognized Tribes and non-federally recognized California Native Americans.

In addition to the requirement to consult with federally recognized Tribes, under Section 106 of the NHPA, NOAA invited additional consulting parties, including non-federally recognized

Tribes,²⁹ Indigenous community groups, and culture-serving organizations that expressed interest in the federal undertaking and concerns about the effects of sanctuary designation on historic properties (36 C.F.R. 800.2(c)(5)). See Appendix E.2 for more information on this consultation process and NOAA’s findings resources.

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) was adopted on September 13, 2007 by the UN General Assembly. Among its many articles, UNDRIP includes the right of Indigenous Peoples to “maintain, protect and develop” their cultures in the past, present, and future. NOAA understands the UNDRIP principles and respects that the United States is supportive of (but not currently a signatory to) this declaration (United Nations, n.d.). As noted in the “Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples,” the United States recognizes the significance of UNDRIP’s provisions on free, prior and informed consent, which the United States “understands to call for a process of meaningful consultation with Tribal leaders, but not necessarily the agreement of those leaders, before the actions addressed in those consultations are taken.” (U.S. Department of State, 2011). NOAA believes the proposed sanctuary aligns well with UNDRIP principles, particularly given the planned collaborative co-stewardship approach to elevate Indigenous voices, and the sanctuary’s programmatic emphasis honoring Indigenous People connected to the local coasts and ocean.

There are several non-federally recognized Chumash-affiliated Tribes and Chumash-associated organizations, and Salinan Tribes and Salinan-associated organizations in the region, some but not all of which are listed by the NAHC. Those Chumash Tribes and associated culture-serving groups that have expressed interest in the proposed sanctuary include the Barbareño/Ventureño Band of Mission Indians, Coastal Band of the Chumash Nation, Barbareño Chumash Tribal Council, Northern Chumash Tribal Council, Northern Chumash Bear Clan, and yak tityu yak tilhini Northern Chumash Tribe.³⁰ Additionally, two Chumash-associated organizations have expressed interest and submitted comments on the proposed sanctuary: the Wishtoyo Chumash Foundation and the Chumash Maritime Association. Salinan-affiliated Tribes and organizations that have expressed interest in the proposed sanctuary are the Salinan Tribe of Monterey and San Luis Obispo Counties, the Xolon Salinan Tribe, and the Salinan Trowtraahl of the Salinan Nation Cultural Preservation Association.

Tribes in central California were displaced from much of their ancestral homelands with the arrival of several waves of European, Mexican, and American colonists and settlers. Native

²⁹ As described in the Advisory Council on Historic Preservation’s Guide to Working With Non-Federally Recognized Tribes in the Section 106 Process, while the term “non-federally recognized Tribe” is not defined in federal laws, it can include state-recognized Tribes and Tribal entities without state or federal recognition. <https://www.achp.gov/sites/default/files/whitepapers/2018-06/GuidetoWorkingwithNon-FederallyRecognizedTribesintheSection106Process.pdf>

³⁰ NOAA understands that among the non-federally recognized Tribes and Chumash-associated organizations, some have told NOAA that they have documentation supporting lineage to their historic village areas, some may be otherwise externally recognized as a Chumash Tribe, some may self-identify as a Chumash Tribe, and at this time only one Tribe is a federally recognized sovereign Tribal government. As is customary for all national marine sanctuaries, NOAA intends to use an inclusive approach to engaging with the local communities, groups, and Tribes. NOAA does not have the authority to adjudicate claims of authenticity or Tribal ancestry. For more information, see Appendix A, response to comment TI-1.

bands in the central California coastal region were among the first Tribes and Indigenous communities in California to encounter Europeans when Spanish explorers arrived in the mid-1500s. Chumash, Salinan, and Esselen Peoples were heavily impacted by the establishment of several Spanish missions in the region in the late 1700s and later the arrival of Mexican and American settlers and ranchers (Millikin & Johnson, 2005; Chung, 2018). The subsequent onslaught of disease, removals from homeplaces to missions, forced labor, and vigilante violence and genocide resulted in tremendous population declines and displacement from Tribal lands (BOEM, 2022, p. 81). Although the Chumash, Salinan, and Esselen Peoples survived this onslaught, reports by ethnographers and anthropologists suggested otherwise, such as William Duncan Strong (1929, p. 1) who stated that “[t]he coastal peoples of southern California disappeared after the advent of the missions.” These types of reports served to advance misapprehensions that the Tribes no longer existed. Today, most of the Indigenous groups in the central California region do not have formal ownership or management of lands within their ancestral territories and do not have any lands held in trust on their behalf by the federal government. However, the Santa Ynez Band of Chumash Indians has over 1,500 acres in Santa Barbara County held in federal trust by the Department of the Interior as a reservation (Santa Ynez Band of Chumash Indians, 2021b). Other non-federally recognized Tribes and Indigenous groups work with nonprofit and government organizations to regain or protect areas of their homelands (BOEM, 2022, p. 81; YTT, 2023).

Chumash ancestral territory encompasses approximately 7,000 square miles on the central California coastline from what is today Malibu to Paso Robles, including the four northern Channel Islands, and inland to the western edge of the San Joaquin Valley (Santa Ynez Band of Chumash Indians, 2021a; UXL, 2008). Efforts have been made to understand the historical northern coastal range of Chumash occupation as it joins with the historical southern coastal areas of the Salinan People (Millikin and Johnson, 2005). The yak tityu yak tilhini Northern Chumash Tribe describes the homeland of tilhini Peoples as inclusive of a coastal area that extends northward to Ragged Point on the coast of Big Sur (YTT, 2022).

The Chumash were traditionally, and continue to be, inextricably connected to the marine environment. They are recognized as one of the few ocean-going Indigenous communities on the California coast (NCTC, 2015), traveling to sea, to the Channel Islands, and along the coast in traditional redwood plank canoes called tomols. Coastal Chumash traditionally harvested an array of marine resources such as abalone and other shellfish, *Olivella* shells, fish, kelp and other seaweeds, and marine mammals (Kennett, 2005). Chumash individuals and organizations describe the importance of coastal areas of the central California region to Chumash culture and work to revive coastal- and ocean-based cultural traditions: “The Chumash way of life is interwoven with the ocean and the many clans who still exist and thrive on the central coast” (NCTC, 2015, p. 9). Today, Chumash People celebrate their ancestral ocean voyages in tomol canoes to honor their ancestors (Cordero et al., 2016, Pagaling, 2018) and continue to honor ceremonial sites within their historic areas.” (NCTC, 2015, p. 9). Coastal and marine-based cultural activities include a renewal of tomol voyages, including from the mainland to Santa Cruz Island, and associated ceremonies, among other activities (Cordero et al., 2016).

Along the central California coast, Salinan People occupied a territory that ranged from Morro Bay to just north of Big Sur, with an inland extent south to the Caliente Range and north to

Salinas. There are at least 21 recorded Salinan village sites within this area, with more likely to be submerged along the coast, and others yet to be discovered inland. Salinan People thrived on coastal and inland foods including fish, shellfish, acorns, deer, rabbit, bear, sage, berries, and fruits. Bone, shell, wood, sinew, and gourds were used to make knife handles, mortars, bows, arrows, combs, stirrers, and dippers. These resources also provided materials for tools and clothing, and for square, domed houses covered with woven tule or rye grass (Hester 1978). Salinan People are actively reconstructing their language and culture, and documenting social and political structures for historical purposes (Taylor, n.d.; STMSLO, 2020; Xolon Salinan Tribe, 2019).

Cultural Resources

Representatives of Chumash and Salinan communities have expressed to NOAA and BOEM that they consider many locations along the central coast region to be sacred places (BOEM and CEC, 2021). In particular, Morro Rock and the surrounding waters has been identified as a culturally significant place for Chumash and Salinan Peoples, who refer to Morro Rock as Lisamu' and Le'samu, respectively (BOEM and CEC, 2021; NCTC, 2023; STMSLO, 2024). The Channel Islands and surrounding waters and Point Conception are also identified as significant places for Chumash Tribes (NCTC, 2015; Cordero et al., 2016). Point Conception is one of the earliest known sites of human settlement on the California coast (Rick et al., 2022) and is regarded by some as a place where souls depart for the afterlife (Blackburn, 1975; Haley and Wilcoxon, 1997; 1999). Tribes and Indigenous groups often choose to hold sacred or culturally important places confidential, and BOEM and NOAA recognize that many other coastal and offshore locations are important to Tribes. The mention of a few publicly identified locations here is not intended to imply these are the only important or sacred places. During the scoping period for the proposed sanctuary, the Northern Chumash Tribal Council described sacred sites along the coast of the study area as including the following:

“Point Conception, an extremely important Chumash Sacred Place known to Native Americans as the Western Gate, Humqaq.” (NCTC, 2022, p. 4). “It is the spot where souls leave this world, and local archeological sites confirm we [Chumash] have been its guardians for over 20,000 years.” (NCTC, 2022, p. 13).

“Other sites adjacent to or extending into submerged land include Jalama; two 10,000-year-old sites within Vandenberg AFB including the “Swordfish Cave” featuring an ancient painting of Elye'wun; sites at Point Sal; four major Chumash Sacred sites onshore San Luis Bay of which three [are] known to have been continuously occupied for at least 9,000 years: the site for which the City of Pismo Beach is named, the site was the Chumash people return to renew the Traditional Ritual Ceremony Cycle, the old Chumash Capital in Avila Beach, now partially covered by sea-level rise, the Chumash Sacred site at Diablo Cove along the coastline of the Pecho Coast dated over 9,000 years, the Chumash Village Sacred site in Los Osos; hundreds of Chumash Sacred sites ringing Morro Bay; the Chumash village Sacred site of Cayucos (continuously occupied for 8,000 years); other large sites found in the area to a mile north of Pt. Estero; and two Chumash village Sacred sites in Cambria continuously occupied for 10,000 years” (NCTC, 2022, p. 13), “and the sacred site and Bird Refuge of Morro Rock” (NCTC, 2022, p. 13–14).

“Chumash coastal and submerged sacred site areas continue northward to Ragged Point in the Monterey Bay National Marine Sanctuary. Several significant Chumash villages and foraging sites are found near Point Sal. A variety of sites are found within the Nipomo Dunes and adjacent to its wetlands. Extensive shell mounds from thousands of years of clamming have been documented. Other sites are positioned along the Pleistocene-era dunes of Nipomo and Arroyo Grande above what was once a large estuary formed by Arroyo Grande Creek and Price Canyon drainage. Several other sites surround the old estuary on its northern embankment. An unknown number of submerged sites are off Pismo Beach, most probably located along older drainage systems dating back nearly 20,000 years. Other Chumash sites have been covered by ocean rise. Significant Chumash solstice alignments arrive from the interior, passing through present coastal sites that 9,000 years ago were miles from the coast. Presently operating alignments pass along coastal benches and pass offshore to now-submerged rock outcrops, similar to those on the Carrizo Plain, and pass beyond over areas that were once dry land” (NCTC, 2022, p. 13–14).

The ancestral territory of Salinan-speaking groups covers the areas of the central California coast inland to the Temblor and Diablo ranges, including the Santa Lucia range and the areas encompassing the Salinas River (Xolon Salinan Tribe, 2019; STMSLO, 2020). The Salinan were traditionally a hunter-gatherer society who utilized abundant resources, such as acorns, pine nuts, and sage seeds, and a variety of land and marine animals (Chung, 2018; Taylor, n.d.). Among the first Native Americans in California to be impacted by Europeans, the establishment of Missions by the Spanish in the region greatly disrupted the lifeways and social structures of Salinan cultural groups (Taylor, n.d.; Rivers and Jones, 1993). Present-day Salinan-affiliated groups and individuals work to maintain cultural practices connected to the natural environment (STMSLO, 2020; Xolon Salinan Tribe, 2019). The Xolon Salinan Tribe considers its ancestral coastal lands to include the area from around Point Sur south to near Morro Rock (map of territory, Xolon Salinan Tribe, 2019). Morro Rock, among other culturally important places in the central California region, is identified as a sacred place by many Salinan (Herrera, 2017; Shuman, 2021; Taylor, n.d.). The Xolon Salinan Tribe describes their ancestors as living within permanent and seasonal villages throughout coastal regions from Le'Sam lak' (Morro Lands) extending northward to Dolan Rock in Big Sur (K. White, Chair, Xolon Salinan Tribe, personal communication, January 21, 2022).

Santa Ynez Band of Chumash Indians and many Indigenous groups in the region include as their mission the preservation and revitalization of cultural heritage through traditional practices, language, customary gathering of natural resources, and other means (STMSLO, 2020; Xolon Salinan Tribe, 2019; ETMC, 2021; Santa Ynez Band of Chumash Indians, 2021a). They work to protect sacred sites and artifacts through advocacy and formal regulatory processes (e.g., NHPA, Native American Graves Protection and Repatriation Act). Additionally, several indicate they identify as the original stewards and caretakers of their natural environment and recognize a cultural mandate to care for and maintain a relationship with traditional ecosystems (Cordero et al., 2016; NCTC, 2015; ETMC, 2021). Some recognize an interconnection and relationship between humans and the natural world, including marine species and ecosystems. For example, “Chumash worldview holds that all living and non-living beings are relatives. This includes plants, animals, water, land, fire, wind, etc. Humans are

neither at the apex nor the center of this worldview, but are part of a large extended family,” (Cordero et al., 2016, p. 187).

The National Park Service completed a Gaviota Feasibility Study in 2003 to evaluate and map the area for possible designation as a unit of the National Park System. The National Park Service study area covered a 76-mile stretch of coastal watersheds in Santa Barbara County, from Coal Oil Point in the south, extending north to Point Sal (NPS, 2003). The cultural resource significance of this coastal area is also well understood and documented by Chumash traditional knowledge and history and numerous ethnographic studies (Gamble, L.H., 2008; Gibson, 1991; Santa Ynez Band of Chumash Indians, 2021a, 2021b). The Coastal Band of Chumash Nation notes that at least 41 coastal and 25 interior Chumash village sites have been identified within or near the study area, with additional evidence of occupation and cultural lifeways being discovered regularly (CBCN, 2023). The Gaviota Coast has a history of Chumash habitation dating back at least 8,000 years, and the traditional villages of Mikiw and Kuyamu and sacred burial sites of the Barracuda Clan of the Gaviota Coast are located there (Gamble, L.H., 2008). National Park Service Feasibility Study highlights relevant to the sanctuary’s southern coastal segment, which extends east along the Gaviota Coast to the east end of Naples SMCA, include the following:

- The National Park Service Gaviota Coast study area is rich in cultural resources that illustrate over 10,000 years of human inhabitation. Over 1,000 archeological and historic sites are documented, spanning national, state, and local levels of significance.
- Accessible ceremonial sites along the National Park Service study area coast continue to be used by Chumash People. The Santa Ynez Band of Chumash Indians and Chumash organizations throughout the study area remain actively engaged in protecting cultural and sacred sites and archeological resources along the Gaviota Coast.
- A 77-acre parcel of land was donated by Chevron Oil, east of Gaviota State Park, for Chumash cultural, social, and ceremonial use purposes.
- Chumash groups continue to lack access to many cultural and sacred sites. For example, access to Point Conception (Humqag) is limited by surrounding private property.
- Vandenberg Space Force Base (VSFB) has granted the Santa Ynez Band of Chumash Indians and Chumash groups access to sacred sites since 1974.
- The abundance of resources within the study area accounted for the richness and cultural complexity of the Chumash in this area.
- The unique environment of the study area east of Point Conception, a south-facing coast with a channel sheltered by the offshore islands, allowed Chumash to develop and make use of the plank canoe, called a tomol, for fishing and trade with other Chumash groups. Chumash villages north of Point Conception could not make use of the plank canoe in the rough waters and instead relied on the abundance of shellfish in this area.
- There were approximately fourteen Chumash villages within the study area at the time of colonial contact. The largest Chumash village on the California Coast at the time of colonial contact was Mikiw, located on the west bluff of Dos Pueblos Canyon.
- A prehistoric village located near Pillar Point on VSFB and twelve sites at Point Conception have been listed on the National Register of Historic Places (NRHP) (U.S. Air Force, 1998; Palmer, 2002).

- Archeological deposits in the Gaviota Coast study area date back as far as the Paleoindian Period (13,000–8,500 B.P.) (Johnson, 2002).
- Most of the sites inhabited were located at the mouths of rivers and along the seashore where there was an abundance of food (Gibson, 1991).
- Because development has been limited along the study area coast, the region has many sites that have retained a high degree of integrity (Johnson, 2002).
- The range of sites documented within the Gaviota Coast study area includes rock art, shrines, village sites, camp sites, cemeteries, organic remains, evidence of trade systems, and evidence of various forms of subsistence, including hunting, fishing, and extraction (NPS, 2003).

The pronounced Chumash cultural significance of the Gaviota coast is demonstrated through Chumash Indigenous knowledge, history, and use of the land. From an archaeological perspective, the area's significance is also supported through the work of L.H. Gamble (2008). In addition, the Chumash-named Kashtayit SMCA, as well as the Naples SMCA, are located on the Gaviota Coast.³¹

Maritime Heritage Resources

Historical archaeological and cultural heritage resources are collectively referred to as “maritime heritage” and include the wide variety of tangible (e.g., shipwrecks, village sites, gathering areas, and cultural landscapes) and intangible (e.g., places imbued with sacred significance, historical resonance, or traditional knowledge) resources that represent human connections to ocean areas. Archaeological sites and other cultural resources, such as shipwrecks and Native American artifacts, are protected under state and federal law, including the NHPA (54 U.S.C. § 300101 *et seq.*) and the Sunken Military Craft Act (10 U.S.C. § 113 *et seq.*).

As described above, the coastal area in the study area has been occupied for millennia by Indigenous People. The Indigenous Peoples of California all have their own stories of creation, and their histories on the land begin with their creation (Akins & Bauer Jr., 2021). The area embodies a special sense of place with sacred meaning and significant cultural values for the Chumash, Salinan, and other Indigenous People that still reside in the region today (NOAA, 2020b). During the post-European contact period, Juan Rodriguez Cabrillo and his successor, Bartolome Ferrer, led the first European exploration of this coastline from 1542–1543. The Spanish east-bound Manilla Galleon Trade Route starting in 1565 continued for about 250 years with vessels passing south along the central coast. In the years to follow, Pedro Unamuno, 1587; and Sebastian Vizcaino, 1602; were in the region exploring and mapping the coastline and establishing European place-names (Bailey, J., 1982). During the Spanish period (1769–1821), missions and presidios were established along the California coast extending from San Diego to Sonoma. San Luis Obispo de Tolosa (1772) was the first mission founded in the land of the Chumash People. In the early 19th century, agriculture and ranching activities led to the growth of the hide and tallow trade. Other maritime activities included the fur trade, whaling, commercial fisheries, and foreign and domestic trade. During World War II, the Japanese

³¹ The federally recognized SYBCI plays a sovereign role in independently managing the Tribe's fishing and resource collection activities through its state-approved exemption for subsistence and cultural fishing in the Kashtayit SMCA and Naples SMCA.

Imperial Navy's submarines were attacking U.S. merchant shipping in the region (Webber, B., 1992). Today, commercial fisheries, recreational boating, exploration and survey vessels, military and merchant shipping continue. The offshore shipping lanes are major trade routes for vessels engaged in foreign and domestic trade.

The region off Point Conception and to the north up to Point Sal is considered California's central coast graveyard of shipwrecks due to the high number of vessel losses in close proximity to each other (Schwemmer, R., 2022). George Davidson, surveyor with the U.S. Coast Survey, later U.S. Coast and Geodetic Survey, and author of "Pacific Coast – Coast Pilot of California, Oregon, and Washington 1889" describes California steamers stranding in the region in foggy weather before the establishment of a fog-signal at Point Conception. He further describes Point Conception as the "Cape Horn" and the "Hatteras" of the Pacific, on account of the "heavy northwesterners" winds (Davidson & U.S. Coast and Geodetic Survey, 1889, p. 66). The first lighthouse at Point Conception was started in 1854. With delays in finishing the lighthouse station, in 1855 a petition from the steamship companies to the U.S. Lighthouse Board begged for a fog-bell and life-boat at Point Conception due to its peculiar geographical position, isolated and dangerous, lying as it does directly in the track of the whole trade from San Francisco to Panama. Even after the completion of the lighthouse station in 1856, 19 years later it was recommended that a new lighthouse structure be built on the lower bluff as the current light was frequently hidden in layers of fog. The new lighthouse was constructed in 1881 and first exhibited in 1882.

As the air and land warms along the central coast in summer months, the hot air rises creating a vacuum for the cold moisture-filled ocean air to rush in creating foggy conditions. These foggy conditions have been the leading cause for multiple vessel strandings and vessel collisions offshore prior to the availability of radar and modern navigation equipment. Even in modern times, collisions still occur, as in the case of the bulk carrier M/V *Pacbaroness* colliding with the car-carrier M/V *Atlantic Wing* off Point Conception in 1987. *Pacbaroness* sunk in 1400 feet (427m) of water with its cargo of 21,000 metric tons of copper concentrate, bunker fuel, and lubricants, and is still considered a potentially polluting wreck (Schwemmer, R., 2002). In 2002, NOAA's Sanctuary Quest: West Coast Expedition with a multidisciplinary team of scientists conducted remotely operated vehicle (ROV) reconnaissance dives at the wreck site and collected sediment samples (NOAA, 2013).

There are numerous submerged historic maritime heritage resources that include the remains of landings, wharves, and ship and aircraft wrecks located in the study area, some of which are important in our nation's history and are listed on the NRHP. The NRHP is maintained by the Department of Interior; under the NHPA and its implementing regulations (36 C.F.R. part 60), properties or other cultural and historic resources that meet the required criteria may be added to the NRHP by acts of Congress, directly by the Department of Interior, or through nominations submitted by federal agencies, states, local governments, or persons (consistent with the requirements of the NRHP regulations). The NHPA requires federal agencies to consider the effects of their undertakings on historic properties. Over two hundred ship and aircraft wrecks have been reported in the study area; several vessels were later salvaged or were reported as not being a total loss (see Table 4.5-1). Shipwreck sites currently listed on the NRHP are described below.

The California Gold Rush side-wheel passenger steamer S.S. *Yankee Blade* stranded in fog off Point Pedernales in 1854 with 939 passengers and crew aboard, resulting in the loss of approximately 30 lives. The site of the shipwreck remains was nominated to the NRHP and successfully listed on May 16, 1991.

S.S. *Montebello*, an oil tanker owned by the Union Oil Company of California, was torpedoed off Cambria by the Imperial Japanese Navy's submarine I-21 on December 23, 1941, just over two weeks after the attack on Pearl Harbor. Heroic citizens of Cambria, Cayucos and Morro Bay risked their lives and vessels to launch a sea and shoreline rescue that saved all 38 crewmen. NOAA and MBNMS funded two submersible expeditions in 1996 and 2003 to survey and characterize the archaeological remains of this historically significant shipwreck associated with the Japanese submarine patrols in the Eastern Pacific during WWII (Schwemmer et al., 2009). In 2011, the U.S. Coast Guard (USCG) conducted an ROV survey assessment, in partnership with the state of California and ONMS, to determine if the wreck contained its original cargo of over three million gallons of crude oil. It was determined by USCG that there is no substantial oil threat from the *Montebello* to California waters and shorelines (USCG, 2011). ONMS submitted a nomination to list the shipwreck S.S. *Montebello* to the NRHP (Schwemmer, 2016). The listing was approved on September 20, 2016, commemorating the 75th anniversary year of the loss.

USCG Cutter *McCulloch* was sunk in a collision with the passenger ship S.S. *Governor* near Point Conception on June 13, 1917. At the time of the collision, *McCulloch* was involved in World War I patrols along the Eastern Pacific and was en route to the Mare Island Naval Shipyard to be refitted with larger guns. *Governor's* lifeboats were deployed rescuing 92 of the cutter's USCG and U.S. Navy personnel. *McCulloch's* contributions in American history included serving in the U.S. Revenue Service in the Bering Sea Patrols as a floating courtroom in the summer months and patrolling the coastline between Cape Blanco, Oregon, and the Mexican border. Its early history included being the first U.S. Revenue Service cutter to pass through the Suez Canal and Indian Ocean. The cutter and its crew are most noted for serving at the Battle of Manila Bay under the command of Commodore George Dewey, ultimately becoming Dewey's official dispatch ship to deliver the news of the first successful battle of the Spanish American War. During a joint NOAA – USCG ROV mission off the NOAA R/V *Shearwater* in 2016, the archaeological remains of the shipwreck *McCulloch* were confirmed (Schwemmer et al., 2021). In 2020, ONMS and the USCG submitted a nomination to list the shipwreck USCG cutter *McCulloch* to the NRHP. On April 22, 2021, the site of the shipwreck remains was listed to the NRHP, as well as California's Register of Historical Resources.

Another historically significant vessel loss in the region, not located, is the U.S. Quartermaster steam auxiliary bark USS *Edith* lost at San Antonio River (north VSFB) in 1849. At the time, it was headed for Santa Barbara and San Diego to pick up delegates who were to attend California's state constitutional convention at Monterey. This is the earliest known steamship loss in the Eastern Pacific along the U.S. continental mainland and possibly the first U.S. military vessel loss in the area. Other military wrecks include several WWII military aircraft reported in the study area; to date no surveys have confirmed their locations. The U.S. Navy's worst peacetime disaster due to the loss of seven navy destroyers, known as the "Honda Naval Disaster" occurred at Point Pedernales on September 8, 1923. Twenty-three sailors' lives were

lost as a result of this peacetime disaster when the USS *Delphy*, USS *Young*, USS *Chauncey*, USS *S. P. Lee*, USS *Nicholas*, USS *Woodbury*, and USS *Fuller* stranded in fog due to navigational error. Just north of the Honda Naval Disaster are the remains of the civilian passenger cargo steamships S.S. *Santa Rosa* lost 1911 and the S.S. *Harvard* lost 1931 as a result of errors in navigation. At Point Pedernales are the remains of the Japanese tanker M/V *Nippon Maru* lost in 1933.

Known submerged remains of historic landings, wharves, and piers are listed in Table 4.5-2.

Table 4.5-1. Known shipwreck sites.

Name	Year Lost	Type/Service	Site Location	Presence in Alternatives*						
				IBA	1	2	3	4	5a	5b
<i>Yankee Blade</i> **	1854	Steamship/Passenger – Cargo	Point Pedernales	✓	✓	✓	✓	✓		
<i>Gosford</i>	1893	Bark/Collier	Cojo Bay	✓	✓	✓	✓	✓		
<i>San Pedro</i>	1894	Steamship/Wrecker	Cojo Bay	✓	✓	✓	✓	✓		
<i>Sibyl Marston</i>	1909	Steam Schooner	Surf	✓	✓	✓	✓	✓		
<i>Santa Rosa</i>	1911	Steamship/Passenger – Cargo	Point Pedernales	✓	✓	✓	✓	✓		
USCG Cutter <i>McCulloch</i> **	1917	USCG Cutter	Point Conception	✓	✓	✓	✓	✓		
USS <i>Delphy</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>S. P. Lee</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>Nicholas</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>Woodbury</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>Young</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>Chauncey</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
USS <i>Fuller</i>	1923	U.S. Navy Destroyer	Point Pedernales	✓	✓	✓	✓	✓		
<i>Harvard</i>	1931	Steamship/Passenger – Cargo	Point Pedernales	✓	✓	✓	✓	✓		
<i>Nippon Maru</i>	1933	Motorship Tanker	Point Pedernales	✓	✓	✓	✓	✓		
<i>Montebello</i> **	1941	Motorship Tanker	Cambria	✓	✓					
<i>Humble SM-1</i>	1961	Oil Drilling Barge	Government Point	✓	✓	✓	✓	✓		
<i>Pacbaroness</i>	1987	Motorship Bulk Carrier	Point Conception	✓	✓	✓	✓	✓		
<i>Ballena</i>	2000	NOAA Research Vessel	Point Arguello	✓	✓	✓	✓	✓		
<i>Nash</i>	2014	Freight Barge	Point Conception	✓	✓	✓	✓	✓		

* Abbreviations for alternatives: IBA = Initial Boundary Alternative, 5a = Sub-Alternative 5a, 5b = Sub-Alternative 5b.

** Listed on the NRHP.

Source: Schwemmer, R., 2022.

Table 4.5-2. Historic landings, wharves, and piers.

Historic Place Name	County	Nearest Geographic Place Names	Presence in Alternatives*						
			IBA	1	2	3	4	5a	5b
Cayucos Landing & Pier	San Luis Obispo	Cayucos	✓	✓			✓		
Pecho Landing	San Luis Obispo	Point Buchon	✓	✓					
Mallagh's Wharf	San Luis Obispo	San Luis Obispo Bay							
People Wharf	San Luis Obispo	San Luis Obispo Bay							
Harford Wharf**	San Luis Obispo	San Luis Obispo Bay							
Union Oil Wharf	San Luis Obispo	San Luis Obispo Bay							
Pismo Landing	San Luis Obispo	Pismo	✓	✓	✓	✓	✓		
Point Sal Wharf	Santa Barbara	Point Sal	✓	✓	✓	✓	✓		
Chute Landing	Santa Barbara	Point Sal South	✓	✓	✓	✓	✓		
Meherin Wharf	Santa Barbara	Lompoc North	✓	✓	✓	✓	✓		
Lompoc Landing	Santa Barbara	Purisima Point	✓	✓	✓	✓	✓		
Espada Landing	Santa Barbara	Point Conception	✓	✓	✓	✓	✓		
Gaviota Wharf	Santa Barbara	Gaviota	✓	✓	✓	✓	✓		

* Abbreviations for alternatives: IBA = Initial Boundary Alternative, 5a = Sub-Alternative 5a, 5b = Sub-Alternative 5b.

** Within Port San Luis, not technically within the sanctuary.

Source: Davidson & U.S. Coast and Geodetic Survey, 1889.

California State Lands Commission

The title to all abandoned shipwrecks, archaeological sites, and historic resources on or in the tide and submerged lands of California is vested in the state and under the jurisdiction of the CSLC (California Public Resources Code, § 6313).³² ONMS will consult with the CSLC should any maritime or historic resources on state lands be discovered within the sanctuary.

4.5.2 Impact Assessment Methodology (Cultural Heritage and Maritime Heritage Resources)

In evaluating the potential for significant impacts, ONMS considered the potential for the proposed action to cause effects on significant cultural and historical resources. ONMS evaluated several criteria for determining which sites may be identified as significant cultural or historical resources. Cultural and historical resources must meet certain federal criteria to be considered a significant historic resource. The following significance criteria are the basis for determining inclusion of a property on the NRHP (36 C.F.R. 60.4). The property must have the following:

- Association with events that have made a significant contribution to the broad patterns of our history.
- Association with the lives of persons significant to our past.

³² Note that the federal Abandoned Shipwreck Act of 1987, 43 U.S.C. 2101 *et seq.*, asserts federal ownership over certain shipwrecks found in state waters (within the 3 nautical mile line) and transfers ownership of those resources to the states. Included in the range of resources covered by this act are certain abandoned shipwrecks, which have been deserted and to which the owner has relinquished ownership rights with no retention. Separately, the Submerged Lands Act, 43 U.S.C. 1301 *et seq.*, granted states title to natural resources located within three miles of their coastline.

- Resources that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose component may lack individual distinction.
- Resources that have yielded, or may be likely to yield, information important in prehistory or history.

Pursuant to the NHPA and its implementing regulations (see Appendix E for details on NHPA Section 106), a proposed action would have an adverse effect on a historic property when it may alter, directly or indirectly, any of the characteristics of the property that qualify it for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 C.F.R. 800.5). Adverse effects include, but are not limited to, the following:

- Physical destruction, damage, or alteration of all or part of the property.
- Removal of the property or alteration of the character of the property's setting when that character contributes to the property's qualifications for the NRHP.
- Introduction of visual, audible, or atmospheric elements that are out of character with the property or changes that alter its setting.
- Neglect of a property resulting in its deterioration or destruction.
- Transfer, lease, or sale of a property without adequate provision to protect the property's historic integrity.

Any of these adverse effects on a significant cultural or historical resource would be considered a significant effect. In addition, an action that may alter any characteristic of a resource determined by a Native American Tribe to be of traditional religious and cultural significance to the Tribe would be considered to have a significant effect. Effects may include changes to a cultural resource or its setting. ONMS considers potential beneficial effects to be significant if they would result in a substantial increase in long-term protection of a historical resource and/or a considerable action to honor, promote, or enhance cultural resource values or qualities.

The following assessment of impacts (beneficial, adverse, and cumulative) on cultural and maritime heritage resources within the Initial Boundary Alternative area as well as within the range of additional boundary alternatives is based upon the understanding that the location of all such resources is not known. Known shipwreck sites and other historic landings, wharfs, and piers (see Tables 4.5-1 and 4.5-2) do not represent the full inventory of maritime heritage sites that are expected to be present; several ships, for example, were reported lost in the area but have not been found or recorded. Similarly, with regard to cultural resources, definitive and comprehensive lists of known site locations do not exist. Paleoshoreline environments are assumed to have the potential for containing artifacts and other Indigenous cultural heritage resources within the benthic sediments. Additionally, it is understood that many local Tribes hold in private additional information about sensitive and significant cultural sites, and that these sites may not be definable geographically or archaeologically; that is, they may have intangible characteristics relating to stories, experiences, or ceremonies that may not map onto standard Western conceptions of significance. Exact locations of Native American Cultural Resources (e.g., locational information for pre-European contact archaeological sites, or

traditional cultural properties) are protected from public disclosure under NHPA, Archaeological Resources Protection Act, and Freedom of Information Act exceptions. Consequently, for both maritime heritage and cultural resources, it is generally assumed in this assessment that the extent of such resources present within each boundary alternative lessens with overall reduced boundary size by an amount that cannot be quantified.

4.5.3 Environmental Consequences of the Initial Boundary Alternative (Cultural Heritage and Maritime Heritage Resources)

There are both beneficial and minor adverse impacts on cultural heritage resources and maritime heritage resources from implementing the Initial Boundary Alternative.

Beneficial Impacts on Cultural Heritage Resources and Maritime Heritage Resources

Implementing the Initial Boundary Alternative would have the following types of beneficial impacts on cultural heritage resources and maritime heritage resources in the study area:

- Direct protection of resources through proposed sanctuary regulations and implementation of components of the management plan that would directly protect underwater cultural and heritage resources from disturbance and physical damage (see Section 3.2).
- Enhanced management of underwater cultural and heritage resources from information gained through research and monitoring activities, ongoing consultation and collaboration with the Santa Ynez Band of Chumash Indians, and assistance from the Sanctuary Advisory Council and ICAP through implementation of the Indigenous Collaborative Co-Stewardship Framework (described in the management plan).
- Increased community stewardship and heightened awareness of underwater cultural and heritage resources by conducting public outreach activities and volunteer training that helps foster awareness of these resources, and by emphasizing resource sensitivity concerns with enforcement partners.

Direct Protection of Underwater Cultural Heritage Resources and Maritime Heritage Resources

Under the Initial Boundary Alternative, NOAA would directly protect underwater cultural and maritime heritage resources in the proposed sanctuary from injury and disturbances by developing and enforcing regulations, and by implementing a long-term, comprehensive management plan. The proposed regulations (see Section 3.2.2) would directly protect these underwater resources by prohibiting “possessing, moving, removing, or injuring, or attempting to possess, move, remove or injure, a sanctuary historical resource.” This prohibition does not apply to “moving, removing, or injury resulting incidentally from lawful kelp harvesting or lawful fishing activities.” These proposed regulations would enforce the principles of in situ preservation of underwater cultural resources in the sanctuary to maintain their long-term integrity. These sanctuary regulations would provide additional protection to cultural heritage and maritime heritage resources in addition to existing protections under state and federal law.

See Appendix F for more details on relevant federal and state statutes applicable to cultural heritage and maritime heritage resources in the study area.

With regard to Native American cultural and ceremonial activities, a proposed category for sanctuary general permits would allow those types of activities to be approved that: “will promote or enhance local Native American cultural or ceremonial activities; or will promote or enhance education and training related to local Native American cultural or ceremonial activities.” 15 C.F.R. 922.30(b)(7). In this manner, the Initial Boundary Alternative would protect and preserve the integrity of submerged cultural resources, while also supporting associated cultural resource values and Native American community practices. NOAA is proposing this general permit category to address a need identified during scoping; specifically, NOAA received a scoping comment letter stating that Indigenous communities should be allowed to conduct the following cultural activities in the proposed sanctuary: collecting culturally significant resources including bones, feathers, shells, animals and plants; burials of cremated remains in biodegradable receptacles; survey and other work at submerged Indigenous living sites, like villages or caves, including collecting artifacts like stone bowls or pestles. The proposed permit category would be recipient neutral; i.e., any person, as that term is defined in 15 C.F.R. 922.11, would be able to apply for a permit under the proposed category. However, permits may only be issued for those activities that will promote or enhance local Native American cultural or ceremonial activities or education and training related to such activities. Additionally, as with all sanctuary permit issuance considerations, NOAA will adhere to federal agency requirements and complete any required consultations pursuant to other relevant laws. Additionally, this proposed permit category would not displace applicable requirements under the Archaeological Resources Protection Act, NHPA, or Native American Graves Protection and Repatriation Act (NAGPRA). NOAA has determined that this proposed permit category would further the purposes and policies of the NMSA by facilitating uses of sanctuary resources compatible with the primary objective of resource protection, and by enhancing public awareness, understanding, appreciation, and wise and sustainable use of the historical, cultural, and archaeological resources of the proposed sanctuary.

Enhanced Management of Underwater Cultural Heritage Resources and Maritime Heritage Resources through Research and Monitoring and Tribal Consultation and Engagement

Under the Initial Boundary Alternative, NOAA’s designation of a sanctuary would enhance the management of underwater cultural and heritage resources through collection of data and information, and application of Indigenous Knowledge, to support resource protection and informed management decisions. For example, under the management plan’s Indigenous Cultural Heritage Action Plan and Maritime Heritage Plan, NOAA would conduct research and monitoring programs, with appropriate consultation and cooperation with Tribes, that would fill important gaps in archaeological knowledge and historical context of cultural heritage resources and maritime heritage resources. NOAA would engage in a research and exploration effort in state and federal waters to find and characterize paleoshorelines. As part of its Indigenous Cultural Heritage Action Plan, NOAA would celebrate and protect the unique Indigenous cultural heritage and resources connected to the sanctuary through meaningful collaboration and partnership with Chumash and Salinan communities.

In addition, the Maritime Heritage Action Plan calls for NOAA to conduct research to assess and collate baseline data on known shipwrecks, and their associated artifacts. As described in Section 4.5.1, there are over two hundred ship and aircraft wrecks that have been reported for the Initial Boundary Alternative area; several vessels were later salvaged or were reported as not being a total loss. There are 20 known shipwreck sites, three of which are listed on the NRHP (see Table 4.5-1). NOAA would collect data addressing eligibility for the NRHP (see Section 4.5.2) and the condition of the sites using various methodologies, including such activities as scuba, ROV, and towed instrument or remote sensing surveys. NOAA would develop and implement a monitoring program for underwater cultural resources in the sanctuary. These proposed research and monitoring activities would inform long-term management of underwater cultural resources.

Enhanced Stewardship through Education and Outreach Activities, Tribal Consultation, Volunteers, and Law Enforcement Training

Under the Initial Boundary Alternative, NOAA's implementation of education, outreach, community engagement, volunteer, and enforcement coordination programs would enhance protection of underwater cultural heritage and maritime heritage resources in the sanctuary by fostering awareness and stewardship of these resources. The proposed sanctuary's management plan includes several strategies and activities for promoting public education. NOAA anticipates that under the Initial Boundary Alternative, its education and outreach efforts and Indigenous community collaborations would enhance public appreciation of the historical and cultural significance of the proposed sanctuary's resources and encourage greater public stewardship of the area. For example, NOAA would promote marine technology with educators and develop outreach programs that endorse sanctuary resource protection, such as publicizing best management practices for scuba divers to minimize their impacts while wreck diving. NOAA would work closely with the Santa Ynez Band of Chumash Indians and other Tribes and Indigenous community groups to understand specific cultural resource sensitivities and needs for protection, and implement education, training, and outreach activities accordingly. For example, NOAA would develop programs for volunteers to assist with sanctuary interpretation, including training on cultural resource significance and sensitivity. Further, NOAA would work with several partnering law enforcement agencies to raise awareness about cultural resource sensitivities and the need for oversight.

Summary of Beneficial Impacts on Underwater Cultural Heritage Resources and Maritime Heritage Resources

Overall, the **beneficial impacts** on underwater cultural heritage and maritime heritage resources from implementing the Initial Boundary Alternative would be **direct, long-term,** and **significant**. This is due primarily to the direct and permanent protections of these culturally and historically significant resources that would be provided by implementing regulations to prohibit harm or injury to shipwrecks and cultural/historic resources. In addition, protection of these resources would be enhanced through conducting research and monitoring activities to inform long-term management, enhancing community stewardship through public outreach initiatives, volunteer involvement, coordination of enforcement agencies, ongoing Santa Ynez Band of Chumash Indians government-to-government consultation, and assistance

from the Sanctuary Advisory Council and ICAP through implementation of the Indigenous Collaborative Co-Stewardship Framework (described in the management plan).

Adverse Impacts on Underwater Cultural Heritage Resources and Maritime Heritage Resources

Implementing the Initial Boundary Alternative could have some minor adverse impacts on cultural and historical resources in the study area due to increased field activities and site visitation. NOAA-led field activities to support management of the proposed sanctuary could include vessel operations and maintenance; scuba operations; deployment of autonomous underwater vehicles (AUVs), remotely operated vehicles (ROVs), gliders, and drifters; and archaeological site investigations. These activities have the potential to cause minor adverse impacts. Deploying AUVs, ROVs, and remote sensing equipment to better document underwater cultural resources within the proposed sanctuary would carry a slight risk of entanglement or accidental contact with a wreck or other historic resource. However, NOAA operators are highly trained, deploy these types of vehicles regularly, and follow NHPA protocols that describe how to avoid harm to cultural heritage and maritime heritage resources.

Scuba diving during field activities could injure cultural and maritime heritage resources if divers use improper diving techniques and make physical contact with a wreck or submerged cultural resource. Under the Initial Boundary Alternative, NOAA would conduct scuba diving operations as part of its research efforts to study known and possible shipwrecks within the proposed sanctuary. ONMS divers would adhere to the established NOAA policy guidelines for maritime heritage site work.

Most recreational divers responsibly follow best management practices. However, poorly trained or careless recreational divers could damage underwater cultural or maritime heritage resources by using improper diving techniques. Designating the proposed sanctuary may increase non-NOAA dive traffic within its boundaries. NOAA's education and outreach efforts would promote responsible diving practices and increase public appreciation and stewardship of these sanctuary resources. Overall, any **adverse impacts** on underwater cultural and maritime heritage resources from implementing the Initial Boundary Alternative would be **negligible** due to best management practices NOAA would follow during research and other field activities and due to NOAA's efforts to promote responsible diving practices for recreational divers. See Appendix C for more details on proposed best management practices.

4.5.4 Environmental Consequences of Alternative 1 (Cultural Heritage and Maritime Heritage Resources)

Under Alternative 1, Bank to Coast, NOAA would focus research and monitoring activities on fewer underwater cultural heritage and maritime heritage resources west of the Santa Lucia Bank compared to the Initial Boundary Alternative, which would reduce the amount of new archaeological information available for the research community, public, and Indigenous communities. Alternative 1 would still include offshore areas known to be paleoshoreline environments where submerged cultural resources may be located under bottom sediments (see Figure 4.5-1). Alternative 1 might represent a smaller number of shipwreck sites, yet at this time

NOAA is unaware of known shipwrecks or other submerged cultural sites that would be excluded from sanctuary protection.

Nonetheless, this alternative would protect a substantial number of nationally significant shipwreck sites and coastal cultural heritage resources, in the same way as the Initial Boundary Alternative. Therefore, the **beneficial impacts** on underwater cultural resources from implementing Alternative 1 would be **significant** and the same as for the Initial Boundary Alternative. Any **adverse impacts**, under Alternative 1, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

4.5.5 Environmental Consequences of Alternative 2 (Cultural Heritage and Maritime Heritage Resources)

Under Alternative 2, Cropped Bank to Coast, NOAA would focus research and monitoring activities on fewer underwater cultural heritage and maritime heritage resources as compared to the Initial Boundary Alternative, which would reduce the amount of new archaeological information available for the research community, public, and Indigenous communities. Under Alternative 2, the proposed sanctuary boundaries would include a smaller number of shipwreck sites within recreational and technical diving limits, resulting in fewer opportunities for visitor engagement and enjoyment. Importantly, Alternative 2 would not provide additional federal protection for the shipwreck SS *Montebello* that is listed on the NRHP (see Section 4.5.1), since it would be outside of the proposed sanctuary boundaries. In addition, NOAA and partners' interpretive activities would be narrower in scope than under the Initial Boundary Alternative or Alternative 1 due to the reduced geographic scope of the proposed sanctuary.

Under Alternative 2, the coastal area extending north from Hazard Canyon Reef in the northern portion of Montaña de Oro State Park would not be within the sanctuary. As such, the extent of coastal culturally sensitive and sacred sites within the sanctuary would be significantly reduced compared to the Initial Boundary Alternative. Also, not included within the sanctuary would be a stretch of coastal area from Los Osos to Cambria that several Indigenous groups (Northern Chumash and Salinan) identify as important parts of their historic territories.

Alternative 2 would still protect numerous nationally significant shipwreck sites and cultural heritage resources that would benefit from the regulatory protections, as well as government-to-government consultation with the Santa Ynez Band of Chumash Indians, and assistance from the Sanctuary Advisory Council and ICAP through implementation of the Indigenous Collaborative Co-Stewardship Framework (described in the management plan). However, NOAA believes the **direct, long-term, beneficial impacts** on underwater cultural resources from implementing Alternative 2 would be **moderate**, less than for the Initial Boundary Alternative. Any **adverse impacts**, under Alternative 2, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

4.5.6 Environmental Consequences of Alternative 3 (Cultural Heritage and Maritime Heritage Resources)

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) does not alter the beneficial or adverse impact levels to submerged cultural resources. The boundary area excluded is too small, and any possible submerged cultural resources within the excluded area are not known to be present or potentially distinct enough from the rest of Alternative 3, to meaningfully affect NOAA's estimated impact from sanctuary designation. As such, this minor modification would not result in environmental impacts other than those already considered.

Under Alternative 3, Diablo to Gaviota Creek, NOAA would focus research and monitoring activities on fewer underwater cultural heritage and maritime heritage resources as compared to the Initial Boundary Alternative, which would reduce the amount of new archaeological information available for the research community, public, and Indigenous groups. Under Alternative 3, the proposed sanctuary boundaries would include a smaller number of shipwreck sites within recreational and technical diving limits, resulting in fewer opportunities for visitor engagement and enjoyment. Importantly, Alternative 3 would not provide additional federal protection for the shipwreck SS *Montebello* that is listed on the NRHP (see Section 4.5.1), since it would be outside of the proposed sanctuary boundaries. In addition, NOAA and partner's interpretive activities would be narrower in scope than in the Initial Boundary Alternative or Alternative 1 due to the reduced geographic scope of the proposed sanctuary.

Under Alternative 3, the coastal area starting from two miles southeast of the private marina at DCP, running north to Cambria, would not be within the sanctuary. As such, the extent of coastal culturally sensitive and sacred sites within and directly adjacent to the sanctuary would be significantly reduced as compared to the Initial Boundary Alternative. Also, not included within and adjacent to the sanctuary under Alternative 3 would be a stretch of coastal area from near DCP to Cambria that several Indigenous groups (Northern Chumash and Salinan) identify as important parts of their historic territories. NOAA does not anticipate that the minor adjustment to the northeastern corner of boundary Alternative 3 (explained in sections 3.5 and 3.5.1) would result in a reduced number of submerged cultural and maritime heritage resources or a lesser amount of new archaeological information available for research.

Alternative 3 would still protect numerous nationally significant shipwreck sites and cultural heritage resources that would benefit from the regulatory protections, as well as government-to-government consultation with the Santa Ynez Band of Chumash Indians, and assistance from the Sanctuary Advisory Council and ICAP through implementation of the Indigenous Collaborative Co-Stewardship Framework (described in the management plan). However, NOAA believes the **direct, long-term beneficial impacts** on underwater cultural resources from implementing Alternative 3 would be **moderate**, substantially less than the Initial Boundary Alternative and Alternative 1, and slightly less than Alternative 2. Any **adverse impacts**, under Alternative 3, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

4.5.7 Environmental Consequences of Alternative 4 (Cultural Heritage and Maritime Heritage Resources)

As would be the case with Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the beneficial or adverse impact levels to submerged cultural resources. The boundary area excluded is too small, and any possible submerged cultural resources within the excluded area are not known to be present or potentially distinct enough from the rest of Alternative 4, to meaningfully affect NOAA's estimated impact from sanctuary designation. As such, this minor modification would not result in environmental impacts other than those already considered.

Under Alternative 4, Combined Smallest, the smallest boundary alternative being considered, NOAA would focus research and monitoring activities on fewer underwater cultural heritage and maritime heritage resources, which would reduce the amount of new archaeological information available for the research community, public, and Indigenous groups. The effects on cultural and maritime heritage resources from approving Alternative 4 would largely be the same as explained for Alternative 3 in Section 4.5.6. In summary, the **long-term, direct beneficial impacts** on underwater cultural and maritime heritage would be **moderate**, substantially less than for the Initial Boundary Alternative and Alternative 1, and slightly less than Alternative 2. Any **adverse impacts**, under Alternative 4, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

4.5.8 Expanded Protection from Sub-alternatives 5a and 5b

Sub-Alternative 5a: Expansion for Morro Bay Estuary

Under Sub-Alternative 5a, expanding proposed sanctuary boundaries to include Morro Bay Estuary, NOAA would focus research and monitoring activities on additional possible underwater cultural heritage resources which would add to the amount of new archaeological information available for the research community, public, the Santa Ynez Band of Chumash Indians, and other local Tribes and Indigenous groups. Adding Sub-Alternative 5a to the Initial Boundary Alternative or to Alternative 1 would not include any additional known or reported shipwrecks in the proposed sanctuary boundaries. NOAA and partner interpretive activities would be slightly larger in scope than in the Initial Boundary Alternative due to the slightly larger geographic scope of the proposed sanctuary. Sub-Alternative 5a would likely place within the proposed sanctuary additional cultural "sacred sites" that "ring Morro Bay," as noted by the Northern Chumash Tribal Council in their scoping comment letter. Although the precise locations of these sites are not known to NOAA, it is likely that some are found within the estuary area that is contained within Sub-Alternative 5a. Morro Rock and the surrounding Morro Bay are identified as sacred places by many Salinan (Herrera, 2017; Shuman, 2021; Taylor, n.d.).

This action has the potential to protect nationally significant cultural heritage resources. The incremental **long-term, direct beneficial impacts** on underwater cultural resources from implementing Sub-Alternative 5a would be **significant** due to the direct and permanent protection of any culturally significant resources in the Morro Bay Estuary that would be

provided by implementing regulations to prohibit harm or injury to these resources, research and monitoring activities to inform long-term management of them, enhanced community stewardship through public outreach initiatives, government-to-government consultation and collaborative management practices with the Santa Ynez Band of Chumash Indians, and assistance from the Sanctuary Advisory Council and ICAP through implementation of the Indigenous Collaborative Co-Stewardship Framework (described in the management plan). Any **adverse impacts**, under Sub-Alternative 5a, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

Sub-Alternative 5b: Gaviota Coast Extension

Under Sub-Alternative 5b, Gaviota Coast Extension, NOAA would focus research and monitoring activities on additional underwater cultural heritage and maritime heritage resources, which would add to the amount of new archaeological information available for the research community, public, Santa Ynez Band of Chumash Indians, and other local Tribes and Indigenous groups. Adding Sub-Alternative 5b to the Initial Boundary Alternative or any of the action alternatives would include three additional reported shipwrecks and two military aircraft wrecks in the proposed sanctuary and may provide additional recreational and technical diving opportunities for visitor engagement and enjoyment. One additional historic wharf site would also be included within the proposed sanctuary boundaries (see Table 4.5-2). In addition, NOAA and partner interpretive activities would be larger in scope than in the Initial Boundary Alternative due to the larger geographic scope of the proposed sanctuary.

Sub-Alternative 5b, by extending further along the Gaviota Coast to the east of Dos Pueblos Creek (see Figure 3-11), would add a significant number of coastal cultural resources beyond those included in the Initial Boundary Alternative. The National Park Service Gaviota Coast Feasibility Study (NPS, 2003) documented the significant presence of coastal cultural resources, including in the area extending from Gaviota Creek (the eastern shoreline boundary of the Initial Boundary Alternative) to the east of Dos Pueblos Creek (the eastern coastal extent of Sub-Alternative 5b).

Overall, adding this sub-alternative to the Initial Boundary Alternative or any of the other action alternatives would protect more shipwreck sites and the waters offshore numerous significant cultural heritage resources. The incremental **long-term, direct beneficial impacts** on underwater and intertidal and coastal cultural and historical resources from implementing Sub-Alternative 5b would be **significant**. Any **adverse impacts**, under Sub-Alternative 5b, would be **negligible** because NOAA would follow best management practices (see Appendix C) during research and other field activities while promoting responsible diving practices for recreational divers.

4.5.9 Environmental Consequences of No Action (Cultural Heritage and Maritime Heritage Resources)

Under the No Action Alternative, NOAA would not designate a national marine sanctuary. The No Action Alternative would not result in any change to the existing state and federal management setting for cultural and historical resources along and offshore San Luis Obispo

and Santa Barbara counties. The No Action Alternative would forgo the moderate to significant beneficial and negligible adverse impacts of implementing the Initial Boundary Alternative or alternatives on the resources and human uses in and around the proposed sanctuary. Generally, the No Action alternative would forgo the beneficial impacts of implementing sanctuary regulations, as well as management plan implementation that would provide comprehensive, long-term protection of cultural and historical resources located within the proposed sanctuary.

Under the No Action alternative, the suite of strategies and activities included within the proposed Indigenous Cultural Heritage Action Plan would not be implemented. Those strategies are directed at enhancing protection to Indigenous cultural resources through training, education, mitigation for research permits, ongoing consultation and collaborative co-stewardship, and development of best practices for sanctuary research and management activities. Additionally, the No Action alternative would not provide for NOAA's use of Indigenous Knowledge to enhance sanctuary management and resource protection, nor would it provide for the planned NOAA coordination and support for Indigenous community access to the proposed sanctuary for cultural purposes.

4.6 Socioeconomics, Human Uses, and Environmental Justice

This section describes recent socioeconomic and demographic conditions including population density, income and employment, and economic value to determine the baseline to be used in the impact analysis. This section describes sources of income and employment as indicators of the health of the local economy and opportunities for employment. An overview of what is currently known about the uses of the natural and cultural resources includes recreation, tourism, land use, research, and education. Commercial fishing is addressed separately in Section 4.4. NOAA prepared a detailed socioeconomic profile to characterize recent demographic and economic conditions and to determine the baseline statistics to be used in the impact analysis of the alternatives (see NOAA's Proposed Chumash Heritage National Marine [Sanctuary Community Profile](#)). The information is provided for the socioeconomics study area, which is composed of the counties of San Luis Obispo and Santa Barbara in the state of California. These two counties, referred to as the "sanctuary community" in this section, are the counties along the shoreline where the primary social and economic (socioeconomic) impacts would take place (see Figure 4.6-1).

The impacts on commercial fishing and aquaculture, cultural heritage and maritime heritage resources, offshore energy, marine transportation, and DoD and homeland security activities are addressed in sections 4.4, 4.5, 4.7, 4.8, and 4.9, respectively.

4.6.1 Regional Overview of Affected Environment (Socioeconomics, Human Uses, and Environmental Justice)

Socioeconomics

Population

In 2019, the total population of San Luis Obispo County was 283,111 and the total population in California was 39,512,223 (U.S. Census Bureau, 2020). The population of San Luis Obispo County was smaller than the total population of Santa Barbara County, which was 446,499 in

2019. The sanctuary community (San Luis Obispo and Santa Barbara counties) included 1.8% of the total population of California. Of the two counties in the sanctuary community, Santa Barbara County also had the highest population in 2010, at 1.1% of the total population of California, while San Luis Obispo County had 0.7%.

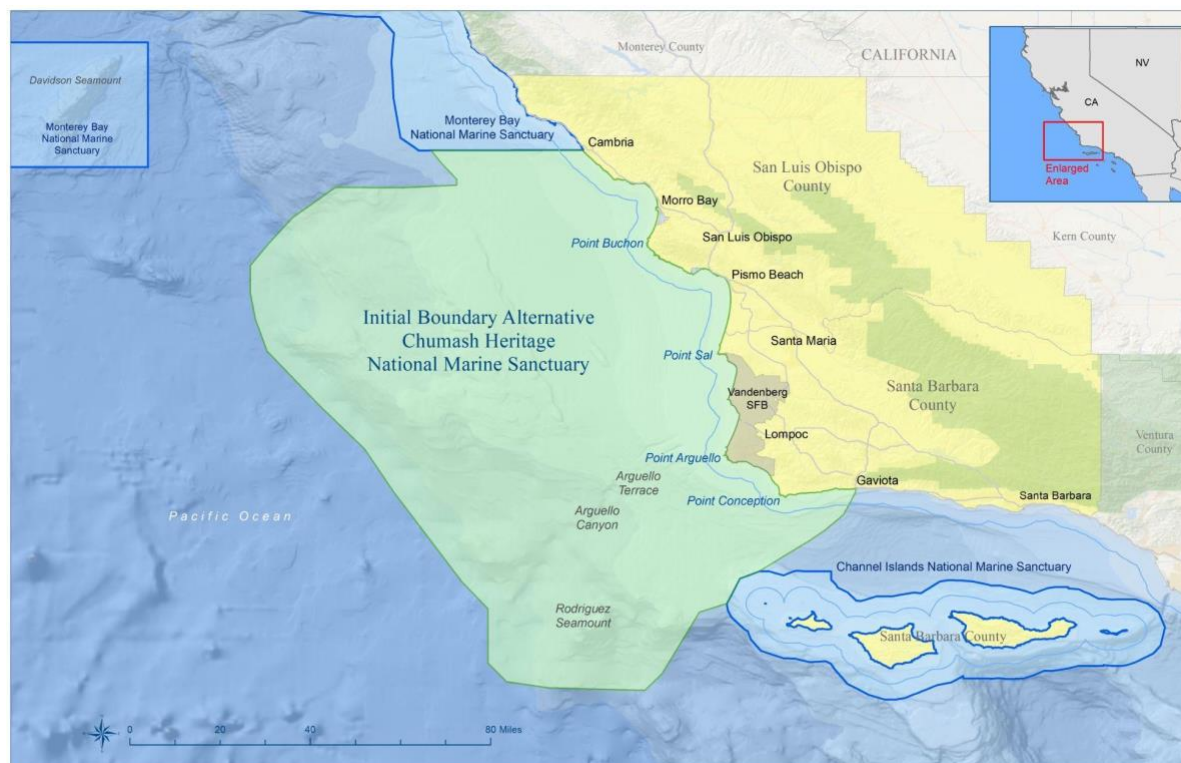


Figure 4.6-1. Proposed CHNMS community counties. Image: NOAA

Population Growth

From 2010 to 2019, the population of San Luis Obispo County increased by 4.9% (U.S. Census Bureau, 2020). During the same period, the total population of Santa Barbara County increased by 5.2%, and the state of California's population increased by 5.9%.

Population Density

In 2010, the population density of San Luis Obispo County was 74 people per square mile (U.S. Census Bureau, 2020). The population density increased from 2010 to 2019, with a density of 78 people per square mile in 2019. Similarly, the population density of Santa Barbara County was 112 and increased in 2019 to 118 people per square mile. Both densities are lower compared with California.

Per Capita Income

In 2019, per capita income in San Luis Obispo County was \$61,004 (U.S. Census Bureau, 2020). Santa Barbara County had a per capita income of \$66,076 in 2019. The per capita income of California was \$70,662, ranking California sixth compared to the rest of the U.S. in 2019.

Poverty Rate

According to the U.S. Census, in 2019 the poverty rate for San Luis Obispo County was 11.8%, while in Santa Barbara County the poverty rate was 12.3% of the population. The poverty rate in the sanctuary community (12.1%) is slightly higher than the state-wide poverty rate (11.6%).

Demographics

Gender distribution

In 2019, the estimated population in San Luis Obispo County was 283,111 with 50.6% male and 49.4% female (see NOAA's Proposed Chumash Heritage National Marine [Sanctuary Community Profile](#)). The estimated population in Santa Barbara County was 446,499, with 50.0% male and 50.0% female in 2019 (Census.gov, 2020).

Race

In 2020, the San Luis Obispo County population was comprised of white as the largest racial group at 68.5% (non-white Latinos excluded). Asians comprised 4.0% of the population. In Santa Barbara County, white comprised 85.1% of the population (non-white Latinos excluded).

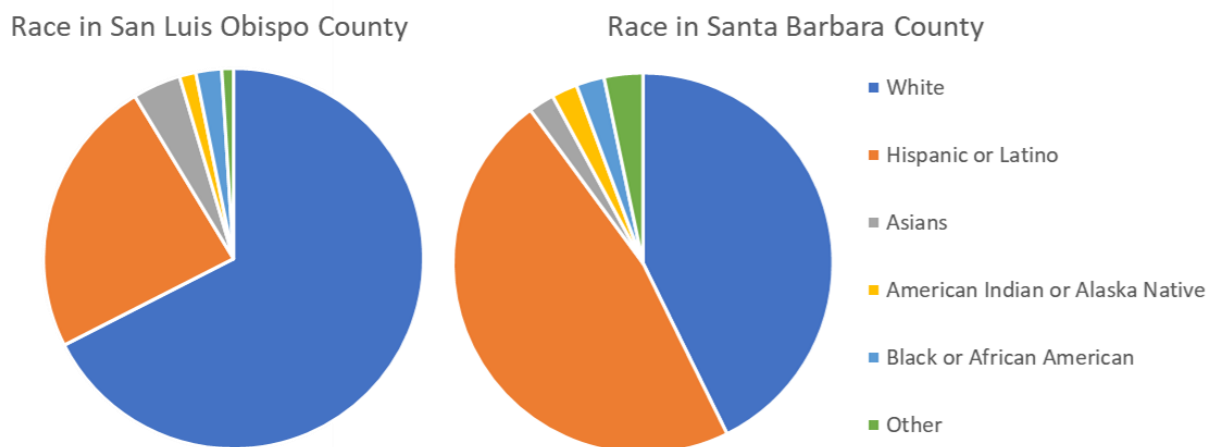


Figure 4.6-2. Race in San Luis Obispo and Santa Barbara Counties, 2019. Source: U.S. Census, Quick Facts for San Luis Obispo and Santa Barbara Counties, 2020

Ethnicity

In the 2020 census, Hispanic represents those of Hispanic, Latino, or Spanish origin and any race may identify as Hispanic. As of 2019, Hispanic people accounted for 22.9% of the San Luis Obispo County population, while in Santa Barbara County, 44.6% identified as Hispanic or Latino (U.S. Census Bureau, 2020).

Education level

At least 30% of the population over 25 years old in San Luis Obispo and Santa Barbara Counties have some college or associate degree. More than 20% have a bachelor's degree and 14% have a graduate or professional degree (See NOAA's Proposed Chumash Heritage National Marine [Sanctuary Community Profile](#)).

Economic Profile

Personal Income

In 2017, 58.3% of households in the proposed sanctuary community had a personal income of at least \$60,000 (see NOAA's Proposed Chumash Heritage National Marine [Sanctuary Community Profile](#)). For both counties, most households had a personal income between \$60,000 and \$149,999 (Samonte et al., 2023).

Employment by Industry Sector

There were 343,826 total employed civilians³³ in 2020 in San Luis Obispo County (131,426 individuals) and Santa Barbara County (212,400 individuals). The larger sectors of employment in Santa Barbara and San Luis Obispo counties are management, business, science, and arts (38.3%) and in-service occupations (20.6%) (see NOAA's Proposed Chumash Heritage National Marine [Sanctuary Community Profile](#)).

Land Use and Development

This section describes current land uses along the coast adjacent to the study area not described in other sections. Land use in the coastal areas of San Luis Obispo and Santa Barbara Counties that are adjacent to or could be affected by the proposed action (designating a new sanctuary) mainly consists of coastal communities with residential, industrial, civic, visitor serving uses; rural and remote residential uses, open space public uses, and agriculture uses. This discussion also addresses whether there is the potential for conflicts between the proposed action and the objectives of federal, regional, state, Tribal, and local land use plans, policies, and controls for the study area.

Santa Barbara County

The County of Santa Barbara spans 110 miles of shoreline, of which only 20.4 miles (18.5%) are publicly owned beaches. The coastline supports a range of recreational uses, including surfing, kayaking, sunbathing, swimming, and nature study. These beaches, in addition to receiving extensive use by local residents, provide popular destination points for visitors. Existing beach parks are being used to capacity, especially during summer weekends. The California Department of Parks and Recreation is a major supplier of coastal recreational opportunities in Santa Barbara County. Most state park developments along the coast provide a high level of amenities, including facilities for campers and trailers. Generally, overnight use of these facilities is by out-of-County users, particularly those living in the Los Angeles metropolitan area. In the County's coastal zone, public recreational areas (rather than commercial visitor serving facilities) are the dominant activity. From Ellwood west to Point Conception and north to the San Luis Obispo County line, the coastal area is rural and remote; extensive state park development, County parks, large cattle ranches, and rugged open areas characterize this area.

San Luis Obispo County

The coastal zone in San Luis Obispo County spans 96 miles of coastline. Along most of California, the coastal zone boundary generally extends inland only 1,000 yards, while in San

³³ The U.S. Census Bureau employment data, by definition, excludes people on active duty in the United States Armed Forces.

Luis Obispo County the coastal zone extends further inland in several areas because of important habitat, recreational, and agricultural resources. Those areas include the lands surrounding Nipomo Dunes, Hearst Ranch and other north coast areas, and the Morro Bay watershed. Along the shoreline of San Luis Obispo County, there are 10 state parks and numerous smaller local parks providing access to the coast. Within the County, the state owns more than 14,500 acres of coastal parklands, which are designated as parks, beaches, historical monuments, vehicular recreation areas, reserves, or preserves. The 10 state park units range from Montaña de Oro State Park's 7,828 acres with over 21 miles of bay and ocean frontage to the relatively small 15 acres of Cayucos State Beach; this includes the Oceano Dunes State Vehicular Recreation Area (see more information below under recreation). In addition to these state parks, there are several smaller parks and natural areas maintained by San Luis Obispo County. These include such sites as Oceano Memorial Park, Elfin Forest Natural Area, and Lampton Cliffs Park. Six of the 10 state parks and one county park in coastal San Luis Obispo County provide overnight camping opportunities. In San Luis Obispo County, public parks account for 30 miles of available public lateral access, close to one-third of the 96-mile shoreline. An additional 275 acres of land known as the Estero Bluffs have been acquired for public use. In Cambria, the shorefront 407-acre East-West Ranch also has been acquired for public use. In addition to the parks, there are other types of smaller coastal accessways, principally access easements.

Submarine Fiber Optic Cables

In the mid-19th century, the need for long distance communication connecting continents led to the invention and installation of trans-oceanic telegraph cables. Over time, technology advancements gave rise to fiber optic cables, marked by the world's first long-haul trans-Atlantic fiber optic cables TAT-8 in 1988. Optical fibers carry communications (e.g., voice, data, and internet) in the form of colored light signals of various wavelengths to enable high-speed communications over long distances. Submarine fiber optic cables currently carry 99% of the world's international electronic communications, and have been recognized as essential, critical infrastructure that represent the backbone of the global digital communications system and global economy, and play an important role in national security (Department of Justice, 2022). Presidential Policy Directive 21 on Critical Infrastructure Security and Resilience prioritizes national efforts to strengthen and maintain secure, functioning, and resilient critical infrastructure, to include fiber-optic telecommunication networks.³⁴ Additionally, the Department of Homeland Security's Communications Sector-Specific Plans (12-14) guide collaborative efforts to improve security and resilience of national critical infrastructure.³⁵

San Luis Obispo County has become a telecommunications hub, one of about a half dozen hubs located on the U.S. West Coast. An increase in demand for trans-Pacific fiber optic cables around 2000 led to the development of several submarine cable systems laid to and from onshore cable landing stations in Los Osos and Grover Beach, in San Luis Obispo County (see Figure 4.6-3). A "cable system" can consist of one or more cables. There are currently seven cable systems that operate a total of 11 submarine fiber optic cables in the sanctuary study area;

³⁴ Presidential Policy Directive 21 (Critical Infrastructure Security and Resilience) is available [online](#).

³⁵ The Department of Homeland Security's Cybersecurity and Infrastructure Security Agency's Communications Sector-Specific Plans are available [online](#).

one of the existing cables has not yet been approved to operate (Meta Platforms Inc, 2023; NASCA, 2023; PC Landing Corp., 2023). Two (of the 10) operational cables in the study area have applied to terminate operations and could be removed in 2026.

Two unofficial “corridors” have been established for existing submarine cables. In this EIS, they are characterized as a “northern” corridor, with cables that land at Los Osos, and a “southeastern” corridor with cables that land at Grover Beach. Another cable transits a more inshore route from Cayucos to Santa Barbara. Most of these cables were installed in the early 2000s. The maximum operational and economic lifespan for submarine fiber optic cables is typically 25 years, although some are retired sooner and some continue operating after 25 years. In addition to the 10 operational cables, four other cables have been retired and partially removed, or retired but not yet removed. There are two new submarine fiber optic cables proposed to land at Grover Beach; installation could occur in 2024 (see Table 4.6-1 below). There is an unused conduit drilled under the shoreline at Grover Beach that could be used in the future to bring onshore an additional fiber optic cable. Thus, more growth in fiber optic cable systems landing in the county can be expected in the future.

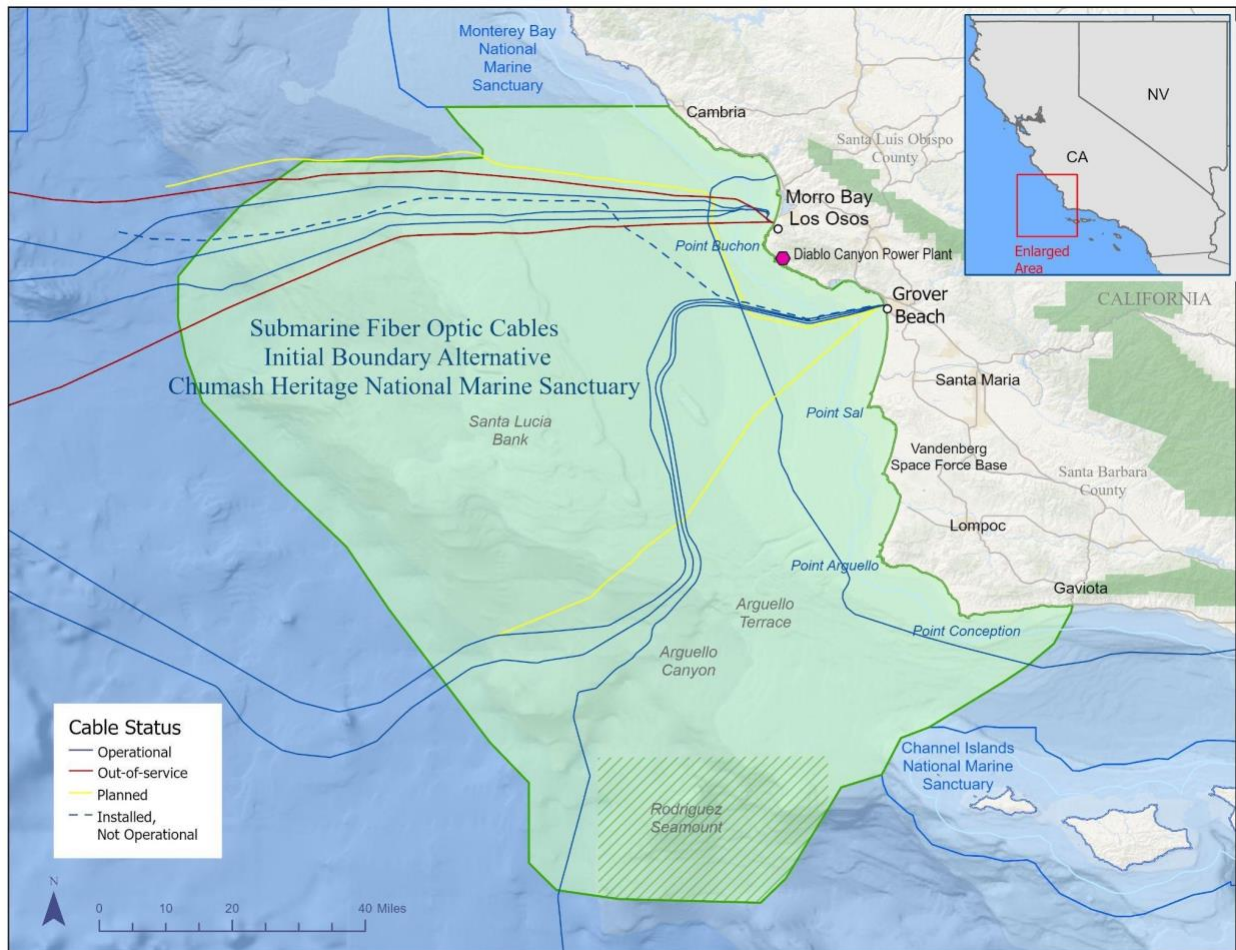


Figure 4.6-3. Submarine fiber optic cables in the Initial Boundary Alternative. Image: NOAA

Table 4.6-1a. Existing and operating submarine fiber optic cables offshore San Luis Obispo County.

Cable	Location	Year Installed	Status	Corridor	Landing	Alternative(s)
Zayo Global West Segment E	To Santa Barbara	2000	Installed, Operational	N/A (Nearshore)	Cayucos	IBA, 1, 2, 3, 4
Southern Cross Cable Network	Australia - Hawaii - California	2000	Installed, Operational	Northern	Los Osos	IBA, 1, 2, 3
Asia-America Gateway (AAG)	To Guam	2009	Installed, Operational	Northern	Los Osos	IBA, 1, 2, 3
Japan-US (Segment S9)	Japan-CA	2000	Out-of-service; Planned for removal	Northern	Los Osos	IBA, 1, 2, 3
Japan-US (Segment E1)	Japan-CA	2000	Operational; In service for a minimum of 5 more years	Northern	Los Osos	IBA, 1, 2, 3
Trans-Pacific Cable - 5 (segment T1)	Japan-Hawaii-CA	1996	Out-of-service	Northern	Los Osos	IBA, 1, 2, 3
Trans-Pacific Cable - 5 (segment G)	Japan-Hawaii-CA	1996	Out-of-service	Northern	Los Osos	IBA, 1, 2, 3
PC1 Segment E	To Seattle	2000	Installed, Operational	Southeastern	Grover Beach	IBA, 1, 2, 3, 4
PC1 Segment S	To Japan	2000	Installed, Operational	Southeastern	Grover Beach	IBA, 1, 2, 3, 4
Pan-American Crossing (PAC)	To Latin and South America	2000	Installed, Operational	Southeastern	Grover Beach	IBA, 1, 2, 3, 4
BtoBE Cable	To Phillipines	2020	Installed, Not operational	Northern	Grover Beach	IBA, 1, 2, 3, 4

Table 4.6-1b. Planned new submarine fiber optic cables offshore San Luis Obispo County.

Cable	Location	Year Installed	Status	Corridor	Landing	Alternative(s)
Bifrost	To Guam and Mexico	Planned for 2024	Planned for installation	Northern	Grover Beach	IBA, 1, 2, 3, 4
JUNO	To Japan	Planned for 2024	Planned for installation	Southeastern	Grover Beach	IBA, 1, 2, 3, 4

Table 4.6-1c. Retired and partially removed submarine fiber optic cables offshore San Luis Obispo County.

Cable	Location	Year Installed	Status	Corridor	Landing	Alternative(s)
China-US (Segment S7)	China - CA	2000-2016	Out-of-service; Partially removed	Northern	Los Osos	IBA, 3
HAW 2 (Coax cable)	Hawaii - CA	1964	Out-of-service; Partially removed	Northern	Los Osos	NA
HAW 3 (Coax cable)	Hawaii - CA	1974	Out-of-service	Southeastern	Los Osos	NA
HAW 5	Hawaii - CA	1993	Out-of-service	Northern	Los Osos	NA

Source: NASCA, 2023; K. Bressie, NASCA, personal communication, February 2024; C. Brungardt, RTI Solutions, personal communication, February 2014; W. Horn, CCC, personal communication, January 2024; Submarine Cable Networks, n.d; Atlantic Cables, n.d

Infrastructure and Activities

There are 138 known permits and leases for infrastructure and activities within the sanctuary study area (Appendix H), including 114 active permits and leases, 11 permit amendments, and 13 applications either in process, pending, or on hold. These permits do not represent individual or discrete infrastructure and activities since some infrastructure and activities listed in this appendix are associated with more than one issued permit. These include industrial use, oil and gas leases, protective structure use, public agency use, recreational use, and right-of-way use. There are also three permit applications, two for offshore wind and one for an oil and gas pipeline.

The definitions in the sanctuary regulations would allow for the beneficial use of dredged material from a public harbor adjacent to the sanctuary that the ONMS director determines is suitable as a resource for habitat protection and/or restoration purposes. ONMS could review a proposed beneficial use project description, and, if suitable harbor dredged material is determined to have net positive effects in protecting and/or restoring sanctuary habitat, could permit the beneficial use of dredge material in the sanctuary. Potential beneficial use sediment placement options include within the sanctuary boundaries, or outside the sanctuary boundaries such as above the mean high water line. NOAA will develop beneficial use permitting guidelines for the sanctuary, built off guidelines it has developed for MBNMS (see Activity WQ-2.8 in the management plan). See Section 3.2 for more details on dredging and permitting.

Recreation

Recreational Fishing

The study area waters support several forms of recreational fishing from various platforms/locations (e.g., private vessels, charter vessels, shorelines, fishing piers). Recreational fishing via boat and diving are popular uses, with quality fishing opportunities available to the public in many areas of the proposed sanctuary. Recreational fishers use private and for-hire boats in nearshore and offshore waters, and may fish from above or below the water (e.g., spearfishing). Gear and fishing techniques commonly used include hook-and-line, spear guns, hoop nets, and diver-based hand-removal.

A [commercial passenger fishing vessel](#) (CPFV) is any vessel licensed for commercial passenger fishing purposes within the state out of which it is operating and from which, while under charter or hire, persons are legally permitted to conduct sportfishing activities. Data on CPFV activity were provided by CDFW (2020). In the two counties, the five-year (2015–2019) annual average number of CPFV's reporting catch was 25 vessels (minimum = 19, maximum = 32). In terms of effort, for the five-year period (2015–2019) there were 22,225 angler days (minimum = 19,655, maximum = 24,666). The top species groups that were kept by recreational fishers on CPFVs are shown in Table 4.6-2.

Table 4.6-2. Top 10 species kept by recreational fishers, 2015–2019.

Species Group	Average Number Kept
Rockfish	187,849
Sablefish Louvar Whiting Whitefish	7,799
Crab	1,331
California Scorpionfish Cabezon Thornyheads	383
Flatfish	215
Sculpin Basses Greenlings Grenadier	110
All Other (e.g., rock scallop, white croaker, bluebanded goby, brown bullhead, barracuda)	110
Tuna	105
California Sheephead	54
Salmon	25

Source: California Department of Fish and Wildlife, 2020. CPFV log data, 1980–2020 [Data set].

Additional information about recreational fishing is in the [Sanctuary Community Profile](#) prepared for the sanctuary designation process (Samonte et al., 2023). For details on commercial fishing, see Section 4.4.

Other Recreational Activities

In 2017, more than half of visitors to Santa Barbara County engaged in beach activities during their trip. Santa Barbara County residents partake in outdoor coastal recreation such as biking, hiking, surfing, sea kayaking, stand-up paddle boarding, beach volleyball, and beach combing. Other common activities for visitors were whale watching, kayaking, sailing, surfing/paddle boarding, and excursions to the Channel Islands (Table 4.6-3; Destination Analysts, 2017).

Table 4.6-3. Other visitor recreation activities in Santa Barbara County, 2017.

Marine/Coastal Recreation Activity	Hotel Guest	Visit Family/Relatives	Day Trip
Beaches	58.9%	68.4%	51.8%
Whale watching	4.8%	4.8%	2.6%
Kayaking	1.9%	7.0%	2.4%
Sailing	2.0%	3.9%	2.7%
Surfing/Stand-up Paddle Boarding	1.8%	7.5%	2.0%
Channel Islands excursion	1.3%	1.3%	1.5%
Sample size	894	228	548

Source: Derived from Destination Analysts, Inc. 2017.

San Luis Obispo County has a coastline for beach activities (such as sand volleyball, hiking down the beach or at the tidepools) at all times of the year. Other year-round activities along the coast waters include stand-up paddle boarding, surfing, and kayaking. Cruises are also year-round and whale watching (for whales such as gray whales, humpback whales, and blue whales) occurs between December and February and again between March and May. Aside from whales, visitors also look out for otters, sea lions, seals, and pelicans as well. Visitation data is not currently available for San Luis Obispo County.

Additional beach and dune recreational activities are also popular in San Luis Obispo County. In particular, many visitors take part in off-road recreation at the Oceano Dunes State Vehicular Recreation Area, which is the only state park in California that allows recreational driving on the beach and in the dunes. More information is available [online](#). The State Vehicular Recreation Area operates via a Coastal Development Permit issued by the CCC.

Tourism

Tourism is a major contributor to San Luis Obispo County's economy. In 2017, 7.2 million visitors to the county spent nearly \$1.69 billion (Tourism Economics, 2018) (see Figure 4.6-4). Employment sustained by tourism was 23,386 jobs or 13.3% of all jobs in the county. Compared to 2014, visits, visitor spending, and tourism employment increased 6.8%, 9.2%, and 8.2%, respectively. Lodging represented the largest spending sector at approximately \$490 million, followed by spending on food and beverages (\$354 million). On average, each visitor spent \$234. Overnight visitors outpaced day visitors in 2017, increasing 5.2% from 2014 to 4.6 million visits. Day visitors increased 0.7% from 2014, registering 2.6 million visits.

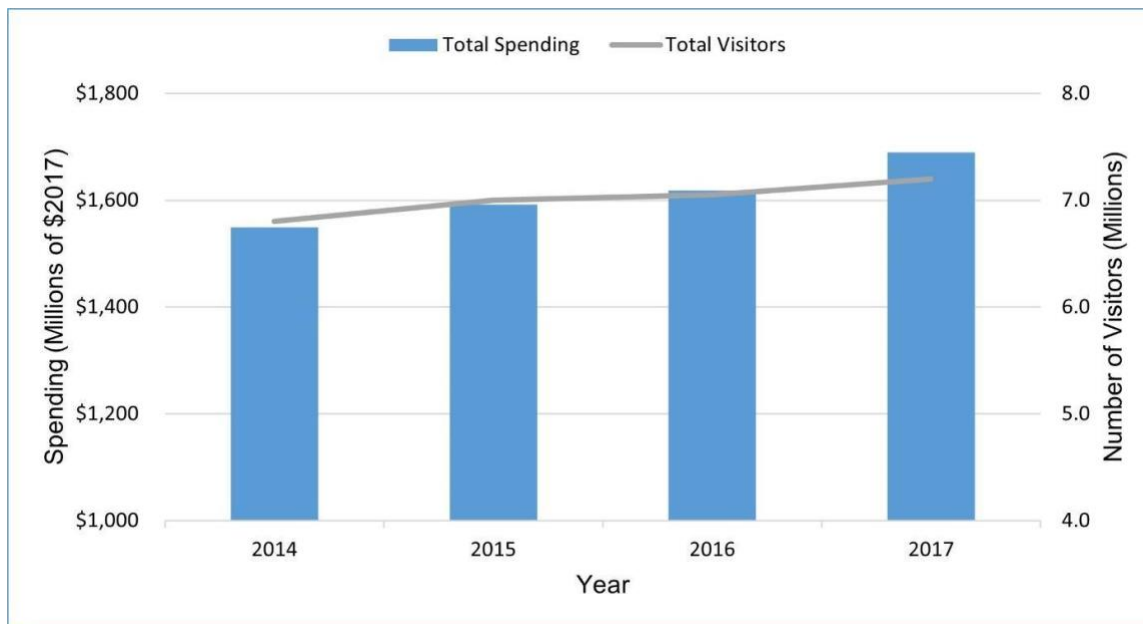


Figure 4.6-4. Total visitation and spending in San Luis Obispo County, 2014–2017. Source: Tourism Economics, 2018

In Santa Barbara County, key findings from a survey between September 2016 and August 2017, showed that total direct visitor related spending contributed \$1.9 billion to the local economy, which represented a 25.3% increase since 2013 (when visitor spending was \$1.5 billion; see

Figure 4.6-5; Destination Analysts, 2017). In Santa Barbara County, 7.2 million total visitors represented an 18% increase compared to 6.1 million in 2013. The majority of visitors surveyed reside within the U.S. (82%), while the remaining 18% were international residents, with Canada, the U.K., and China being the top international markets (up from 15.6% in 2013).

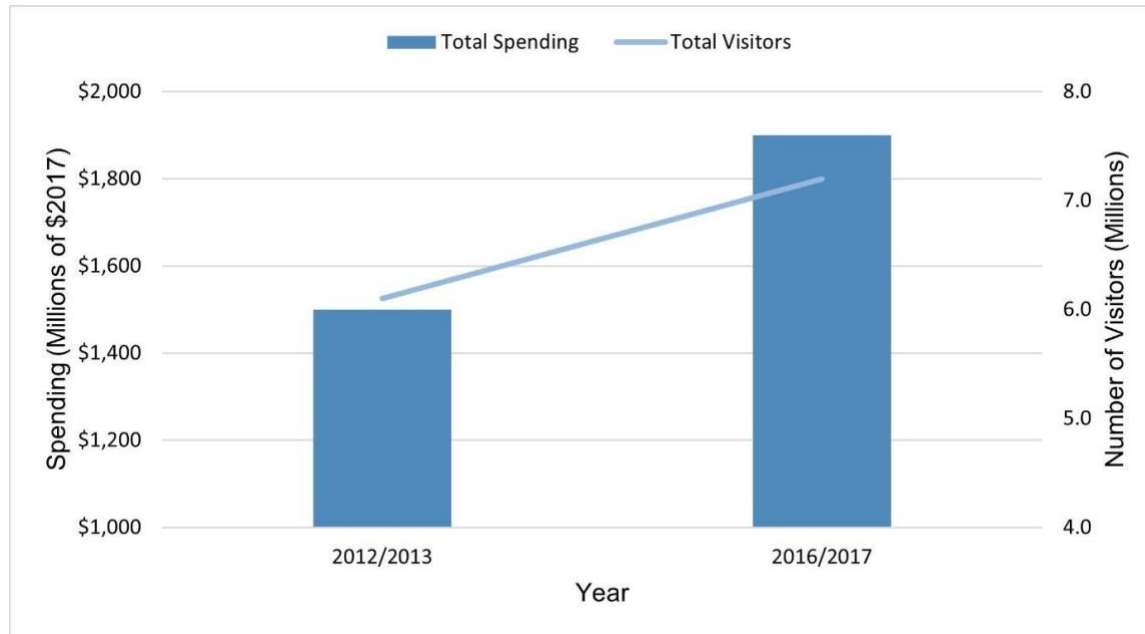


Figure 4.6-5. Total visitation and spending in Santa Barbara County, 2012–2017. Source: Destination Analysts, 2017

Available data indicates that visitor spending in the Santa Barbara South Coast supported more than 13,000 jobs (Destination Analysts, 2017). Visitors reported spending an average of \$430.22 per day compared to \$255.75 in the 2013 study. Going to the beach was one of the most common activities visitors participated in during their trip to the Santa Barbara South Coast (55.5%). Data is not available for the northern coast of Santa Barbara County.

Ocean-Related Facilities

There are 15 ocean-related facilities in San Luis Obispo County, 14 are public access. The two private boating facilities are in Avila Beach and Morro Bay (Table 4.6-4). In Santa Barbara County, there are six boat access locations (Table 4.6-5).

Table 4.6-4. Ocean-related facilities in San Luis Obispo County.

Facility Name	City	Type
San Simeon S.P. Leffingwell Landing	Cambria	Launch
Bay Front Marina	Morro Bay	Marina
DeGarimore's Central Coast Fuel and Ice Dock	Morro Bay	Fuel dock
Morro Bay – City Harbor	Morro Bay	Department/district
Morro Bay Boatyard	Morro Bay	Marine services/repair
Morro Bay Kayak Ramp – Kayak Shack	Morro Bay	Boating access
Morro Bay Marina	Morro Bay	Marina/mooring fields
Morro Bay Public Launch Facility	Morro Bay	Launch

Facility Name	City	Type
Morro Bay State Park Marina	Morro Bay	Marina
Olde Port Beach	Avila Beach	Launch
Port San Luis Boat Launch Facility	Avila Beach	Launch
Port San Luis Boatyard	Avila Beach	Marine services/repair
Port San Luis Harbor Dry Storage	Avila Beach	Dry storage
Port San Luis Harbor Mooring Field	Avila Beach	Launch/mooring fields
Port Side Marine	Avila Beach	Marina/launch

Source: California State Parks Division of Boating and Waterways, 2022a.

Table 4.6-5. Ocean-related facilities in Santa Barbara County within or near the study area.

Facility Name	City	Type
Gaviota State Park	Goleta	Launch
Goleta Beach County Park	Goleta	Launch
Goleta Beach Restoration	Goleta	Beach/erosion project
Harbor Marine Works	Santa Barbara	Marine services/repair
Santa Barbara Harbor	Santa Barbara	Marina/launch
Santa Barbara Palm Park (Chase Palm Park)	Santa Barbara	Boating access

Source: California State Parks Division of Boating and Waterways, 2022b.

Research

Research is conducted within the proposed sanctuary by a plethora of public and non-profit groups including academic institutions, non-profit and community-based organizations, Native American community groups, and regional, state, and federal agencies. Various studies include water quality monitoring for pollutants; oceanographic research including upwelling and sea surface temperature, wave, wind, and surface current monitoring; monitoring bird and mammal population distribution, status and trend and potential disturbance factors; fisheries assessment; and substrate and habitat mapping. Several agencies and organizations, among many others, conducting this research include the following: California State University Long Beach, California Polytechnic State University, NOAA's Deep Sea Coral and Research Technology Program, Morro Bay National Estuarine Reserve, California Cooperative Oceanic Fisheries Investigations long-term monitoring, and Santa Barbara Channel Long Term Ecological Research site and Partnership for Interdisciplinary Studies of Coastal Oceans. Some of the additional ongoing areas of research in the study area include the following:

- Projects investigating climate change, oceanographic conditions, acoustic monitoring, ecosystem connectivity, sea level, deoxygenation, species distributions, and ocean acidification.
- Monitoring and research to understand impacts of wind farm implementation on biological resources, including soundscape monitoring.
- Tribal cultural landscape studies and research on traditional historic properties, shipwrecks, aircraft, and other maritime heritage sites.
- Seafloor mapping, remotely operated vehicle (ROV) footage, and autonomous underwater vehicle (AUV) surveys.
- Water quality contaminant monitoring at beaches and tributaries.

Education

Educational programming in the coastal communities adjacent to the proposed sanctuary area includes formal education programs, informal education programs, docent and volunteer programs, and programs organized by Indigenous communities, regional tourism organizations, and nonprofit organizations. Some of the organizations offering educational programming in the area include the National Park Service, National Estuary Program, NOAA National Centers for Coastal and Ocean Science, California State University San Luis Obispo and Channel Islands, University of California, Santa Barbara, the Santa Ynez Band of Chumash Indians, Northern Chumash Tribal Council, yak tityu tityu yak tilhini Northern Chumash Tribe, Antioch University, and many more. More information on local museums and visitor centers is provided in the [Sanctuary Community Profile](#), which is provided as a supporting document for this EIS, and the [Santa Ynez Band of Chumash Indians Museum and Cultural Center](#). Some of the additional ongoing educational programs in the study area include the following:

- The ONMS-U.S. Forest Service partnership initiated in 2016 between sanctuaries in California and U.S. Forest Service Region 5.
- Informal school programs such as after-school programs and environmental education programs.
- Whale watching boat tours led by Subsea Tours and Morro Bay Whale Watching.
- Central Coast Parks Association coastal interpretation and naturalist programs.
- Highway 1 Stewardship Program group beach clean-ups.

4.6.2 Impact Assessment Methodology (Socioeconomics, Human Uses, and Environmental Justice)

Please note that impacts on commercial fishing and aquaculture, cultural heritage and maritime heritage resources, offshore energy, marine transportation, and DoD and homeland security activities are addressed in EIS sections 4.4, 4.5, 4.7, 4.8, and 4.9, respectively. The criteria to determine the impacts associated with socioeconomic, demographic, and environmental justice issues are based on federal, state, and local standards and regulations. Environmental justice considers the potential for the proposed action to result in disproportionate and adverse human health or environmental effects on communities with environmental justice concerns. Socioeconomics, human use, and environmental justice impacts are considered to be significant if the Initial Boundary Alternative or action alternatives were to result in:

- Substantial changes in unemployment rate.
- Substantial changes in total income.
- Substantial changes in business volume.
- A conflict or inconsistency with established land use plans (e.g., county plans).
- A substantial change in existing land uses.
- An interference with the public's right of access to the sea.
- A long-term preemption of a recreational use or substantial temporary preemption during a peak use season.
- Disproportionate and adverse human health or environmental effects on communities with environmental justice concerns.

- Substantial delay to obtain final project approval so as to render the project infeasible for fiber optic communications cable installation, maintenance, repair, or removal.

Socioeconomic, demographic, environmental justice, land use, recreation, research, and education data in and around the proposed sanctuary boundaries were examined to determine their sensitivity to the foreseeable impacts of the Initial Boundary Alternative and other alternatives. The method of analysis applied to the socioeconomics and environmental justice issue areas is qualitative since there is very little quantitative information to assess the Initial Boundary Alternative and other alternatives. NOAA does not consider the administrative process of seeking (applying for) and obtaining a permit from the sanctuary to be an adverse impact, but substantial delay to obtain final project approval from NOAA or any other federal, state, or local agency, is a component of determining a significant impact.

4.6.3 Environmental Consequences of the Initial Boundary Alternative (Socioeconomics, Human Uses, and Environmental Justice)

This section evaluates the impacts of implementing the Initial Boundary Alternative, as described in Section 3.2, related to socioeconomics, human uses, and environmental justice. In evaluating the Initial Boundary Alternative against the criteria listed above, the following determinations were made:

- The Initial Boundary Alternative is not likely to change the population of the sanctuary community. However, it could have some positive effects on unemployment rate, and on personal and business income. The Initial Boundary Alternative would result in a national marine sanctuary designation that may attract new users to the area for recreation and tourism, resulting in an increased demand for various tourism, recreation, and hospitality services. The Initial Boundary Alternative would not generally affect demographic communities of the two counties adjacent to the proposed sanctuary boundary because it would not potentially increase any adverse environmental and health impacts (such as cumulative impacts of pollution and other burdens like climate change). Additionally, this designation worked to strengthen engagement with the local communities, and included government-to-government consultations and coordination along with extensive public meetings.
- The Initial Boundary Alternative would not lead to any negative impacts related to environmental justice, as designations of national marine sanctuaries by NOAA help to ensure the enhancement of environmental quality for all demographic populations in the region. In addition, many of the potential impacts from designating the proposed sanctuary would result in long-term or permanent beneficial impacts by protecting sanctuary resources, which may have a positive impact on communities by providing employment and educational opportunities, and potentially result in improved ecosystem services. The establishment of a sanctuary in this region is likely to positively impact communities with environmental justice concerns, as a result of actions proposed in the management plan. Examples include working with Indigenous groups for Tribal participation and collaborative co-stewardship (Indigenous Cultural Heritage Action Plan); and working with local and regional organizations to promote sanctuary sustainable and equitable tourism, activities, and events (Blue Economy Action Plan).

- The Initial Boundary Alternative is expected to result in long-term beneficial impacts on local residents (such as the health and well-being of children). As contributors to mitigation, adaption, and resilience, national marine sanctuaries are an important nature-based solution to climate change. The National Marine Sanctuary System is taking proactive steps to respond to climate change by adapting to the changing ocean and supporting the capture and storage of carbon dioxide within sanctuaries' coastal and ocean ecosystems, also known as blue carbon.
- The Initial Boundary Alternative would not conflict with federal, state, or local plans, policies, or regulations, including county land use plans. The proposed sanctuary is intended to offer additional resource protection, consistent with existing federal and state policy.
- The minor beneficial and adverse impacts on research and education would be similar across all action alternatives.

Human Uses

Protecting these important resources under the Initial Boundary Alternative would provide benefits to recreation and tourism and would also provide important benefits to people who use the sanctuary and depend on a functioning, healthy, and resilient ecosystem for cultural practices, recreation, and livelihoods. Some of these benefits would include visitors and tourists experiencing enhanced enjoyment from outreach and interpretive services.

The proposed regulations would not restrict activities of user groups such as recreational fishing and other marine recreation. The sanctuary would not directly regulate lawful fishing activities; recreational fishing is included in that category (see Section 4.4 for impact analysis on commercial fishing). Human uses such as recreational fishing rely on healthy marine ecosystems for their success. Sanctuary regulations would limit harmful discharges into the sanctuary and would restrict other prohibited activities that may adversely affect resources in the sanctuary. The Initial Boundary Alternative would conserve and potentially improve the sanctuary resources and therefore is likely to provide beneficial impacts on the marine uses (recreation, fishing, and cultural practices) and the industries that support those uses.

The Initial Boundary Alternative would not adversely affect public access to the shoreline, as there are no proposed prohibitions against public access. Ocean access would remain unchanged. For example, recreational access and legal activities at the Oceano Dunes State Vehicular Recreation Area would continue to be allowed. Specific to the state's permitted activities at Oceano Dunes, NOAA could certify the existing CCC permit (see the CHNMS certification regulations at 15 C.F.R 922.234). Designating the waters off of San Luis Obispo and Santa Barbara counties as a national marine sanctuary under the Initial Boundary Alternative is expected to have beneficial effects on recreation and tourism overall. Sanctuary status may serve to attract visitors to the area and provide better quality resources in the future for residents and non-residents of the area engaging in recreation activities and cultural activities in the proposed area. Sanctuaries across the U.S. generally increase recognition of their unique and remarkable natural and cultural resources, which lead to increased tourism opportunities (NAPA, 2021).

Sanctuary designation under the Initial Boundary Alternative would provide added protection to the natural resources that contribute to the area's value as a recreation-tourist destination, while

not restricting consumptive and non-consumptive activities such as boating, fishing, wildlife viewing, and coastal access. This could result in a beneficial impact on recreation and tourism. Employment opportunities from increased tourism and recreation-related activities include jobs in the hospitality, boating, transportation, guide services, and other support service industries to accommodate travelers interested in coastal activities and opportunities. Therefore, NOAA anticipates **no adverse impacts** on human access or recreation under the Initial Boundary Alternative.

Vessels would be prohibited from discharging wastes, pollutants, and untreated sewage in the Initial Boundary Alternative under the sanctuary regulations, with exceptions for several normal operating procedures and clean discharges as provided at 15 C.F.R. 922.232(a)(2)(i). Additionally, vessel discharges that would be prohibited by NOAA within the sanctuary but that are otherwise lawful would still be allowed outside of the sanctuary boundaries, so long as the discharged material does not subsequently enter the sanctuary and cause injury to sanctuary resources or qualities, as provided at 15 C.F.R. 922.232(a)(2)(iii). Overall, the proposed discharge regulations would help maintain and may improve water quality and ecosystem health within the Initial Boundary Alternative, on which thriving fish populations depend (see Section 4.4). Recreational vessel operators (private and charter) are expected to be able to run their vessels in a manner consistent with the sanctuary discharge regulation (i.e., either already possess the appropriate MSD or choose to install an MSD or portable toilet), plan accordingly for holding untreated sewage wastes while within waters of the Initial Boundary Alternative, and either lawfully discharge while outside the sanctuary or at port using an appropriate waste-handling facility. Should a vessel owner or operator choose to install an MSD or a portable toilet, there would be one-time costs for purchase of the device and installation, and periodic costs for maintenance. While an MSD could be expensive to install because vessel renovations could be involved, the cost for a portable toilet can be a hundred dollars or less. There is no way to accurately estimate costs for installing MSDs or portable toilets due to the wide range of vessel and MSD/portable toilet designs and varying labor costs. NOAA lacks data to quantitatively estimate the number of recreational vessel operators who would choose to install an MSD or portable toilet as a means to comply with the discharge regulation. NOAA believes with these uncertainties taken into consideration, the proposed discharge regulation has the potential to cause some direct, short-term, minor to moderate adverse impacts on individual recreational vessel (private and charter) operators under the Initial Boundary Alternative.

The proposed regulation prohibiting desertion of a vessel in the sanctuary under the Initial Boundary Alternative could place an additional economic burden on owners of recreational vessels abandoned at anchor but at risk of sinking, or vessels that are otherwise incapacitated and need to be moved or salvaged before sinking or running aground and causing greater environmental damage. The regulation is also designed to require immediate removal of any hazardous substances from an abandoned vessel. While this may be a burden for the recreational vessel owner, the overall risk of an individual boat being abandoned is relatively small. Within the Initial Boundary Alternative (which excludes local harbors), recreational boaters are not expected to frequently engage in vessel abandonment. Therefore, the proposed sanctuary regulation prohibiting deserting a vessel or leaving hazardous material aboard a deserted or grounded vessel (15 C.F.R. 922.232(a)(7)) is expected to cause **short-term, indirect, and minor adverse impacts** on the recreational boating community as a whole.

NOAA has added this additional discussion of recreational vessels under a new “human uses” section to the final EIS to clarify impacts relating to the discharge and vessel abandonment regulations, in consideration of comments and information provided during scoping and the public comment period on the draft designation materials. As described above, NOAA does not anticipate any significant impacts on recreational vessels and does not consider the overall impact on socioeconomics, human uses, and environmental justice to be significantly different in manner or extent from those already considered in the draft EIS.

The Initial Boundary Alternative would also include a regulation that would prohibit disturbance of the seabed within the proposed sanctuary, yet also include exceptions for several activities, including anchoring a vessel, installing an authorized navigational aid, and repairing, replacing, or rehabilitating an existing dock, pier, breakwater, or jetty. As described in Section 3.2.2, aside from the enumerated exceptions, approval of any coastal construction involving submerged lands in the proposed sanctuary area would be limited to certification of existing permitted uses (e.g., an existing pier) or issuance of a sanctuary general permit or ONMS authorization for a new or expanded use pursuant to the proposed sanctuary regulations. A special use permit could be issued for activities on or in submerged lands for activities that “do not destroy, cause the loss of or injure sanctuary resources” (NMSA Section 310(c)(3)). This permit could be used for: placement and recovery of objects for a public event on non-living substrate; or, placement and recovery of objects related to commercial filming (may also be allowed for discharge). NOAA does not consider the administrative process to seek and obtain a permit from the sanctuary to be an adverse impact.

A **moderate beneficial impact** on research and education may take place if the Initial Boundary Alternative facilitates additional research and education programs or projects in the area. Positive market economic impacts for research and education activities are also likely to the extent the Initial Boundary Alternative results in increased research and education activities. Research and education activities that constitute scientific research or scientific monitoring of a sanctuary resource or quality, would generally qualify for a sanctuary general permit as long as the permit procedures and review criteria are met. Therefore, adverse impacts of the proposed sanctuary regulations on research and education activities would be negligible because most of these activities would be allowed or would be eligible for a sanctuary general permit if they were otherwise prohibited under the proposed regulations. In rare instances, it is possible that new research activity would not qualify for a permit or authorization. The proposed certification regulation would allow approval of preexisting uses in the proposed sanctuary that are specifically authorized by a valid federal, state, or local lease, permit, license, or right of subsistence use or access, if those activities are in existence on the effective date of sanctuary designation. The proposed regulations define the application and certification approval process. NOAA does not consider the administrative process to seek and obtain a permit from the sanctuary to be an adverse impact.

Land Use

For the potential impacts on the telecommunications industry and submarine fiber optic cables, see the specific section for those land use activities below. For the potential impacts on any land use related to offshore energy, see Section 4.7.3 of this EIS.

Establishing discharge regulations in the proposed sanctuary area would provide an overall **beneficial impact**, by limiting pollutants in the ocean environment. The proposed discharge regulations would apply within the proposed sanctuary boundaries and would also prohibit the discharge from onshore land uses or discharge of any material beyond the boundary of the sanctuary that subsequently enters the sanctuary and injures a sanctuary resource. This measure would help reduce potentially harmful pollutants such as oil, sewage, and other hazardous materials from injuring sanctuary resources. Although many land uses, such as livestock grazing, agriculture, and suburban development may discharge pollutants that enter the sanctuary through runoff, the threat of any one discharge injuring a sanctuary resource is very small to negligible. A prohibited discharge under the sanctuary regulations may also be considered for a permit, authorization, or certification, as applicable and as described above. Overall, the sanctuary designation is expected to result in **long-term, moderate beneficial impacts** on recreational, tourism, and commercial uses of the sanctuary and the local region. Only **negligible** to **minor adverse impacts** are expected related to land use development.

Telecommunications and Submarine Fiber Optic Cables

NOAA has added this section on telecommunication and fiber optic cables to the final EIS to clarify cable impacts, in consideration of comments and information provided by telecommunications companies during scoping and the public comment period on the draft designation materials. As described below, NOAA does not anticipate any significant impacts on telecommunication and fiber optic cables and does not consider the overall impact on socioeconomics, human uses, and environmental justice to be significantly different in manner or extent from those already considered in the draft EIS.

The proposed regulations would prohibit disturbance of the submerged lands and placing a structure on or in the submerged lands. An existing or proposed submarine fiber optic cable, whether for commercial or research purposes, would be prohibited unless approved by NOAA, through one of several permit processes. The 11 existing submarine fiber optic cables crossing through the sanctuary study area can receive a certification under 15 C.F.R. 922.10, 15 C.F.R. 922.232(g), and 15 C.F.R. 922.234 to allow existing, permitted structures on the submerged lands and activities present at the time of sanctuary designation (see Section 3.2.2 for more information on certifications). Normal maintenance activity on existing cables, while rare, is sometimes necessary to repair a cable break. Typically, this requires grappling to find and retrieve the broken cable (or cable ends) or otherwise disturbing the submerged lands. New cable segments spliced in to repair the break are lowered down to rest on or in the submerged lands. Some underlying permits to allow a cable's installation may already contemplate and allow for repair of cables, in which case the sanctuary certification process could cover that activity. If not, NOAA would be able to review a proposal to repair and replace a cable segment, or remove a cable segment, via an ONMS authorization process of an applicable underlying permit (such as a USACE permit, if applicable).

New cable proposals could also be reviewed and approved by NOAA consistent with guidelines published in 2011: "Policy and Permit Guidance for Submarine Cable Projects." For commercial telecommunication cables, these guidelines and CHNMS regulations anticipate NOAA's considering and issuing an ONMS authorization of an underlying federal, state, or local agency lease, permit, license, approval, or other authorization (see 15 C.F.R. 922.232(e) for CHNMS),

subject to completion of environmental review and satisfaction of permit review criteria. In the past, this has meant approving an ONMS authorization of a USACE permit allowing installation of the cable. NOAA is actively evaluating whether there may be additional valid federal, state, or local permits, licenses, or approvals that may also be authorized in this context. In the past, NOAA has also relied on its authority to issue a special use permit to allow a cable to remain in or on the seabed. Historically this has been done because there had been time limitations in the USACE underlying permit. Relying on the authorization of a CCC process as described above, which is valid for the life of a cable project, may eliminate the need for a special use permit in offshore California waters. A statutory limitation on the special use permit is it can only be issued for five years; however, it can be (and historically always has been) extended upon request. Issuing a special use permit allows NOAA to assess a fair market value for use of the seafloor especially for the portions buried in the submerged lands of the sanctuary. However, as described in Section 3.2.2 of the final EIS, NOAA issued a Federal Register notice on August 16, 2024 that modified the special use permit category for the continued presence of commercial submarine cables in the following way: for a two-year period beginning on August 16, 2024, the special use permit category does not apply to sanctuaries designated after August 16, 2024, including the proposed CHNMS. In other words, for the duration specified in the notice (and subject to extension), the continued presence of commercial submarine cables in CHNMS is not subject to the requirements of Section 310 of the NMSA.

NOAA has approved several ONMS authorizations/special use permits for new submarine fiber optic cables for commercial purposes and sanctuary general permits for cables built for research purposes within national marine sanctuaries. It has also certified existing cables. For example, in 2016, NOAA certified two commercial cables included with the expanded GFNMS boundaries. This permitting capacity shows that submarine fiber optic cables can be approved within national marine sanctuaries including CHNMS. An array of submarine cables already exists in the proposed sanctuary that have been permitted by partner agencies such as the CCC and includes necessary permit conditions to ensure resource protection. Without project-specific information, NOAA cannot anticipate at this time what, if any, additional mitigation measures it would require above measures required by partner agencies like USACE, CCC, and CSLC. Furthermore, NOAA is committing to revising its 2011 policy and permitting guidance for submarine cables in 2024 through a public process, allowing telecommunications companies and others to suggest other ways to streamline the overall permitting process, thus further lessening any impact from mitigation or reporting requirements that may arise through the NOAA permit review process.

NOAA acknowledges that some telecommunication companies commented on the draft EIS that they often route cables away from sanctuaries to avoid any delays or enhanced regulatory costs, including fair market value assessments they perceive from sanctuary permitting processes. These comments are also addressed in detail in final EIS Appendix A: Response to Comments (see responses to Comments FC-3 and FC-7). Although Section 4.7 of this final EIS concludes that the Initial Boundary Alternative would have moderate adverse impacts on installation, maintenance, repair, and continued presence of subsea electrical transmission cables, NOAA determines that impacts on telecommunication cables would not rise to the level of moderate adverse, for several reasons. NOAA has experience authorizing telecommunication cables as described above, which is still being developed for energy transmission cables. For energy

transmission cables, developers have concerns about existing financing models and the need to develop alternative financing models that are not limited by reliance on a sanctuary permit process (and lack of an easement or right-of-way) for construction and operation of subsea electrical transmission cables within the proposed sanctuary. For these reasons, NOAA determines that any **adverse impacts** from the Initial Boundary Alternative on telecommunication companies would be **short-term, localized, and minor** if any special mitigation measures were needed to protect sanctuary resources. The certification process for existing cables would likely cause **negligible adverse impacts** on telecommunications companies, as NOAA's practice, as envisioned by NMSA 304(c), is to approve existing, permitted cables (and other structures) via certifications and any new reporting requirements or other conditions would be a negligible burden on operators.

4.6.4 Environmental Consequences of Alternative 1 (Socioeconomics, Human Uses, and Environmental Justice)

In evaluating Alternative 1, Bank to Coast, against the criteria listed above, NOAA makes the following determinations.

Alternative 1 would have similar potential consequences as the Initial Boundary Alternative. The reduction in proposed sanctuary area under Alternative 1, compared to the Initial Boundary Alternative, may result in proportionally less beneficial impacts on the adjacent communities. Only negligible to minor adverse consequences on land use development are expected from this alternative, the same as identified for the Initial Boundary Alternative. The minor to moderate adverse impacts on individual recreational vessel operators due to discharge regulations would be the same as the Initial Boundary Alternative. The minor adverse impacts on recreational vessel owners due to vessel desertion regulations would be the same as the Initial Boundary Alternative. The minor adverse impacts on telecommunications companies due to potential conditions or requirements imposed through permit review of submarine fiber optic cables would be the same as the Initial Boundary Alternative. Also, for some cable routes, Alternative 1 would reduce the distance a cable may traverse the sanctuary because it removes approximately 20 miles (width) of offshore waters and seabed as compared to the Initial Boundary Alternative.

4.6.5 Environmental Consequences of Alternative 2 (Socioeconomics, Human Uses, and Environmental Justice)

In evaluating Alternative 2, Cropped Bank to Coast, against the criteria listed above, NOAA makes the following determinations.

Alternative 2 would have similar potential consequences as Alternative 1. The reduction in proposed sanctuary area under Alternative 2, compared to the Initial Boundary Alternative, may result in proportionally less beneficial impacts on the adjacent communities. Only negligible to minor adverse consequences on land use development are expected from this alternative, less than those identified for the Initial Boundary Alternative, due to the smaller proposed sanctuary area. The adverse impacts on individual recreational vessel operators due to discharge regulations would be lessened compared to the Initial Boundary Alternative, but would remain minor to moderate. The adverse impacts on recreational vessel owners due to vessel desertion regulations would be lessened compared to the Initial Boundary Alternative, but would remain

minor. Alternative 2 would lessen the minor adverse impacts on telecommunications companies compared to the Initial Boundary Alternative because the area excluded between Montaña de Oro and Cambria would not be in the sanctuary and thus neither would the landing site at Los Osos for five existing cables, and much of the route for another new cable in the northern corridor that would land at Grover Beach. Also, for some cable routes, Alternative 2 would reduce the distance a cable may traverse the sanctuary because it removes approximately 20 miles (width) of offshore waters and seabed from the proposed sanctuary as compared to the Initial Boundary Alternative. As such, impacts on telecommunications companies would be reduced under Alternative 2, but would remain minor adverse.

4.6.6 Environmental Consequences of Alternative 3 (Socioeconomics, Human Uses, and Environmental Justice)

In evaluating Alternative 3, Diablo to Gaviota Creek, against the criteria listed above, NOAA makes the following determinations.

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) does not alter the level of beneficial or adverse impacts on socioeconomic activities discussed in this section of the EIS. The boundary area excluded is too small, and the uses within the excluded area are not sufficiently distinct enough from the rest of Alternative 3, to meaningfully affect the impact of sanctuary designation on socioeconomic, human uses, or environmental justice activities. As such, this minor modification would not result in environmental impacts other than those already considered.

Alternative 3 would have similar potential consequences as the Initial Boundary Alternative. The reduction in proposed sanctuary area under Alternative 3, compared to the Initial Boundary Alternative, may result in proportionally less beneficial impacts on the adjacent communities. Only negligible to minor adverse consequences on land use development are expected from this alternative, less than those identified for the Initial Boundary Alternative, due to the smaller proposed sanctuary area. The adverse impacts on individual recreational vessel operators due to discharge regulations would be lessened compared to the Initial Boundary Alternative, but would remain minor to moderate. The adverse impacts on recreational vessel owners due to vessel desertion regulations would be lessened compared to the Initial Boundary Alternative, but would remain minor. Alternative 3 would lessen the minor adverse impacts on telecommunication companies compared to the Initial Boundary Alternative because far more of the routes for existing submarine fiber optic cables in the northern corridor would not be within the sanctuary, which reduces the chance a cable repair activity would be needed for the portion of a cable within the sanctuary.

4.6.7 Environmental Consequences of Alternative 4 (Socioeconomics, Human Uses, and Environmental Justice)

In evaluating Alternative 4, Combined Smallest, against the criteria listed above, the following determinations were made.

As with Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the level of beneficial or adverse

impacts on socioeconomics, human uses, and environmental justice discussed in this section of the EIS. The boundary area excluded is too small, and the uses within the excluded area are not sufficiently distinct enough from the rest of Alternative 4, to meaningfully affect the impact of sanctuary designation on socioeconomics, human uses, or environmental justice. As such, this minor modification would not result in environmental impacts other than those already considered.

Alternative 4 would have similar potential consequences as the Initial Boundary Alternative. The reduction in proposed sanctuary area under Alternative 4, compared to the Initial Boundary Alternative, may result in proportionally less beneficial impacts on the adjacent communities. Only negligible to minor adverse consequences on land use development are expected from this alternative, less than those identified for the Initial Boundary Alternative due to the smaller proposed sanctuary area. The adverse impacts on individual recreational vessel operators due to discharge regulations would be lessened compared to the Initial Boundary Alternative, but would remain minor to moderate. The adverse impacts on recreational vessel owners due to vessel desertion regulations would be lessened compared to the Initial Boundary Alternative, but would remain minor. Compared to the Initial Boundary Alternative, Alternative 4 would considerably lessen the minor adverse impacts on telecommunication companies because more than half of the existing submarine fiber optic cables within the study area would not be within the sanctuary; thus, substantially more repair activities and new cables, depending on routes proposed, could occur without NOAA review.

4.6.8 Environmental Consequences of Sub-Alternative 5a and 5b (Socioeconomics, Human Uses, and Environmental Justice)

Sub-Alternative 5a: Morro Bay Estuary

Sub-Alternative 5a would have similar potential consequences as the Initial Boundary Alternative. Overall, adding the Morro Bay Estuary to the Initial Boundary Alternative or to Alternative 1 is expected to result in some incremental beneficial impacts on both the local communities. Only incremental negligible to minor adverse consequences on land use development are expected under this sub-alternative, similar to those identified for the Initial Boundary Alternative. Only incremental minor to moderate adverse impacts on individual recreational vessel operators due to discharge regulations are expected under Sub-Alternative 5a, similar to those identified for the Initial Boundary Alternative. Incremental minor adverse impacts on recreational vessel owners due to vessel desertion regulations are expected, similar to those identified for the Initial Boundary Alternative. This alternative would have no impact on telecommunication companies because no existing or known proposed submarine telecommunication cables fall within this boundary alternative.

Sub-Alternative 5b: Gaviota Coast Extension

Sub-Alternative 5b is an extension along the Gaviota coast that may result in more beneficial impacts on the adjacent communities than identified for the Initial Boundary Alternative alone. Overall, adding the Gaviota extension to the Initial Boundary Alternative or any of the action alternatives is expected to result in some incremental beneficial impacts on local communities. Only incremental negligible to minor adverse consequences on land use development are

expected from this sub-alternative, similar to those identified for the Initial Boundary Alternative. Only incremental minor to moderate adverse impacts on individual recreational vessel operators due to discharge regulations are expected under Sub-Alternative 5b, similar to those identified for the Initial Boundary Alternative. Incremental minor adverse impacts on recreational vessel owners due to vessel desertion regulations are expected, similar to those identified for the Initial Boundary Alternative. Sub-Alternative 5b would have no impact on telecommunication companies because no existing or known proposed submarine telecommunication cables fall within this boundary alternative.

4.6.9 Environmental Consequences of No Action (Socioeconomics, Human Uses, and Environmental Justice)

Under the No Action Alternative, NOAA would not designate the proposed sanctuary and would not implement the proposed sanctuary regulations, management plan, and field activities to support management of the proposed sanctuary. Under the No Action Alternative, the beneficial impacts and negligible adverse impacts from the proposed sanctuary designation would not be realized. For example, the No Action Alternative would prevent NOAA from implementing additional resource protections and advance understanding of socioeconomic issues such as providing support for sustainable recreational activities within the sanctuary.

4.7 Offshore Energy

The offshore energy resources within the study area that may be affected by the Initial Boundary Alternative or other action alternatives include ongoing operations from existing oil and gas development projects, pending decommissioning and removal of several other offshore oil and gas facilities, the ongoing operations and potential decommissioning and removal of a nuclear power plant, and the potential permitting, construction, and operation of offshore wind energy generation and transmission facilities.

4.7.1 Regional Overview of Affected Environment (Offshore Energy)

Oil and Gas Development

The history of coastal, and eventually offshore, oil and gas development along the San Luis Obispo and northern Santa Barbara County coasts adjacent to the proposed sanctuary dates back to the early 1900s when the first production oil well was drilled onshore in the Santa Maria oil field. Over the last 115 years, oil and gas exploration, production, transportation, and shipping in this region have created a robust energy industry. A substantial amount of the regional oil production, as well as production from the San Joaquin Valley, was transported by rail and pipeline to a marine terminal at Avila Beach. This product was shipped to refineries along the West Coast and Hawai'i (Avila Beach Golf Resort, 2018). Some locally produced crude oil was refined in the region with the product sold across California.

By the late 1970s and early 1980s, offshore oil and gas development that had been previously centered in southern California, including southern Santa Barbara and Ventura counties expanded to include fields in federal waters offshore Gaviota and northern Santa Barbara County near VSFB. Unocal developed the Point Pedernales Unit from Platform Irene; Chevron and Texaco developed the Point Arguello Unit from Platforms Harvest, Hermosa, and Hidalgo;

and Exxon developed the Santa Ynez Unit from Platforms Hondo, Harmony, and Heritage. The Point Arguello Unit has now been relinquished and the platforms and wells permanently closed. The Point Pedernales Unit and former Point Arguello Unit are now owned and operated by Freeport-McMoRan oil company; Exxon/Mobil owns and operates the Santa Ynez Unit. Oil production from Point Pedernales and former Point Arguello has been shipped onshore via pipelines, and then on to refineries locally or outside the region via tanker or pipeline. Initial oil production from Platform Hondo was processed, stored, and loaded onto tankers via a moored offshore storage and treatment ship, but eventually all development from the Santa Ynez Unit came to shore via pipeline for processing and then to refineries outside the area via pipeline. Natural gas for all facilities was and still is shipped to shore via pipelines then processed, stabilized, used onsite, or sold to local utilities.

All the Point Pedernales and former Point Arguello units and any associated platforms, pipelines or cables to shore lie within the proposed sanctuary. Approximately 28 square miles of the Santa Ynez Unit are within the proposed sanctuary boundaries; none of the Santa Ynez Unit platforms are within the proposed sanctuary (see Figures 4.7-1 and 4.7-2). An oil pipeline, gas pipeline, and a power cable from Platform Hondo to shore lie within the boundaries of Sub-Alternative 5b, Gaviota Coast Extension; this corridor also includes a produced water pipeline connecting onshore processing facilities with Platform Harmony for offshore discharge. For different reasons, all production from all three projects—Point Pedernales, Point Arguello and Santa Ynez—is shut in, meaning no oil and gas production is occurring. Platform Irene, operated by Freeport-McMoRan, is temporarily shut in due to the closure of the Santa Maria refinery operated by Phillips 66, which had been handling its production. It was last producing in December 2022. Its lease unit is permitted to remain idle until November 2024 and will be terminated at that time unless the leaseholder reinitiates production or conducts other in-reservoir activities such as drilling new or reworking existing wells (B. Kurtz, BSEE, interagency communication, 2024). The three former Point Arguello platforms have been permanently shut in and are not operating. These three platforms are scheduled to be decommissioned and removed in the coming years. Production from the Santa Ynez Unit has been temporarily shut in since the Plains All-American Pipeline rupture in May 2015. It is possible that in the next five years, production from the Santa Ynez Unit could recommence if an onshore pipeline to ship production to refineries can be reestablished (E. Briggs, Santa Barbara County Planning & Development Department, personal communication, April 2022). Table 4.7-1 provides more details about these oil and gas facilities.

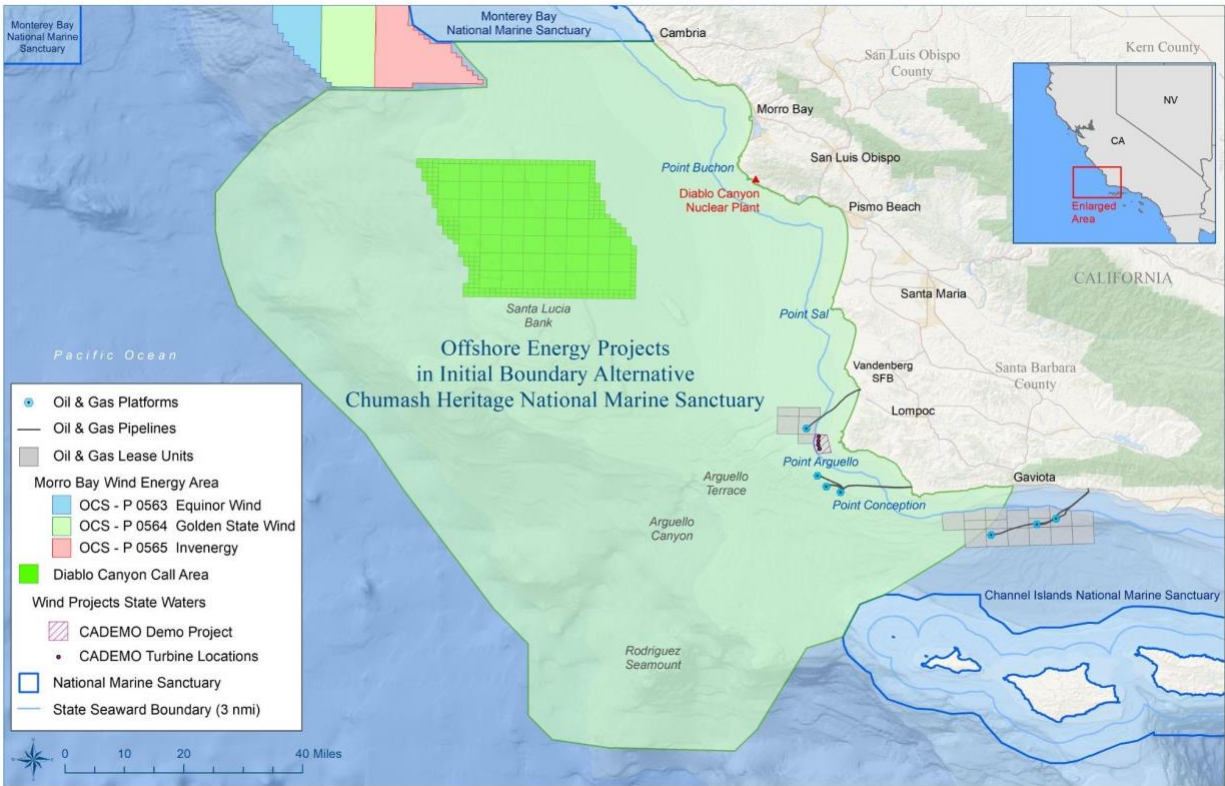


Figure 4.7-1. Overview of existing and proposed offshore energy projects in and adjacent to the study area. Image: NOAA

The region has also endured numerous spills and leaks from onshore and offshore oil and gas operations. For instance, one of the largest onshore petroleum spills in U.S. history continues to be remediated in the Guadalupe-Nipomo Dunes field along the coast in southern San Luis Obispo County. Likely greater than 20 million gallons of toxic petroleum product—different diluents injected into pipelines and storage tanks to aid processing and shipment of highly viscous, produced crude oil—leaked into sand dunes and reached the groundwater, with some of the product reaching adjacent wetlands and the ocean (Guadalupe Fund Committee, 2001). Also, in San Luis Obispo County, one of the most expensive oil cleanup efforts in California history (\$200 million) involved remediating the town of Avila Beach due to leakage of crude oil and refined product from a Unocal tank farm. Here too, petroleum products contaminated a coastal area, including soil and groundwater underneath businesses and homes, and reached the ocean (California Department of Fish and Game, 2001; Guadalupe Fund Committee, 2001; Martin, 1998).

Table 4.7-1. Existing offshore oil and gas facilities, for all alternatives (unless noted).

	Point Pedernales Unit	Point Arguello Unit			Santa Ynez Unit		
Area of unit overlapping with the proposed CHNMS	34.4 square miles	None. Since the leases and unit for Pt. Arguello project have been relinquished, the unit no longer exists.			27.8 square miles		
Platform Name	Irene	Hidalgo	Hermosa	Harvest	Heritage*	Harmony*	Hondo*
Pipelines ^a	20" oil 8" gas	16" oil 10" gas	24" oil to shore 20" gas to shore	12" oil 8" gas	20" oil 12" gas	20" oil 12" gas 12" water disposal	14" oil 12" gas
Miles of pipelines in proposed CHNMS ^b	9.5 mi in fed waters 8 mi in state waters	9.6 mi (to Hermosa)	12.2 mi in fed waters 6.9 mi in state waters	5.8 mi (to Hermosa)	None	10.8 mi (in state waters) ^c	None
Wells within proposed CHNMS	45 wells	None. Wells have been shut in.	None. Wells have been shut in.	None. Wells have been shut in.	24 wells, in Sacate formation.	None	None
Date installed	Aug. 1985	July 1986	Oct. 1985	June 1985	Oct. 1989	June 1989	June 1976
Operator	Freeport-McMoRan	Freeport-McMoRan	Freeport-McMoRan	Freeport-McMoRan	ExxonMobil	ExxonMobil	ExxonMobil
Status	Temporary Shut in	Permanent Shut in	Permanent Shut in	Permanent Shut in	Temporary Shut in	Temporary Shut in	Temporary Shut in
Oil produced, ^d cumulative	4.4 billion gallons	1.2 billion gallons	3.2 billion gallons	3.6 billion gallons	8.2 billion gallons	5.2 billion gallons	7.9 billion gallons
Gas produced, ^d cumulative	38.6 trillion cubic feet	22.8 trillion cubic feet	54.5 trillion cubic feet	99.9 trillion cubic feet	274 trillion cubic feet	264 trillion cubic feet	426 trillion cubic feet
Remaining reserves ^e (Est.)	464 million gallons	None			7.9 billion gallons		
Water depth	242 feet	430 feet	603 feet	675 feet	1,075 feet	1,198 feet	842 feet

Notes: *Outside proposed sanctuary boundaries for all alternatives. (a) There is also a power cable between Platform Irene and shore, and multiple cables between Platform Harmony and shore. (b) Miles shown are additive for various pipelines noted above. (c) Only for Sub-Alternative 5b, Gaviota Coast Extension. (d) Source: BSEE, data through 2022. (e) BOEM, 2021c.

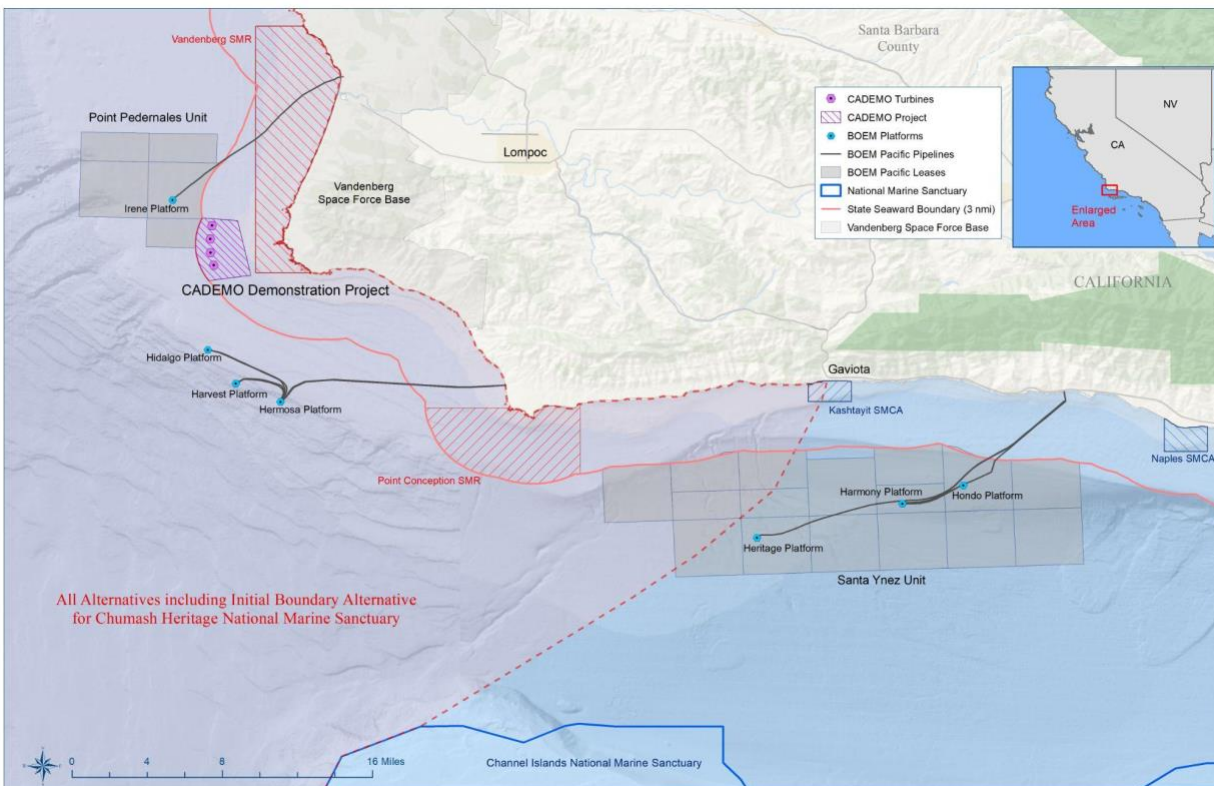


Figure 4.7-2. Detailed view of existing and proposed offshore energy projects in and adjacent to the east end of the study area. Image: NOAA

More recent offshore oil and gas development has also caused leaks into the marine environment. The pipeline from Platform Irene to shore (then operated by Torch) ruptured in September 1997, spilling 7,000 gallons of oil, which resulted in extensive environmental damage, including killing over 700 birds and fouling intertidal habitat and recreational beaches. The ultimate size of the settlement for civil claims, including natural resource damages, was \$3 million (Torch/Platform Irene Trustee Council, 2007).

In May 2015, an onshore rupture of the Plains All American pipeline carrying processed crude oil largely from the Santa Ynez Unit to refineries leaked approximately 123,000 gallons of crude oil, about half of which flowed several hundred yards through culverts and a ravine into the ocean near Refugio Beach. At least \$22 million from the settlement has been dedicated to habitat and resource restoration projects (Refugio Beach Oil Spill Trustees, 2021). Subsequent inspections of the entire Plains All American pipeline indicated numerous weak points such that the entire pipeline has been shut down, in effect preventing further production from the Santa Ynez Unit since May 2015. Exxon has been unsuccessful in obtaining permits to truck produced crude oil in order to allow the platforms to recommence operation. Industry attention is now focused on permitting repairs to the onshore pipeline that would allow operation from the three Santa Ynez Unit platforms. It may take at least another year to obtain permits and, if successful, several more years to repair the pipeline (E. Briggs, Santa Barbara County Planning & Development Department, personal communication, April 2022). Exxon had been producing

approximately 1.25 million gallons of crude oil and 27 million cubic feet of natural gas per day from its three platforms before the Refugio Beach Oil Spill (Exxon Mobil Corporation, 2018).

The offshore oil and gas industry in central and southern California is entering a new phase as platforms reach the end of their operational lives: decommissioning, platform and possibly pipeline removal, and offshore site remediation (BOEM, BSEE, & CSLC, 2019). The Bureau of Safety and Environmental Enforcement (BSEE) and BOEM will review and accept or reject decommissioning applications for the removal and disposal of oil and gas platforms, associated pipelines, and other facilities offshore southern California on the Pacific Outer Continental Shelf, as required by regulation and governing lease terms (BSEE & BOEM, 2023). Some projects like the offshore facilities for the Point Arguello Unit are already shut in and closed down. Companies throughout the region are preparing plans for facility decommissioning and removal, and once large equipment is available and permits issued, removal activities will begin. BSEE, the lead federal agency for platform decommissioning and removal, anticipates that removal of platforms in the region, including within the study area, will tentatively begin in 2027 and continue for at least 10 years for about a dozen platforms and pipelines. As described in the final Programmatic EIS for Oil and Gas Decommissioning Activities on the Pacific Outer Continental Shelf (BSEE & BOEM, 2023), BSEE analyzed three principal decommissioning and removal alternatives for infrastructure of an offshore oil and gas project once wells are plugged and petroleum and other toxic materials are removed from offshore structures:

- **Complete Removal** – Complete removal of platforms, associated infrastructure, including pipelines and power cables, and other facilities. All platform structures would be removed via cutting tools or explosives below the mudline, and the platform and other structures transported by barge to shore to be recycled or disposed of.
- **Partial Removal** – Includes partial platform removal to a depth of 85 feet below the sea surface, rather than complete removal, and abandonment-in-place (rather than complete removal) of pipelines. Accessible facilities and obstructions would be removed, and only the topsides would be disposed of onshore.
- **Rigs-to-Reef Option** – Includes partial platform removal, with the upper jackets placed as an artificial reef. Decking on an offshore oil and gas platform would be removed; the undersea structure could be partially left in place or fully removed and relocated to another site to serve as an artificial reef. Facility owners could offer or be required to share some cost savings for monitoring effectiveness given this option is often considerably less expensive. This option will generally always be a hybrid where some elements of the offshore facility such as the deck structures, offices, and labs are not suitable for ocean disposal and thus removed to shore and recycled or disposed of. Associated pipelines would be abandoned in place.

While BOEM regulations pertaining to platform decommissioning also allow the owner of a facility, or a third party, to propose re-use/alternate use of an offshore energy structure onsite (30 C.F.R. part 586), the final BOEM/BSEE programmatic EIS was unable to evaluate alternative reuse due to a lack of detail for any specific project. BSEE issued a Record of Decision in December 2023 that selected full removal of all platforms, pipelines, and cables to shore on the Pacific Outer Continental Shelf (BSEE, 2023). With this decision, leaseholders would be expected to submit applications for full removal of all offshore facilities, but could still

request approval of one of the alternatives considered in the programmatic EIS. The programmatic EIS also included potential mitigation measures that will guide future site-specific decommissioning and removal (BSEE & BOEM, 2023).

The Initial Boundary Alternative includes four platforms—Irene, Hidalgo, Harvest, and Hermosa—and their pipelines and cables to shore that are covered by the programmatic EIS. Sub-Alternative 5b includes pipelines and a power cable to the platforms in the Santa Ynez Unit; however, that unit's three platforms are not within any boundary for CHNMS. See Table 4.7-1 for details about project elements. Full removal of structures on the platforms, the platform jackets, pipelines, and power cables will all require weeks to months of work at each platform. Sanctuary regulations prohibiting discharges, disturbance of the submerged lands, and possibly wildlife disturbance could be pertinent to decommissioning and removal activities.

Assessments of environmental impacts and alternatives for decommissioning projects including assessing impacts on natural and cultural resources from complete removal, partial removal, or rigs-to-reef scenarios would be conducted by BSEE and CSLC, possibly the County of Santa Barbara and others to comply with federal and state environmental laws, respectively.

Proposals to conduct leasing for potential new oil and gas development within the study area is unlikely over the next five years. However, given BOEM estimates, there are still considerable recoverable oil and gas reserves in this area (2.18 billion barrels of oil [91.5 billion gallons] and 2 trillion cubic feet of natural gas) (BOEM, 2020) and potential future leasing to develop these reserves cannot be ruled out.

Diablo Canyon Power Plant

PG&E owns and operates the Diablo Canyon Power Plant (DCPP), which is located onshore near Avila Beach in San Luis Obispo County. Its ocean intake structure is located within the marina behind a breakwater, and its discharge outfall structure is located along the shoreline in Diablo Cove. The plant's permit requires operations to cease and decommissioning to commence in 2024 and 2025. PG&E, at the urging and with incentives provided by the state and federal governments, has been exploring continuing to operate the DCPP for another five years to as many as 20 years. On December 14, 2023, California Public Utilities Commission conditionally approved extending DCPP operations until 2029 and 2030 for Units 1 and 2, respectively (California Public Utilities Commission, 2023). In November 2023, PG&E submitted its license renewal application to the Nuclear Regulatory Commission (NRC) to extend DCPP operations for another 20 years. If the licenses are renewed, they would expire in November 2044 and August 2045, respectively (Nuclear Regulatory Commission, 2023). The NRC determined the application was sufficient for review in December 2023, conducted public scoping from January to February 2024, and plans to complete the draft and final supplemental environmental impact statements by summer of 2025. The final decision on the license renewal is expected by August 2025 (Nuclear Regulatory Commission, 2024). While under review, DCPP will be able to continue operating Units 1 and 2. According to the NRC, the existing operating licenses will remain valid until the NRC has made a final determination on the application (88 Fed. Reg. 87817 (December 19, 2023); PG&E Currents, 2023). PG&E also has the discretion to continue with its plans to decommission the plant, remove most of the structures and remediate the site. The County of San Luis Obispo, the lead agency conducting environmental review of the plan for

power plant decommissioning, facility removal, and eventual site remediation, released a draft environmental impact report for the DCPD Decommissioning Project in July 2023 (County of San Luis Obispo, 2023). The final environmental impact report is expected to be released late 2024. This EIS has had to assume both scenarios in assessing potential impacts of the sanctuary designation on offshore energy including this facility. The proposed sanctuary boundary for the Initial Boundary Alternative and for alternatives adjacent DCPD—alternatives 1 and 2—includes Diablo Cove but excludes the actual marina.

If continued operations of DCPD were approved by all necessary regulatory agencies and PG&E elected to continue operations, extended operation of the DCPD would include discharge of a very large volume of cooling water at a temperature well above ambient. PG&E draws in 2.5 billion gallons of seawater daily for use as once-through cooling water to help cool the power plant and discharges this same volume through a shore-side outfall at approximately 20 degrees above ambient temperatures. PG&E also discharges treated sewage, storm runoff, and desalination brine from this same outfall (see Section 4.2.1 for more details on discharges).

For more than a decade, California agencies have adopted policies and regulations to ban or phase out once-through cooling water discharges because of impacts of both entrainment via intake systems and heat related impacts on organisms and nearshore habitats. Extending operations of DCPD would need to comply with these state policies and regulations related to once-through cooling water.

For the decommissioning pathway, PG&E plans to stabilize radioactive material and equipment and remove large structural elements from 2024–2029. Removal of smaller elements and soil remediation would occur from 2029–2034. Final site remediation and restoration would take place from 2032–2039. Related to the marine environment, PG&E proposes to keep the marina and seawater intake system (within the marina) intact after all decommissioning, but will remove the thermal outfalls in Diablo Cove, just north of the marina (PG&E, 2021). Regardless of whether or not DCPD continues to operate, as described below, the plant will one day be decommissioned and potential impacts of the new national marine sanctuary discussed later are relevant.

There are numerous ideas, suggestions, and concepts for re-use of the power plant site for recreation purposes, scientific study, Indigenous ownership, and other purposes. No plans have been developed to a level of detail that would allow NOAA to evaluate how the sanctuary might impact those potential activities. However, this EIS considers the potential subsequent use of the onshore grid connection at DCPD via subsea electrical transmission cables from the Morro Bay lease areas (California Independent System Operator, 2023; Golden State Wind et al., 2023). The timing and capacity of this potential transmission capability would depend on future plans for DCPD, as briefly discussed above.

Offshore Wind Development – Federal Waters

On the Outer Continental Shelf in federal waters outside national marine sanctuaries and other federal protected areas, BOEM has the authority to issue leases, rights of way, and easements, and to regulate offshore wind development. While BOEM does not have the authority to lease areas for wind development in national marine sanctuaries, the Outer Continental Shelf Lands Act (OCSLA) recognizes other federal agency jurisdiction and authorities to regulate activities

on the Outer Continental Shelf. Under NMSA, NOAA has the authority to manage all uses in sanctuaries. In several sanctuaries, NOAA has allowed oil and gas development as well as construction and the continued presence of submarine telecommunication cables. This authority would similarly allow NOAA to regulate wind development within the proposed sanctuary, including the placement and continued presence of subsea electrical transmission cables, via an ONMS authorization and/or special use permit; other agencies would also have a permit role for installation of subsea electrical transmission cables or other offshore wind activity. NOAA intends to coordinate with BOEM, as necessary, on the potential integration of NMSA authorities with BOEM's OCSLA authorities for the purposes of specific wind development projects contemplated in the vicinity of and within the study area. A more detailed description of NOAA's likely permitting approach for transmission cables within the proposed sanctuary is provided in Section 4.7.3. The certification process could also be used to allow existing permitted uses that pre-date the sanctuary designation to continue to operate consistent with federal, state, or local permits, leases, or authorizations.

Planning, engineering, and leasing for offshore wind in federal waters is rapidly developing at the time of drafting this EIS in response to demand driven by the state of California's goals of 2–5 GW of offshore wind energy by 2030, and 25 GW of offshore wind energy by 2045. Similarly, the federal government has a goal of deploying 30 GW of offshore wind energy capacity by 2030, and 15 GW of floating offshore wind energy by 2035.

In October 2018, BOEM issued a Call for Information and Nominations related to two potential wind development sites in the study area: the Morro Bay Call Area and the Diablo Canyon Call Area. The calls for public and industry input were preceded by two years of planning and study by BOEM, including consultation with the Santa Ynez Band of Chumash Indians and other government agencies, as well as coordination with Indigenous groups, industry, and fishermen. In May 2021, BOEM designated a refined Morro Bay Wind Energy Area (see Figure 4.7-1). In contrast, BOEM did not move forward with a wind energy area designation for the Diablo Canyon Call Area at that time. However, they could pursue it in the future with additional outreach, collaboration, and a public process. A slight adjustment was made to the proposed sanctuary boundary to ensure the sanctuary and the Morro Bay Wind Energy Area did not overlap. In October 2022, BOEM finalized the designation of the Morro Bay lease areas, and the Morro Bay lease areas are not within the boundaries of the Initial Boundary Alternative, nor any action alternative. However, as described below, subsea electrical transmission cables would likely be required to pass through the proposed sanctuary under several action alternatives if wind energy facilities are developed in the Morro Bay lease areas.

BOEM opened the lease bidding process on December 6, 2022, concluding a day later. All three Morro Bay lease areas in the Morro Bay Wind Energy Area were bid on and provisional winners were declared. Leases were awarded to successful bidders on June 1, 2023. The westernmost lease (OCS-P 0563) is owned by Equinor Wind U.S. LLC, the central lease (OCS-P 0564) is owned by Golden State Wind LLC, and the easternmost lease (OCS-P 0565) is owned by Invenergy California Offshore LLC (Figure 4.7-3). Leaseholders have a one-year preliminary term followed by five years to complete characterization of the lease site and potential routes for cables to shore, engineering, and other planning, culminating in a Construction and Operations Plan. BOEM then conducts an environmental and technical review of the Construction and

Operations Plan and issues a final action to approve the plan, disapprove it, or approve it with modifications.

Wind turbines that may be installed within the offshore Morro Bay lease areas will be floating wind platforms, where turbines are mounted on a floating structure that is affixed to the seafloor via chains and/or cables attached to multiple large anchors. Inter-array power cables would connect groups of platforms within a lease together and would hang below platforms (but likely not extend to the seafloor). Groups of platforms typically connect to one or more floating, offshore electric substation(s). From the substations, energy generated from wind turbines in the offshore Morro Bay Wind Energy Area would be brought to shore via one or more subsea electrical transmission cables laid on or in the seabed. The location, number, design, size, and burial depth, if any, have not been determined for these cables. Prior to publication of the draft EIS, BOEM had suggested to NOAA that designs for energy transmission from the Morro Bay lease areas to shore, if similar to designs for offshore wind development on the East Coast, could have between eight and 11 subsea electrical transmission cables to shore for each of the three Morro Bay lease areas.

For purposes of the draft EIS, NOAA used the BOEM estimate of 30 cables that would be installed between the offshore Morro Bay lease areas and shore, passing through the sanctuary. BOEM suggested the most reasonable landing site to assume for the subsea electrical transmission cables from the offshore Morro Bay lease areas would be just north of Morro Bay harbor to allow connection to existing grid infrastructure. For purposes of the draft EIS, NOAA incorporated this information from BOEM but also considered, and incorporated in its alternatives impacts analysis, the possibility that a subset of cables could be proposed to route to points of interconnection at DCP or other sites.

During the public comment period on the draft EIS, the three leaseholders indicated the estimated number of cables to be inaccurate (see Appendix A, Response to Comments, comment OW-13), and provided clarifying information that their cable needs would be closer to 15, and no more than 24 cables, with as many as half to be proposed for landing at DCP. Comments indicate that planning for cable corridors needs to account for the large bend radii (cannot make sharp turns for these cables), crossing of submarine fiber optic cables at right angles, and a distance between subsea electrical transmission cables of approximately three times the water depth to aid any future repair activities. They also clarified that construction of these cables would be spread over many years. NOAA has factored these clarifications into the final EIS analysis, but the clarifications do not result in changes to impact level conclusions with respect to offshore energy.

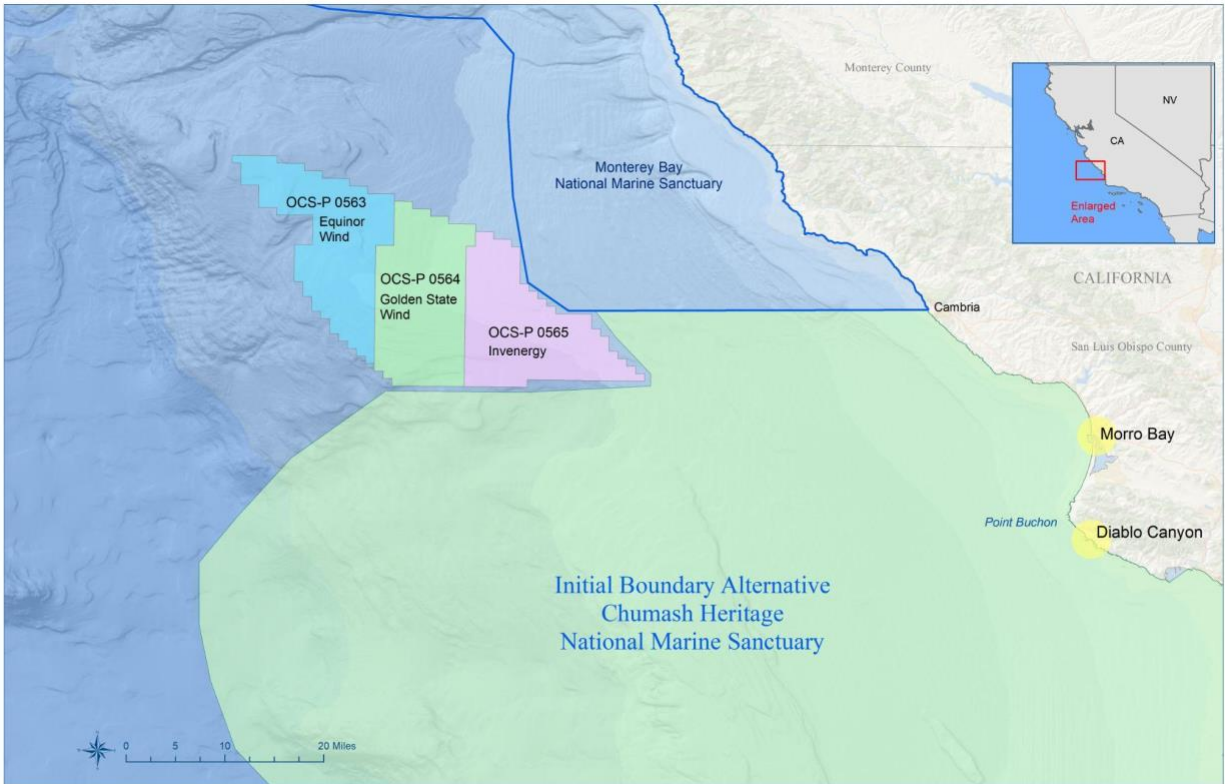


Figure 4.7-3. Three offshore Morro Bay lease areas as part of the Morro Bay Wind Energy Area, with highlights for Morro Bay and DCPD landing sites for subsea electrical transmission cables. Image: NOAA

The ultimate routing for the subsea electrical transmission cables from the Morro Bay Wind Energy Area to shore will require successful leaseholders to conduct various evaluations including assessing seafloor conditions and terrain and other structures around which to design subsea electrical transmission cables. For instance, about a half dozen trans-Pacific submarine fiber optic cables come ashore just south of Morro Bay, and industry representatives have noted the complexity with laying electric transmission cables on the seafloor over the top of fiber optic cables. Overall, project designs for offshore subsea electrical transmission cables are not yet final or firmly defined and may not be for several years due to the need to collect and analyze further site characterization data.

Alternative 3, proposed by BOEM as a cooperating agency for this EIS, would shift the proposed sanctuary boundary so that subsea electrical transmission cables from the Morro Bay lease areas would not require routing through the proposed sanctuary if they proposed to connect at Morro Bay (or possibly at DCPD). Alternative 3, as well as Alternative 4, would also allow BOEM to evaluate additional areas on the central coast of California for potential future leasing for another wind farm, to support state offshore wind and renewable energy goals, including possibly considering development of the Diablo Canyon Call Area (see sections 3.5 and 3.6 for details on alternatives 3 and 4). Subsea electrical transmission cables from this call area could connect at DCPD (or Morro Bay) without needing to pass through the sanctuary. Again, comments from the three leaseholders during the draft EIS public review period suggested that only Alternative 4 would be adequately sized to achieve their goals of 15–24 subsea transmission

cables to shore with design constraints noted above, and with about half landing at DCPD and half at Morro Bay, and avoiding CHNMS. In addition, between the draft EIS and final EIS and based on the information provided in the leaseholders' comments, NOAA made minor adjustments to the northern shoreline boundaries for alternatives 3 and 4 to achieve a primary purpose of these alternatives—to exclude areas identified for offshore wind development and, in particular, to allow access to DCPD grid connections for subsea electrical transmission cables (see sections 3.5 and 3.6 for more information).

State and federal energy agencies and the wind industry are coordinating various development, construction, and operation aspects of the Morro Bay lease areas. One possible but not yet defined ancillary development project would involve building a new harbor or expanding an existing harbor along the coast of the study area to function as a deep-water port for fabrication of offshore wind platforms and turbines that would then be towed and installed in the Morro Bay lease areas or any other wind energy areas developed regionally.

Offshore Wind Development – State Waters

In summer 2019, CSLC received two unsolicited lease requests to develop offshore floating wind projects in state waters (0–3 miles from shore) off Point Arguello, near VSFB (CSLC, 2021). This location is within the boundaries of all action alternatives. Both companies—CIERCO (later renamed “CADEMO Corporation”) proposing the CADEMO Wind Demonstration Project and BW Ideol proposing the Vandenberg Pilot Project—sought approval to develop four offshore floating platforms each and sell power locally. BW Ideol has since withdrawn its project application.

The CADEMO project is proposed to be a demonstration project to test various elements of offshore floating wind technology, such as floating structure design, anchoring, cable routing, and impact assessment. Four floating platforms would be held in place with anchors, chains, and cables approximately 2.5 miles offshore, and would be similar in size to those identified above for platforms/turbines in federal waters. The applicant proposes each platform would generate between 12–15 megawatts for a total output of 60 megawatts for the project. CADEMO's initial proposal is to land power cables south of Point Arguello through a directionally-drilled shore crossing and bring power to local substations or directly to VSFB. CSLC is the lead agency for state environmental review and the U.S. Department of the Air Force is the federal lead agency; together they will prepare a joint environmental document, and intend to initiate scoping for the project in the “latter half” of 2024 (CSLC, 2024). CADEMO's public comments on the draft EIS requested a change to the CHNMS boundary to exclude its project site, or changes to the sanctuary regulations to exempt their development (see Appendix A, Response to Comments, comments OW-33 and OW-34).

4.7.2 Impact Assessment Methodology (Offshore Energy)

The Initial Boundary Alternative or any of the alternatives would result in a significant impact on offshore energy if its designation and implementation would result in:

- Substantial reductions in production of existing offshore oil and gas reserves;
- Substantial reductions in development of offshore wind energy from what is projected and permitted by federal or state lead agencies; or

- Substantial delay to obtain final project approval so as to render the project infeasible for offshore or coastal energy projects including site characterization or site assessment studies; new facility construction; decommissioning, abandonment, and site remediation of existing facilities.

Impacts on offshore energy were assessed based on review of current wind development plans, onshore and offshore decommissioning plans, and the anticipated application of NMSA system-wide regulatory authorities and the proposed site-specific regulations under the Initial Boundary Alternative. Because the proposed site-specific regulations and the system-wide NMSA authorities contain several permitting mechanisms, it is possible that activities that would otherwise be prohibited under the proposed regulations could be approved via a permit (sanctuary general permit, ONMS authorization, certification, or special use permit). NOAA does not consider the administrative process to seek (apply for) a permit from the sanctuary to be an adverse impact, but substantial delay to obtain final project approval from NOAA or any other federal, state, or local agency, could be a component of determining a significant impact. Many of the offshore energy projects and activities in the study area are early in the development and planning phase, and many project designs and plans are actively changing and may continue to change for years. Because of this, some details on potential impacts on specific offshore energy projects and activities from sanctuary designation are uncertain or in some cases may be speculative; however, for the reasons described below, ONMS determines that the reasonably foreseeable adverse effects evaluated below would not rise to a level that is significant. In addition, any future permitting decision by NOAA or other agencies relating to offshore energy projects within the sanctuary would be subject to project-specific environmental review processes.

4.7.3 Environmental Consequences of the Initial Boundary Alternative on Offshore Energy

This section evaluates the impacts on offshore energy from implementing the Initial Boundary Alternative, as described in Section 3.2. There are no identified beneficial effects on offshore energy. There are some adverse impacts of the proposed sanctuary regulations on several types of existing or potential offshore energy development within the proposed sanctuary boundaries.

Adverse Impacts on Oil and Gas Development

Prohibition on New Oil and Gas Development

The regulations proposed for the sanctuary designation would prohibit new exploration, development, or production of oil and gas resources within the sanctuary under all action alternatives, including leasing of new areas for development. Leasing is not anticipated in the next five years as no lease sales are contemplated offshore California in the National Outer Continental Shelf Oil and Gas Proposed Program for 2023–2028. Elected leaders at the federal, state, and local levels in California have expressed opposition to new offshore oil and gas leasing. A lease sale for oil and gas development has not occurred offshore California since 1984. As stated in Section 4.7.1, BOEM has estimated there could be 2.18 billion barrels of oil (91.5 billion gallons) and 2.00 trillion cubic feet of natural gas within the proposed sanctuary boundaries. BOEM did not distinguish if these are total reserves or recoverable reserves,

meaning reserves that are economically and technically feasible to recover at the existing price of oil. The industry has been developing offshore oil and gas in the area proposed for the sanctuary since the 1980s, having already produced roughly 485 million barrels (20.4 billion gallons) of crude oil and nearly 500 billion cubic feet of natural gas. The U.S. and the state of California are moving aggressively toward offshore renewable energy development, foregoing offshore oil and gas. Any new offshore oil and gas development has been concentrated in the Gulf of Mexico over the past decade. The **adverse impacts** caused by the Initial Boundary Alternative on offshore oil and gas development would be **direct, long-term, localized, and moderate** because other domestic offshore oil and gas fields exist and future energy development in offshore waters is likely to be from renewable sources.

In state waters, the California Coastal Sanctuary Act of 1994 and the California Public Resources Code Section 6245 prohibit new leases authorizing extraction of oil or gas, or authorizing new construction of oil and gas related infrastructure associated with Outer Continental Shelf leases issued after January 1, 2018. Therefore, the Initial Boundary Alternative has no impact on new offshore oil and gas development in state waters.

The proposed sanctuary regulations include an exception to allow continued oil and gas production pursuant to leases or lease units in effect at the time of final sanctuary designation. NOAA interprets leases or lease units in effect at the time of final designation to include leases and production that are temporarily shut in, as is the case for production from both Platform Irene in the Point Pedernales Unit and Platform Heritage in the Santa Ynez Unit. (The three Point Arguello platforms are permanently shut-in and their production cannot recommence.) Therefore, under the Initial Boundary Alternative, if at some point Freeport-McMoRan and/or Exxon/Mobil recommence production, that would be considered continued operation and would be excepted from the prohibition on oil and gas development. Activities that normally occur in the reservoirs, like well drilling, work over to repair and maintain product flow, and well abandonment would also be excepted from the prohibitions in the proposed sanctuary regulations. Therefore, with this exception, **no impacts** on existing oil and gas operations at Platform Irene and Platform Heritage are anticipated from the Initial Boundary Alternative. If a pipeline between a platform and shore required repair such that it led to disturbance of the seabed, that activity might require NOAA to also issue a permit. None are known or planned at this time, but it can be anticipated that NOAA could issue an ONMS authorization for a federal or state-issued permit if a pipeline repair project were necessary. This would result in no more than **negligible adverse impacts** on offshore energy because of the ability to rely on another agency's permitting actions, expertise, and likely mitigation measures.

Prohibition on Discharges

NOAA is proposing a standard regulation prohibiting discharges within or into the sanctuary, and has proposed to include an exception for discharges "... incidental and necessary to oil and gas production within or into reservoirs contained within existing leases or lease units..." This exception acknowledges normal oil and gas development from Platform Irene and Platform Heritage could include the discharge of material into existing reservoirs to aid production of oil and gas from a well. However, this exception would not apply to discharges from the platform into the waters of the sanctuary, which can include the discharge of muds and cuttings during drilling activities, and discharge of produced water from the platform during normal production

activities. Operators of platforms with these types of routine discharges that have a valid federal (or if applicable, state or local) permit, approval, or other authorization can continue to conduct that activity upon obtaining a certification from NOAA. Most likely these discharges would only be expected from Platform Irene since Platform Heritage is not located inside any of the sanctuary boundary alternatives. Because of the regulatory exception for routine discharges into reservoirs as part of oil and gas production, the Initial Boundary Alternative would result in no impact on discharges into reservoirs within leases in effect at the time of sanctuary designation. Because § 304(c) of the NMSA does not provide the authority to terminate an existing permitted activity, rather only the authority to regulate such activity consistent with the purposes for which the sanctuary is designated, the certification process for routine, permitted discharges into the sanctuary is considered to have negligible adverse impacts on existing oil and gas development. Normally, conditions imposed via a certification concentrate on sharing information or requiring reports on activities allowed by the certification, such as in this case of discharges from a platform into the sanctuary, the volume and make up of discharges if not already required by another agency's permit.

A non-routine discharge, such as a leak or spill from Platform Irene's oil pipeline to shore or from the platform would lead to prohibited discharges within or into the sanctuary that would not normally be an activity NOAA would permit. Also, NOAA is proposing a standard regulation that prohibits a discharge from beyond the boundary of the sanctuary, that subsequently enters and injures sanctuary resources. That regulation might more aptly apply to Platform Heritage, which is beyond the proposed sanctuary in the Initial Boundary Alternative. A leak or spill from Platform Heritage that enters and injures sanctuary resources would be prohibited under that proposed discharge regulation. NOAA cannot predict the probability of a future spill; however, it is reasonable to assume that there is a risk of future oil spills, given past accidental spills in the study area (see Section 4.7.1).

Because spills from the platforms or pipelines operating in or adjacent to the study area have occurred, NOAA believes it is appropriate to assess what a spill comparable to past incidents would mean in relation to the proposed sanctuary regulations. Should a spill comparable to previous major spills in 1997 and 2015 occur, it is reasonable to assume there would be adverse effects on sanctuary resources, and in turn, it is reasonably foreseeable that civil penalties, response costs, damages, and required restoration and mitigations would be greater than what would have been imposed if the sanctuary were not present. It is reasonably foreseeable that the financial consequences associated with the assessment of response costs, damages, and any required restoration and mitigation for a future spill at the Point Pedernales or Santa Ynez Unit, while hard to predict with specificity at this time, could have **direct, long-term, localized, moderate adverse impacts** on oil and gas operations.

Offshore Facility Abandonment, Decommissioning, and Removal

Abandonment, decommissioning, and removal (hereafter referred to as "decommissioning and removal") of offshore platforms and pipelines are anticipated to commence in the next five years for the Point Arguello Unit, and perhaps subsequently for the Point Pedernales Unit. As described in Section 4.7.1, BSEE and BOEM completed a program-level environmental review of oil and gas facilities decommissioning on the Pacific Outer Continental Shelf in October 2023 (BSEE & BOEM, 2023), and have selected the alternative requiring complete decommissioning

and removal of all oil and gas facilities (BSEE, 2023). Similarly, state lease requirements for these facilities also include full removal (J. Lucchesi, CSLC, personal communication, April 2022). Thus, a reasonable assumption is that the four platforms and pipelines and power cable to shore will be removed and any seafloor or other impacts restored. The NMSA and ONMS place a preference on restoring damaged habitats. ONMS has no policy at this time either promoting or objecting to any alternative plans such as creation of artificial reefs from platform abandonment. Any decommissioning and removal activity that results in seafloor disturbance or discharges within the proposed sanctuary boundaries would be subject to the prohibitions of the sanctuary regulations, but could be approved by ONMS via either a sanctuary general permit or an ONMS authorization. Under the proposed regulations, ONMS could impose mitigation measures through this ONMS authorization process. ONMS also anticipates requesting to participate in environmental review that BSEE would conduct for site-specific activities. The 2023 final programmatic EIS predicted various adverse, unavoidable impacts from platform decommissioning and removal, such as disturbance to the seabed and benthic habitat; noise impacts on vertebrates and invertebrates; and discharges of toxic materials. It also identified many sensible and suitable mitigation measures to reduce those adverse impacts (BSEE & BOEM, 2023). Additional mitigation measures could be derived by required project-specific environmental review. NOAA's participation would be directed at ensuring that a specific decommissioning and removal project does not unnecessarily harm sanctuary habitats and resources and ensuring proper assessment of mitigation measures for this purpose. It is not reasonably foreseeable at this time what specific mitigation measures, if any, may be necessary to protect sanctuary resources from individual platform decommissioning, or removal activities beyond what other agencies would require. Nonetheless, the inclusion of a permit process to allow activities otherwise prohibited under the proposed sanctuary regulations would limit the degree of any adverse impacts of the Initial Boundary Alternative on the oil and gas industry with respect to offshore facility decommissioning and removal (note: well abandonment, as a final step in the oil and gas production process, is treated differently than decommissioning of all other facilities necessary for offshore oil and gas development and NOAA proposes an exception from sanctuary prohibitions for well abandonment).

Adverse Impacts on Diablo Canyon Power Plant

The amount and temperature (above ambient) of once-through cooling water from DCPD discharged into the ocean is substantial, and it has been occurring for more than 35 years. Numerous agencies have permitted it and continue to oversee the impacts of that discharge. At the time this EIS has been developed, NOAA is not aware of any specific requirements, including phase out requirements, the state will impose to ensure extended operations at DCPD comply with plans to eliminate once-through cooling water from coastal power plants. Under the regulations proposed for the Initial Boundary Alternative for CHNMS, NOAA would have the ability to review and certify preexisting, permitted discharges like those by PG&E at DCPD and in that process, consider and possibly mirror mitigation measures via terms and conditions on a NOAA-issued permit and phase out requirements state agencies would have imposed to limit the impact of once-through cooling water. This certification process would mean designation of the Initial Boundary Alternative would likely have no more than **negligible adverse impacts** on continued PG&E operations.

If decommissioning, removal, and restoration were to occur at DCPD over the next 10–20 years, these activities would be subject to the proposed sanctuary regulations prohibiting alteration of the seabed and discharges within or into the sanctuary. Present plans for removal of DCPD's offshore discharge apparatus would require constructing a cofferdam to dewater the cove to remove the outfall. Proposed sanctuary regulations would prohibit disturbance of the seabed; however, these regulations also allow ONMS to issue permits or authorizations, as applicable, for activities otherwise prohibited. ONMS would work with the County of San Luis Obispo, CCC, CSLC, and other agencies to ensure effective resource protection during removal of the outfall, or other abandonment and decommissioning activities affecting the sanctuary. Permit review by ONMS would likely require conducting a NEPA review, and it is possible that a joint review under NEPA and California Environmental Quality Act could be conducted by ONMS and state/local agencies. The impacts of any mitigation measures that ONMS might impose through this process in order to protect sanctuary resources beyond what other agencies would require are not reasonably foreseeable at this time. In particular, it is not clear if decommissioning activities would occur in the next 10 years, or the next 20 years after extended operations are complete. However, the inclusion of a permit process to allow activities otherwise prohibited in the proposed sanctuary regulations would limit the degree of any adverse impacts on the decommissioning of DCPD. Further, as explained in Section 4.7.1, at this time re-use plans for the site have not been developed and, therefore, assessing future impacts on undefined projects would be speculative. Any future permitting decision by NOAA or other agencies relating to DCPD decommissioning, removal, and restoration would be subject to project-specific environmental review processes.

Site decommissioning plans also include the use of barges to transport non-radioactive concrete and scrap metal to shore, where it would be hauled to recycling sites most likely in the Portland, Oregon area. NOAA is not proposing any regulations to prohibit shipment via barge of material removed from DCPD, so the Initial Boundary Alternative would have **no adverse impacts** on that activity.

Adverse Impacts on Offshore Wind Development – Federal Waters

Morro Bay Lease Area Development

The planned offshore wind development of roughly 3 GW of power from hundreds of wind turbines in the Morro Bay lease areas lies outside the proposed sanctuary boundary under the Initial Boundary Alternative and any alternative boundary option. Development within the Morro Bay lease areas would not, therefore, be directly impacted by the proposed sanctuary.³⁶ However, the subsea electrical transmission cables necessary to service these lease areas would likely have to be routed through the proposed sanctuary under the Initial Boundary Alternative. The impacts related to placement and permitting of these subsea electrical transmission cables under the Initial Boundary Alternative are discussed below.

³⁶ As noted earlier, the NMSA includes a provision, Section 304(d), that requires federal agencies to consult with NOAA if their activities are likely to destroy, cause the loss of, or injure any sanctuary resource. That consultation may be necessary between BOEM and NOAA with regard to the existing Monterey Bay National Marine Sanctuary (MBNMS) adjacent to the Morro Bay lease areas, and if CHNMS is designated, could involve this sanctuary too.

Several comments on the draft designation materials for this sanctuary indicate that one outgrowth of one or more of the Morro Bay lease areas may be the generation of “green hydrogen,” a term used to indicate hydrogen generated (extracted) by renewable energy (see response to comment OW-21). In concept, offshore wind farms could be used to generate electricity that, once transported to shore via subsea electrical transmission cables, could support an onshore hydrolyzer where hydrogen is produced (extracted). Alternatively, a hydrolyzer could be installed offshore, fed by offshore renewable energy, and the hydrogen could then be transported to shore in a pipeline that either replaces subsea electrical transmission cables, or partially replaces them depending on the amount of electricity and hydrogen developed offshore (Little, A.D., 2023). NOAA is describing the concept of green hydrogen in the EIS because it arose during the public comment period on the draft EIS, but the development of specific green hydrogen projects is not reasonably foreseeable at this time, and NOAA does not have any information that allows it to properly consider what impact the sanctuary may have on this form of offshore or co-located energy development. Green hydrogen would not be considered “oil and gas production” and it is not a “mineral,” so producing it and installing pipelines to transport it could, in theory, be approved via a sanctuary general permit or ONMS authorization after proper environmental review and interagency consultation. The inclusion of a permit process to allow activities otherwise prohibited under the proposed sanctuary regulations would limit the degree of any adverse impacts of the Initial Boundary Alternative on the offshore wind industry with respect to potential green hydrogen generation.

Site Characterization for Subsea Electrical Transmission Cables to Shore

Site characterization investigations for subsea electrical transmission cables typically consist of a number of phases where the preceding phase informs the following phase. Site characterization generally includes the following activities: desktop studies, seabed exploration and sample collection, laboratory testing of collected sediment samples, evaluation and assessment of geotechnical engineering properties, and documentation of the results in a written report. Critical information is gathered during geophysical and geotechnical surveys where high-resolution geophysical equipment collects information on the depth, contour, and nature of the sediments on and below the seabed. Ground truthing the geophysical data is necessary and requires the collection or testing of the sediments with the use of grab samplers, sediment cores, and/or cone penetration tests.

The resulting site characterization report(s) typically include a large array of site-specific information. Some examples of the data generated include information on geohazards, anthropogenic hazards, seabed topography, slope stability, rocky versus softer substrates, and more. The data gathering process for site characterization work such as this within a national marine sanctuary is very standard and typically offers benefits because the research would further the understanding of the sanctuary and its resources. Sanctuary regulations would allow ONMS to issue a sanctuary general permit for research activities that disturb the seabed. With a quality permit application, review, and approval of this sort of permit typically can be completed within weeks to a month. If this work is proposed to be conducted after the sanctuary is designated, the **adverse impact** would be **negligible** on-site characterization work for offshore wind.

Installation, Maintenance, Repair, and Continued Presence of Subsea Electrical Transmission Cables

BOEM issued three leases to develop offshore wind energy in the Morro Bay Wind Energy Area in June 2023. As noted in Section 4.7.1, based on comments from the three leaseholders, NOAA is now assuming there could be 15 to as many as 24 subsea electrical transmission cables to shore, about half landing at the grid connection at Morro Bay and the other half at the grid connection at Diablo Canyon (there may also be one or more offshore floating substation(s) between the offshore Morro Bay and shore, but NOAA has no details at this time to conduct any assessment of how the sanctuary designation could affect a floating substation) (Golden State Wind et al., 2023). Under the Initial Boundary Alternative, it is anticipated that these cables would be routed through the proposed sanctuary. Although BOEM cannot issue leases, rights of way, or easements for wind development within national marine sanctuaries per OCSLA, NOAA intends to coordinate with BOEM on potential integration of NMSA authorities and BOEM's OCSLA authorities for the purposes of specific wind development projects contemplated adjacent to and within the proposed sanctuary. Installation of a subsea electrical transmission cable through the proposed sanctuary would likely violate the proposed prohibition on disturbing the submerged lands and leaving a structure on or in the seabed. Proposed regulations for the Initial Boundary Alternative (and all action alternatives) include provisions whereby ONMS could approve seabed disturbance associated with the installation, maintenance, and repair of subsea electrical transmission cables, as well as their continued presence on or beneath the seabed. However, the special use permit category is temporarily paused for new sanctuaries designated after August 16, 2024, which would include this proposed sanctuary, and therefore for the two-year duration specified in NOAA's Federal Register notice, the continued presence of commercial submarine cables is not subject to the special use permit requirement. Although the final details of any individual permit or authorization would be project-specific, NOAA believes that the most likely permitting approach for activities associated with subsea electrical transmission cables is as follows. Sanctuary general permits, authorizations, and special use permits are only issued after satisfaction of permit review criteria and necessary reviews under NEPA, NHPA, and other environmental compliance processes are completed.

- As stated in an earlier section, to **allow the site assessment and characterization activities that must be conducted prior to cable installation**, NOAA could issue a sanctuary general permit for research purposes under 15 C.F.R. subpart D and Section 922.233, which ONMS' practice has been to rely on this permit for "commercial research" activities necessary, for instance, to best plan for cable routes.
- For the **installation of a subsea electric transmission cable on the outer continental shelf within the proposed sanctuary**, NOAA could issue an ONMS authorization of a permit issued by the USACE under Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), under 15 C.F.R. 922.36 and Section 922.232(e). NOAA is also evaluating whether there may be additional valid federal, state, or local permits, licenses, or approvals that may also be authorized in this context.
- For **installation of cables within state waters of the proposed sanctuary**, NOAA could authorize a lease issued by the CSLC or a coastal development permit issued by the CCC, under 15 C.F.R. 922.36 and Section 922.232(e).

- To **authorize the continued presence of the cable on or in the seabed within the proposed sanctuary**, NOAA could then issue a special use permit under Section 310 of the NMSA. A special use permit has been used in the past when USACE permits only covered installation but not ongoing operations or repair activities. However, as described in Section 3.2.2 of the final EIS, NOAA issued a Federal Register notice on August 16, 2024 that modified the special use permit category for the continued presence of commercial submarine cables in the following way: for a two-year period beginning on August 16, 2024, the special use permit category does not apply to sanctuaries designated after August 16, 2024, including CHNMS. In other words, for the duration specified in the notice (and subject to extension), the continued presence of commercial submarine cables in CHNMS is not subject to the requirements of Section 310 of the NMSA.
- To **allow any necessary maintenance and repair associated with the cable that might cause a disturbance of the submerged lands of the sanctuary**, NOAA could consider several potential options. These could include relying on the initial ONMS authorization of the USACE Section 10 permit and/or state permit for the cable installation (depending on the duration of that permit and whether it included future repair and maintenance), or issuing an ONMS authorization of a separate USACE and/or state permit that is issued specifically for the maintenance and repair activity.

Considerable details about how NOAA reviews and can permit any submarine cable is included in NOAA's 2011 guidance, "ONMS Policy and Permitting Guidance for Submarine Cable Projects" (NOAA, 2011). NOAA has committed to assessing and updating the guidelines, as stated above, through the issuance of a Federal Register notice. Consistent with these guidelines and past submarine cable projects in other national marine sanctuaries, NOAA has spoken to USACE regarding relying on this approach in federal waters should CHNMS be designated, and intends to continue that coordination throughout the designation process and as plans for cabling in the area are developed. As noted above, NOAA is also evaluating whether there may be additional valid federal, state, or local permits, licenses, or approvals that may also be authorized in this context. Regular coordination with state agencies has occurred in the past and NOAA would conduct specific coordination meetings related to cable permitting as necessary. That said, NOAA's proposed regulations contain several permitting mechanisms (see Section 3.2.2 of this EIS) that would provide NOAA with flexibility in its approach to any individual permitting request.

ONMS has experience successfully permitting submarine fiber optic cables via these same permit mechanisms through several national marine sanctuaries. For instance, ONMS has approved construction of fiber optic cables within other national marine sanctuaries by authorizing an USACE permit and has issued special use permits to allow the continued presence of those cables within the seabed of the proposed sanctuary. One purpose of the proposed action is to protect offshore resources including submerged historical and cultural resources, habitats, commercially important species, and uses. Through the permitting processes described above, ONMS would be able to review, approve, and condition specific subsea electrical transmission cables proposed within the sanctuary, and would have the authority to impose mitigation measures that are necessary to protect sanctuary resources, and uses that depend on them. No final approval for any offshore wind development that definitively

requires construction and operation of subsea electrical transmission cables through the proposed sanctuary has yet been issued by BOEM or any other agency, and such a decision could be several years away. Moreover, the potential designs of the size and numbers of cables for such future projects are unknown, as are other details such as whether or not cables will be buried or surface-laid, specific cable routes to shore, the size of the construction corridor, and the need for offshore floating substations between the Morro Bay lease areas and shore. As such, there is substantial uncertainty over what mitigation measures, if any, ONMS may determine to be necessary to authorize the placement and continued presence of any specific subsea electrical transmission cables within the proposed sanctuary under the Initial Boundary Alternative. Any future ONMS permitting decision would be subject to project-specific environmental review processes. The potential impacts due to any mitigation measure imposed through ONMS' regulatory authority under the Initial Boundary Alternative are therefore not reasonably foreseeable. BOEM has issued several record of decisions and plan decisions regarding subsea electric transmission cables in the Atlantic off the East Coast (e.g., BOEM & NOAA Fisheries, 2023). While future plans for subsea transmission cables for the Morro Bay lease areas may be similar to the plans that have been evaluated on the East Coast, the specifics for cabling projects in the area proposed for sanctuary designation have not yet been developed or proposed.

Wind industry representatives during the public scoping process and thereafter have expressed concerns to ONMS about NOAA's inability to issue a lease within a sanctuary that would provide property interests to the developer for a cable corridor.³⁷ They have expressed doubts that NOAA's process to permit submarine fiber optic cables would be sufficient for subsea electrical transmission cables needed by the wind industry. Industry representatives have said they fear that even if NOAA issues a wind company a permit to build a subsea electrical transmission cable, another user could conduct incompatible development within the permitted cable corridor before or after the company built the electrical cable. In turn, industry representatives have stated that this lack of granted/leased property interest for the lifetime of the project (20–30 years) would create significant challenges if not outright impediments to obtaining financing for offshore wind development projects. Comments on the draft EIS also raised concerns with the maximum five-year term for a special use permit and concerns that obtaining financing could be impossible for a 30-year project that has a permit that expires in five years. While the five-year term of a special use permit is prescribed by the NMSA (16 U.S.C. 1441(c)(2)), the special use permit can be renewed, which NOAA has done repeatedly for other submarine cable projects. However, as described above, for the duration specified in the August 16, 2024 Federal Register notice ([89 Fed. Reg. 66689](#)) (and subject to extension), the continued presence of commercial submarine cables in CHNMS is not subject to the requirements of Section 310 of the NMSA.

NOAA's experience at other sites indicates large cable construction projects may be successfully proposed and built within national marine sanctuaries. Several companies on the East and West coasts have developed, deployed, and operated trans-oceanic submarine fiber optic cable projects through national marine sanctuaries relying on the ONMS authorization process for

³⁷ The NMSA does not provide NOAA the authority to issue leases that grant exclusive use of the seafloor/water column for an activity, a legal tool available to BOEM outside national marine sanctuaries and other protected areas via OCSLA.

construction of the cable and a special use permit for continued presence of that cable within the sanctuary seafloor. These trans-oceanic submarine fiber optic cable projects required investment of hundreds of millions of dollars and did not have a granted/leased property interest for their cable corridors within the sanctuary. While acknowledging the concerns expressed by the wind industry, as well as the fact that the level of investment necessary for offshore wind development may be higher than for telecommunications cables, NOAA believes the example of telecommunication companies pursuing fiber optic cable projects within sanctuaries shows that financing challenges could be overcome.

In light of all this, the Initial Boundary Alternative would likely impose **direct, localized, short-term, moderate adverse impacts** on offshore wind development due to present concerns developers have about existing financing models and the need to develop or be comfortable with alternative financing models that are not limited by reliance on a sanctuary permit process (and lack of a lease) for construction and operation of subsea electrical transmission cables within the proposed sanctuary.

Further, NOAA does not believe there would be any meaningful delay, or any delay at all, due to the requirement to obtain an ONMS authorization, when compared to the timeline necessary to conduct NEPA review and obtain BOEM lease approval, USACE permit approval, CSLC lease approval, and CCC “approval” for any subsea electrical transmission cables developed outside a national marine sanctuary. BOEM needs to evaluate environmental impacts for cable routes to shore regardless of the jurisdiction in federal or state waters of that route, and NOAA can participate as a cooperating agency in the environmental review process to facilitate its development. Once BOEM, USACE, and various key state agencies issue their permits, NOAA could issue an ONMS authorization within a matter of weeks. Therefore, there is **no impact** linked to the time necessary to pursue an ONMS authorization and special use permit.

Although NOAA had originally considered that there could be up to 30 subsea electrical transmission cables to shore from the Morro Bay Wind Energy Area, the three leaseholders clarified that only 15, or possibly up to 24, cables total would be needed from the Morro Bay lease areas, and about half of these cables would land at Morro Bay and half at Diablo Canyon. Despite these revised assumptions, this new information does not alter the impact conclusions under the Initial Boundary Alternative.

Vessel Traffic

Construction of floating platforms in the Morro Bay lease areas and associated subsea electrical transmission cables to shore would result in a large but not yet quantified increase in vessel traffic in the northern end of the proposed sanctuary. NOAA is not proposing any regulations to prohibit construction-related or operation-related vessel traffic to build and operate the new wind farm, so the Initial Boundary Alternative would have **no adverse impacts** on that activity.

Additional Offshore Wind Development in Federal Waters

BOEM has sought public and industry input on the potential wind energy development of the Diablo Canyon Call Area, which would be within the proposed sanctuary boundaries under the Initial Boundary Alternative. While there was industry interest in developing that area, there

was also opposition expressed by many parties, including commercial fishermen and the DoD. BOEM has indicated that it is not currently pursuing further offshore wind leasing activity in the Diablo Canyon Call Area. Nonetheless, the California Energy Commission, in response to state legislation (“AB 525”), released a report that indicated technically feasible offshore floating wind production for California could range between 21.8–25 GW by 2045 (California Energy Commission, 2022). Future evaluation of the previously designated Diablo Canyon Call Area is one of several potential areas that could contribute to realization of these production goals.

So, while there is presently no reasonably foreseeable plan to develop offshore wind energy production in the Diablo Canyon Call Area (or any other area in federal waters of the Initial Boundary Alternative), NOAA has assessed the extent to which designating the Initial Boundary Alternative could have an impact on this future development. Under OCSLA, BOEM cannot issue leases, rights of way, or easements for wind development in national marine sanctuaries. Therefore, designating the Initial Boundary Alternative would foreclose the ability to develop the Diablo Canyon Call Area under BOEM’s jurisdiction. If interest in developing the Diablo Canyon Call Area arises after sanctuary designation under the Initial Boundary Alternative, NOAA could consult with BOEM, the state, and others regarding potential options for that development subject to a sanctuary permit or other authorization. However, as noted above, the offshore wind industry has expressed concerns that large-scale wind development requires financing that may be difficult to obtain if a developer lacks a lease to provide long-term property interest for the development. The NMSA does not provide NOAA with this legal tool. For all intents and purposes, the regulatory uncertainty, permit processes contained in the proposed regulations, and industry’s approach to seek financing for large projects, may mean that another potential wind energy development area like Diablo Canyon Call Area would not be developed within the proposed sanctuary’s boundaries under the Initial Boundary Alternative. For this reason, it is likely that the designation of the Initial Boundary Alternative would have a **direct, long-term, localized, moderate adverse impact** on additional offshore wind development in federal waters. NOAA believes this adverse impact from a sanctuary designation would be no more than moderate because: development of other potential areas offshore California may be available and preferable to achieve renewable energy goals; and opposition to developing this area could limit the scale and scope of any additional future development.

Deep-water Port Development

Determining the potential impact from designating the Initial Boundary Alternative on the potential future development in San Luis Obispo County or possibly Santa Barbara County of a deep-water port is speculative at this time. Because of considerable interest in this potential development during the scoping process, NOAA is providing this characterization of how such a project would be considered should the proposed sanctuary be designated. It is reasonably foreseeable that any future construction of a deep-water port—likely to include offshore dredging and discharge of material, as well as placement of rock for revetments, breakwaters, and harbor facilities below the mean high water line—would likely violate proposed CHNMS regulations prohibiting disturbing the seabed, placing a structure on the seabed, and discharges from within or into the proposed sanctuary. Should such a project ever advance to the stage of environmental review after sanctuary designation, ONMS would participate with local, state, and federal agency partners, ensure effective consultation with Santa Ynez Band of Chumash

Indians, and should NHPA Section 106 requirements be invoked, consultation with other interested parties that could include local Tribes and Indigenous groups. Under the proposed regulations, NOAA would be able to consider authorizing a proposed deep-water port project; however, that determination would be based on project-specific information that would be developed at the time and is not available now, such as proper and complete project engineering and design, environmental review, and mitigation planning.

Adverse Impacts on Offshore Wind Development – State Waters

CSLC is the state lead agency, under the California Environmental Quality Act, for reviewing and rendering the principal decision on the CADEMO wind project proposed in state waters off VSFB. The CCC review would follow CSLC review, as a responsible state agency. CSLC anticipates initiating environmental review by mid-2024. The impacts of the Initial Boundary Alternative on the offshore wind development in state waters cannot be precisely known until environmental review, including analysis of alternatives, has been completed. Nonetheless, NOAA considers four scenarios to be reasonably foreseeable outcomes from this California process:

1. CSLC or CCC denies the project before or after designation of the proposed sanctuary. The Initial Boundary Alternative would have **no adverse impact** in this scenario because the state regulatory agencies would have denied the project.
2. CSLC and CCC both approve the project before designation of the proposed sanctuary. In this scenario, NOAA would treat the permit issuance like other existing, permitted facilities and rely on the certification process in the proposed final sanctuary regulations to allow the approved activity to continue, subject to any terms and conditions consistent with the purposes for which the sanctuary was designated. Therefore, the Initial Boundary Alternative would have **no adverse impact** on the offshore wind energy development in state waters in this scenario. It appears that the decision to designate, or not designate, the sanctuary will likely precede any final state action on the CADEMO project.
3. CSLC and CCC approve the project after designation of the proposed sanctuary. NOAA would then, pursuant to the proposed final regulations, decide whether or not to issue an ONMS authorization, most likely of the CSLC lease or CCC permit, which would allow the developer to disturb the seabed by placing anchors for the platforms and laying power cables to shore. If NOAA were to decide not to issue authorizations for the project, **impacts** on offshore wind energy development in state waters would be:
 - **Direct**, because it would directly impact the project developer;
 - **Localized**, because the developer could relocate the project to another location including possibly outside the proposed sanctuary; and
 - **Moderate**, because while the developer would have invested in design and studies to develop this location, it could relocate the project to another location including possibly outside the proposed sanctuary; to the extent California Environmental Quality Act/NEPA review evaluated alternative locations, it may be possible to promptly pursue one of these alternative locations with little to no cost or loss of time.

4. The last scenario is CSLC and CCC approve the project after designation of the proposed sanctuary and NOAA decides to authorize a state lease or permit. In doing so, it would work closely with CSLC and CCC to ensure proper mitigation of potential impacts on proposed sanctuary resources. It is not possible at this time to speculate on what potential mitigations would be needed that the state agencies would not have imposed on their own. Nonetheless, given this scenario assumes a permit authorization is granted, the Initial Boundary Alternative can be considered to have no adverse impact on offshore wind energy development in state waters.

Given that three of the four potential scenarios above lead to no adverse impact on development of this project in state waters, and given the state itself has not requested that NOAA provide any special boundary or regulatory exception for this singular development project, NOAA is not adopting the particular requests made by CADEMO in public comments that it be given special regulatory exceptions or boundary exclusions for developing its project. NOAA will participate in the environmental review for the CADEMO project. That review process will provide NOAA project-specific information and the opportunity to coordinate with state agency partners on the appropriate action for that proposal. In Appendix A, see responses to comments OW-33, OW-34, and OW-35 for more information about NOAA's decision-making process related to the CADEMO project.

4.7.4 Environmental Consequences of Alternative 1 (Offshore Energy)

Because the area that would be excluded from the proposed sanctuary boundaries under Alternative 1, Bank to Coast, does not include any planned offshore energy development projects, impacts would be the same as in Section 4.7.3 under the Initial Boundary Alternative for all offshore energy activities.

4.7.5 Environmental Consequences of Alternative 2 (Offshore Energy)

Adverse Impacts on Oil and Gas Development, Diablo Canyon Power Plant, and Offshore Wind in State Waters

The boundary for Alternative 2, Cropped Bank to Coast, is identical to Alternative 1 from Hazard Canyon Reef to Gaviota, which includes existing oil and gas development, decommissioning and removal of existing oil and gas facility infrastructure, waters adjacent to DCP, and the area planned for offshore wind in state waters. Therefore, the adverse impacts for Alternative 2 for these activities are the same as for Alternative 1 and the Initial Boundary Alternative. However, the moderate adverse (but not significant) impact on new oil and gas development would be slightly reduced in federal waters because the oil and gas reserves in the area between Cambria south Hazard Canyon Reef could be developed one day.

Adverse Impacts on Offshore Wind Development – Federal Waters

Because there would be no sanctuary designated from Cambria south to Hazard Canyon Reef, Alternative 2 would exclude a large area being planned for installation and operation of subsea electrical transmission cables from the Morro Bay lease areas to shore from sanctuary status. For any cables proposed to be routed through this area beyond (north of) the boundary for Alternative 2, none of the potential concerns that the wind industry has expressed regarding

obtaining financing for construction and operation of subsea electrical transmission cables would occur because the cables would not be within the proposed sanctuary. BOEM would have jurisdiction over leasing this area for subsea electrical transmission cables under OCSLA. For these cables, there would be no impact from designating Alternative 2. However, not all cables are expected to be proposed for landfall near Morro Bay Harbor. Thus, there could still be the potential for adverse but reduced impacts on offshore energy should some cables be proposed for routes through the sanctuary in Alternative 2 to other landing sites. In addition, NOAA has considered the suggestion from the leaseholders that only Alternative 4 would accommodate their goal of placing 15–24 subsea cables to Morro Bay and DCPD points of interconnection while avoiding CHNMS entirely, but this input does not alter the impact conclusion for Alternative 2. In sum, the impact from designating Alternative 2 on offshore energy-related subsea electrical transmission cables would be less than described for the Initial Boundary Alternative, thus in aggregate, reducing potential adverse impacts to **direct, localized, short-term and minor**.

The potential impacts for other offshore wind development in federal waters—for instance, future development of a wind farm in the Diablo Canyon Call Area within the proposed sanctuary—would be the same as for the Initial Boundary Alternative, and Alternative 1. However, the opportunity would exist to expand the Morro Bay Wind Energy Area into the area excluded in Alternative 2, possibly increasing offshore wind production. If pursued by BOEM or the state, this could result in Alternative 2 having less adverse impact on new offshore wind development than identified for the Initial Boundary Alternative. However, NOAA lacks sufficient information about the feasibility of this scenario.

4.7.6 Environmental Consequences of Alternative 3 (Offshore Energy)

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) does not alter the level of impact on offshore energy, for the following reasons: areas currently leased for oil and gas development would not be affected; the minor modification is too spatially small to meaningfully alter the potential for future oil and gas development in the area; and DCPD and the Diablo Canyon Call Area would still be excluded from the sanctuary boundaries. Additionally, the purpose of the minor modifications is to effectuate the exclusion of an area from the sanctuary identified or potentially necessary for offshore wind development, consistent with one of the primary purposes of Alternative 3 (see Section 3.5 for more information). As such, there is no change to the impact conclusions for offshore energy because the minor modification would ensure subsea electrical transmission cables in nearshore waters could reach Morro Bay and DCPD grid connection points without passing through the sanctuary.

Adverse Impacts on Oil and Gas Development

Because existing oil and gas facilities are within the boundaries of Alternative 3, Diablo to Gaviota Creek, impacts on existing offshore oil and gas development and platform decommissioning and removal would be the same as described in Section 4.7.3 under the Initial Boundary Alternative. However, the potential adverse impacts on future oil and gas development, including new leasing, would be substantially reduced under Alternative 3 compared to the Initial Boundary Alternative, as a large portion of the Santa Lucia Bank all the

way to Cambria would not be included in the proposed sanctuary boundaries. As explained in Section 4.7.3, there is more information about potential oil and gas reserves that would remain in the proposed sanctuary under Alternative 3, because that area has been developed for 40 years. While lessened, the **adverse impacts** of Alternative 3 on oil and gas development would still be **direct, long-term, localized, and moderate** because known reserves that could be developed would still exist within the reduced sanctuary area.

Adverse Impacts on Diablo Canyon Power Plant

Under Alternative 3, there would be **no impacts** on PG&E's abandonment, decommissioning, and restoration of DCPD because the proposed sanctuary boundary would shift to the south of DCPD. Thus, all decommissioning activities could occur outside the proposed sanctuary. There would also be **no impact** on continued operation of DCPD because its discharge or other potential impacts would fall outside the proposed sanctuary boundary.

Adverse Impacts on Offshore Wind Development – Federal Waters

Similar to Alternative 2, Alternative 3 would exclude from the proposed sanctuary an area between the Morro Bay lease areas and the anticipated grid connection at Morro Bay and DCPD. None of the potential concerns that the wind industry has expressed regarding obtaining financing for construction and operation of subsea electrical transmission cables would materialize for any future cables installed in this area because they would not be within the proposed sanctuary. For these potential cables, there would be **no impact** from designating Alternative 3. As noted for Alternative 2, it is likely that not all subsea electrical transmission cables from the Morro Bay lease areas would be proposed to land at Morro Bay. If cables were proposed to land at DCPD, depending on the offshore lease area of origin, those could fall outside the proposed sanctuary in Alternative 3 and thus there would be **no impact** on those cable projects. However, the northwest portion of Alternative 3's boundary extends near several of the offshore wind development leases. Input received from the three leaseholders during the public comment period on the draft designation materials clarified their cable siting needs—distance between cables, large bend radii, routing around and across other structures, and micro siting. Developers could propose subsea electrical transmission cables to DCPD through that northwest portion of Alternative 3, and thus the potential impacts as explained for the Initial Boundary Alternative for that single cable or cable segment could result. Nonetheless, because many potential cable configurations result in no impact and some configurations result in moderate adverse impacts depending on the origin of cables and the grid connection points onshore, in aggregate, the potential adverse impacts on offshore energy for cable routing would be **direct, localized, short-term and minor** if Alternative 3 were designated.

The draft EIS also indicated that developers could propose a subsea electrical transmission cable from the three offshore Morro Bay lease areas to pass through Alternative 3 to a landing site well south of DCPD. No public comments were submitted regarding this potential development scenario and NOAA is now considering this development scenario too speculative to warrant an assessment of reasonably foreseeable impacts from Alternative 3.

Alternative 3 would also not include a large area where the Diablo Canyon Call Area had been proposed, creating the possibility that additional offshore wind development could be eventually leased under BOEM's OCSLA authorities. Therefore, the potential impacts from the proposed

sanctuary designation on the wind industry related to development of new offshore wind development in or around the Diablo Canyon Call Area would not occur. Depending on how much of and in what configuration BOEM chose to lease this area, the adjacent sanctuary boundary could require lease configurations that avoided platform anchors or cables into or through the proposed sanctuary. Although there is no development scenario to assess, NOAA foresees designating Alternative 3 would have **no adverse impacts** on development of a wind energy facility in federal waters because much or all of the area considered for the Diablo Canyon Call Area could be developed.

Any potential development of a new deep-water port from DCPD north to Cambria—an area outside the proposed sanctuary under Alternative 3—would not be subject to sanctuary regulations and thus, **no impacts** would occur. Otherwise, the potential but undefinable impacts on a deep-water port if one is proposed for development south of (down coast) of DCPD (within the Alternative 3 boundaries) would be the same as explained in Section 4.7.3.

Adverse Impacts on Offshore Wind Development – State Waters

Impacts on offshore wind development in state waters near VSFB would be the same as in Section 4.7.3 for the Initial Boundary Alternative because that area would remain in the proposed sanctuary boundaries under Alternative 3.

4.7.7 Environmental Consequences of Alternative 4 (Offshore Energy)

For the same reasons provided in Section 4.7.6 above, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not itself result in environmental impacts on offshore energy not previously considered.

Adverse Impacts on Oil and Gas Development, Diablo Canyon Power Plant, and Offshore Wind in State Waters

Because the boundary for Alternative 4, Combined Smallest, includes existing oil and gas facilities, but excludes the most area of the ocean that could be developed for offshore energy of all the alternatives for CHNMS, the impacts from approving Alternative 4 would be the least but still have the same impacts level as described in Section 4.7.6 above for Alternative 3 for oil and gas development. Alternative 4 would have the same level of impact on DCPD and offshore wind energy development in state waters as described for Alternative 3 (Section 4.7.6).

Adverse Impacts on Offshore Wind Development – Federal Waters

Among the action alternatives, the boundary for Alternative 4, Combined Smallest, would leave open the largest amount of area outside of the new sanctuary that could be developed for offshore wind development, both for a new, additional wind energy area for renewable energy development and for new subsea electrical transmission cables between offshore wind developments and shore. As noted for Alternative 3 (see Section 4.7.6), although there is no additional wind farm development scenario to assess, NOAA foresees designating Alternative 4 would have no adverse impacts on development of a wind energy facility in federal waters because much or all of the area considered for the Diablo Canyon Call Area could be developed.

With regards to subsea electrical transmission cables from the three Morro Bay lease areas to grid connections at Morro Bay and DCP, Alternative 4 with adjustments made in its nearshore boundary as described in Chapter 3, offers near certainty that the three leaseholders can plan, install, and operate their cables without having to pass through the new sanctuary. The various constraints they have noted—landing cables at both Morro Bay and DCP, distance between cables, large bend radii, routing around and across other structures, micro siting—and the three leaseholders’ goal to avoid having to get a sanctuary permit, could all be accommodated with Alternative 4. Therefore, if all cables are landed at Morro Bay and DCP, NOAA finds that this alternative will have no adverse impact on offshore wind energy with regard to subsea electrical transmission cables from offshore wind farms to shore.

As noted for Alternative 3, the draft EIS also indicated that developers could propose a subsea electrical transmission cable from the three offshore Morro Bay lease areas to pass through Alternative 4 to a landing site well south of DCP. No public comments were submitted regarding this potential development scenario and NOAA is now considering this development scenario too speculative to warrant an assessment of reasonably foreseeable impacts from Alternative 4.

4.7.8 Environmental Consequences of Sub-Alternatives 5a and 5b Expanded Protection Areas (Offshore Energy)

Sub-Alternative 5a – Morro Bay Estuary

The inclusion of Morro Bay Estuary in the proposed sanctuary boundaries would not affect any existing offshore oil and gas development and would not affect future potential wind energy development, as no facilities are planned within the estuary. Therefore, there would be **no incremental impacts** on offshore energy under Sub-Alternative 5a.

Sub-Alternative 5b – Gaviota Coast Extension

Adding Sub-Alternative 5b, Gaviota Coast Extension, to any of the action alternatives would expand the proposed sanctuary boundaries to include several existing oil and gas facilities: an oil pipeline and gas pipeline transporting oil and gas from platforms in the Santa Ynez Unit to shore; a pipeline that ships produced water from onshore operations back to Platform Harmony for offshore discharge; and an electric cable between offshore platforms and the substation at Las Flores Canyon. Including this area in the proposed sanctuary boundaries under Sub-Alternative 5b would have **no impact** on operation of these pipelines because their operation is not limited by proposed regulations. However, similar to Section 4.7.3, any future repair activity to a pipeline would likely require an ONMS authorization of a state permit due to disturbance of the seabed. This would result in no more than **negligible adverse impacts** because of the ability to rely on other agencies’ permitting actions, expertise, and likely mitigation measures. A leak or spill from these pipelines would not be exempt from sanctuary regulations; thus, the potential impacts of the proposed sanctuary on offshore oil and gas activities from a pipeline leak or spill within or into the proposed sanctuary, or from beyond the boundary that subsequently enters and injures a sanctuary resource, would be same as those impacts analyzed in Section 4.7.3 for the Initial Boundary Alternative.

Discussions with BSEE indicate that the decommissioning and removal of these pipelines and the electrical cable to shore would most likely occur well into the future, far beyond five or 10 years. To date, there are no plans, conceptual or specific, that have been shared about abandonment and decommissioning of facilities within the boundaries of this sub-alternative. Therefore, NOAA is unable to consider impacts of the proposed sanctuary on such a distant and undefined project. Nevertheless, the proposed regulations would allow ONMS to review and authorize any proposed repair, abandonment, or removal of these pipelines and the power cable. Therefore, impacts on decommissioning and removal of these facilities would be the same as described for the Initial Boundary Alternative in Section 4.7.3.

Sub-Alternative 5b lies wholly within state waters where there is currently a ban on new oil and gas development. Thus, this sub-alternative would have **no impact** on new oil and gas development.

4.7.9 Environmental Consequences of No Action on Offshore Energy

Under the No Action Alternative, NOAA would not designate the proposed sanctuary and would not implement the proposed sanctuary regulations to support management of the proposed sanctuary. Offshore energy development in the study area would continue to be regulated by state and federal agencies with no additional ONMS authority. BOEM would continue to be the lead agency to review and approve routing, mitigation, and leases for subsea electrical transmission cables and floating substations between the Morro Bay lease areas and shore, and BSEE would continue to be the lead agency for ongoing oil and gas development and the permitting for decommissioning and removal of those facilities. Energy projects within coastal onshore areas would continue to be regulated by local jurisdictions. Therefore, **no impacts** on offshore energy development would result from the No Action Alternative.

4.8 Marine Transportation

Section 4.8.1 summarizes existing marine transportation activities in the region, including commercial cargo vessels (container, bulk, reefer, car carriers), tankers, and passenger vessels (cruise ships, ferries, and large private yachts). Smaller commercial and recreational vessels are also prevalent in the study area. Harbors near the study area host recreational, commercial, and research vessels. In turn, these vessels provide year-round opportunities for diving, fishing, sailing, whale watching, and wildlife viewing. For the most part, commercial fishing, recreational fishing and boating, and homeland security and military transportation are addressed separately in sections 4.4, 4.6, and 4.9, respectively. The impact analysis presents the standards used to evaluate impacts on marine transportation in Section 4.8.2 and addresses the reasonably foreseeable effects of the Initial Boundary Alternative and alternatives on marine transportation activities in sections 4.8.3–4.8.9. The study area for the marine transportation analysis includes the waters of the Initial Boundary Alternative and all action alternatives. In addition, implementation of regulations would affect vessel discharges occurring outside the study area that enter and injure resources of the proposed sanctuary. A majority of the traffic in the study area is coming to or from the Santa Barbara Channel.

4.8.1 Regional Overview of Affected Environment (Marine Transportation)

The history of the development of California's coastal economy has been influenced by the maritime industry. Ocean-based commerce and industries are important to maritime history, the modern economy, and the social character of this region.

The study area is north of the Ports of Los Angeles and Long Beach (LA/LB), so the statistics for vessels transiting this area are strongly influenced by the LA/LB port traffic and are of particular interest for this analysis. A majority of commercial vessel traffic (over 300 gross tons) that transits through the study area is either inbound or outbound from the Santa Barbara Channel. In 2022 there were approximately 3,700 transits (inbound and outbound) through the Santa Barbara Channel (Marine Exchange of Southern California, 2023).

Using Automatic Identification System (AIS) data, NOAA staff analyzed vessel traffic density in the study area. Vessel traffic density was analyzed as the number of kilometers traveled by vessels per square kilometer (km²) block. The vessels included were cargo vessels, large passenger ships, and tankers, all greater than 328 feet (100 meters) in length. Data from 2021 shows that approximately 77% of the transits completed in a heavily trafficked portion of this region were made by cargo ships (container, bulk, reefer, car carrier, bulk), 9% were tankers, and 3% of the traffic were passenger/recreational vessels. The remaining 11% of transits were completed by other types of vessels, including tugs, towing vessels, and fishing vessels (USCG, 2022). Figure 4.8-1 shows a representation of vessel traffic data from November 2023 and captures recent changes in traffic since new queuing processes went into effect in January 2022, which drastically changed the distribution of container vessel traffic compared to 2021. As the per capita income of the region and the U.S. increases, demand for consumer goods will likely increase the volume of goods shipped and the number of vessels traversing the area.

Due to the 2016 expansion of the Panama Canal, decreases in freight transport from Asia to large U.S. ports along the West Coast may occur (Park et al., 2020). The expanded Panama Canal allows larger vessels from Asia to travel directly to the ports along the Atlantic Ocean and bypass the prior route of U.S. West Coast ports en route to eastern U.S. cities.

Vessel transits within the region may also be affected by amendments to the Santa Barbara Channel Traffic Separation Scheme (TSS) and an expanded ATBA recently approved by the IMO subcommittee on Navigation, Communication, Search, and Rescue that went into effect on June 1, 2023. The amended IMO routing measures will help protect marine mammal populations and better organize shipping coming into the Santa Barbara Channel or transiting south of the Channel Islands. The 13-nautical mile extension of the TSS will queue ships farther west and off the continental shelf in deeper waters where there are fewer whales. The ATBA expansion covers important whale feeding habitat. As shown in Figure 4.8-2, the western-most portion of the amended ATBA and the amended TSS extension falls within the Initial Boundary Alternative.

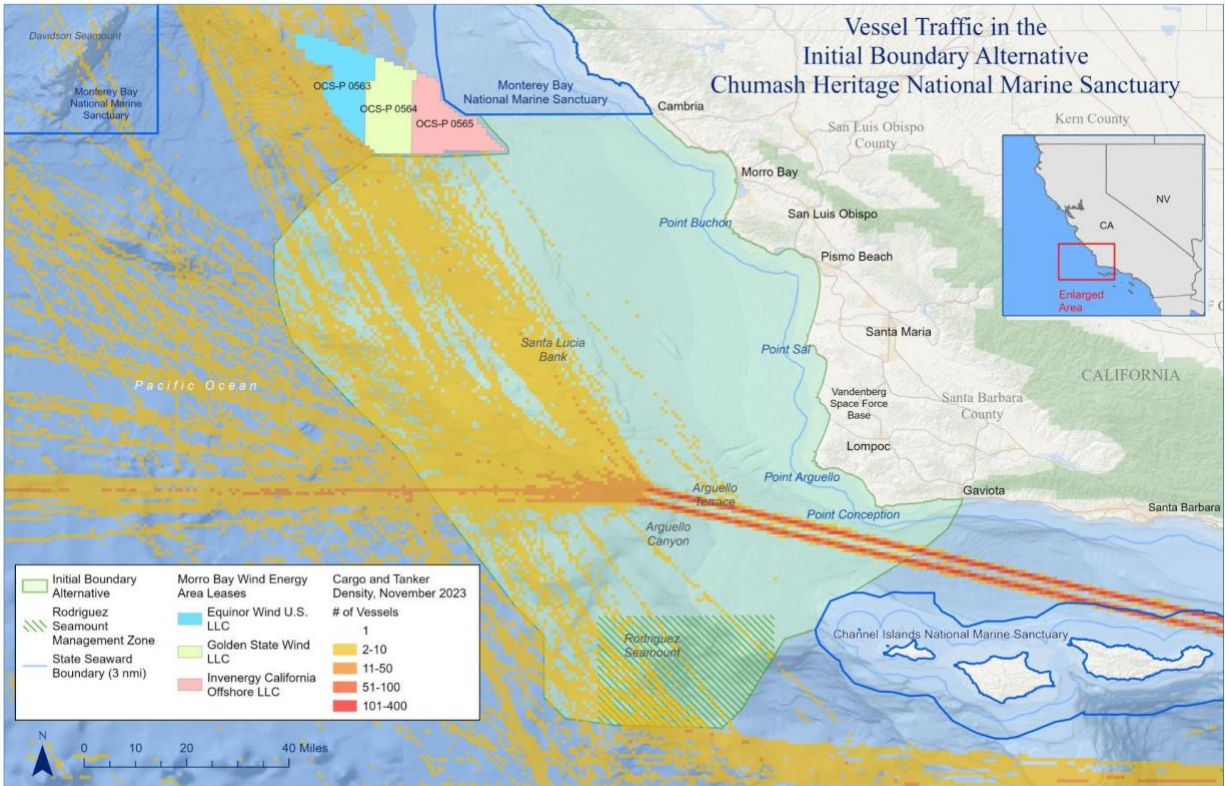


Figure 4.8-1. Vessel traffic density from AIS data. Source: Gatehouse maritime. Image: NOAA

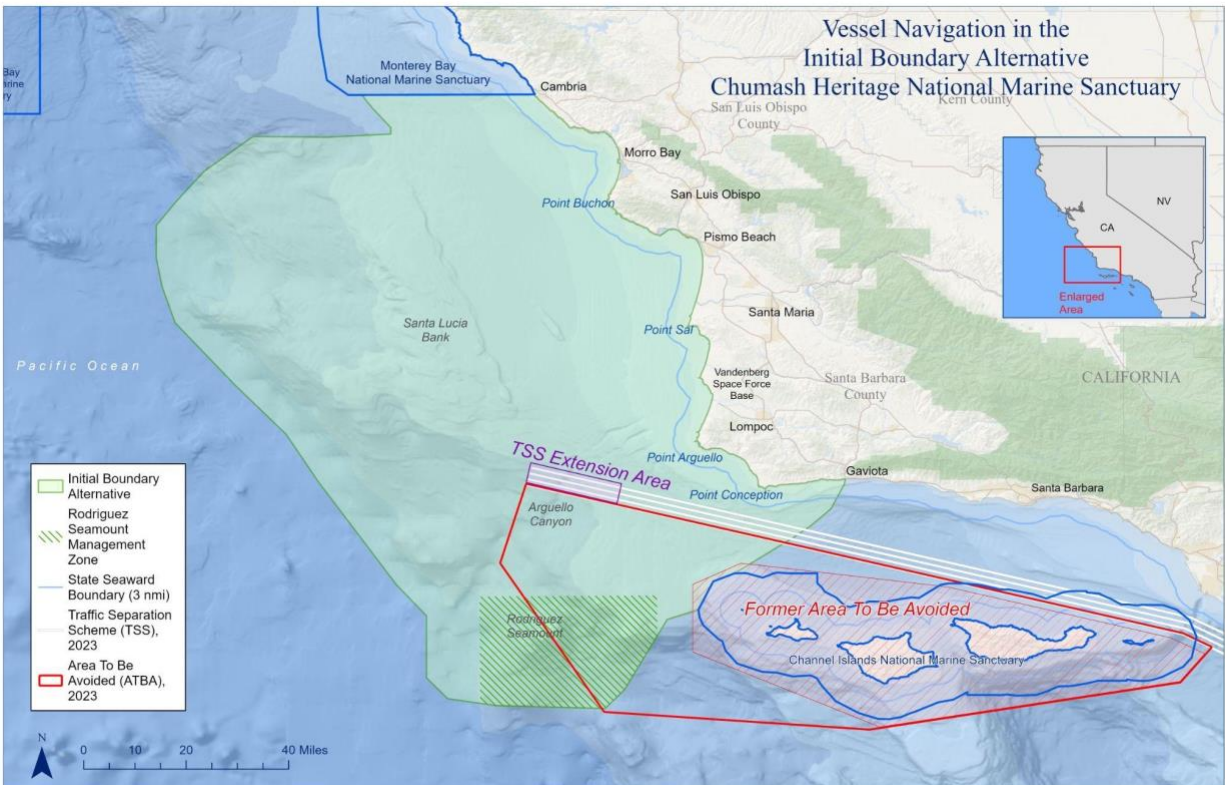


Figure 4.8-2. ATBA and TSS (as of June 1, 2023) in the Santa Barbara Channel, showing the extended portion of the TSS and the prior ATBA. Source: NOAA. Image: NOAA

Other changes in large vessel traffic are anticipated in the future due to new and modified vessel routing measures resulting from the USCG's recently completed Final Report of the Pacific Coast Port Access Route Study (PAC-PARS; USCG, 2023a). The PAC-PARS comprehensively evaluated safe access routes for vessel traffic movement proceeding to or from ports or places along the western seaboard of the U.S. to determine navigational risk and provide recommendations to uphold safety of navigation. The PAC-PARS recommends establishing new voluntary fairways for coastwise and nearshore vessel traffic with connections to existing TSSs and ports. These fairways facilitate safe and predictable traffic patterns as the demand for and use of Pacific coastal waters increases (USCG, 2023a). Results from the final PAC-PARS will inform USCG's decisions as to designating safe access routes for vessels proceeding to and from U.S. ports, which may include traffic routing measures, fairways, TSSs, limited access areas, recommended routes, and regulated navigation areas. They may also provide justification for regulatory projects or submissions to the IMO. As next steps, NOAA anticipates the USCG may initiate a federal rulemaking process and/or IMO's ships routing measures process (USCG, 2023c). Some of these existing and PAC-PARS-recommended vessel traffic routes overlap with the study area for the sanctuary. Figure 4.8-3 depicts vessel traffic patterns and routing measures overlaid on the Initial Boundary Alternative area.

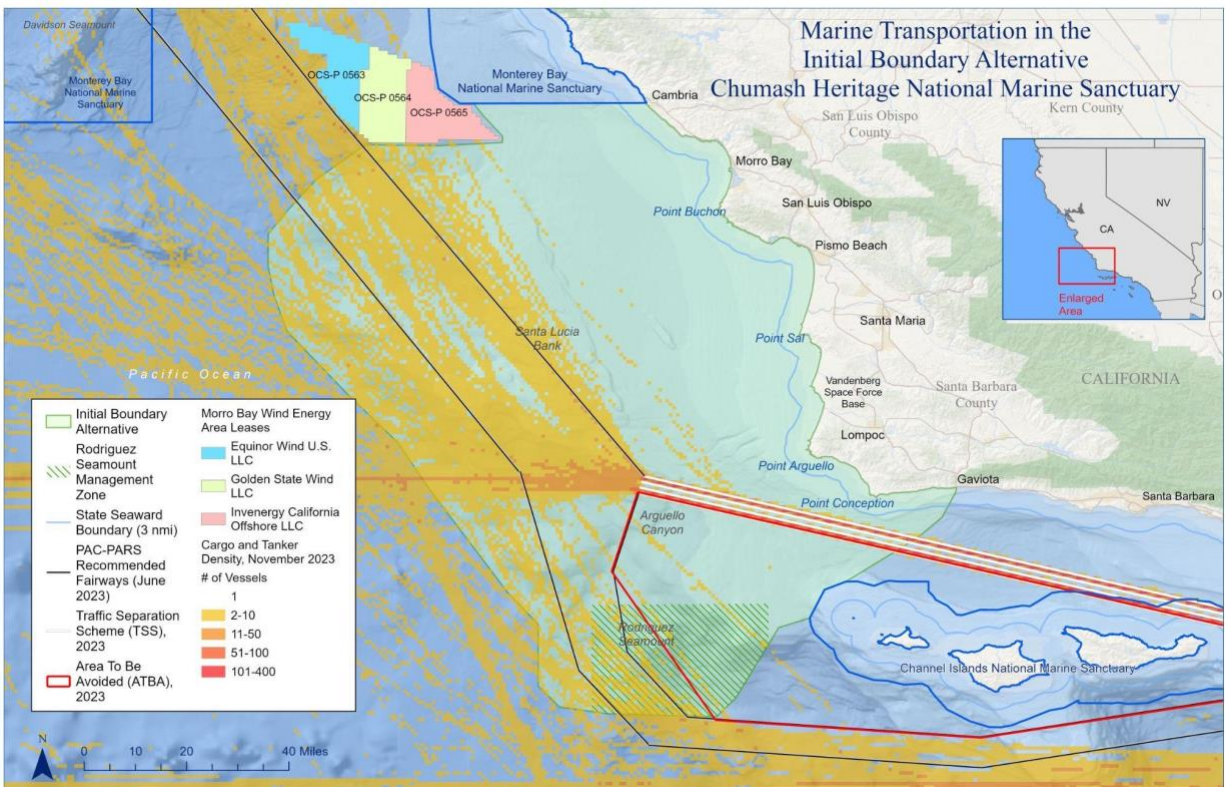


Figure 4.8-3. Vessel traffic (November 2023) and USCG-recommended fairways from PAC-PARS overlaid with the Initial Boundary Alternative and Rodriguez Seamount Management Zone. Image: NOAA

Vessel traffic within the study area would also likely increase in the future due to new planned development of the three Morro Bay lease areas in the Morro Bay Wind Energy Area, including towing of constructed wind platforms/turbines, or components of those wind platforms/turbines to be constructed locally. At this time, NOAA has not received detailed projections from BOEM or the wind industry as to how much and what type of marine vessels could be expected, but there is consensus that full development of the Morro Bay lease areas, or any other wind development should it occur in the area, would cause a substantial increase in the amount of coastal transits of large ships, barges, and crew boats. Oil and gas platform abandonment and decommissioning will likely occur in the next 5–10 years in the study area and would also result in an increase in vessel traffic.

In addition to the threat of materials being deposited from vessels into the ocean, vessels themselves can directly affect various marine resources. Vessels can potentially alter the behavior of marine mammals and seabirds, changing the distribution of the animals or the amount of time that they spend feeding and/or resting. Vessels also injure or kill marine mammals through collisions. In the fall of 2007, there were at least three blue whale deaths off the coast of southern California that were attributed to ship strikes (Abramson et al., 2011). From 1986–2019, there were 107 recorded fatal ship strikes on large whales in California, and from 2007–2019, there were 48 recorded fatal ship strikes on endangered whales in California (Carretta et al., 2021). Documented ship strike deaths are considered minimum values. Cetacean carcasses detection is consistently quite low across regions and species. Observed numbers are unrepresentative of true impacts. For example, reporting for humpback whale vessel strikes is estimated to be only 10% of all strikes (Carretta et al., 2021).

4.8.2 Impact Assessment Methodology (Marine Transportation)

The Initial Boundary Alternative or any of the other action alternatives would result in a significant impact on marine transportation if its implementation would result in any of the following:

- Displacement of vessels in harbors within the study area;
- Substantial increase in operating cost to comply with any new sanctuary regulation; or
- Substantial delay of commercial vessel traffic.

The analysis includes an assessment of commercial shipping, which includes both domestic and foreign passenger vessels, such as cruise ships, dry cargo freighters, and tankers. The analysis of potential impacts of the vessel desertion prohibition on marine transportation includes all vessel sizes. None of the alternatives would result in significant impacts on marine transportation, as documented in the following subsections.

In the following analysis, the use of the terms “nautical miles” and “miles” depends on the jurisdiction and regulatory authority. Some regulations refer to nautical miles, while other regulations simply refer to miles, which is assumed to be statute miles. The same applies to the use of the terms “gross registered tons” and “gross tons” because the existing regulations vary in their references.

4.8.3 Environmental Consequences of the Initial Boundary Alternative (Marine Transportation)

Several prohibitions in the sanctuary regulations have the potential to affect marine transportation. These include the prohibitions on: discharge or deposit of matter or materials within the proposed sanctuary and from beyond the boundary of the sanctuary, if the discharged material subsequently enters the sanctuary and injures a sanctuary resource or quality; introduction or release of introduced species; desertion of a vessel aground, at anchor, or adrift and leaving harmful matter on deserted vessels in the sanctuary; and abandoning any structure, matter, or material on the submerged lands of the sanctuary. However, as discussed below, the **adverse impacts** on marine transportation operations under the Initial Boundary Alternative would be **minor**. The Initial Boundary Alternative would not result in displacement of vessels in harbors or delay of commercial traffic.

Adverse Effects on Marine Transportation

Discharge Regulations

The regulations prohibiting discharges of matter and material into the sanctuary would result in direct, **short-term, minor adverse impacts** on marine transportation under the Initial Boundary Alternative. Current state and federal regulations already limit different types of discharges into the waters of the proposed sanctuary, so the addition of the sanctuary regulations would represent an incremental increase in restrictions on vessel discharges. The discharge regulations would affect sewage and other materials associated with vessel operations. The regulations would prohibit the discharge or deposit of any matter or material from vessels within or into sanctuary waters. The relevant exceptions to this prohibition would be:

- Fish, fish parts, chumming materials, or bait used during lawful fishing activities.
- Clean effluent generated incidental to vessel use by an operable, approved Type I or II MSD, from vessels less than 300 gross register tonnage (GRT) and from vessels 300 GRT or greater without sufficient capacity to hold sewage while in the sanctuary.
- Clean vessel deck wash down, vessel engine cooling water, vessel generator cooling water, and bilge water.
- Anchor wash.
- Vessel engine or generator exhaust.
- Discharge of clean graywater, as defined by Section 312 of the CWA (galley, bath, and shower water), from vessels less than 300 GRT, and from vessels 300 GRT or greater without sufficient capacity to hold graywater within the sanctuaries.

Cruise ships would also be prohibited from discharging or depositing material or matter in the sanctuary. Section 4.2 also contains details on cruise ship discharges.

Under the regulations, the exceptions for cruise ships, as listed below, would be more limited than the exceptions for other vessels:

- Clean: vessel engine cooling water, vessel generator cooling water, and bilge water.
- Vessel engine or generator exhaust.
- Anchor wash.

Sewage

The USEPA has established a No Discharge Zone (NDZ) for marine waters within three miles of the California coastline (the territorial sea, as defined in the CWA), prohibiting discharge of treated and untreated sewage from all large passenger vessels of 300 gross tons or greater and large oceangoing vessels of 300 gross tons or greater with available holding tank capacity or containing sewage generated while the vessel was outside state waters (40 C.F.R. § 140.4(b)(2)) (USEPA, 2012). This 3-mile NDZ currently applies within the Initial Boundary Alternative and all other alternatives. Section 312 of the CWA (33 U.S.C. § 1322) and its implementing regulations (33 C.F.R. part 159) require the use of MSDs for all vessels within three miles of the coast if equipped with an installed toilet. Vessels up to 65 feet (19.7 meters) may use a Type I, II, or III MSD. Vessels over 65 feet in length must have a Type II or Type III MSD. Smaller vessels may have MSDs (but are not required to), or may have portable toilets, portable sewage receptacles, or no toilet facilities.

Beyond three miles from the coast vessels may discharge treated or untreated sewage from any type of MSD. The sanctuary regulation to prohibit discharge of untreated sewage would apply throughout the sanctuary regardless of distance from shore. Smaller vessels spending time in the area rather than transiting through it, including vessels engaged in research, would either discharge waste through an approved Type I or II MSD, or hold the waste, so little impact is expected on that type of vessel. Vessel operators would be required to lock all MSDs in a manner that prevents discharge or deposit of untreated sewage. Aside from discharge of sewage outside sanctuary boundaries, discharge into a mobile or shore pumpout or other on-shore sewage disposal facility would be an option for the waste from smaller vessels, when the facilities have the capacity to accept their volume of waste; such facilities exist in local harbors and are free to use. Typically, pumpout services cannot serve large vessels due to their size and limited pumpout equipment and tank capacities. Should a vessel owner or operator choose to install an MSD, there would be one-time costs for purchase of the device and installation, and periodic costs for maintenance. Due to these factors, the Initial Boundary Alternative has the potential to cause some adverse economic effects on marine transportation. While it is not possible due to lack of data to quantify the number of vessels that would choose to engage in these options, the number is expected to be limited because the majority of vessels already have installed toilets and MSDs. In addition, the one-time installation cost and periodic maintenance cost is not expected to cause a substantial increase in the cost of operating a vessel. Therefore, the prohibition on discharge of untreated sewage into the sanctuary is expected to result in **short-term, direct, minor adverse impacts** on the marine transportation industry under the Initial Boundary Alternative.

Cruise ships, which generate more sewage and wastewater than other vessels due to the numbers of passengers they carry, have a typical transit speed of 18–20 knots in open water (King County 2007). Although their ability to hold sewage and treated wastewater varies, cruise ships may hold sewage for an average of 62 hours (USEPA, 2008) or treated wastewater for 1–2 days (King County, 2007). Cruise ships would be prohibited from discharging sewage in the sanctuary, but it is feasible for cruise ships to pass through the sanctuary without discharging. Overall, the adverse impact on marine transportation from the prohibition on sewage discharge is expected to be less than significant.

Other Material

The discharge regulations would affect vessel discharge of other matter in the sanctuary, including, but not limited to, graywater, bilge water, and solid waste. Most vessels with graywater are larger in size and function, requiring a kitchen, shower, and/or laundry facilities onboard.

Graywater is a category of discharge covered by a Vessel General Permit issued by USEPA, which applies only to the territorial sea (three miles from shore). Large passenger vessel and cruise ship graywater discharges are prohibited in state waters under the Vessel General Permit, and graywater discharges (including graywater mixed with sewage) from oceangoing vessels of 300 gross tons with sufficient holding capacity are prohibited. The sanctuary discharge regulation would not prohibit discharge of clean graywater for vessels less than 300 gross tons, or for vessels above that size without sufficient capacity to hold graywater while within the sanctuary boundaries. Moreover, responsible vessel operators generally secure loads to prevent loss into the ocean and do not discharge other solid waste deliberately overboard. Therefore, any **adverse impacts** from the regulatory prohibitions on discharging graywater and other material would be **negligible** on marine transportation under the Initial Boundary Alternative.

Deserted Vessels Regulation

It is currently illegal for abandoned vessels to “trespass” on submerged lands under CSLC’s jurisdiction. It is also illegal to abandon barges greater than 100 gross tons on the navigable waters of the U.S. per the Abandoned Barge Act of 1992 (46 U.S.C. § 4701 *et seq.*), but there is currently no comparable federal law for other vessels. Under the Initial Boundary Alternative, the regulation prohibiting vessel desertion would mean no owner, operator, or person in charge could desert any vessel within the sanctuary. Vessels could not be deserted while aground, adrift, or at anchor under the regulation. In addition, no harmful matter could be left aboard a grounded or deserted vessel; this could lead to a prohibited discharge or deposit of harmful material or matter from the untended vessel. The potential for a vessel at anchor to ground or discharge or deposit materials, when the vessel is not secured in a timely manner, is another factor for considering a vessel deserted. Abandoned vessels will likely have extensive biofouling and, therefore, need to be managed appropriately to avoid the inadvertent translocation of species prior to moving them to a new location.

The regulation prohibiting abandoning a vessel would have a **direct, short-term, minor adverse impact** on the marine transportation industry, as it would place an additional economic burden on vessel owners/responsible parties to ensure that capsized, sunken, or otherwise incapacitated vessels be salvaged rather than abandoned and to ensure that any hazardous substances are removed from grounded or abandoned vessels. The intent of the regulation is to ensure that vessel owners take responsibility for their vessels before damage to sanctuary resources and habitats can occur or worsen. The financial impact of penalties, response costs, or damages on a responsible party found to have abandoned a vessel in violation of the sanctuary regulation could vary depending on such factors as the nature of the deserted vessel, if it contained hazardous substances, and impacts from the vessel on sanctuary resources. While this might be an immediate burden for vessel owners, the overall risk of an individual boat being abandoned is expected to be relatively low based on experiences in other sanctuaries, especially those offshore of California, and the associated **adverse impact** on

marine transportation as a whole is expected to be **minor** under the Initial Boundary Alternative.

Ballast Water Discharge Prohibition/Introduced Species Regulations

The ballast water management regime in offshore waters of California, out to the U.S. Exclusive Economic Zone, is managed by CSLC, USCG, and USEPA. One of the principal purposes of the California Marine Invasive Species Program is to prevent the spread of introduced species from ballast water and biofouling. Vessels that come to port in California currently have the option to retain all ballast water on board or take up or exchange/discharge³⁸ ballast water if in compliance with the ballast water management regime for this region. Compliance with these current regulations largely requires exchange of ballast water beyond 200 nautical miles from land for vessels coming to port in California. For vessels transiting along the coast, they may exchange ballast water that has been taken aboard within the U.S. Pacific Coast Region and discharge it within the Pacific Coast Region if they do so when beyond 50 nautical miles from land. Other regulations and restrictions from these three agencies apply to ballast water discharges, including some exemptions in the case of emergency. Public comments from CSLC indicate very few vessels will still need to exchange ballast water; most vessels that need to manage their ballast water will rely on onboard ballast water treatment systems and will not need to exchange their water at all.

The sanctuary regulation prohibiting discharges would not allow ballast water to be discharged within the sanctuary, the furthest western boundary of which would be 68 nautical miles from land under the Initial Boundary Alternative. Vessels coming from international ports that transit the sanctuary will have already exchanged ballast water beyond 200 nautical miles from land. Because some vessels engaged in trade along the U.S. Pacific Coast Region may have planned to rely on ballast water discharge beyond 50 nautical miles, this prohibition might affect their operations. However, because few if any of these vessels would be making port calls within the sanctuary, because relatively few vessels transit along the coast in the range between 50–68 nautical miles from land in this area, and because the sanctuary is not an area where many vessels are actively engaged in uptake, exchange, and discharge of ballast water, the discharge regulation and introduced species regulation would have **short-term, direct, minor adverse impacts** on vessel operations under the Initial Boundary Alternative.

4.8.4 Environmental Consequences of Alternative 1 (Marine Transportation)

Adverse Effects on Marine Transportation

Discharge Regulations

The discharge regulations would have less adverse impacts under Alternative 1, Bank to Coast, compared to the Initial Boundary Alternative, because a large portion of the offshore waters

³⁸ Note: Ballast water “exchange” is the practice of exchanging coastal water with mid-ocean water while a vessel is in transit away from land, whereas “discharge” is typically used to describe the release of ballast water at the vessel’s destination. The similar use of the terms “exchange” and “discharge” here is meant to highlight that the process of ballast water exchange may result in coastal water being released in or near the sanctuary.

beyond the Santa Lucia Bank would not be within the sanctuary boundaries. This would provide either a shorter distance for vessels to travel to discharge untreated sewage or graywater, or would reduce the area where large vessels transiting the coast would be within the sanctuary. Further, the PAC-PARS process could shift coastal vessel traffic lanes and corridors further offshore over the next five years, quite possibly into the offshore waters excluded in Alternative 1. This could mean even fewer vessels would be subject to the adverse, albeit minor, impacts caused by the discharge regulations. **Adverse impacts** would remain **direct, short-term, and minor** under Alternative 1.

Deserted Vessels Regulation

The proposed regulation prohibiting deserting a vessel would have less adverse impacts under Alternative 1 compared to the Initial Boundary Alternative due to the reduced spatial area and associated reduced area where vessels could potentially be deserted, but **adverse impacts** would remain **direct, short-term, and minor**.

Ballast Water Discharge Prohibition/Introduced Species Regulations

For the potential impacts from the regulations prohibiting discharges and introduced species, which are largely linked to ballast water, the **minor adverse impacts** described for the Initial Boundary Alternative would be reduced to **negligible** levels since most of the current ballast water discharge management takes place beyond 50 nautical miles from shore and the farthest distance from shore for the boundary under Alternative 1 would be 51 nautical miles from shore.

4.8.5 Environmental Consequences of Alternative 2 (Marine Transportation)

Adverse Effects on Marine Transportation

Discharge Regulations

Impacts from Alternative 2, Cropped Bank to Coast, would be reduced compared to the Initial Boundary Alternative because the projected increase in on-site vessel activities to construct and operate wind farms in the Morro Bay Wind Energy Area, as well as any related dredging activity in the Morro Bay Harbor or DCP, would be largely outside the sanctuary and therefore not subject to sanctuary discharge regulations. Alternative 2 would also provide a shorter distance for vessels to travel to discharge untreated sewage or graywater and would reduce the area where large vessels transiting the coast would be within the sanctuary. Further, the PAC-PARS process could shift coastal vessel traffic lanes and corridors further offshore over the next five years, quite possibly into the offshore waters excluded in Alternative 2. This could mean even fewer vessels would be subject to the adverse, albeit minor, impacts caused by the proposed discharge regulation. While lessened as described above, **adverse impacts** would remain **direct, short-term, and minor** under Alternative 2.

Deserted Vessels Regulation

The impacts from deserting a vessel would still represent **direct, short-term, minor adverse impacts** on marine transportation under Alternative 2. However, because the coast from the southern boundary of MBNMS to Hazard Canyon Reef of the Initial Boundary Alternative would be excluded from the sanctuary in Alternative 2, the impacts on marine

transportation would be proportionally reduced. For the rest of the sanctuary in Alternative 2, from Hazard Canyon Reef to Gaviota Creek, the potential adverse impacts from the vessel desertion regulation would be unchanged compared to the Initial Boundary Alternative.

Ballast Water Discharge Prohibition/Introduced Species Regulations

For the potential impacts from the regulations prohibiting discharges and introduced species, which are largely linked to ballast water, the **minor adverse impacts** described for the Initial Boundary Alternative would be reduced to **negligible** levels since most of the current ballast water discharge management takes place beyond 50 nautical miles from shore and the farthest distance from shore for the boundary under Alternative 2 would be 51 nautical miles from shore.

4.8.6 Environmental Consequences of Alternative 3 (Marine Transportation)

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) between the draft and final EIS does not alter the beneficial or adverse impact levels to marine transportation. The boundary area excluded is too small; major vessel routes and fairways are not located in this area; and NOAA is not aware of any other distinct marine transportation activities occurring in this area, to meaningfully affect the impact of sanctuary designation on marine transportation in the area. As such, this minor modification would not result in environmental impacts other than those already considered (and described here).

Adverse Effects on Marine Transportation

Discharge Regulations

The adverse impacts associated with discharge regulations would be reduced under Alternative 3, Diablo to Gaviota Creek, compared to the Initial Boundary Alternative, because a considerable portion of the area from Santa Lucia Bank and DCPD all the way to the Morro Bay Wind Energy Area would not be included in the sanctuary boundaries. Current vessel traffic in that area, and the increase in vessel traffic projected to construct and operate wind farms in the Morro Bay Wind Energy Area would not be subject to any impacts from the regulations prohibiting discharge of sewage or other material. However, because Alternative 3 includes some of the offshore portions west of the Santa Lucia Bank that are also included in the Initial Boundary Alternative, the impacts from the discharge regulations in that area would be the same as for the Initial Boundary Alternative. Overall, **adverse impacts** would remain **direct, short-term**, and **minor** under Alternative 3.

Deserted Vessels Regulation

The impacts from deserting a vessel would still represent **direct, short-term, minor adverse impacts** on marine transportation under Alternative 3. However, because about a third of the coast of the Initial Boundary Alternative is excluded from sanctuary protection in Alternative 3 (the area from Cambria to just south of Diablo Cove, including the waters near the active port of Morro Bay), the impacts on marine transportation are proportionally reduced. For the rest of the sanctuary in Alternative 3, from just south of Diablo Cove to Gaviota, the potential

adverse impacts from the vessel desertion regulation would be unchanged compared to the Initial Boundary Alternative.

Ballast Water Discharge Prohibition/Introduced Species Regulations

Like the Initial Boundary Alternative, the furthest western boundary of Alternative 3 would also be 68 nautical miles from land, so vessels that may have planned to rely on ballast water discharge beyond 50 nautical miles would be affected in the same way under this alternative. Therefore, the regulations prohibiting discharges and introduced species would result in the same **direct, short-term, minor adverse impacts** under Alternative 3 as the Initial Boundary Alternative.

4.8.7 Environmental Consequences of Alternative 4 (Marine Transportation)

For the same reasons mentioned with Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the beneficial or adverse impact levels to marine transportation.

Adverse Effects on Marine Transportation

Discharge Regulations

Alternative 4, Combined Smallest, would have the least impact on marine transportation because both the exclusions offshore of the Santa Lucia Bank (Alternative 1) and much of the Bank north to Cambria and the Morro Bay Wind Energy Area (Alternative 3) would place a large area outside the proposed sanctuary boundaries.

The impacts from the prohibitions on discharging untreated sewage, graywater, and other matter would still be considered **short-term, direct, minor adverse** impacts, but would affect far fewer vessels and vessel operators because about 3,000 fewer square miles would be protected by the proposed sanctuary.

Deserted Vessels Regulation

The **adverse impacts** on marine transportation from the vessel desertion regulation would be the same as for Alternative 3 and remain **direct, short-term, and minor**.

Ballast Water Discharge Prohibition/Introduced Species Regulations

The impacts from the proposed regulations prohibiting discharges and introduced species, which are largely linked to ballast water, would be the same as under alternatives 1 and 2 and would be **negligible, minor adverse impacts**, since most of the current ballast water discharge management takes place beyond 50 nautical miles from shore and the farthest distance from shore for the boundary under Alternative 4 would be 52 nautical miles from shore.

4.8.8 Expanded Protection from Sub-Alternatives 5a and 5b (Marine Transportation)

Sub-Alternative 5a: Morro Bay Estuary

Sub-Alternative 5a, the inclusion of Morro Bay Estuary, would have incremental **indirect, short-term, minor adverse impacts** on marine transportation due to the prohibition on deserting a vessel for the same reasons as articulated for the Initial Boundary Alternative (Section 4.8.3). Sewage discharge is already prohibited in the Morro Bay Estuary and the number of vessels which would need to discharge gray water is likely very low. In addition, Morro Bay Harbor is immediately adjacent to the Morro Bay Estuary and has pumpout facilities for vessels that could handle any sewage or gray water discharge needs. Therefore, discharge regulations would have no impact on marine transportation under Sub-Alternative 5a.

Sub-Alternative 5b: Gaviota Coast Extension

Sub-Alternative 5b, Gaviota Coast Extension, would have a slight incremental increase in adverse impacts identified for the Initial Boundary Alternative on marine transportation for general vessel discharge prohibitions and for the vessel desertion prohibition but these incremental **adverse impacts** would remain **minor**. Because this proposed extension of the proposed sanctuary boundaries would be exclusively in state waters, discharge of sewage in state waters is prohibited, so this proposed regulatory prohibition would have **no impact**.

4.8.9 Environmental Consequences of No Action (Marine Transportation)

Under the No Action Alternative, marine transportation would continue to be managed in the study area as it is currently managed under federal and state laws. No impacts on marine transportation would therefore occur under the No Action Alternative. Under the No Action Alternative, NOAA would not designate the sanctuary, and vessel owners and operators would not need to take any additional actions to comply with the sanctuary regulations.

4.9 Department of Defense and Homeland Security Activities

The DoD and homeland security activities within and adjacent to the study area for the proposed sanctuary include operations of the USCG, the Department of the Air Force, and U.S. Navy.

4.9.1 Regional Overview of Affected Environment (Department of Defense and Homeland Security Activities)

VSFB; U.S. Navy Training and Testing Areas Offshore; and the USCG Station Morro Bay and Marine Safety Detachment, Santa Barbara are located within the study area.

Department of Defense

DoD activities within the meaning of the proposed exemption described in the proposed rule are those activities that DoD carries out or approves. DoD has informed NOAA that all activities described here are carried out or approved by DoD.

The U.S. Navy, within DoD, has been using the waters and airspace off the coast of central and southern California for military training and testing activities for nearly 80 years. There are specific areas within which they have regular at-sea activities. DoD (U.S. Navy) operates the Point Mugu Sea Range (PMSR) off the coast of central and southern California, overlapping a large area of the proposed sanctuary boundaries (see Figure 4.9-2).

The study area overlaps substantially with long-standing Military Warning Areas (see Figure 4.9-1). DoD performs critical military testing, training, and operations in these areas and is committed to active participation and collaboration with NOAA.

DoD activities are conducted to meet the military services' statutory requirement to train and equip forces in preparation for deployment in support of military operations and national defense objectives. DoD conducts training, testing, and operations in the airspace, sea surface, subsurface, and seafloor of the Outer Continental Shelf offshore California that includes the proposed sanctuary area. Maintaining access to DoD training and testing areas is critical to supporting the National Defense Strategy's focus on warfighting readiness and resilience.

A key component to these operations is VSFB, located on the coast northwest of Lompoc, California. VSFB is the U.S. Space Force's West Coast Spaceport and Test Range. The base commonly enables commercial, civil, and military national security space launches on its footprint. The base is mainly a space launch base, launching spacecraft from the Western Range, and performs missile testing. In addition to its military space launch mission, VSFB hosts space launches for civil and commercial space entities, such as the National Aeronautics and Space Administration and SpaceX. Moreover, VSFB has intercontinental ballistic missile launch facilities and activities. Finally, Space Launch Delta 30's national defense mission includes various other activities, including training for war and other operations, such as deployments. VSFB is permitted to conduct up to 110 launches per year. Current launches average about 30 per year over the last several years. However, the number of launches is expected to increase in the near future.

VSFB contains 99,604 acres of land, operates approximately 16 launch facilities and complexes, and maintains the second largest airfield runway in the DoD, which is 15,000 feet long. The installation provides a safe location for testing new and existing DoD-sanctioned programs as well as government and commercial launch and range services. VSFB also offers future space lift and land-based mission capabilities in support of the National Defense Strategy. The base has 42 miles of coastline, 9,000 acres of sand dunes, 5,000 acres of wetlands, more than 1,600 prehistoric archaeological resources, 14 rock art sites, a National Historic Landmark, five Native American villages, a National Historic Trail, 42 Cold War-era complexes, and more than 17 different endangered or threatened species (VSFB, 2022).

VSFB has a coastal loading dock that is used to bring to the base large rocket components, including rocket components recovered at sea from launches that jettison such components. The loading dock area lies within a small, protected cove with a few pilings and a small breakwater and ramp. There is no fueling station, maintenance yard or other infrastructure, which might pose a discharge threat. DoD conducts occasional dredging of the approach to the loading dock, with the dredged sand placed upland. Based on comments on the draft EIS and to ensure

consistency in the approach to harbors, NOAA has excluded the harbor from the sanctuary boundary.³⁹

³⁹ As discussed in Chapter 3, the Initial Boundary Alternative (and other alternatives) exclude the VSFB harbor area. This is a technical change to ensure consistency in the approach to harbors (namely, excluding existing coastal harbors from the boundaries of the sanctuary). This is also a minor variation of the boundary alternatives previously presented, the impacts of which are encompassed in the scope of alternatives in the draft EIS. For more information and a detailed discussion of this point, see Response to Comments BO-14 and BO-15 in Appendix A.

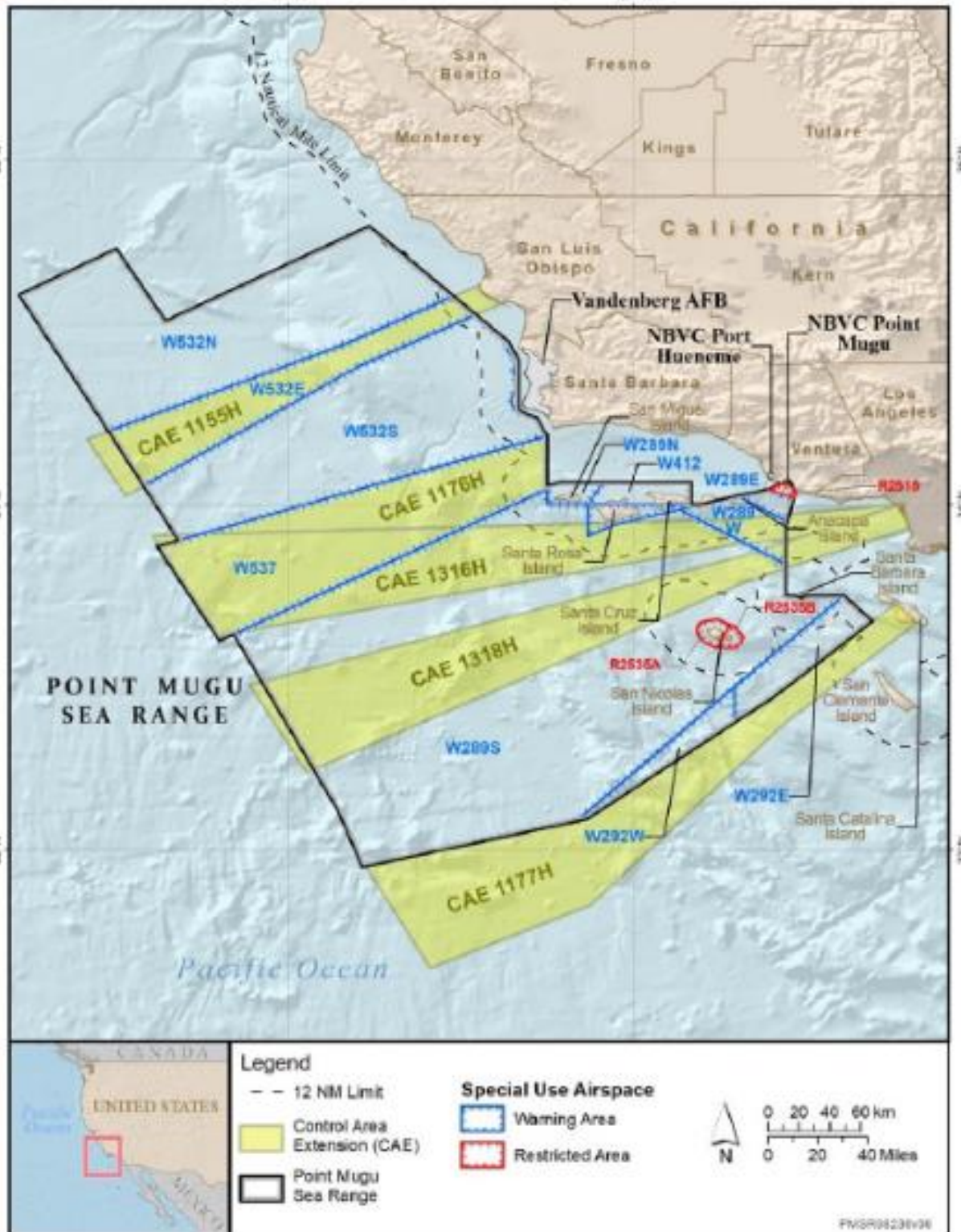


Figure 4.9-1. Military use areas in and adjacent to the proposed sanctuary. Vandenberg AFB was renamed to Vandenberg Space Force Base (VSFB) on May 14, 2021. Source: PMSR EIS, 2022 (U.S. Department of the Navy, 2022). Image: VSFB

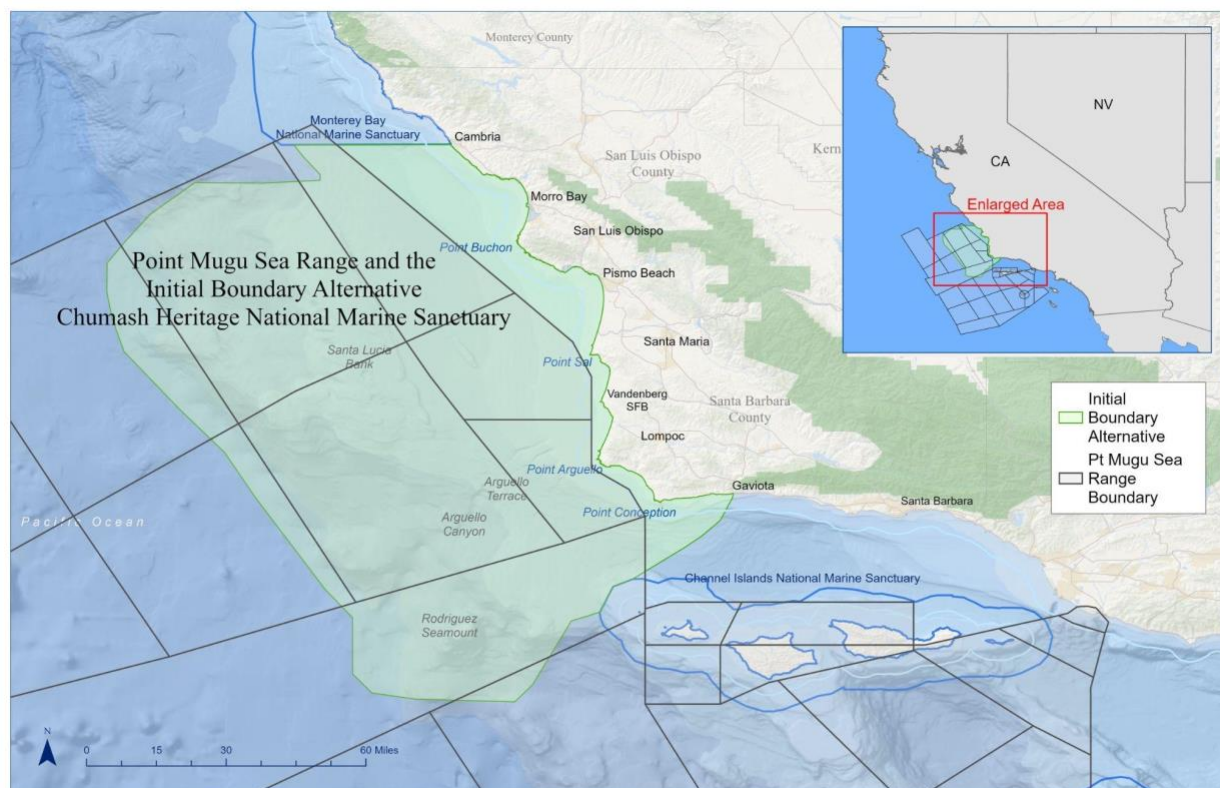


Figure 4.9-2. PMSR and the Initial Boundary Alternative for the proposed sanctuary. Data Source: U.S. Navy. Image: NOAA

VSFB is recognized as a DoD Major Range Test Facility Base (MRTFB) activity. MRTFB activities are part of the designated core set of DoD Test and Evaluation (T&E) infrastructure and associated workforce and are considered a national asset. VSFB offers a unique and irreplaceable T&E operating environment that is used by all DoD branches. VSFB commands the West Coast Offshore Operating Area (WCOOA), a 200-nautical-mile-wide corridor off the U.S. West Coast that stretches from Portland, Oregon to Baja, California. The WCOOA is used extensively for space lift operations, ballistic missile test events, and aeronautical operations. Moreover, the Navy conducts state-of-the-art weapons systems testing and evaluations in the PMSR, which overlaps with the proposed sanctuary area (see Figure 4.9-1 and Figure 4.9-2; U.S. Department of the Navy, 2022). PMSR is also recognized as a MRTFB.

VSFB supports air warfare training and testing for the Joint Strike Fighter, F-22 Raptor, F-15 Eagle, F-16 Falcon, RQ-9 Global Hawk, hypersonic platforms, and multiple uncrewed aerial vehicle programs. VSFB also supports national defense missions and commercial launch endeavors by Firefly, United Launch Alliance, SpaceX, Missile Defense Agency, and Global Strike Command. This range is one of the few at-sea ranges where some long-range weapons systems can be used in a test or training environment to their full capacity. Future uses are expected to utilize this capability to support hypersonic weapons and long-range anti-ship missiles. PMSR supports live-fire training exercises required prior to deployment, including activities that can only be conducted in PMSR.

PMSR also maintains military operational readiness by providing a safe, operationally realistic, and thoroughly instrumented sea range testing environment in collaboration with VSFB, foreign allies, and industry partners who conduct additional weapons and systems testing and training missions. Established in 1946, the 36,000-square-mile at-sea range is DoD's largest and most extensively instrumented over-water range, offering unique capabilities for realistic open ocean and littoral operating environments. The PMSR is the U.S. Navy's primary ocean testing area for guided missiles and related ordnance. Test operations on the PMSR are conducted under highly controlled conditions, allowing for collecting empirical data to evaluate weapon system or subsystem performance. The sea range supports a wide range of test and training activities, including ships, aircraft, weapons systems, and specialized systems.

The types and tempo of testing and training activities have fluctuated over time because of the introduction of new technologies, the evolving nature of international events, advances in warfighting doctrine and procedures, and changes in force structure (e.g., organization of ships, submarines, aircraft, and weapons). Such developments influence the frequency, duration, intensity, and location of required testing and training activities. Most of the factors influencing frequency and types of activities are fluid in nature (i.e., continually evolving and changing), and the PMSR activity level will continue to fluctuate in the future. Projecting future testing activities' duration and frequency varies depending on U.S. Navy Fleet requirements and funding. Future testing depends on scientific and technological developments that are not easy to predict, and experimental designs may evolve with emerging science and technology. Even with these challenges, the U.S. Navy makes every effort to forecast all future testing requirements. Requirements are ultimately driven by the need to support DoD and U.S. Navy readiness based on emerging national security interests.

Major categories of training activities currently conducted in the study area include air warfare (e.g., air-to-air, surface-to-air), electronic warfare (e.g., directed energy/airborne electronic detection and counter measures, lasers, and high-powered microwave systems), and surface warfare (e.g., surface-to-surface, air-to-surface, and subsurface-to-surface). PMSR regularly hosts activities such as live-fire gunnery or missiles that are hazardous to non-participants. PMSR safety officials make every practical effort to clear non-participating ships and aircraft out of the hazard area. Conflict avoidance is aided by use of the Federal Aviation Administration designated special use airspace, Notices to Mariners and Notices to Airmen, as well as coordination with agencies controlling aircraft and surface traffic.

There are numerous Navy activities that conduct testing and training in this region. Although the PMSR is the largest designated area, other Navy activities such as the U.S. Pacific Fleet and the Naval Sea Systems Command conduct Military Readiness Activities in this region, as well as other services.

The Naval History and Heritage Command administers the U.S. Navy's authorities and responsibilities under the Sunken Military Craft Act to protect sunken military crafts. The study area includes eight U.S. Navy sunken military craft and potentially additional sunken military craft that have not been located.

Sunken military craft, and their associated contents, represent a collection of non-renewable and significant historical resources that may also serve as maritime graves, carry unexploded

ordnance, or contain oil and other hazardous materials. Sunken military craft are administered by the respective Secretary concerned pursuant to the Sunken Military Craft Act. The Secretary concerned is solely responsible for authorizing disturbance of sunken military craft under the Sunken Military Craft Act, specifically for archaeological, historical, or educational purposes, and will consult with NOAA when considering permitting such activities. The Secretary concerned is also responsible for determinations of sunken military craft status and ownership, publicly disclosing the location of sunken military craft, and for determining eligibility and nominating sunken military craft as historic properties to the NRHP. Any agreements with foreign sovereigns regarding sunken military craft in U.S. waters are negotiated by the Secretary of Defense, the Secretary of State, and the Secretary of the Navy, according to authorities vested in each by the Sunken Military Craft Act. The Secretary concerned, or his or her designee, and NOAA will ensure coordination and foster collaboration on any research, monitoring, and educational activities pertaining to sunken military craft located within the National Marine Sanctuary System.

U.S. Coast Guard

The USCG operates in the waters of the proposed sanctuary. The primary USCG missions in this sector include search and rescue, marine safety, ports and waterways coastal security, marine environmental protection, aids to navigation, maritime law enforcement, and recreational boating safety. These operations are conducted off USCG cutters, and various smaller law enforcement and search and rescue vessels. The USCG also assists NOAA with surveillance efforts and actions related to enforcing regulations for existing national marine sanctuaries. USCG units conduct surveillance activities during their routine operations in the vicinity of a sanctuary and schedule periodic site inspections. Both air and surface craft are involved in these activities.

The USCG operates Coast Guard Station Morro Bay, located within the Morro Bay Harbor. The USCG maintains a Rescue Station at Morro Bay Harbor to provide services for the entire central California coast, including port safety coverage for the DCPD VSFB and search and rescue.

The Coast Guard Marine Safety Detachment, Santa Barbara, deals with pollution incidents reported in Morro Bay. The Coast Guard Marine Safety Detachment also provides inspections for vessels carrying passengers or freight for hire.

USCG boats from Station Morro Bay and larger USCG vessels routinely transit, train, and patrol within the proposed sanctuary boundaries. These vessels most frequently conduct patrols to enforce laws and regulations related to Living Marine Resources/Protected Species/Fisheries Enforcement, Counterdrug and Migrant Interdiction Operations, and Marine Safety missions, as well as routine transits and training within the proposed sanctuary boundaries. USCG vessels also respond to urgent search and rescue missions within the proposed sanctuary boundaries.

USCG helicopters and fixed wing aircraft routinely transit and train within the proposed sanctuary boundaries. Additionally, USCG aircraft respond to urgent search and rescue missions of mariners in distress within the study area. Search and rescue response efforts may result in aircraft flying below 1,000 feet within a mile of the coast or the emergency discharge of aviation fuel in order to maintain flight safety.

In addition, USCG vessels may be required to patrol Limited Access Areas (i.e., Safety/Security Zones) based on risk to national security associated with commercial and defense launch operations. Currently, the USCG works with the VSFB program manager to evaluate the risk to the maritime community associated with each rocket launch. Specific commercial space companies can recover the first stage rocket on a barge. The exact location of the barge landing zone for each launch changes based on specifics of the mission. In the past, recovery operations were from 6–60 nautical miles offshore west of VSFB in the study area. DoD has indicated that an increase in operations in the Pacific Ocean and VSFB should be expected (S. Chung, U.S. Navy, personal communication, June 2022).

It is too early to fully predict the USCG roles and planning for potential wind development offshore of this section of the California coast. The wind energy projects would likely cause increased navigation, construction activity, and safety management, and are expected to increase the number of vessels operating from multiple ports along the California coastline to include construction, crew, and cargo vessels. These vessels may transit and operate within the study area. Based on risk evaluation, USCG may be required to increase patrol, search and rescue operations, law enforcement operations, pollution responses, and other operations due to the increased use of the waterway. Transit from USCG home ports would require vessels and aircraft to transit through the proposed marine sanctuary.

4.9.2 Impact Assessment Methodology (Department of Defense and Homeland Security Activities)

The Initial Boundary Alternative and action alternatives would result in significant adverse impacts on DoD and homeland security activities if their implementation would result in substantial restrictions on existing operations. NOAA assessed impacts on DoD activities and homeland security uses based on review of existing and planned operations and how the proposed sanctuary regulations might affect them. The proposed regulations that may affect DoD and homeland security activities are similar to existing regulations for other national marine sanctuaries in California.

4.9.3 Environmental Consequences of the Initial Boundary Alternative (Department of Defense and Homeland Security Activities)

This section evaluates the impacts on DoD and homeland security activities from implementing the Initial Boundary Alternative.

Department of Defense

In recognition of the importance and irreplaceable nature of VSFB and PMSR to national defense, the proposed sanctuary regulations would exempt all existing DoD activities as identified in this section and Appendix I to this final EIS, which include military training and testing activities, similar to exemptions in other national marine sanctuaries. Under the exemption as described in the final rule, all existing activities carried out or approved by DoD within the proposed sanctuary, as identified in Section 4.9 and Appendix I to the final EIS for the proposed sanctuary, would be exempted. DoD activities within the meaning of the

exemption are those activities that DoD carries out or approves. With respect to commercial and civil launches from the base and associated activities, DoD has informed NOAA that:

- DoD conducts NEPA reviews for these activities. Other federal agencies, such as the Federal Aviation Administration and/or USCG, may be cooperating agencies for purposes of these NEPA reviews.
- DoD also conducts all required natural and cultural resource consultations for these activities.
- Civil partners and commercial providers conducting these activities are required to comply with DoD best management practices.

Therefore, existing DoD activities would not be subject to the regulatory prohibitions.⁴⁰ The regulation also describes DoD's obligations in the event an accident or unanticipated activity causes harm to a sanctuary resource. Given the scope of military training that occurs in this area, National Marine Sanctuaries Act's (NMSA) policy requirement to balance compatible activities, and DoD's past and present strong commitment to work with NOAA to ensure its activities limit resource harm when feasible but do not disrupt training or other national defense operations, NOAA finds that these proposed DoD activities exemptions are warranted. Therefore, the designation of the Initial Boundary Alternative and the proposed regulations with the DoD exemption is determined to cause **no adverse impacts** on DoD's current activities.

NOAA advises that based on public comments received, additional coordination with DoD, and NOAA's experience administering the National Marine Sanctuary System, pursuant to NEPA and the Administrative Procedure Act, the final EIS Appendix I reflects minor changes to the list of exempted activities based on DoD's administrative record of environmental compliance for the exempted activities. These minor conforming changes were made to ensure that the list of exempted activities in Appendix I reflects the most current information as to the existing activities that DoD carries out or approves. As such, these minor changes are consistent with the purposes of the DoD exemption and do not alter the no adverse impacts conclusion.

Adverse Impacts on New DoD Activities

New DoD activities that are not prohibited by the CHNMS regulations would not require an amendment to the list of exempted activities. For those new activities that would otherwise be prohibited by one or more of the regulations, NOAA has proposed a process, which is summarized below, whereby the ONMS director, upon consultation with the appropriate counterpart at the DoD, can also exempt such new activities.

An activity is considered to be a new activity, and not covered by the exemption for existing DoD activities, if the activity is new or modified in any way (including change in location, frequency, duration, or technology used) from the activities described or listed in Section 4.9 or Appendix I, and the activity is likely to cause adverse effects on sanctuary resources or qualities that are

⁴⁰ The regulations would exempt existing DoD activities from most of the regulatory prohibitions, but the exemption would not apply to the proposed prohibition on new oil and gas exploration, development, or production or the proposed prohibition on attracting a white shark. ONMS does not anticipate DoD activities would include oil and gas exploration, development, and production or attracting white sharks.

substantially greater or different in kind than the effects of the activities described or listed in Section 4.9 or Appendix I.

A new activity that is not covered by the exemption for existing DoD activities could be conducted if a sanctuary general permit or ONMS authorization, as applicable, were issued for the proposed activity. DoD would conduct these new activities in compliance with other applicable federal resource protection requirements, including complying with NEPA to evaluate potential impacts and identify feasible mitigation measures.

NOAA, like other federal agencies, does not consider the mere requirement and administrative process to seek and obtain a permit or to engage in consultation to necessarily cause an adverse impact. For instance, while NOAA may require a NEPA document to render a decision on a permit, DoD itself complies with NEPA for its own activities and NOAA could rely upon that document as support for its decision. A substantial delay to obtain final project approval from NOAA, beyond the time involved for DoD itself and any other federal, state, or local agency to approve a future project, could be a component of determining a significant impact. However, without a specific project description for such a future activity to evaluate at this time, it is not possible and would be speculative to definitively assign an impact level with certainty. Although the potential impacts of the consultation process for future DoD activities are not reasonably foreseeable at this time, for the reasons outlined in this section, NOAA does not anticipate that any such adverse impacts would be significant.

In addition, NOAA commits to working with the DoD to consider exempting new activities from the CHNMS regulatory prohibitions through subsequent rule-making procedures, for instance in subsequent management plan and regulatory review processes for CHNMS. Any changes to the list of exempted DoD activities could only occur after compliance with all applicable laws, such as the Administrative Procedure Act and NEPA, as necessary, and after public notice and comment, as applicable. (Note: A new DoD activity that would not violate the CHNMS regulatory prohibitions would not require an amendment to the list of exempted DoD activities).

NOAA is willing to work with the DoD to create a mechanism whereby new activities that are likely to injure sanctuary resources, and thereby also require NMSA 304(d) consultation, could be handled in a single, consolidated review.

Beneficial Impacts on Department of Defense Activities

Implementing the proposed sanctuary regulations would have **indirect, long-term, significant beneficial impacts** for DoD activities because of proposed restrictions in the sanctuary on development that can impede military training activities. Specifically, the proposed prohibition on leasing and developing new offshore oil and gas fields and the prohibition on disturbing the seabed, which may impede developing additional offshore wind farms in the sanctuary (see Section 4.7.3), means a reduced risk of conflicts for military training and related defense activities. DoD has repeatedly characterized to ONMS staff and those from other state and federal agencies that military training in this area is highly specialized, nearly impossible to relocate, and critical for military readiness. DoD has expressed concerns that wind farms create challenges for radar and other DoD activities, cause conflicts with use of ocean space, and invariably reduce effective sea space for military training. This reduced risk is considered a beneficial effect of the Initial Boundary Alternative.

U.S. Coast Guard

Activities conducted by the USCG would not be exempt under the exemption for DoD activities, as the USCG operates as part of the Department of Homeland Security and the exemption is specific to DoD activities. Therefore, USCG activities may be affected in slightly different ways than DoD uses in the proposed sanctuary area. Because the USCG is often involved in responding to emergencies that threaten life and property, much of its emergency response and search and rescue activities would be exempt from the proposed sanctuary prohibitions due to a proposed exemption for all activities necessary to respond to an emergency threatening life, property, or the environment. Therefore, the Initial Boundary Alternative would result in **no impacts** on USCG search and rescue and other emergency response functions.

The regulations would prohibit discharge or deposit of any matter or material from vessels within or into the sanctuary waters, with exceptions as noted in Section 3.2. The regulations would except clean effluent generated incidental to vessel use from Type I or II MSDs, acceptable treatment systems to reduce the impact from discharging human waste (e.g., sewage, gray water) into the sanctuary, for vessels less than 300 GRT or a vessel 300 GRT or greater without sufficient holding tank capacity to hold sewage while in the proposed sanctuary. Most USCG vessels lack Type I or II MSDs on their cutters and patrol vessels; rather, they rely on holding tanks that can later be pumped out onshore or offshore in acceptable areas. However, due to the large size of the proposed sanctuary and the limited holding tank capacity of vessels in the USCG fleet, the USCG does not believe they can conduct normal patrols or training and comply with the proposed discharge prohibitions (T. Conner, USCG, personal communication, May 2022). Accordingly, the USCG has requested that its vessels be specifically exempted from the proposed regulatory discharge prohibition. This exception is included in the prohibition on discharging any material into the proposed sanctuary (see Table 3-1), to avoid potential adverse impacts on USCG operations.

For example, the 87-foot USCG Coastal Patrol Boats have limited holding tank capacity, requiring discharge every 24 to 48 hours; so, if they did not have a Type I or II MSD, mission plans for these vessels would need to take the vessels' holding capacity into account to ensure the vessels were outside national marine sanctuary waters when a discharge needed to be made. Otherwise, vessels would need to come ashore more regularly than planned to dispose of waste in onshore pump out facilities. Depending on the nature of the missions they undertake, this could potentially have an impact on USCG operations.

Additionally, USCG vessels are required to conduct regular training that includes discharge of ammunition in live-fire exercises, and discharge of pyrotechnics for search and rescue. The USCG has asked that it be allowed to conduct these training activities at all locations seaward of 12 nautical miles within the proposed sanctuary boundaries. This is consistent with USCG operations at other large national marine sanctuaries, in particular those on the U.S. West Coast.

NOAA has approved similar USCG requests for exception from the discharge regulations in other national marine sanctuaries, including related to the large expansion of Cordell Bank National Marine Sanctuary (CBNMS) and GFNMS. USCG patrol vessels provide a tremendous benefit to NOAA by assisting with enforcement of national marine sanctuary regulations.

Moreover, the USCG is an essential element of marine safety to all mariners operating offshore in central California, and they also provide enforcement of other federal laws, conduct drug smuggling interdiction activities, and protect the homeland. ONMS has developed informal plans with USCG District 11 leadership to limit discharges into other national marine sanctuaries on the West Coast and anticipates similar approaches could be explored for USCG operations in the proposed sanctuary. Therefore, NOAA considers the proposed discharge exception for USCG vessels appropriate. Due to the proposed discharge exception, the designation of the Initial Boundary Alternative would have **no impact** on USCG patrols and training.

Adverse Impacts on U.S. Coast Guard Activities

Under the proposed sanctuary regulations, USCG vessels would not be exempt from the proposed prohibition on introduced species. This proposed regulation could apply to USCG activities since many introduced species move into a new ecosystem by attaching to the bottom of a vessel or are discharged via ballast water. USCG vessels transiting along the U.S. West Coast are not a concern with regard to discharge from ballast water since organisms that disperse in ballast water could also have the ability to disperse naturally on ocean currents along the U.S. West Coast. However, it is possible that introduced species could move into the area on the hull of a USCG vessel. ONMS would work with the USCG in District 11 to ensure regular hull inspections and removal of attached organisms. Conducting hull inspections to comply with the introduced species regulation would cause **indirect, short-term, negligible adverse impacts** on USCG operations.

Beneficial Impacts on U.S. Coast Guard Activities

NOAA is also concerned about desertion of vessels in the proposed sanctuary; thus, the proposed sanctuary regulations prohibit vessel desertion. Across the U.S. West Coast, ONMS works closely with the USCG on emergency response for vessel incidents like groundings and sinkings. When ONMS determines a vessel is deserted, ONMS works to find the owner and have the vessel removed or secured to prevent running aground or sinking. This proactive response aids both mariners and response agencies, such as the USCG, as securing a vessel before it sinks or runs aground always costs less in time and money than responding after an incident takes place. Thus, implementing the vessel desertion regulation under the Initial Boundary Alternative would have **direct, long-term, localized, minor beneficial impacts** on USCG and enforcement partners.

4.9.4 Environmental Consequences of Alternative 1 (Department of Defense and Homeland Security Activities)

Alternative 1, Bank to Coast, would remove a large area west of Santa Lucia Bank from the proposed sanctuary boundaries. This would not result in any difference in beneficial or adverse impacts on DoD, compared to the Initial Boundary Alternative. While the area for the proposed sanctuary would be smaller overall, the area removed from consideration is very far offshore and in very deep water, so potential new development that could conflict with DoD activities would be highly unlikely; thus, this alternative would not reduce the benefit to DoD from designating the new sanctuary compared to the Initial Boundary Alternative, as analyzed in Section 4.9.3.

Therefore, Alternative 1 would also have **indirect, long-term, significant beneficial impacts** on DoD activities.

The potential adverse impacts and the one beneficial impact on the USCG under the Initial Boundary Alternative (see Section 4.9.3) would be minimally different under Alternative 1, largely due to Alternative 1 being spatially smaller than the Initial Boundary Alternative. Therefore, Alternative 1 would also have **indirect, short-term, negligible adverse impacts** on USCG operations due to the introduced species regulation, and **direct, long-term, localized, minor beneficial impacts** on USCG and enforcement partners due to the vessel desertion regulation. There would be **no impact** on USCG emergency response functions or patrols and training due to the proposed exemption for emergency activities and proposed discharge exception for USCG vessels.

4.9.5 Environmental Consequences of Alternative 2 (Department of Defense and Homeland Security Activities)

Alternative 2, Cropped Bank to Coast, would be similar in area to Alternative 1 but would exclude the northern portion, cut off at Hazards Reef, thus creating a smaller sanctuary area. Alternative 2 would open up an area to potential development inshore of the Morro Bay lease areas. DoD opposes offshore energy development, including offshore wind, in the area due to conflicts with PMSR and VFSB missions. Therefore, the indirect, long-term, significant beneficial impacts on DoD activities under the Initial Boundary Alternative would be reduced to a **moderate beneficial impact** level under Alternative 2.

For USCG, because Alternative 2 would result in a smaller sanctuary, the impacts are similar to Alternative 1 impacts, and therefore minimally different from the impacts described for Alternative 1. Therefore, Alternative 2 would also have **indirect, short-term, negligible adverse impacts** on USCG operations due to the introduced species regulation, and **direct, long-term, localized, minor beneficial impacts** on USCG and enforcement partners due to the vessel desertion regulation. There would be **no impact** on USCG emergency response functions or patrols and training due to the proposed exemption for emergency activities and proposed discharge exception for USCG vessels.

4.9.6 Environmental Consequences of Alternative 3 (Department of Defense and Homeland Security Activities)

The minor boundary modification made to the northeast corner of Alternative 3 (explained in sections 3.5 and 3.5.1) between the draft and final EIS does not alter the beneficial or adverse impact levels to DoD and Homeland Security activities. The boundary area excluded is too small to meaningfully affect the extent of DoD or Homeland Security activities in the sanctuary; therefore, this minor change would not alter the impact of sanctuary designation on DoD and Homeland Security activities in the area. As such, this minor modification would not result in environmental impacts other than those already considered (and described here).

Alternative 3, Diablo to Gaviota Creek, would not result in any difference in adverse impacts on DoD activities compared to the Initial Boundary Alternative (which were largely negligible). However, Alternative 3 would substantially reduce the beneficial impacts on DoD activities,

compared to the Initial Boundary Alternative, because it would not include a very large area of the Santa Lucia Bank that could be developed with wind energy facilities. As explained in Section 4.9.5, DoD has opposed additional offshore wind development and expressed concerns about further oil and gas development in this area. Excluding most of the Santa Lucia Bank would exclude sanctuary regulatory prohibitions on future development of offshore oil and gas and sanctuary regulations that could impede development of offshore wind farms that could conflict with DoD activities. Therefore, the **indirect, long-term, beneficial impacts** on DoD activities described under the Initial Boundary Alternative (see Section 4.9.3) would be reduced to a **minor beneficial impact** level under Alternative 3.

Potential adverse impacts on the USCG under Alternative 3 would be minimally different from impacts identified for the Initial Boundary Alternative due to Alternative 3 being geographically smaller overall. However, the small beneficial impact due to the vessel desertion prohibition would be lessened because the area subject to the proposed sanctuary regulations, including the waters in and around Port San Luis, an active harbor, would be smaller. Nonetheless, this alternative would have **direct, long-term, localized, minor beneficial impacts** on USCG and enforcement partners, as described in Section 4.9.3. Like the Initial Boundary Alternative, Alternative 3 would also have **indirect, short-term, negligible adverse impacts** on USCG operations due to the introduced species regulation. There would be **no impact** on USCG emergency response functions or patrols and training due to the proposed exemption for emergency activities and proposed discharge exception for USCG vessels.

4.9.7 Environmental Consequences of Alternative 4 (Department of Defense and Homeland Security Activities)

As described with Alternative 3, the minor boundary modification made to the northeast corner of Alternative 4 (explained in sections 3.5 and 3.6.1) does not alter the beneficial or adverse impact levels to DoD and Homeland Security activities. The boundary area excluded is too small to meaningfully affect the extent of DoD or Homeland Security activities in the sanctuary; therefore, this minor change would not alter the impact of sanctuary designation on DoD and Homeland Security activities in the area. As such, this minor modification would not result in environmental impacts other than those already considered (and described here).

The potential adverse and beneficial impacts on DoD and Homeland Security activities under Alternative 4, Combined Smallest, would be the same as the impacts outlined for Alternative 3 in Section 4.9.6 above.

4.9.8 Expanded Protection from Sub-Alternatives 5a and 5b (Department of Defense and Homeland Security Activities)

Sub-Alternative 5a: Morro Bay Estuary

There are no DoD or USCG standard patrol or training operations within Morro Bay Estuary. Therefore, there would be **no impacts** on DoD or USCG activities if NOAA were to include Morro Bay Estuary in the proposed sanctuary under Sub-Alternative 5a.

The beneficial impacts on USCG operations from having a prohibition on deserting a vessel would be incrementally increased by adding Sub-Alternative 5a to the Initial Boundary

Alternative or Alternative 1. NOAA bases this conclusion on its experience dealing with vessel desertions in other estuaries, which has demonstrated the value of regulations that aid enforcement agencies to help vessel owners recognize when a vessel needs to be secured or removed to avoid environmental damage. Sub-Alternative 5a would therefore result in incremental **direct, long-term, localized, minor beneficial impacts** on USCG operations.

Sub-Alternative 5b: Gaviota Coast Extension

There would be no additional adverse impacts on DoD activities or USCG operations if NOAA were to extend the proposed sanctuary boundary in state waters under Sub-Alternative 5b, Gaviota Coast Extension.

Sub-Alternative 5b would have additional incremental **indirect, long-term, minor beneficial impacts** on DoD activities from the proposed prohibition on new offshore industrial activity in this area, predominantly offshore wind development along the Gaviota Coast. These incremental beneficial impacts would be minor because it is unlikely that offshore wind development would occur in state waters along this stretch of coast, and it is a relatively small area.

4.9.9 No Action Alternative (Department of Defense and Homeland Security Activities)

Under the No Action Alternative, DoD and homeland security activities would continue to be managed within the proposed sanctuary area as they are currently managed under federal and state laws, since there would be no new national marine sanctuary. **No adverse impacts** on DoD or homeland security activities would occur under the No Action Alternative. However, the **beneficial impacts** on both DoD and USCG operations **would also not occur** under the No Action Alternative.

4.10 Cumulative Impacts Analysis

This section describes the potential cumulative impacts of implementing the proposed action and each alternative. The 2020 NEPA regulations issued by the CEQ define “effects” or “impacts” to mean “changes to the human environment from the proposed action or alternatives that are reasonably foreseeable and have a reasonably close causal relationship to the proposed action or alternatives” (40 C.F.R. 1508.1(g)). As explained in Section 4.1.3, NOAA divided the reasonably foreseeable effects of the proposed action and alternatives into three categories—direct impacts, indirect impacts, and cumulative impacts—to facilitate the most meaningful analysis and to provide clarity to the public about the nature of those effects.

This section describes the potential cumulative impacts of implementing the proposed action and each alternative. Based on historical practice and case law, NOAA uses the term “cumulative impact” to mean a known or potential impact resulting from the incremental effect of the proposed action added to other past, present, or reasonably foreseeable future actions. This section presents the methods used to evaluate cumulative impacts, lists projects that may have cumulative effects when combined with the impacts from the proposed action or alternatives discussed in this EIS, and evaluates potential cumulative impacts.

4.10.1 Approach to Cumulative Impact Analysis

This analysis reflects NOAA's consideration of the impacts of the proposed action and alternatives in combination with the impacts of other actions or projects in the study area (see Table 4.10-1) to determine the overall cumulative impact on the resources in the affected environment.

Cumulative impacts can result from, individually minor but collectively significant, actions that take place over a period of time or geographic area. Cumulative effects may arise from single or multiple actions and may result in additive or interactive effects. For the purposes of this analysis, NOAA only considers the cumulative impacts that are reasonably foreseeable and have the potential to overlap with impacts of the proposed action or alternatives.

4.10.2 Actions with Potential to Contribute to Cumulative Impacts

NOAA determined that the projects listed in Table 4.10-1 could contribute to cumulative impacts on the resources assessed in this chapter. These are actions or projects that have occurred, are currently occurring, or are anticipated to occur in the reasonably foreseeable future within the study area. NOAA compiled this information based on staff knowledge of other existing activities occurring in and around the proposed sanctuary. NOAA selected these past, present, and reasonably foreseeable future actions because they are likely to have similar types of impacts on the resources within the study area, would affect similar resources to those that are affected by the action, or are large enough to have far-reaching effects on a resource. The actions described in Table 4.10-1 are related primarily to local and regional management of the environment and resources in and adjacent to the proposed sanctuary boundaries. NOAA has considered the effects of these actions in combination with the impacts of the proposed action and alternatives to determine the overall cumulative impact on the resources in the study area.

Table 4.10-1. Actions with potential to contribute to cumulative impacts.

Project Name	Project Location	Project Sponsor or Management Entity	Project Description	Estimated Completion Date
Endangered Species Conservation	U.S. federal waters	NOAA, NOAA Fisheries, and USFWS	Ongoing activity. NOAA Fisheries and USFWS developing and implementing recovery plans and conducting five-year status reviews for ESA-listed species. Consulting on federal actions that may affect a listed species or its designated critical habitat. Issuing permits that authorize scientific research on listed species.	Ongoing
"Decadal Management Review" of State MPAs	Approximately 7 locations within study area	CDFW	California conducted a review of its statewide system of MPAs, including approximately eight within the study area. The Decadal Review is available online .	Jan 2023: Report completed. 2024: CDFW review of MPA change petitions.
TSS and ATBA Modifications	West and South of CINMS	CINMS; U.S. Delegation to the IMO	CINMS led a coalition to review and expand the ATBA around CINMS and extend the TSS further west, extending partially into the study area. Affects marine shipping patterns and possibly marine wildlife (lessening whale ship strike risk).	2023: Amendments to the Santa Barbara TSS and an expanded ATBA took effect on June 1, 2023.
USCG – PAC-PARS	Pacific Coast	USCG	The USCG led a planning process to reassess shipping traffic and lane placements along the U.S. West Coast. The USCG is recommending new offshore fairways to guide coastwise vessel traffic; recommended fairways would avoid the Morro Bay Wind Energy Area and limit overlap of the proposed sanctuary. PAC-PARS Final Report (USCG, 2023a)	June 2023: Final PAC-PARS report published. 2023-2024: results will inform USCG designation of safe access routes
Federal Waters – Offshore Wind Energy Development	Morro Bay lease areas in the Morro Bay Wind Energy Area	BOEM	BOEM completed an EA in October 2022 to assess impacts from issuing up to 3 leases (Morro Bay lease areas) to develop approximately 3 GW from the Morro Bay Wind Energy Area. BOEM issued 3 leases to wind energy companies in June 2023 (BOEM, 2022). BOEM had previously suggested assuming up to 30 separate power cables would need to come to shore landing around (north of) Morro Bay Harbor, but leaseholders subsequently indicated only 15 to 24 cables would be needed, installed over many years and landing at both Morro Bay Harbor and DCPH.	Ongoing

Project Name	Project Location	Project Sponsor or Management Entity	Project Description	Estimated Completion Date
California Waters – Offshore Wind Development	State waters offshore of VSFB	CSLC, U.S. Department of the Air Force	CSLC is the lead agency for state environmental review and the U.S. Department of the Air Force is the federal lead agency; they will prepare a joint environmental review document under the California Environmental Quality Act and NEPA to evaluate the impacts from developing the CADEMO Wind Demonstration Project—4 floating platforms ~2.5 miles offshore in state waters, and land power cables south of Pt. Arguello.	CSLC and the U.S. Department of the Air Force anticipate initiating scoping for the project in summer 2024
Decommissioning of Oil and Gas Platforms and Pipelines	Federal waters off Pt. Arguello and Pt. Conception	BSEE	Record of Decision published on December 12, 2023 selecting the Preferred Alternative described and analyzed in the Programmatic EIS for Oil and Gas Decommissioning Activities on the Pacific Outer Continental Shelf (BSEE, 2023; BSEE & BOEM, 2023). Future NEPA analyses will focus on site-specific issues and effects related to decommissioning activities, including for the removal of the three platforms in federal waters and pipelines off Pt. Conception – Harvest, Hermosa, Hidalgo; and likely removal of Platform Irene, near Pt. Arguello.	2023 & Ongoing
Existing Oil and Gas Production Activities	Platforms Irene, Heritage, Harmony, and Hondo	BSEE	See Table 4.7-1 for status of platforms and leases. All four platforms have temporary shut-in status.	Ongoing

Project Name	Project Location	Project Sponsor or Management Entity	Project Description	Estimated Completion Date
Decommissioning of DCPD; near-term continued operation of DCPD	Approximately 5 miles west of Port San Luis	County of San Luis Obispo	In Dec. 2023 California Public Utilities Commission granted approval for DCPD to operate its two reactors until 2029 and 2030; the Nuclear Regulatory Commission is undergoing a multi-year review of PG&E's application to renew the operating license. While under review and until the NRC makes a final determination (expected summer 2025), DCPD can continue operating reactors past their current 2024 and 2025 licenses. In July 2023, San Luis Obispo County published a draft environmental impact report assessing impacts from DCPD decommissioning, including removing the outfall in the proposed sanctuary area, and up to 60 barges carrying clean debris to Portland, Oregon (County of San Luis Obispo, 2023)	2029-2030
Fisheries Management Actions		NOAA Fisheries, PFMC, CDFW, and California Fish and Game Commission.	Ongoing activity. Implementing and amending fishery management plans and associated fishing regulations, issuing exempted fishing permits, modifications to EFH and HAPCs, enforcing fisheries regulations. For more information, see the following links: • NOAA Fisheries, West Coast: Fisheries • Pacific Fishery Management Council, Managing Pacific coast fisheries • CDFW, Marine Regions • California Fish and Game Commission Also see the FAQ on NMSA and Fishing Regulations, available online (ONMS, 2023).	Ongoing
Navy PMSR Increased DoD Activities	36,000-square-miles adjacent to Los Angeles, Ventura, Santa Barbara, and San Luis Obispo counties	U.S. Navy	Department of the Navy (Navy) increased military readiness activities within the PMSR Study Area as described in the PMSR Final EIS/OEIS. Military readiness activities include research, development, acquisition, testing, and evaluation (referred to as "testing") and training activities. See more information online :	July 2022: Navy Record of Decision published Ongoing: Navy operations in the PMSR

Project Name	Project Location	Project Sponsor or Management Entity	Project Description	Estimated Completion Date
Navy Hawaii-California Training and Testing (HCTT) Activities	Locations offshore Hawai'i and California. See map online .	U.S. Navy	U.S. Navy published Notice of Intent (NOI) (Dec. 2023) to prepare a draft EIS to assess impacts from Hawaii-California Training and Testing areas (U.S. Department of the Navy, n.d.), including proposed additional testing locations off the central and northern California coast; overlaps proposed sanctuary.	Fall 2024: Draft EIS expected. Late 2025: Record of Decision expected. Ongoing: Navy operations in existing HCTT area (PMSR in CA).
Listing of Lisamu (Morro Rock) as Historic Property under the NRHP	Morro Bay	SYBCI	SYBCI proposed the listing of Lisamu as a Historic Property under the NRHP	Ongoing

4.10.3 Description of Cumulative Impacts

As the proposed action (designating a new sanctuary) is a regulatory and management action rather than a specific development action, the cumulative effects are related primarily to local and regional management of marine resources.

Physical Resources

The proposed action and alternatives would not cause any significant adverse impacts on air quality and climate change, geology, oceanography, or water quality, as described in sections 4.2.3–4.2.8. There would be less than significant adverse impacts on physical resources due to air quality and climate change impacts from increased research and enforcement vessel use and potential impediment to offshore wind energy development.

Certain projects listed in Table 4.10-1 would have potential adverse impacts on physical resources, such as potential increased air emissions, degradation/alteration of geologic and oceanographic resources, or harmful discharges due to offshore wind energy development, decommissioning of DCP or oil and gas facilities, existing oil and gas production activities, and Navy activities.

However, the proposed action and alternatives would not make a substantial contribution to these adverse cumulative impacts. Rather, the beneficial impacts on physical resources from the proposed action and alternatives could offset some of the potential adverse impacts caused by the anticipated projects described above. The resource protections and restoration provided by designating the sanctuary would result in positive influences on physical resources, primarily due to the proposed sanctuary's regulatory protections prohibiting seafloor disturbance and discharges, thereby preventing degradation of physical resources. These **beneficial impacts** would be **less than significant** from a cumulative perspective due to their low level of intensity in the context of the wide array of ongoing activities and human uses affecting the physical resources in the California central coast region.

Biological Resources

With regard to biological resources in the study area, the proposed action and alternatives would not cause any significant adverse impacts, as described in sections 4.3.3–4.3.8. Rather, the potential adverse impacts expected would be **negligible or minor** from the proposed management plan activities, such as research operations and other field activities.

The regulations under the proposed action and alternatives would have beneficial impacts on biological resources by adding additional protections to sensitive resources. The proposed sanctuary regulations would supplement and complement other applicable authorities and would improve and enhance other past, present, and future conservation actions such as the state's no-take marine reserves, designated EFH, and Areas of Biological Significance. The proposed action and alternatives would result in less than significant adverse impacts on local biological resources within the proposed sanctuary's boundaries.

Table 4.10-1 lists several significant construction, or decommissioning, projects that would be expected to have the potential to harm marine resources in the region. Protections afforded to biological resources by the proposed action and alternatives, including the proposed sanctuary

regulations, would be beneficial and offer additional protections from the cumulative development projects and impacts. Sanctuary regulations and management actions would help to incrementally mitigate adverse impacts from future coastal development projects in the region. Additionally, sanctuary research, resource protection, education, and management activities are expected to be harmonized and coordinated with the activities of other agencies and jurisdictions and would continue to be protective and supportive of sustainable conservation of biological resources and habitats.

Some of the projects in Table 4.10-1 will include research activities that could harm biological resources. The proposed sanctuary is also expected to have such impacts (albeit with a minor adverse impact). Overall, the **cumulative adverse impact** of the proposed action and alternatives in combination with other potential sanctuary research and monitoring programs would be **negligible** on biological resources and habitats because of the relatively low intensity and frequency of ONMS-led field activities in the context of those caused by projects in Table 4.10-1, and because of ONMS' use of operational protocols to reduce or avoid adverse impacts as much as possible (see Appendix C), and because of the protections afforded by the proposed regulatory and management measures, as described above.

The beneficial impacts of the proposed regulatory and management measures would likely have an interactive/synergistic effect when considered in the context of the cumulative projects (i.e., they would help offset some potential adverse impacts of the cumulative projects) as described above.

Commercial Fishing and Aquaculture

With regard to commercial fishing and aquaculture resources in the study area, the proposed action and alternatives considered would not cause any significant adverse impacts, as described in sections 4.4.3–4.4.8. Rather, the potential adverse impacts expected would be negligible from the management plan activities, such as research operations and other field activities.

The proposed sanctuary regulations would have beneficial impacts on commercial fish species and less than significant adverse impacts on commercial fisheries and aquaculture operations due to restrictions on vessel discharges, moorings, and introduced species. The proposed regulations would not directly regulate commercial fishing and would not contribute to regional closures of fishing grounds, establish gear restrictions, or adopt other fishery management actions. As noted in Table 3-1, the regulations allowing ONMS authorizations include a provision that would allow NOAA to authorize new aquaculture projects that involve an introduced species that NOAA and the state determine would be non-invasive to the ecosystem and would not cause significant adverse impact to proposed sanctuary resources. As further described in Section 3.2.2, NOAA intends to expand an existing MOA with the state of California to guide review of ONMS authorizations for future, proposed aquaculture projects within CHNMS that would cultivate an introduced species. The state normally conducts this type and level of an assessment for introduced species aquaculture projects anywhere in the state, so the collaborative review between the state and NOAA envisioned by the MOA and regulations would not cause any new burden on future projects.

When considering potential incremental effects from the proposed action and alternatives in combination with activities expected to continue or take place in the future (Table 4.10-1), such

as any fisheries management actions, potential regulatory changes to state MPAs that may result from CDFW's "decadal review" of state MPAs, or potential restrictions on fishing due to offshore wind energy development, the adverse impacts on commercial fishing and aquaculture under the proposed action and alternatives would **not contribute** to a significant adverse cumulative impact. Additionally, sanctuary research, resource protection, education, and management activities are expected to be harmonized and coordinated with the activities of other agencies and jurisdictions and would continue to be protective and supportive of sustainable commercial fishing and aquaculture resources and activities.

Overall, the incremental **impacts** of the proposed action and alternatives in combination with cumulative projects and activities in the region, would result in **negligible cumulative impacts** on commercial fishing and aquaculture resources because of the relatively low intensity and frequency of ONMS-led field activities, and because of ONMS' use of operational protocols to reduce or avoid adverse impacts as much as possible and because of the protections afforded by the proposed regulatory and management measures, as described above.

Cultural Heritage and Maritime Heritage Resources

With regard to maritime heritage and cultural resources in the proposed sanctuary area, the proposed action and alternatives would not cause any significant adverse impacts, as described in sections 4.5.3–4.5.8. Rather, the potential **adverse impacts** expected would be **negligible** due to best management practices NOAA would follow during research operations and other field activities.

When considering potential incremental effects from the proposed action and alternatives in combination with activities expected to continue or take place in the future (Table 4.10-1), NOAA does not expect the negligible adverse impacts that could occur on cultural heritage and maritime heritage resources to cumulatively worsen. On the contrary, the beneficial impacts on cultural and maritime heritage resources from the proposed action and alternatives could partially offset the potential adverse impacts on cultural heritage and maritime heritage resources caused by the numerous offshore and coastal development projects anticipated in the study area (e.g., potential disturbance and physical damage of underwater cultural and heritage resources due to activities associated with new offshore wind development, construction of subsea electrical transmission cables, and potential construction of a new harbor ancillary to offshore wind development). Such beneficial cumulative impacts would arise primarily from the sanctuary's regulatory protections offered to sanctuary waters and seafloor habitats, preventing disturbance to maritime heritage and cultural resources.

NOAA would continue to use best management practices to mitigate potential resource harm from sanctuary operations. Additionally, sanctuary research and management activities are expected to be harmonized and coordinated with the activities of other agencies and jurisdictions and would continue to be protective of sensitive maritime heritage and submerged cultural resources. The sanctuary regulations and management plan would also enhance other past, present, and future cultural heritage and maritime heritage conservation actions such as the Santa Ynez Band of Chumash Indians' proposed listing of Lisamu (Morro Rock) under the NRHP. A proposed category for sanctuary general permits would enable ONMS to issue a general permit for certain Native American cultural and ceremonial activities within CHNMS.

Thus, the proposed action and alternatives would protect and preserve the integrity of submerged cultural resources, while also supporting associated cultural resource values and Native American Indigenous community practices.

Overall, the incremental adverse impacts of the proposed action and alternatives in combination with ongoing resource protection, research, and stewardship programs, and ongoing or future commercial and industrial activities in the region, would be negligible for cultural heritage and maritime heritage resources because of the relatively low intensity and frequency of ONMS-led field activities, and because of ONMS' use of operational protocols to reduce or avoid adverse impacts as much as possible and because of the benefits afforded by the proposed regulatory and management measures, as described above. The proposed action and alternatives would not result in significant adverse cumulative impacts on cultural heritage and maritime heritage resources.

Socioeconomics, Human Uses, and Environmental Justice

The proposed action of designating a new sanctuary would result in beneficial impacts on tourism, recreation, and local economies, research, education, and passive economic use, as well as minor adverse impacts on marine area use, recreation, submarine fiber optic cables, and socioeconomics as a result of prohibitions on bottom-disturbing activities and discharges, as described in sections 4.6.3–4.6.8. The actions listed in Table 4.10-1 are not anticipated to cause substantial adverse impacts on socioeconomic resources, environmental justice, or human uses in the study area. Their impacts in combination with the proposed action or alternatives would be less than significant due to their low level of intensity in the context of the total marine area use, recreation, and socioeconomic activity along the central coast of California. None of the alternatives or the cumulative actions would contribute to adverse effects on environmental justice because they would not be expected to result in disproportionate and adverse impacts on communities with environmental justice concerns for the same reasons described in Chapter 4.6 (see E.O. 12898, Appendix E). The cumulative effects would not be substantially greater than what was identified for the proposed action and alternatives. The proposed action and alternatives would not make a substantial contribution to cumulative adverse impacts.

Offshore Energy

The Initial Boundary Alternative and alternatives 1 and 2 would have moderate adverse impacts on offshore energy resources due to the prohibition of future new oil and gas facilities and could impede wind energy development in the vicinity of the Diablo Canyon Call Area and elsewhere within proposed sanctuary boundaries, as described in sections 4.7.3–4.7.8. When combined with the effects of cumulative projects and activities in the study area, these impacts would not result in a significant adverse cumulative impact, nor would the Initial Boundary Alternative's incremental contribution to cumulative impacts be significant. Several of the projects in Table 4.10-1 would lead to an increase in offshore energy development and some lead to a decrease, like the decommissioning projects. The only cumulative impact NOAA anticipates would be the contribution of CHNMS to the existing limitations other existing national marine sanctuaries offshore California create on offshore renewable energy development. Because the OCSLA limits BOEM's authority to issue leases to develop offshore renewable energy projects within national marine sanctuaries, a large portion of California—the area already within national marine

sanctuaries—is off limits to offshore wind farm development. Nonetheless, the state, BOEM, NOAA, and other agencies have coordinated on areas that can be developed, including off central California with the offshore Morro Bay lease areas, and other available areas have been identified for potential future development. Furthermore, alternatives 3 and 4 also allow much of the Diablo Canyon Call Area to be developed. Thus, in aggregate, because wind development offshore California is progressing and new areas have been identified, the **cumulative adverse impact** of the proposed action and alternatives would be **minor to moderate**.

Marine Transportation

Similar to commercial fishing, there is the potential for some adverse impacts on marine transportation from the proposed sanctuary discharge regulations. Under the proposed discharge regulations, vessels could be required to hold discharges for a longer distance, if transiting up or down the coastline. The adverse impacts of the proposed action and alternatives on marine transportation are less than significant. Also, proposed regulations that apply to all boundary alternatives include an exception for discharge of sewage from Type I and II MSDs and for clean graywater discharge for certain vessels (see sections 4.5.3–4.5.8). None of the projects listed in Table 4.10-1 affect discharges from offshore marine traffic. Thus, there are no additional **adverse cumulative impacts** on marine transportation from discharge regulations.

Other cumulative projects that may have some adverse impact on marine transportation include the USCG PAC-PARS recommended shipping lane adjustments and the expansion of the ATBA around CINMS. The PAC-PARS project's final report is complete, but any subsequent measures to codify such recommendations in regulation have not occurred to date. However, adjusted vessel routing along the U.S. West Coast is reasonable to expect, and could have adverse impacts on vessel traffic due to vessel operators having to adjust to new routes. The expansion of the ATBA around CINMS has been adopted and it too may result in minor adverse impacts on vessel traffic as vessel operators adjust to new routing. However, because the regulations under the proposed action and alternatives do not include additional routing restrictions, the proposed action and alternatives do **not contribute** to adverse cumulative impacts on routing of marine transportation.

Department of Defense and Homeland Security Activities

Offshore energy projects listed in Table 4.10-1 could have cumulative adverse impacts on DoD and homeland security activities if developed in areas where these activities are carried out. In aggregate, the designation of the Initial Boundary Alternative and Alternative 1 could offset the cumulative adverse impacts from offshore energy projects on DoD and homeland security activities. Alternatives 3 and 4 would not offer the same offset to cumulative adverse impacts. Alternative 2 would offer some offset, but not as much as the Initial Boundary Alternative or Alternative 1. Designation of the sanctuary under the proposed action and alternatives would itself have **negligible adverse impacts** on USCG operations as a result of the proposed sanctuary regulations. The proposed regulatory exemptions for DoD activities and USCG vessels would ensure that the potential contribution of the proposed action and alternatives to cumulative adverse impacts on DoD and homeland security activities would be minimized (see sections 4.9.3–4.9.8).

Chapter 5: Conclusion

5.1 Unavoidable Adverse Impacts

Pursuant to the National Environmental Policy Act (NEPA), an environmental impact statement (EIS) must describe any reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented (42 United States Code (U.S.C.) § 4332(C)(ii); 40 Code of Federal Regulations (C.F.R.) 1502.16). All potential impacts are identified in Chapter 4, by issue area. Potential impacts from the sanctuary designation include numerous beneficial impacts, as well as adverse impacts that range from minor to moderate. There are no unavoidable significant adverse impacts identified for the Initial Boundary Alternative or any of the action alternatives.

5.2 Relationship of Short-term and Long-term Productivity

NEPA requires that federal agencies consider the relationship between short-term uses of the human environment and the maintenance and enhancement of long-term productivity (42 U.S.C. § 4332(C)(iv); 40 C.F.R. 1502.16).

The short-term uses of the environment relating to the Initial Boundary Alternative and each of the action alternatives may increase the number of visitors to the study area, while at the same time improving the health and quality of the environment by increasing protection of the physical, biological, cultural heritage, and maritime heritage resources through: (1) establishing regulations that prohibit damaging the seabed and the underwater cultural resources; (2) establishing regulations that restrict discharges that may harm resources; (3) providing a mechanism through the National Marine Sanctuaries Act (NMSA) to respond to hazardous spills that damage sanctuary resources; and (4) monitoring human activities through regulations and nonregulatory programs that incorporate community involvement in the stewardship of the proposed sanctuary's underwater cultural resources.

Long-term productivity derived from the Initial Boundary Alternative and action alternatives is based on the goals of the proposed sanctuary and the proposed management actions to achieve the goal of long-term protection of the sanctuary resources. These actions include management plan action plans related to resource protection, recreation and tourism, education, science and research, and infrastructure and operations. Benefits to both short-term uses of the environment and long-term productivity based on designation of the proposed sanctuary are proportional to the number of underwater resources within the area of the Initial Boundary Alternative and each alternative.

5.3 Irreversible and Irretrievable Commitment of Resources

NEPA requires discussion of commitments of nonrenewable resources that would be irreversible or irretrievable if the proposal is implemented (42 U.S.C. § 4332(C)(v); 40 C.F.R. 1502.16). This discussion also addresses the energy requirements and conservation potential of the alternatives, as well as the natural or depletable resource requirements and conservation potential of the alternatives (40 C.F.R. 1502.16).

The mission of a national marine sanctuary is to conserve resources for future users, but implementing routine management activities and protective regulations may require some irreversible and irretrievable commitments of resources.

Irreversible commitments of natural resources include the consumption or destruction of nonrenewable resources or degradation of renewable resources over long periods of time. The Initial Boundary Alternative and action alternatives would result in the following irreversible commitments of natural resources:

- Nonrenewable resources that would be consumed during management and research activities include fuel, water, power, and other resources necessary to maintain and operate the proposed sanctuary's potential future research vessel(s) and a potential future sanctuary office.
- Electricity to power sanctuary facilities would be an irreversible use of resources, if derived from a nonrenewable electrical power source (e.g., natural gas or nuclear energy).

Irretrievable commitments of resources include opportunities foregone, expenditure of funds, loss of production, and restrictions on resource use. The Initial Boundary Alternative and action alternatives would result in the following irretrievable commitments of natural resources:

- Monetary funds would be expended to support management activities in the purchase of fuels, electricity, water, and other nonrenewable supplies, for wages and rents, and for potential construction of facilities.
- Natural resources may be used in construction of potential future sanctuary facilities and structures, such as buildings, signs, navigational markers, and mooring buoys.

The irreversible and irretrievable commitment of resources would be minimized and mitigated by best management practices, staff training, and sustainability goals and procedures documented in the proposed sanctuary's management plan.

5.4 Comparison of Impacts of the Alternatives

In this comparison of alternatives, the National Oceanic and Atmospheric Administration (NOAA) identifies that all alternatives would achieve the requirements of sections 101 and 102(1) of NEPA. This section presents a summary comparison of the overall potential environmental impacts of the Initial Boundary Alternative and alternatives and also identifies the agency's Final Preferred Alternative, as required by 40 C.F.R. 1502.14(d) (Section 5.4.9). Pursuant to 40 C.F.R. 1505.2(a)(2), the environmentally preferred alternative or alternatives would be identified in any upcoming Record of Decision.

Environmental advantages and disadvantages of each alternative are discussed. Sections 4.2–4.9 address the individual impacts associated with the Initial Boundary Alternative and each alternative, by topic. There are environmental tradeoffs among the Initial Boundary Alternative and alternatives even within resource issue areas or topics, which have been considered carefully in determining the net effect of the Initial Boundary Alternative and alternatives together. Since all the impact analysis in this final EIS is necessarily qualitative, specifying precise quantitative differences among the Initial Boundary Alternative and other action alternatives is not feasible.

The type of impact (e.g., beneficial, adverse, or no impact) and relative environmental advantages and disadvantages of the Initial Boundary Alternative and other action alternatives are summarized, by topic, in Table 5-1 at the end of this chapter.

For the Initial Boundary Alternative and all action alternatives, there would be significant beneficial impacts associated with implementation of proposed sanctuary regulations (e.g., prohibitions against seabed disturbance, certain vessel discharges, and new offshore oil and gas development) that provide added resource protection in the issue areas of physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; and Department of Defense (DoD) and homeland security activities. The issue area with the largest number of significant beneficial impacts across the Initial Boundary Alternative and action alternatives would be cultural and maritime heritage resources; Alternative 2, Cropped Bank to Coast, Alternative 3, Diablo to Gaviota Coast, and Alternative 4, Combined Smallest, would result in moderate beneficial impacts on this issue area. Some of the action alternatives would result in reduced beneficial impacts when compared to the Initial Boundary Alternative, due to their reduced sanctuary size.

There would be no significant adverse impacts on any of the issue areas from designating the Initial Boundary Alternative or any of the action alternatives, however there would be adverse impacts that are less than significant (negligible, minor, or moderate) on most issue areas from the Initial Boundary Alternative or any of the alternatives. The Initial Boundary Alternative and Alternative 1, Bank to Coast, would adversely affect offshore energy development the most, however impacts would be less than significant. Alternative 2, Cropped Bank to Coast, would lessen adverse (but less than significant) impacts on installation and operation of subsea electrical transmission cables from offshore wind developed outside the proposed sanctuary. Alternative 3, Diablo to Gaviota Creek, would lessen and Alternative 4, Combined Smallest, would eliminate any adverse (but less than significant) impacts on offshore wind development. Compared to the Initial Boundary Alternative, alternatives 1, 2, 3, and 4 would each lessen the adverse (yet still less than significant) impacts on marine transportation. These minor adverse effects would be offset by the substantial aggregate beneficial effects of the proposed sanctuary's regulatory and management plan resource protections. Some of the adverse impacts on topics such as marine transportation, commercial fishing operations, and future offshore energy activities would be reduced under the action alternatives when compared to the Initial Boundary Alternative.

With regard to existing and potential future submarine fiber optic cables within the proposed sanctuary, the Initial Boundary Alternative and Alternative 1 would be expected to produce localized, short-term minor adverse impacts, because through the permitting process, any special mitigation measures would be required by NOAA to protect sanctuary resources. The certification process for existing cables would likely cause negligible impacts on telecommunications companies as NOAA's practice is to approve existing, permitted cables (and other structures) via certifications. The same minor adverse impacts would be expected from Alternative 2, but lessened because the area excluded between Montaña de Oro and Cambria would not be in the sanctuary, thus excluding the landing site for five existing cables, and the route for another new cable that would land at Grover Beach. Alternative 3 would further lessen the minor impacts on telecommunication companies because far more of the routes for existing

submarine fiber optic cables would not be within the sanctuary. Alternative 4 would substantially lessen the minor adverse impacts on telecommunication companies because more than half of the existing submarine fiber optic cables within the study area would not be within the sanctuary, thus substantially more repair activities and new cables, depending on routes proposed, could occur without NOAA review. Sub-Alternative 5a and Sub-Alternative 5b would have no impact on telecommunication companies because no existing or known new submarine telecommunication cables fall within these boundary alternatives.

Because of its relatively small size, Sub-Alternative 5a, Morro Bay Estuary, would cause no new adverse impacts on any of the issue areas, yet would potentially cause minor incremental increases in adverse impacts identified for the Initial Boundary Alternative on physical resources; biological resources; socioeconomics, human uses, and environmental justice; and marine transportation, while it would offer an incremental beneficial impact on cultural and maritime heritage resources. Sub-Alternative 5b, Gaviota Coast Extension, would potentially cause adverse but less than significant impacts on commercial fishing due to regulations that could affect vessel operations, socioeconomics, offshore energy and marine transportation. However, this sub-alternative would offer significant beneficial impacts for cultural and maritime heritage resources given the importance of the Gaviota Coast culturally and historically for Chumash heritage, and less than significant beneficial impacts on physical and biological resources, commercial fishing, socioeconomics, and DoD activities.

5.4.1 Initial Boundary Alternative

The Initial Boundary Alternative would result in significant beneficial impacts on physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; and DoD and homeland security activities due to the added resource protection afforded by the proposed sanctuary regulations and increased awareness of the area's resources.

The Initial Boundary Alternative would result in adverse, but less than significant impacts on offshore energy. These moderate adverse impacts are associated with the proposed prohibition of future new oil and gas facilities in an area with known oil and gas reserves, financial and regulatory burdens of proposed discharge restrictions in the event of a spill, and the proposed prohibition on seabed disturbance that may impede potential future offshore wind energy development within proposed sanctuary boundaries. The Initial Boundary Alternative would also result in moderate adverse impacts associated with installing, maintaining, and operating subsea electrical transmission cables from offshore Morro Bay lease areas in the Morro Bay Wind Energy Area to shore.

The implementation of proposed sanctuary regulations would involve restrictions that could cause adverse, but less than significant impacts on commercial fishing operators, recreational boating, land use development, telecommunications companies, marine transportation, and homeland security and military vessel operations. These impacts are associated with the proposed regulatory prohibitions on discharges and seabed disturbance within the proposed sanctuary.

5.4.2 Alternative 1, Bank to Coast

Alternative 1 would have the same types of beneficial and adverse impacts as the Initial Boundary Alternative but to a lesser extent due to the smaller size of the proposed sanctuary area and some reduction in user conflicts due to the distance from shore. Certain beneficial impacts would still be significant for physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; and DoD and homeland security activities. Minor adverse impacts on marine transportation due to the proposed discharge prohibition would be reduced when compared to the Initial Boundary Alternative.

5.4.3 Alternative 2, Cropped Bank to Coast

Alternative 2 would have the same types of beneficial and adverse impacts as Alternative 1 from the northern end of Montaña de Oro State Park along the coast to Gaviota Creek, and offshore waters. Certain beneficial impacts would still be significant for physical resources (i.e., geologic and oceanographic resources). Minor adverse impacts on marine transportation due to the discharge prohibition would be reduced to a negligible level compared to the Initial Boundary Alternative.

However, the principal difference between Alternative 2 and Alternative 1 is that the open area north of Montaña de Oro at Hazard Canyon Reef to Cambria would avoid or greatly reduce adverse (yet not significant) impacts on developing, installing, and operating potential subsea electrical transmission cables associated with the Morro Bay Wind Energy Area. The area would be open to offshore wind energy development, as well, if the Morro Bay Wind Energy Area needed to be expanded. Also, there would be potentially less adverse impacts on offshore oil and gas development, as the federal waters of this area would be open to potential future oil and gas exploration and production. However, there are no known plans for either oil and gas or wind energy platform development in this area, at this time.

Beneficial impacts specific to the area omitted from the proposed sanctuary via Alternative 2 on physical resources; biological resources; commercial fishing and aquaculture; and cultural heritage and maritime heritage resources from regulations and sanctuary programs that protect resources—e.g., kelp forests, rocky shores, sandy beaches, protected resources like black abalone and sea otters, the shipwreck *Montebello*—as identified for the Initial Boundary Alternative and Alternative 1, would not occur. The northern area that would be excluded from the sanctuary, in particular the waters off Point Estero and Morro Rock, is a valued Tribal and Indigenous⁴¹ heritage region that would not be protected. Beneficial programs carried out via the draft

⁴¹ This final EIS uses “Tribes and Indigenous communities” and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms “federally recognized Tribe(s)” or “federally recognized Tribal Nation(s).” As such, use of the term “Tribe” or “Tribal” is not intended to refer only to federally recognized Tribes unless otherwise specified.

management plan, like in education and outreach and research and monitoring, would likely not occur in this area as NOAA would scale back such activities.

5.4.4 Alternative 3, Diablo to Gaviota Creek

Alternative 3 is substantially smaller than the Initial Boundary Alternative. It excludes a northern area that may be desired for subsea electrical transmission cables and substations from offshore Morro Bay lease areas to shore at points of interconnection at Morro Bay and Diablo Canyon Power Plant (DCPP). It also excludes potential areas for developing future additional offshore wind farms, including the Diablo Canyon Call Area over the heart of the Santa Lucia Bank, along with a broad area to route subsea electrical transmission cables from the Diablo Canyon Call Area or other areas potentially developed with future offshore wind farms to the present transmission grid at DCPP. Offshore oil and gas development could conceivably be carried out in the area omitted from sanctuary protection. As a result, there would be no sanctuary regulations or programs to protect resources, nor would there be sanctuary regulations to limit offshore energy development in these areas. This is the major difference between this alternative and the Initial Boundary Alternative or Alternative 1. Significant benefits for all issue areas identified in the Initial Boundary Alternative and Alternative 1, or to a lesser extent Alternative 2, would not occur. Beneficial impacts would occur in the same topic areas as identified for the Initial Boundary Alternative but would be at a much smaller scale and at a less than significant level, particularly in the areas of physical resources; biological resources; commercial fishing and aquaculture; and cultural heritage and maritime heritage resources. Excluding the coastal area south of Cambria would preclude any conservation benefits from protecting the shipwreck *Montebello*. The Salinan and Chumash consider the areas excluded from the sanctuary, in particular the waters off Point Estero, Morro Rock, Montaña de Oro, and the area around DCPP to be a valued Tribal and Indigenous heritage region that would not be protected under this alternative.

There would be no adverse impacts on development of potential new offshore wind farms under Alternative 3. Less than significant adverse impacts on new offshore oil and gas development would be reduced compared to the Initial Boundary Alternative. Also, the DCPP site would be excluded from the proposed sanctuary under Alternative 3; therefore, future development and operation of a new deep-water port at that site would not be subject to sanctuary permits or authorizations.

5.4.5 Alternative 4, Combined Smallest

Alternative 4 would provide the lowest level of beneficial impacts on physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; socioeconomics, human uses, and environmental justice; and DoD and homeland security activities, due its substantially smaller size compared to the Initial Boundary Alternative and other action alternatives. Similar to Alternative 3, Alternative 4 would have no impacts on potential offshore wind energy development because it would not include much of Santa Lucia Bank (including the Diablo Canyon Call Area), the northern area that may be needed for Morro Bay lease areas cables and substations connecting to onshore grids through points of interconnection at Morro Bay and DCPP, and the shoreline at DCPP that may be developed for a deep-water port in the future.

Beneficial impacts would occur in the same topic areas as identified for the Initial Boundary Alternative but would be at a substantially smaller scale, particularly in the areas of physical resources; biological resources; commercial fishing and aquaculture; and cultural heritage and maritime heritage resources. Excluding the coastal area south of Cambria would preclude any conservation benefits from protecting the shipwreck *Montebello*. The Salinan and Chumash consider the areas excluded from the sanctuary, in particular the waters off Point Estero, Morro Rock, Montaña de Oro, and the area around DCPD to be a valued Tribal and Indigenous heritage region that would not be protected under this alternative. Alternative 4 would have the least amount of beneficial impacts on environmental resources.

5.4.6 Sub-Alternative 5a, Morro Bay Estuary

This boundary sub-alternative, which could be implemented with the Initial Boundary Alternative or Alternative 1, would include the Morro Bay Estuary in the proposed sanctuary boundaries, as described in Section 3.7.1. By applying the proposed sanctuary regulations to this area, this sub-alternative would offer increased significant benefits (relative to the Initial Boundary Alternative or Alternative 1) for cultural heritage and maritime heritage resources, and additional, less than significant benefits in the issue areas of physical resources; biological resources; commercial fishing and aquaculture; and socioeconomics, human uses, and environmental justice due to protections afforded by the proposed sanctuary regulations. Sub-Alternative 5a would have minor incremental adverse impacts on physical resources; biological resources; socioeconomics, human uses, and environmental justice; and marine transportation.

5.4.7 Sub-Alternative 5b, Gaviota Coast Extension

This boundary sub-alternative would extend the proposed or alternative sanctuary boundaries along the Gaviota Coast, as described in Section 3.7.2. By applying proposed sanctuary regulations to this area, Sub-Alternative 5b would offer increased significant beneficial impacts (relative to the Initial Boundary Alternative or other action alternatives) for cultural heritage and maritime heritage resources; additional less than significant benefits in the issue areas of physical resources; biological resources; commercial fishing and aquaculture; and socioeconomics, human uses, and environmental justice would be achieved due to protections afforded by the proposed sanctuary regulations. Including this area in the proposed sanctuary would have the potential to result in a small incremental increase in adverse impacts on commercial fishing and aquaculture (i.e., commercial fishing operations); socioeconomics, human uses, and environmental justice (i.e., land use development); and marine transportation, due to the implementation of discharge and submerged lands disturbance regulations. The overall adverse impacts would still be less than significant.

5.4.8 No Action Alternative

The impact analysis for the No Action Alternative describes the impacts of the status quo (including any negative environmental impacts of not implementing the proposed agency action), where the proposed sanctuary boundary area is not included in the National Marine Sanctuary System and continues to be managed under existing applicable federal and state programs. Choosing the No Action Alternative would forgo the establishment of a sanctuary and would therefore not cause any of the beneficial or adverse impacts associated with the action

alternatives. Therefore, the No Action Alternative is not represented in Table 5-1. Adverse impacts presently occurring would continue to occur. Attempting to identify impacts of potential future activities that could occur under the No Action Alternative would be speculative and beyond the scope of this EIS.

In summary, the No Action Alternative would have the following implications within the study area:

- Beneficial impacts on physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; socioeconomics, human uses, and environmental justice identified under the Initial Boundary Alternative and action alternatives would not occur.
- New oil and gas development could occur in federal waters if the relevant federal agencies authorized such development. New oil and gas facilities would not be expected in state waters due to the legislative ban on such development by the state government.
- Wind energy projects could be pursued in both state and federal waters and would not be subject to the additional regulations proposed for this sanctuary. There would be a potential for adverse impacts on ocean upwelling from offshore wind energy projects.
- Commercial fishing, recreational, homeland security, and other vessels would not be subject to the discharge prohibitions in the proposed final sanctuary regulations.
- Construction of new or repairs to any existing structures would not be subject to the proposed final discharge or submerged lands disturbance regulations and would not require NOAA approval.

5.4.9 NOAA's Final Preferred Alternative

In the draft EIS, NOAA identified an Agency-Preferred Alternative consisting of Alternative 2, Cropped Bank to Coast, and Sub-Alternative 5b, Gaviota Coast Extension (see Figure 5-1b). Based on public comments on the draft designation materials and further review, NOAA has revised its Agency-Preferred Alternative and now identifies its Final Preferred Alternative as Alternative 4, plus Sub-Alternative 5b, plus a small area analyzed as part of the Initial Boundary Alternative in the center of the Santa Lucia Bank, thereby creating a straight line across the northern section of the proposed sanctuary (see Figure 5-1a).

The Final Preferred Alternative covers 4,543 square miles of coastal and ocean waters, and spans 116 miles of California coast off the counties of San Luis Obispo and Santa Barbara. The proposed sanctuary would span a maximum distance of 60 miles from shore, and reach a maximum depth of 11,580 feet below sea level. Describing the boundary in a clockwise fashion, the boundary of the Final Preferred Alternative originates along the coast two miles southeast of the breakwater for the DCPD marina, runs south along the mean high water line through San Luis Obispo County and northern and western Santa Barbara County to the eastern end of the Naples State Marine Conservation Area (SMCA) on the Gaviota Coast. Along this stretch, the harbor areas at Port San Luis and Vandenberg Space Force Base (VSFB) near Point Arguello are excluded from the sanctuary. Offshore, the boundary extends from the western edge of Channel Islands National Marine Sanctuary (CINMS), around important features like Rodriguez Seamount, most of Arguello Canyon, and about half of the Santa Lucia Bank and part of its

escarpment. At a point approximately 55 miles offshore of the Santa Maria River mouth, the boundary extends east 43 miles, then due north for 12 miles to the point of origin south of the DCPD marina.

Regulations for the Final Preferred Alternative would be identical to those described for the Initial Boundary Alternative in Section 3.2.2 (and listed in Table 3-1), with the exception of minor modifications described in Section 3.6.1 (Alternative 4) to adjust for Morro Bay Harbor not being adjacent to the sanctuary boundary.

NOAA has evaluated the adverse and beneficial impacts from the Initial Boundary Alternative, as well as the various alternatives that considered smaller and larger boundaries. This evaluation includes a careful review of over 110,000 comments submitted on the draft designation materials (see Appendix A, Response to Comments). NOAA staff have held meetings with cooperating agencies for this action and considered their input on the draft EIS. NOAA has also held formal government-to-government consultation meetings with the Santa Ynez Band of the Chumash Indians and has held informational and coordination meetings with other interested non-federally recognized Chumash and Salinan Indigenous groups.⁴² Identification of the Final Preferred Alternative is based on weighing the NEPA analysis, input from cooperating agencies and the Santa Ynez Band of the Chumash Indians, and the input from thousands of comments received during the public comment period.

⁴² This final EIS uses “Tribes and Indigenous communities” and other related phrases to refer broadly to federally recognized Tribes, Native American Tribes that are not federally recognized, and other Indigenous groups and organizations. Where appropriate to reference the federally recognized Tribe in this area, the Santa Ynez Band of Chumash Indians, the EIS specifically names that Tribe. Where appropriate to reference federally recognized Tribes more broadly, the EIS uses the terms “federally recognized Tribe(s)” or “federally recognized Tribal Nation(s).” As such, use of the term “Tribe” or “Tribal” is not intended to refer only to federally recognized Tribes unless otherwise specified.

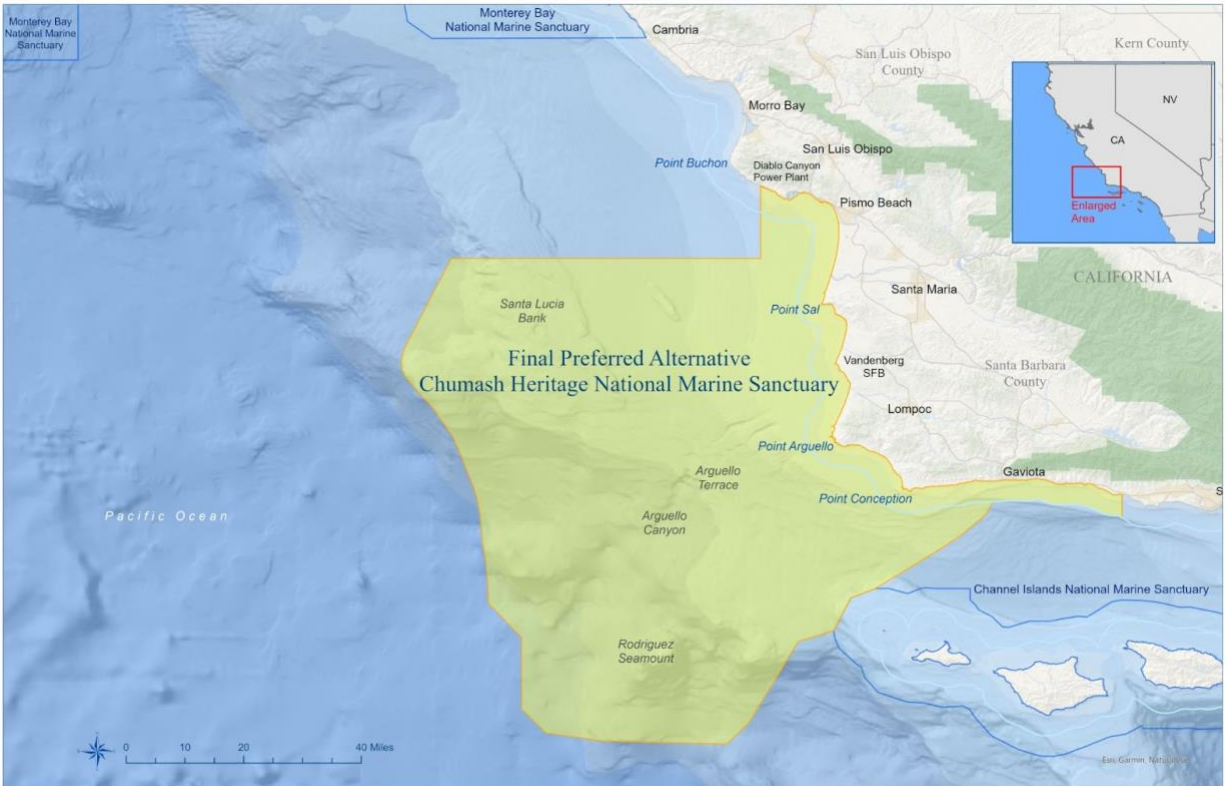


Figure 5-1a. Final Preferred Alternative, consisting of Alternative 4 (Combined Smallest) and Sub-Alternative 5b (Gaviota Coast Extension), plus a small additional area in the center of the Santa Lucia Bank, creating a straight line along the northern border. Image: NOAA

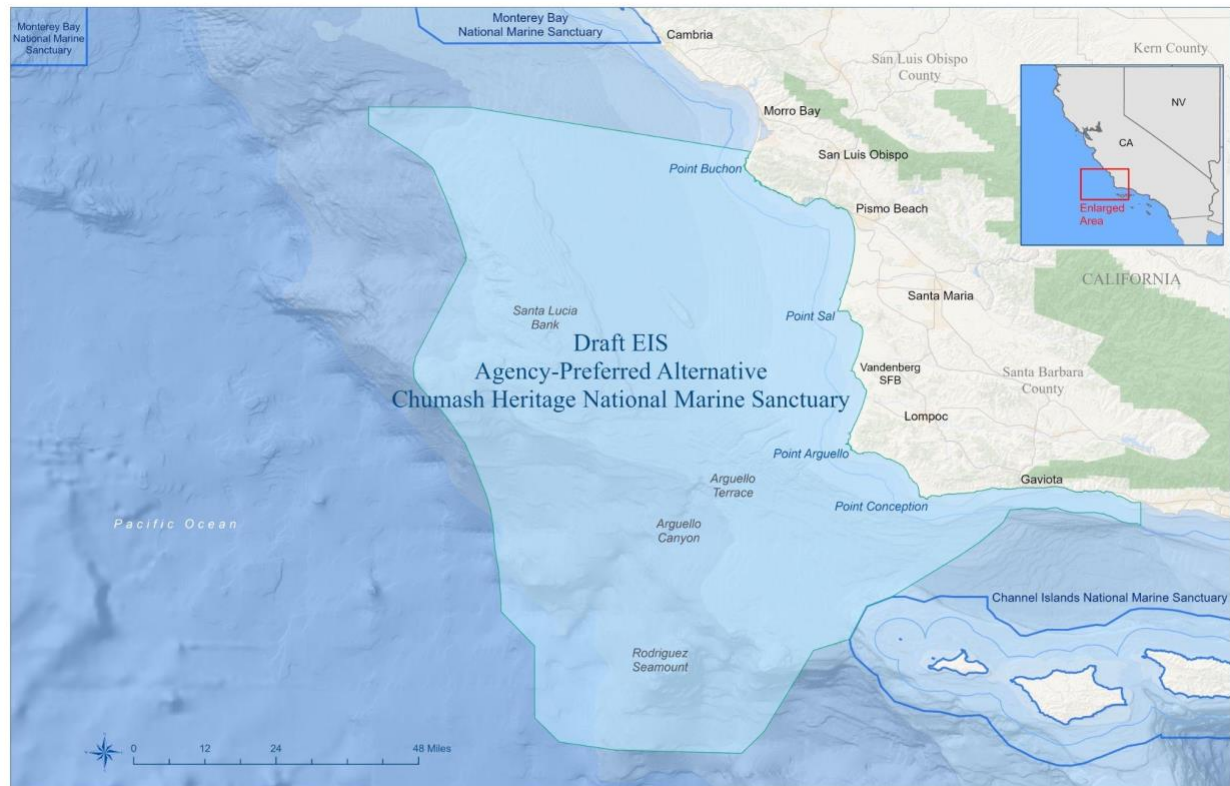


Figure 5-1b. For comparison with NOAA’s Final Preferred Alternative identified in the final EIS, this map shows the previously identified Agency-Preferred Alternative from the draft EIS, consisting of Alternative 2 (Cropped Bank to Coast) and Sub-Alternative 5b (Gaviota Coast Extension). Image: NOAA

NOAA considers the Final Preferred Alternative as Phase 1 for sanctuary protection along this important coast. NOAA intends to initiate a “Phase 2” evaluation process in the future to consider options for protecting nationally-significant resources in areas beyond the sanctuary’s boundary, as warranted and as discussed further in the management plan’s Boundary Adjustment Action Plan.

The Final Preferred Alternative provides significant beneficial impacts on cultural heritage and maritime heritage resources, and added benefits through inclusion of Sub-Alternative 5b along the Gaviota Coast. It provides other beneficial but less-than-significant impacts in nearly all resource areas, such as: physical resources; biological resources; commercial fishing and aquaculture; cultural heritage and maritime heritage resources; socioeconomics, human uses, and environmental justice; and DoD and homeland security activities, largely through sanctuary regulations that would limit the scale and scope of offshore development activities and other human uses that could harm natural, historical, and cultural resources. NOAA has considered the adverse impacts of the Final Preferred Alternative and finds them to be an acceptable balance between resource use and conservation of sanctuary resources. This alternative would have no significant adverse impacts and the least amount of adverse but less-than-significant impacts on development of offshore renewable energy telecommunications and submarine fiber optic cables, and marine transportation (compared to the Initial Boundary Alternative and all other action alternatives).

In identification of the Final Preferred Alternative, NOAA took into consideration existing and planned infrastructure in the study area. Figure 5-2 consolidates information discussed throughout the EIS on the location of a variety of ocean infrastructure relative to the boundary for the Final Preferred Alternative, including federal and state wind energy lease areas and projects, existing and planned submarine fiber optic cables, offshore oil and gas leases, and platforms and pipelines. The figure also includes other features such as marine transportation routes, state marine protected areas (MPAs), sound monitoring stations, and Essential Fish Habitat (EFH) areas.

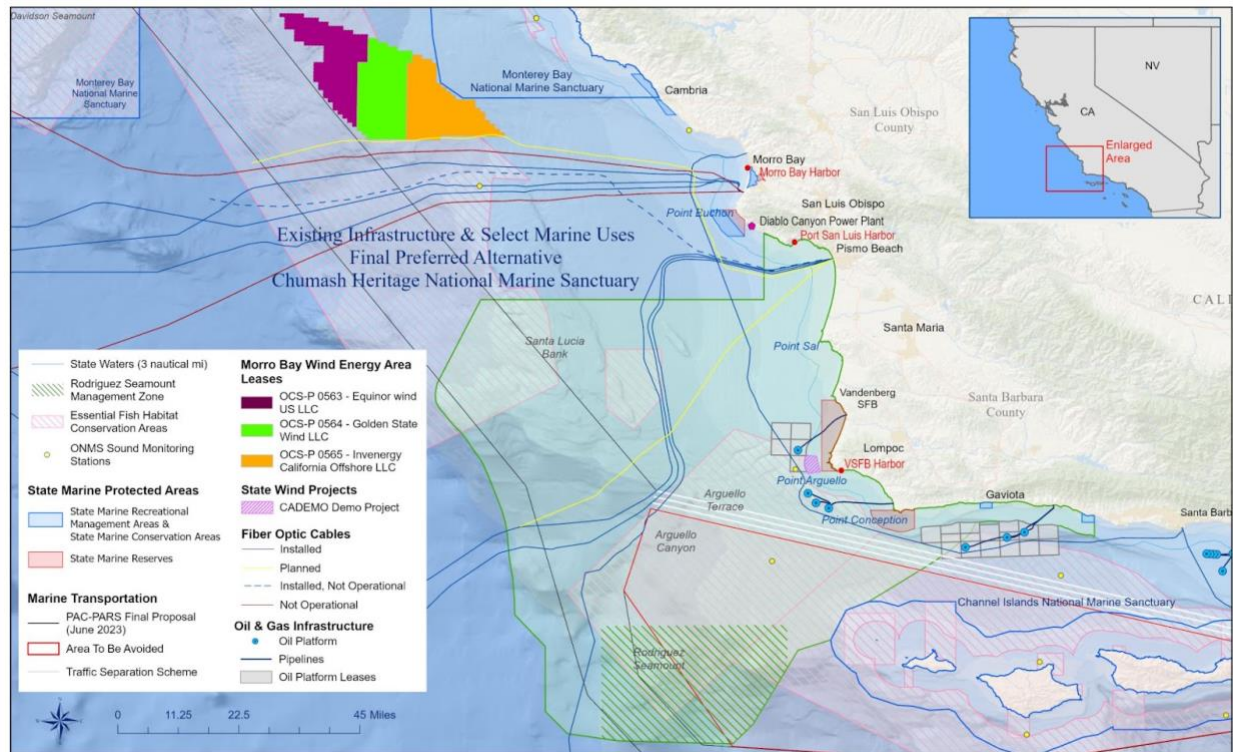


Figure 5-2. Existing infrastructure and uses within and adjacent to the Final Preferred Alternative. Image: NOAA

At the final EIS stage, NOAA has reconsidered offshore wind industry concerns regarding the sanctuary in the particular context of the Morro Bay lease areas, in conjunction with existing infrastructure and competing uses of the proposed sanctuary area (see Figure 5-2), and in light of the purposes and policies of the NMSA and Biden-Harris Administration priorities. Adopting the Final Preferred Alternative would allow offshore wind developers to complete siting and permitting for subsea electrical transmission cables from the three Morro Bay lease areas to landing sites at both Morro Bay and DCPD without having to route cables through the new sanctuary. The Final Preferred Alternative would also be the most manageable boundary at this time and would allow the new sanctuary to focus on numerous core activities outlined in the management plan without the need to focus resources on myriad permitting issues related to offshore wind development. This avoids any perception of risk that a sanctuary permit review of proposed cables could delay or otherwise interfere with development of these renewable energy projects. Additionally, accommodating cable routes to landing sites at both Morro Bay and

DCPP would allow space for the cable routes to make siting adjustments (“micro siting”) to avoid sensitive resources or certain seafloor features or hazards. See also the response to comment BO-1 in Appendix A for additional explanation of NOAA’s identification of the Final Preferred Alternative.

The Final Preferred Alternative is the boundary least likely to create potential regulatory uncertainty perceived by offshore wind developers because they are not expected to require sanctuary permits for subsea electrical transmission cables to shore. NOAA anticipates initiating the review process to consider establishing additional sanctuary protection(s) five to seven years after designation consistent with NOAA’s timeline for the first management plan review process. These additional protections could include an expansion of sanctuary boundaries. This timeframe would provide a reasonable amount of time for offshore wind developers to obtain permits and easements from other agencies to develop their subsea electrical transmission cables, and possibly install some of those cables. Initiating Phase 2 (as described in the final management plan’s Boundary Adjustment Action Plan) to consider establishing additional sanctuary protection would focus on the resources north of and west of Chumash Heritage National Marine Sanctuary (CHNMS), as well as within the waters of Morro Bay estuary. This Phase 2 process would commence no later than January 2032 and would inform NOAA’s consideration of future options for sanctuary protection of this area, which may include expanding the CHNMS boundary, or expanding the Monterey Bay National Marine Sanctuary boundary, or designating a new stand-alone sanctuary in this area. Any future sanctuary designation or expansion could potentially “grandfather in” cables or other permitted structures via a sanctuary certification process. A future designation or sanctuary expansion would require a separate public process under the NMSA and NEPA.

In identifying the Final Preferred Alternative, NOAA has considered which boundary alternative would be most manageable while simultaneously maximizing the principal purposes for the proposed sanctuary. Including the deeper water portions west of the Santa Lucia Bank within the sanctuary boundaries would create an extra management burden at the time of designation without hosting clearly nationally-significant natural or submerged maritime heritage resources in that area, or without significant threats to those resources at this time. If new information becomes available in the future about significant resources or threats for which a national marine sanctuary would offer suitable protection, NOAA could consider adding some or all of that area to the sanctuary at a future date. The Final Preferred Alternative does include significant offshore features of national importance, including a portion of the Santa Lucia Bank, most of Arguello Canyon and all of the Rodriguez Seamount. The Final Preferred Alternative allows NOAA to focus its management on some of the key areas historically important to the Chumash People and natural resources important to their heritage.

Including the Gaviota Coast extension within the Final Preferred Alternative would provide additional protection of important coastal resources. It would include waters off three popular state beaches and parks—Gaviota, Refugio, and El Capitán—and would ensure that the Kashtayit and Naples SMCAs⁴³ are entirely within the sanctuary. It would include beaches, kelp forests,

⁴³ The federally recognized Santa Ynez Band of Chumash Indians plays a sovereign role in independently managing the Tribe’s fishing and resource collection activities through its state-approved exemption for subsistence and cultural fishing in the Kashtayit and Naples SMCAs.

and rocky and soft substrate reefs. As discussed in Section 4.5, that portion of the Gaviota Coast was home to numerous, large Chumash villages at the time of European first contact. Ensuring conservation of these resources is an important benefit to including this sub-alternative in the Final Preferred Alternative. The continued presence and use of offshore structures and development in this area, such as pipelines and cables related to the Santa Ynez Unit oil and gas development, could be accommodated via the certification process included in the proposed regulations. Repair, replacement, or removal of the structures necessary for existing oil and gas production could be considered via an Office of National Marine Sanctuaries authorization process.

Given that the Final Preferred Alternative originates (in the north) along the ancestral coastline of the Chumash People, NOAA is naming the sanctuary “Chumash Heritage National Marine Sanctuary.” See Section 3.10 for additional explanation regarding the selection of the name. If NOAA’s final action adopts a larger area than the Final Preferred Alternative, and includes coastal areas of ancestral importance to Salinan and Chumash Peoples, it will reassess the sanctuary name. Similarly, if NOAA were to take a future sanctuary designation or expansion action following a Phase 2 consideration of additional sanctuary protection measures for this area, and if that were to include coastal areas of ancestral importance to Salinan and Chumash Peoples, it would reassess the sanctuary name.

The draft EIS and the proposed rule alerted the public that, based on public comments received on the draft designation materials and NOAA’s experience administering the National Marine Sanctuary System, pursuant to NEPA and the Administrative Procedure Act, NOAA may choose to identify an alternative in the final rule and final EIS that is within the geographic and regulatory scope of the alternatives considered in the draft EIS. Alternative 4 and Sub-Alternative 5b, plus the small additional area in the center of the Santa Lucia Bank (and part of the Initial Boundary Alternative), and impacts associated with these alternatives, are thoroughly discussed in the draft EIS. NOAA received public comments on these alternatives that it carefully considered in identifying the Final Preferred Alternative. As explained in Section 3.6.1 of the final EIS, the minor variation in the boundary for Alternative 4 south of DCPD is also within the scope of alternatives discussed in the draft EIS and does not result in environmental impacts not previously considered. The Final Preferred Alternative is thus within the geographic and regulatory scope of the alternatives considered in the draft EIS. Based on this information, NOAA has determined that there are no substantial changes to the proposed action that are relevant to environmental concerns, nor are there significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts (40 C.F.R. 1502.9 (d)(1)(ii)). As such, preparation of a supplemental EIS is not required.

NOAA developed and published a draft management plan that would have applied to the Initial Boundary Alternative. The final sanctuary designation would include a final management plan as part of the Final Preferred Alternative. Action plans contained within the final management plan for the Final Preferred Alternative would be the same as those described in Section 3.2.3 for the Initial Boundary Alternative, with a few differences based on the final boundary configuration as explained in Section 3.6.3 (Alternative 4). These management plan differences include reduced programmatic activities in areas beyond the final boundary, combined with

study of outlying areas to the north and west as called for in a new Boundary Adjustment Action Plan.

5.4.10 Comparison of Boundary Alternatives

Table 5-1 provides a summary table that captures the main differences between the Initial Boundary Alternative and other action alternatives. The symbols depicted in Table 5-1 represent the highest level of beneficial or adverse impact (or negligible/no impact) from each resource area or human use analyzed in the EIS. See Chapter 4 for details on other impacts for each resource area or human use not represented in Table 5-1.

Key to symbols:

- = No impact or negligible impact
- ~ = Less than significant adverse impact
- + = Less than significant beneficial impact
- ++ = Significant beneficial impact

Table 5-1. Comparison of Initial Boundary Alternative and action alternatives.

	Initial Boundary Alternative (IBA) ^{a, b}	Alt. 1, Bank to Coast ^{a, b}	Alt. 2, Cropped Bank to Coast ^b	Alt. 3, Diablo to Gaviota Creek ^b	Alt. 4, Combined Smallest ^b	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension*
Physical resources (air quality and climate change, geology, oceanography, and water quality)	++ Highest level of benefit; significant beneficial impacts on upwelling; minor to moderate beneficial impacts on air quality & climate change, geology, & water quality	++ Same as IBA for upwelling; slightly less than IBA for air quality & climate change, geology, & water quality	++ Same as IBA & Alt. 1 for upwelling; less than IBA & Alt. 1 for air quality & climate change, geology, & water quality	+ No beneficial impacts on upwelling; less than IBA, alts. 1 & 2 for air quality & climate change, geology, & water quality	+ No beneficial impacts on upwelling; least beneficial for air quality & climate change, geology, & water quality	+ No beneficial impacts on upwelling; negligible to minor beneficial impacts for air quality & climate change, geology, & water quality	+ No beneficial impacts on upwelling; negligible to minor beneficial impacts for air quality & climate change, geology, & water quality
	~ Minor adverse impacts on air quality & climate change due to increased research & enforcement vessel use & potential impediment to wind energy	~ Slightly less than IBA related to increased vessel use; same as IBA related to potential impediment to wind energy	~ Slightly less than IBA & Alt. 1 related to increased vessel use; same as IBA & Alt. 1 related to potential impediment to wind energy	~ Less than IBA, alts. 1 & 2 related to increased vessel use; no adverse impacts related to potential impediment to wind energy	O Negligible adverse impacts related to increased vessel use; no adverse impacts related to potential impediment to wind energy	O Negligible adverse impacts related to increased vessel use	O Negligible adverse impacts related to increased vessel use
Biological resources**	++ Highest level of benefit	++ Slightly less than IBA	+ Less than IBA & Alt. 1	+ Less than IBA, alts. 1 & 2	+ Least beneficial	+	+
Commercial fishing and aquaculture	++ Highest level of benefit on fisheries	++ Slightly less than IBA	+ Less than IBA and Alt. 1	+ Less than IBA, alts. 1 & 2	+ Least beneficial	+	+

	Initial Boundary Alternative (IBA) ^{a, b}	Alt. 1, Bank to Coast ^{a, b}	Alt. 2, Cropped Bank to Coast ^b	Alt. 3, Diablo to Gaviota Creek ^b	Alt. 4, Combined Smallest ^b	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension*
	~ Minor to moderate effects on vessel operations due to regulations	~	~	~	~	O	~
Cultural heritage & maritime heritage resources**	++ Highest level of benefit	++ Slightly less than IBA	+ Less than IBA & Alt. 1	+ Less than IBA, alts. 1 & 2	+ Least beneficial; substantially less than IBA	++	++
Socioeconomics, human uses, and environmental justice	+ Highest level of benefit	+ Slightly less than IBA	+ Less than IBA & Alt. 1	+ Less than IBA, alts. 1 & 2	+ Least beneficial; substantially less than IBA	+	+
	~ Minor to moderate adverse impacts on recreational vessels due to discharge regulations; Negligible to minor adverse impacts on land use development, telecommunications, and submarine fiber optic cables; negligible adverse impacts	~ Same as IBA	~ Slightly less than IBA & Alt. 1	~ Less than IBA, alts. 1 & 2	~ Least adverse impacts	~	~

	Initial Boundary Alternative (IBA) ^{a, b}	Alt. 1, Bank to Coast ^{a, b}	Alt. 2, Cropped Bank to Coast ^b	Alt. 3, Diablo to Gaviota Creek ^b	Alt. 4, Combined Smallest ^b	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension*
Offshore energy	~ Moderate adverse impact on new oil/gas development; on existing oil/gas operations in event of a spill; on <i>planned</i> offshore wind wrt cable routing; on <i>new</i> wind farm development in Diablo Canyon Call Area or other federal waters; varying potential effects, or no effects, on offshore wind in state waters; negligible or no impact on DCPD	~ Same as IBA	~ Only minor impact on <i>planned</i> wind energy development if cables routed south of Morro Bay; same adverse impacts as IBA on oil/gas development, and <i>new</i> offshore wind farm development in federal waters; same as IBA for offshore wind in state waters	~ Only minor impact on <i>planned</i> wind energy development if cables routed south of DCPD; same adverse impacts on oil/gas development as IBA, and wind energy development in state waters; no impact on <i>new</i> offshore wind farm development in federal waters	~ No adverse impact on <i>planned</i> wind energy development if cables routed south of DCPD; same adverse impacts on oil/gas development as IBA, and wind energy development in state waters; no impact on <i>new</i> offshore wind farm development in federal waters	O	~
Marine transportation	~ Minor impact due to discharge, introduced species, and deserted vessel regulations	~ Slightly less than IBA due to discharge regulation	~ Slightly less than IBA and Alt. 1 due to discharge regulation	~ Less than IBA, alts. 1 & 2	~ Least adverse impacts	~	~

	Initial Boundary Alternative (IBA) ^{a, b}	Alt. 1, Bank to Coast ^{a, b}	Alt. 2, Cropped Bank to Coast ^b	Alt. 3, Diablo to Gaviota Creek ^b	Alt. 4, Combined Smallest ^b	Sub-alt. 5a, Morro Bay Estuary*	Sub-alt. 5b, Gaviota Coast Extension*
DoD and homeland security activities***	++ Highest level of benefit due to potential impediment of wind and new oil and gas development	++ Same as IBA related to potential impediment of wind and new oil and gas development	+ Loss of significant benefit by impeding development	+ Loss of significant benefit by impeding development	+ Same as Alt. 3	+	+

a Sub-Alternative 5a could be added to the Initial Boundary Alternative or Alternative 1.

b Sub-Alternative 5b could be added to the Initial Boundary Alternative or any action alternative.

* Small incremental increase in impacts, when combined with Initial Boundary Alternative or other action alternative.

** Negligible adverse impacts associated with increased vessel use due to sanctuary research and enforcement activities.

*** Negligible adverse impact on U.S. Coast Guard (USCG) under Initial Boundary Alternative and all action alternatives due to introduced species regulation.

Key to symbols:

O = No Impact or Negligible Impact

~ = Less Than Significant Adverse Impact

+ = Less Than Significant Beneficial Impact

++ = Significant Beneficial Impact

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