



Technical Report – September 22, 2020

Five-Year Review of the Chumash Heritage National Marine Sanctuary Nomination

Introduction

In 2020, the National Oceanic and Atmospheric Administration’s (NOAA) Office of National Marine Sanctuaries (ONMS) initiated a process to review the nomination of Chumash Heritage National Marine Sanctuary (CHNMS). The review assesses whether the nomination remains relevant and responsive to 11 sanctuary nomination process (SNP) criteria (four national significance and seven management considerations; Appendix A). NOAA used the same criteria to guide the review of the CHNMS nomination when it was submitted to NOAA in July 2015. The nomination passed ONMS review and was accepted to the inventory of areas for potential designation as a national marine sanctuary on October 5, 2015. Since then, NOAA has not initiated a designation process for this nomination, and ONMS is now conducting a five-year review of the CHNMS nomination to assess whether the proposed CHNMS continues to meet the criteria for sanctuary nomination.

This technical report, structured as 11 chapters, presents information regarding whether or not the CHNMS nomination remains responsive and relevant to the 11 SNP criteria. Each chapter begins with a brief summary of information submitted in the 2015 nomination, followed by a review of new information (e.g., recent events, initiatives, studies, marine resource programs, and activities) derived roughly since the nomination was accepted. The sources of new information generally have been from public comment or internal ONMS research and analysis. Relevant references are compiled in Appendix B.

This report has been prepared to inform the ONMS Director’s decision whether or not the CHNMS nomination will remain in the inventory beyond the five-year anniversary on October 5, 2020 of the nomination’s inclusion in the new site inventory.

Background

2015 Nomination

In 2014, NOAA’s ONMS launched a new sanctuary nomination process (79 FR 33851). After a multi-step review, nominations that meet the 11 SNP criteria are added to an inventory of areas NOAA may consider for potential designation as national marine sanctuaries. The 11 SNP criteria are based on the National Marine Sanctuaries Act (NMSA). Nominations expire after five years in the inventory if a designation is not initiated; however, if a five-year review of the nomination finds it to still meet the SNP criteria, nominations may remain in the inventory for an additional five years.

In July 2015, Fred Collins, on behalf of the Northern Chumash Tribal Council (NCTC), submitted a nomination for CHNMS; ONMS accepted the nomination as complete on August 5, 2015. ONMS conducted an in-depth review, and determined the CHNMS nomination met the national significance criteria and management considerations. On October 5, 2015, the nomination was placed on the inventory of sites NOAA may consider for future sanctuary designation.

The area proposed for the national marine sanctuary stretches from Cambria, south along the San Luis Obispo (SLO) and Santa Barbara counties' coastline, to Gaviota Creek, and then seaward to include Rodriguez Seamount, Arguello Canyon and Santa Lucia Bank. The area is located between Monterey Bay National Marine Sanctuary (MBNMS) to the north and Channel Islands National Marine Sanctuary (CINMS) to the south (Figure 1).

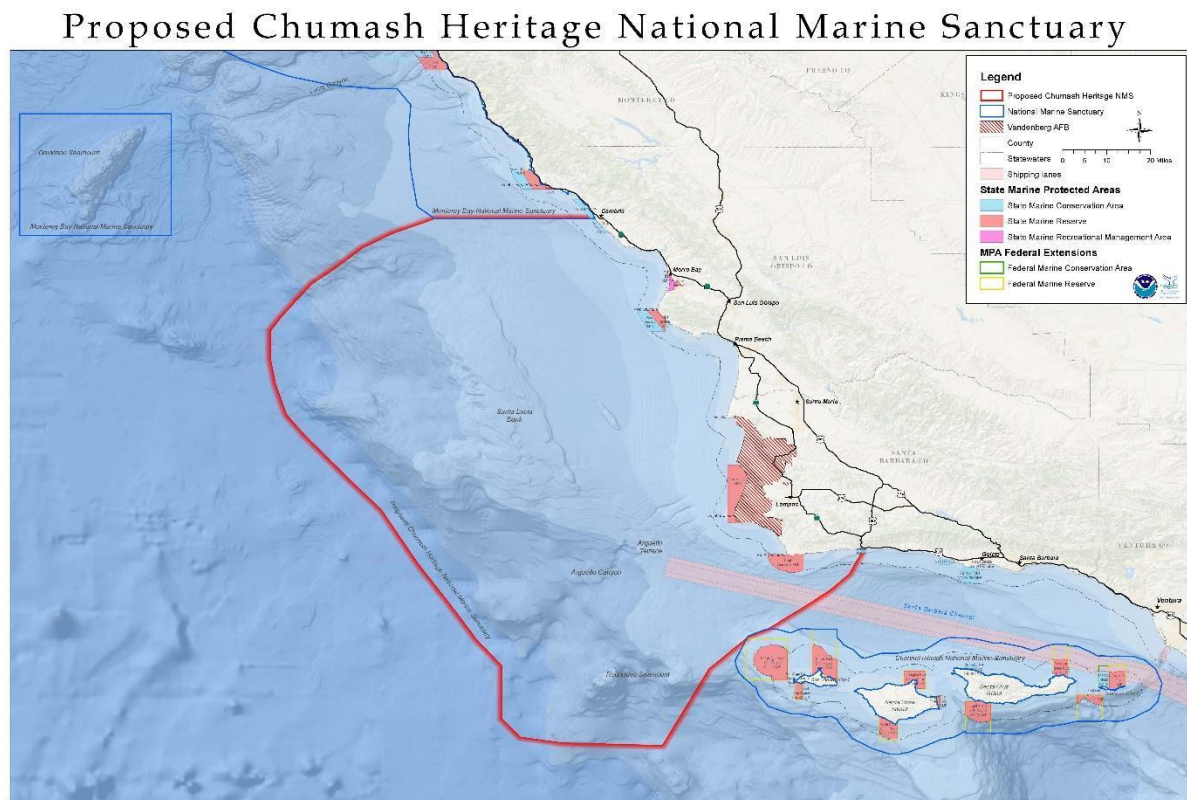



Figure 1: Map of the proposed boundaries for the CHNMS nomination. Credit: NOAA

The proposed CHNMS aims to recognize and preserve Chumash tribal history and to protect the area's rich biodiversity, including a world-renowned ecological transition zone. The nominators were concerned with the number, size, and diversity of proposed development projects being funneled into the area between two existing sanctuaries. They believed a national marine sanctuary offered solutions in guiding coordinated and comprehensive ecosystem-based management, including organizing and stimulating



marine research, education, stewardship, tourism and recreation, in addition to providing protection for important native cultural sites.

Local community members have been supportive of designating a national marine sanctuary in this area since the early 1980s. The July 2015 proposal was submitted with support from the Sierra Club, Surfrider Foundation, and many community leaders and individuals in Santa Barbara and San Luis Obispo counties. The nomination was accompanied by letters of support from elected officials, businesses, user groups, conservation groups, educational institutions, and private citizens.

Five-Year Review

In the spring of 2020, ONMS initiated the five-year review of the CHNMS nomination by first notifying the nominators about this process and giving them an opportunity to provide updated information in regard to the nominated area's relevance and responsiveness to the SNP criteria. ONMS then issued a Federal Register notice (85 FR 26443) requesting public comment for the CHNMS five-year review from May 4 to June 15, 2020. Within that time frame, ONMS held a virtual public meeting on May 27, 2020.

Public Comments

The public comment period produced a considerable level of interest in the review of the CHNMS nomination, totaling over 14,000 comments and signatures (see Table 1).

Comments are summarized as follows:

- Oral comments at virtual public meeting – 28 commenters, of these 19 people submitted additional written comments
- Letters to ONMS, or via Regulations.gov – 815 unique comments from diverse geographies and with diverse perspectives on extending the nomination
- Form letter comments developed by the sports fishing group Coastal Conservation Association (CCA) California – 308 commenters, nearly all from California, opposed to implementation of the proposed CHNMS
- Form letter comments developed by the Audubon Society – 167 commenters, all from California, in support of extending the proposed sanctuary in the inventory
- Form letter comments developed by student members of the Surfrider Foundation – 7 commenters, all from SLO, in support of extending the proposed sanctuary in the inventory
- Form letter comments developed by supporters of the Environmental Defense Center (EDC) – 16 commenters, all from California, in support of extending the proposed sanctuary in the inventory
- Signatories on a petition developed by Environment America – 10,122 signatures, from across the United States, in support of extending the proposed sanctuary in the inventory

- Signatories on a petition developed by the Audubon Society – 2,895 signatures, nearly all from California, in support of extending the proposed sanctuary in the inventory.

Source	Number of Commenters/Signatures	Position
Oral comments at virtual meeting	28	Diverse
Unique written comments to ONMS	815	Diverse
Subtotal	843	
Form letters from CCA	308	Opposed CHNMS implementation
Form letters from Audubon	167	Supported extending CHNMS in inventory
Form letters from Surfrider students	7	Supported extending CHNMS in inventory
Form letters from EDC supporters	16	Supported extending CHNMS in inventory
Signatures to Environment America petition	10,122	Supported extending CHNMS in inventory
Signatures to Audubon petition	2,894	Supported extending CHNMS in inventory
Subtotal	13,514	
Total Comments and Signatures	14,357	

Table 1. Summary of public comments received for the CHNMS five-year review, by source and position (support or opposed to extending the CHNMS nomination in the national inventory). Credit: NOAA

Multiple comment letters were signed by one or several entities on behalf of other like-minded individuals or organizations. Examples include:

- Alliance of Communities for Sustainable Fisheries, representing fishing interests from Port San Luis to Pillar Point Harbor;
- Environmental Defense Center and 22 other environmental groups largely from central California;
- A joint congressional letter from Senator Feinstein, Senator Harris, and Representative Carbajal.

ONMS requested public comments to seek insights and new information that would guide its determination of the nomination's continued relevance to the 11 SNP criteria. Roughly 44 of the comments provided additional information or areas to study in regards to at least one of the first 10 criteria. The 11th criteria (community support expressed by a broad range of interests for the nomination) was addressed in practically all of the comments; 18 commenters did not provide advice on the question of extending the CHNMS nomination.

National Significance 1: Natural Resources and Ecological Qualities (NS-1)

2015 Nomination (NS-1)

The 2015 nomination for Chumash Heritage National Marine Sanctuary (CHNMS) described the natural resources and ecological qualities shaped by the offshore geologic features (e.g. Santa Lucia Bank and Arguello Canyon) that provide conditions for consistent upwelling. Seasonal upwelling serves as the engine of the area's high biological productivity, supporting dense aggregations of commercial and non-commercial species. 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. The nomination also paid special attention to kelp forests, seagrass beds, and wetlands serving as nursery grounds for numerous commercial fish species and critical habitat for the threatened southern sea otter.

New Information (NS-1)

Ocean productivity in the proposed sanctuary remains relatively high, despite two extreme marine heat waves in the past seven years. The endangered species statuses of three animals exemplify the importance of the proposed sanctuary for feeding, shelter and quality habitat. Explorations of the offshore geologic features in the area yielded new biological discoveries. The new information relevant and responsive to NS-1 below incorporates material and information submitted by 11 public comments.

Ocean Productivity

Productivity, as measured by relative abundance of ocean forage (krill, anchovy and sardine) in the California Current Ecosystem (CCE), is highly variable. Shifts in ocean productivity and other ocean dynamics, are influenced by natural climate events (e.g., El Niño, La Niña) and human-induced climate change (e.g., increases in ocean temperature and acidity, sea level rise, changes in currents and salinity). In the past seven years, three ocean warming events dominated the west coast: El Niño of 2014-2015, and two marine heatwaves in 2013-2016 and in 2019 (Frölicher et al. 2018, NOAA 2020). The shift towards warmer ocean conditions in the central CCE, which overlaps with the proposed sanctuary boundaries, produced more adult anchovy in 2019 than any previous year. Adult sardine were also the most abundant in a decade, although not as abundant as in the 2000s. Market squid abundances remained relatively high from 2014 to 2019, with an exception in 2016. The recent abundances of these forage species is countered by the lowest krill catches in a 30-year time series (NOAA 2020), as krill

are among the most important prey for fishes, marine mammals, and seabirds in the CCE.

Marine Mammals: Southern Sea Otters and Humpback Whales

Over the last three decades, the threatened southern sea otter (*Enhydra lutris nereis*), has expanded its range along the mainland south to approximately Gaviota Beach, which coincides with the proposed CHNMS southern boundary. The population (n = 2,863) demonstrated steady growth over the last five years, except in 2019, when the population declined by 5.7%. The population's growth is attributed to a rapid increase in their preferred prey, sea urchins, which boomed when released from predation by the sea star wasting disease decimating sea star species in the rocky intertidal and kelp forests. Subsequently, kelp forests have suffered a die back from exploding populations of herbivorous sea urchins (see MC-1). Although sea urchins are prey for sea otters, loss of kelp also equates loss of refuge for otters from white sharks that have seen a recent population rebound. The prevalence of shark bites observed on sea otters near Año Nuevo and Gaviota Beach indicates white sharks are preying on sea otters in these locations (Tinker et al. 2017, Hatfield et al. 2019).


Demonstrating the significance of seasonal productivity and consistent, available forage in the proposed sanctuary, Calambokidis and colleagues (2015) identified Point Sal to Morro Bay as an important feeding area for humpback whales (*Megaptera novaeangliae*) from April to November. In 2019, NMFS initiated designation of critical habitat for two distinct population segments (DPS) of humpbacks: the Central America DPS is estimated at 783 whales and considered endangered, while the Mexico DPS is estimated at 2,806 and listed as threatened (Wade 2017).

Black Abalone

Black abalone (*Haliotis cracherodii*) is an endangered herbivorous marine snail that once numbered in the millions and was commercially harvested along the California coast. A considerable amount of high quality habitat for black abalone is present in the proposed sanctuary due to the geomorphology of the area. Populations of black abalone here were once large and healthy. Repopulation opportunities via larval transport and an abundance of critical habitat, make the proposed CHNMS the most important area for recovery on the mainland. Recent survey findings by MARINe (Multi-Agency Rocky Intertidal Network) already demonstrate slight improvements in mean number of black abalone per site (P. Raimondi, pers. comm. 2020).

Deep Water Discoveries

Researchers on a 2016 cruise aboard the Ocean Exploration Trust's (OET) E/V *Nautilus*, using a remotely operated vehicle (ROV), discovered a mysterious purple orb (nearly 3



inches wide) in Arguello Canyon at a depth of 5,301 feet (1,616 m). The orb was identified to be a velutinid, a distant relative of snails (Coleman et al. 2017). A subsequent expedition at the base of Davidson Seamount documented thousands of female brooding octopus (*Muusoctopus robustus*) at 10,827 feet (3,300 m; King et al. 2020). These two discoveries alone reveal the extent to which the deep sea off California remains unexplored as well as the potential for new discoveries of natural resources and ecological qualities of special significance within the proposed CHNMS.

National Significance 2: Maritime Heritage Resources (NS-2)

2015 Nomination (NS-2)

The 2015 sanctuary nomination for CHNMS describes the coastal area as an important area that was used for centuries by the Chumash, an ocean-going, indigenous people. The area embodies a special sense of place with sacred meaning and significant cultural values for the Chumash and other indigenous people that still reside in the region today. Descendants of the Chumash are engaging in a cultural revival of their rich heritage. The Chumash tomol (traditional canoe) is considered a symbol of connection to the past, the ocean, and maritime culture. Chumash coastal and submerged resources may be threatened by rising sea level and oil spills. In addition, there are a number of submerged historic maritime heritage resources, such as shipwrecks, located in the area, some of which are important in our nation's history and are listed on the National Register of Historic Places.

New Information (NS-2)

New information is described for the following areas: exploration of paleo-shorelines; discovery of the shipwreck U.S. Coast Guard (USCG) Cutter *McCulloch*; and listing of the shipwreck SS *Montebello* to the National Register of Historic Places. Further, additional research has increased the known number of ship and aircraft wrecks within the proposed area to over 200 (more than the 40 noted in the nomination). The new information relevant and responsive to NS-2 incorporates material and information from two public comments.

Paleo-shorelines

During collaborative ONMS expeditions on the OET E/V *Nautilus*, researchers discovered and mapped the interiors of sea caves around the Channel Islands and banks in the Southern California Bight (Ballard et al. 2019, Ballard et al. 2020). These submerged caves were carved by the sea 19,000 years ago, before the sea level rose from ice melt at the end of the last glaciation, creating a series of paleo-shorelines. Although

these discoveries were not within the proposed sanctuary, they are still relevant given the similarity of geologic and cultural history with the proposed sanctuary. Past archaeological discoveries at the nearby Channel Islands suggest some of the earliest records of human occupation in North America. Hence, possible paleo-shorelines discoveries on the mainland adjacent to the Channel Islands are of national significance to the story of human occupation of the Americas.

Ship and Aircraft Wrecks

ONMS research estimates there are approximately 200 ship and aircraft losses within the proposed sanctuary. A historically significant vessel loss is the U.S. Quartermaster steam auxiliary bark *Edith* lost at San Antonio River (north of Vandenberg Air Force Base) in 1849. 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. Using an ROV in 2016, ONMS visualized and characterized the remains of the USCG Cutter *McCulloch* lying offshore of Point Conception. The *McCulloch* served as a U.S. Revenue Cutter and is also a veteran of the Battle of Manila Bay serving under the command of Commodore George Dewey (Figure 2).

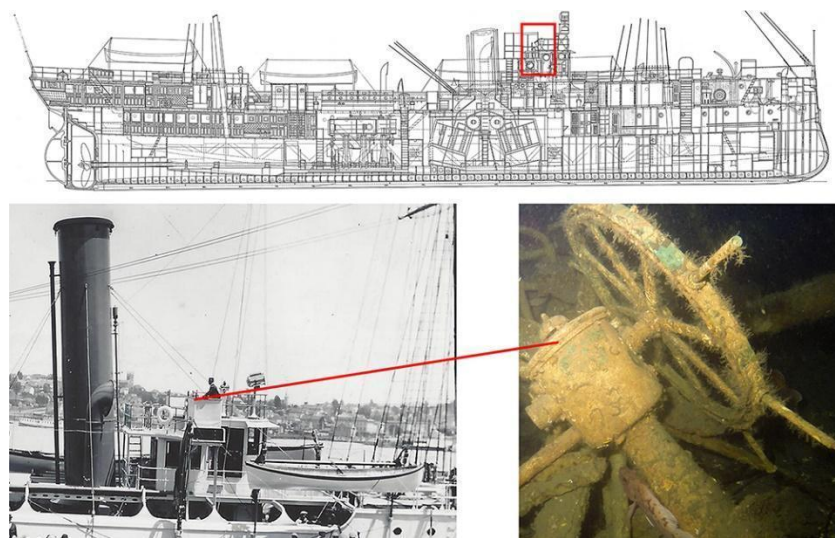


Figure 2. Shipwreck USCG Cutter *McCulloch*'s helm, or steering station, located on the upper-deck of the flying bridge. (Credit: NOAA/USCG/VideoRay/NARA)

National Register of Historic Places

ONMS has submitted a nomination to list the shipwreck SS *Montebello* to the National Register of Historic Places. The listing was approved on September 20, 2016, commemorating the 75th anniversary year of the loss.

National Significance 3: Economic Uses (NS-3)

2015 Nomination (NS-3)

The 2015 sanctuary nomination described numerous economic uses of the area, including tourism, recreation, agriculture, viticulture, commercial and recreational fishing, aquaculture, and education. Recreation, tourism, and fishery -dependent sectors depend on a healthy and thriving ecosystem. The nomination also highlights a study commissioned by the Sierra Club: “The Potential Economic Impacts of the Proposed Central Coast National Marine Sanctuary”, which estimates that designation of a national marine sanctuary in San Luis Obispo County would conservatively result in additional revenues of approximately \$18 million annually and create 547 new jobs.

New Information (NS-3)

The present and potential uses of the proposed sanctuary are shaped by several ongoing and new plans and activities, including a proposed offshore wind energy production area; oil and gas production; tourism; and commercial and recreational fishing. The new information relevant and responsive to criteria NS-3 incorporates material and information submitted by seven public comments.

Tourism

According to Visit SLO CAL, SLO County had about 2.21 million visitors during the third quarter of 2019, a new record, with 800,000 daytime and 1.41 million overnight visitors (Lewis et al. 2020). Visitors to the county spent nearly \$1.7 billion in 2017, making tourism the second largest regional economic driver after agriculture and generating \$79.3 million in taxes. The Santa Barbara north county has coastal recreation and tourism, but at a much lower rate than the more urbanized south county, which is highly popular for tourists and daily out-of-town visitors from across California.

Public Recreation and Access

Significant tourism dollars associated with public enjoyment, recreation, and access to the ocean and coast in the proposed CHNMS area are detailed in NS-4.

Commercial and Recreational Fishing

Total combined value of commercial fish landings from 2015 through 2018 reported for Morro Bay and Santa Barbara harbor complexes (CDFW 2020) equaled \$90.64 million (adjusted to 2018 dollars) on 34.81 million pounds (Figure 3). Morro Bay’s landings include catch from nearby ports such as Port San Luis and Cayucos; Santa Barbara’s landings include Gaviota Beach, Surf Beach, and Carpinteria. Since 2015 these local

catch statistics show a decline in the value of landings; the primary reason for the reduction in landings was the loss of Morro Bay's sole trawl vessel (PCFFA 2020).

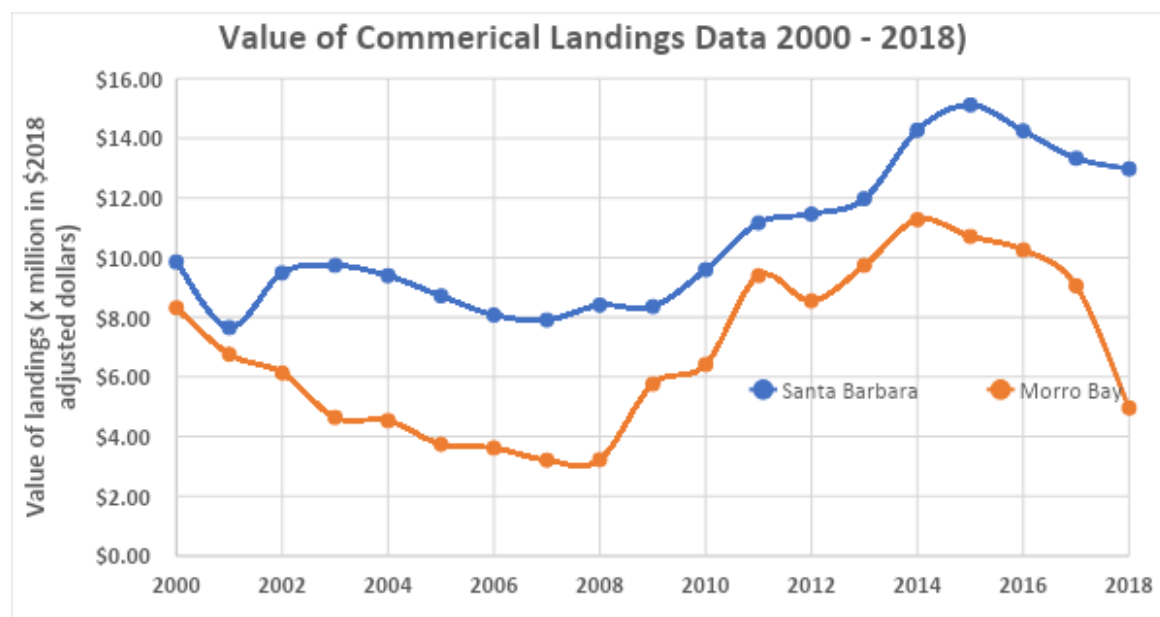


Figure 3. Value of commercial fish landings at Santa Barbara and Morro Bay port complexes. Credit: NOAA

Energy Production Areas

The Bureau of Ocean and Energy Management (BOEM) and the State of California are actively planning for offshore wind energy leasing in this area of the coast. If fully developed, the portions of the potential development areas that overlap with the proposed CHNMS area (Morro Bay and Diablo Canyon Call Areas; Figure 4 in MS-3) could have a potential generation capacity of about 4,800 megawatts (MW) (based on 3 MW/square km; 2020a). This could contribute greatly towards California's goal of 100% electric retail sales sourced from renewable energy by 2045. Further, BOEM estimates approximately 2.18 billion barrels of oil and 2.00 trillion cubic feet of natural gas exist on unleased seafloor within the proposed CHNMS area. Of the four oil and gas platforms making up the Point Pedernales Unit within the area, only platform Irene is still producing approximately 1.02 million barrels of oil and 318 million cubic feet of natural gas annually. Future production of the platform is estimated at about 5.77 million barrels of oil and 4.03 billion cubic feet of natural gas. Off the Gaviota coast, a portion of the Santa Ynez Unit (but not any of its platforms) underlies the southern edge of the proposed sanctuary. Considerable, developable reserves remain to be utilized within this production unit: 60 million barrels of oil and 467 billion cubic feet of natural gas.

National Significance 4: Publically-Derived Benefits (NS-4)

2015 Nomination (NS-4)

The 2015 sanctuary nomination described the area's abundant wildlife and natural beauty that require conservation and management to prevent negative impacts to the public's aesthetic, cultural and recreation experiences. A national marine sanctuary could assist existing programs and authorities (e.g., state, county, and city parks and beaches) with recreational access, ocean water quality, and marine education to preserve and enhance aesthetic value, marine habitat protection, and public recreation.

New Information (NS-4)

The publically-derived benefits of coastal access, recreation, and aesthetic values depend on the resources in the proposed CHNMS. Some of the many recreational opportunities and extensive public access created through numerous parks and beaches are outlined below. The new information relevant and responsive to NS-4 incorporates material and information submitted by two public comments.

Public Recreation and Access

Parks and Beaches

At least 30 parks and beaches line the shores of the proposed sanctuary, of which ten are administered by the California Department of Parks and Recreation (DPR), six by SLO and Santa Barbara counties, and more than a dozen are privately- or city-owned or are managed through a partnership of government authorities. DPR recently improved access to coastal resources and recreation coast-wide by adopting a faster, easier-to-use reservation system and a mobile app in partnership with Google allowing the world to visit 110 state parks via the internet (DPR 2017). The DPR in SLO County began offering additional interpretation and public tours along the coast (D. Falat, pers. comm. 2020).

SLO County Parks in partnership with the City of Morro Bay acquired the coastal beach area in the former Chevron terminal facility, bringing this 1 mile of beach into public ownership and permanently providing public access to the coast in this area. SLO County Parks also completed a reconstruction of beach stairs at 1st Street in Cayucos to provide improved coastal access, and rehabilitated the Cayucos Pier (N. Franco, pers. comm. 2020).

Hollister Ranch Conservancy

A 2019 state interagency collaborative aims to improve coastal access along 8.5 miles of coast at Hollister Ranch, in Santa Barbara County. Public access to this stretch of

coastline would offer people opportunities to recreate on world famous surf breaks and view marine mammals and migrating birds at Hollister Ranch beaches (Kruthers 2016).

Aesthetic Values

Dangermond Preserve

A recent addition to protected spaces is the purchase of the 38 square mile Jack and Laura Dangermond Preserve in 2017 by The Nature Conservancy (TNC). The Preserve, located at Point Conception, was most recently known as the Bixby-Cojo Ranch, which prevented significant development other than ranching for nearly 100 years. In addition to the aesthetic value of the Preserve, TNC aims to use it for conservation, study, and environmental education at the globally significant ecological transition zone. Collaboration with the Chumash community will help protect and conserve the indigenous cultural resources located within the Preserve (TNC 2020).

Energy Production Activities

As noted in other sections, offshore wind farm development could occur in or adjacent to the proposed CHNMS, which could have adverse visual and other aesthetic impacts. Alternatively removal of oil and gas platforms, while less visible due to their location, could offer visual and other aesthetic improvements along the coast.

Management Consideration 1: Marine Science (MC-1)

2015 Nomination (MC-1)

The 2015 nomination described the proposed area as a natural laboratory to study climate impacts to oceanographic patterns, ocean chemistry, biological diversity, and ecosystem and population dynamics in a globally significant biogeographic transition zone. The area also offers opportunities in marine archaeology to study underwater Chumash sites. The nominators suggested the proposed sanctuary would collaborate with University of California at Santa Barbara (UCSB), California Polytechnic State University, SLO (Cal Poly), and partners of these universities.

New Information (MC-1)

Much of the new information described in NS-1, NS-2 and MC-3 is derived from research in the marine sciences, including marine archaeology. Presented here are a handful of important research initiatives from the past five years to better understand the threats to resources, or their status and trends in the proposed sanctuary. The new information relevant and responsive to MC-1 incorporates information submitted by 11 public comments.

Paleo-shoreline Research

BOEM models of paleo-shorelines combined with sonar surveys (Braje et al 2019) indicate more extensive prehistoric coastlines than previously thought. These results served as the foundation for the discovery of sea caves at 100 -110 m depth, estimated to have been formed 11,000 – 22,000 years ago off southern California (Ballard et al. 2019, Ballard et al. 2020). The survey included an autonomous underwater vehicle, a three-dimensional imaging system, and underwater divers to measure the dimensions of cave openings and determine the geospatial context of the caves. This new technology may be ideal for discovering, surveying, and monitoring underwater Chumash sites to create a more comprehensive picture of indigenous culture and history of the Chumash.


Ecosystem monitoring

In 2016, NOAA's Integrated Ecosystem Assessment (IEA) Team began producing reports on the status of the CCE (see NS-1), derived from long-term monitoring of oceanographic and ecological attributes of the ecosystem. These reports address different spatial scales of U.S waters: west coast-wide; and smaller scales, such as a national marine sanctuary. For the latter, the NOAA IEA Team contributed data and analyses for the condition reports of MBNMS (ONMS 2016) and CINMS (ONMS 2019a). Many of the ecosystem status and trends in the proposed CHNMS could be derived from these IEA reports.

Climate research

Climate change has numerous impacts on the physical and natural environment: sea level rise, warming ocean, ocean acidification, more frequent and severe storms, increasing the length and severity of drought conditions, and changing use and distribution patterns for many species. Waters off California are becoming acidic twice as fast as the global ocean average (Osbourne et al. 2019). NOAA researchers and academic partners collected core samples from the seafloor of the Santa Barbara Basin (just south of the proposed CHNMS) and confirmed from historical data that the more acidic the water, the more difficult it was for foraminifera (single-cell plankton) to build a thick calcium carbonate shell. Shell thickness was correlated with estimates of the ocean's acidity level dating back to deposits from 1895. The deposits also revealed decade-long changes in the rise and fall of acidity that matched the Pacific Decadal Oscillation (PDO), a natural warming and cooling cycle. Human-caused carbon dioxide emissions are driving ocean acidification, but the natural variation from PDO also plays an important role in minimizing or amplifying ocean acidification.

The ocean acidification along the U.S. west coast is not only affecting shell formation in foraminifera, but also in Dungeness crab larvae, a commercially important species.



Bednaršek analyzed samples collected in 2016 and found damage to the developing carapace and sensory structures of larval crabs (Bednaršek et al. 2020). More frequent and prolonged exposure to acidic ocean conditions could have serious implications for larval survival and the Dungeness crab fishery.

Research Related to Offshore Energy Development


BOEM's Environmental Studies Program funds research and tool development to inform decisions about renewable energy development (BOEM 2020b). BOEM's studies offer new science relevant to CHNMS and, moreover, opportunities for scientific collaboration in the future. For instance, BOEM research on the potential for electromagnetic fields from undersea cables to affect migratory fish behavior could be studied in a new national marine sanctuary, as could evaluations of whale entanglement risk from offshore wind turbines (preventing whale entanglement is an active issue for state and federal managers, including other sanctuaries in California), as well as the effect of offshore wind turbines on seabirds. Ongoing studies BOEM and the U.S. Geological Survey (USGS) conduct on sea otter range expansion is another example of opportunities to collaborate in marine science within the proposed CHNMS. One pressing issue, should NOAA designate CHNMS in the future, will be abandonment and removal of offshore oil and gas platforms. Studying the impacts of those removals, both acute and long-term, would be an important opportunity for collaboration between ONMS and BOEM.

Expanding Pacific Research and Exploration of Submerged Systems (EXPRESS)

Since 2015, approximately 3,800 square miles (~ 10,000 square kilometers) of the proposed CHNMS have been surveyed using multi-beam technology. A multi-agency collaboration of NOAA, BOEM, and many others, titled the EXPRESS project, collected multi-beam data to provide bathymetry measurements and backscatter data delineating habitat substrate (e.g., hard or soft sediments). Deeper areas around Arguello Canyon were surveyed at 8-15 m resolution grids to assist with planning for ROV dive locations, while shallower areas, like surveys of potential wind farm installation, will be processed at 2-8 m resolution. New maps from these surveys will enhance our ability to better explore areas within the proposed sanctuary and to better assess potential direct, indirect, and cumulative impacts of offshore development on humans and the environment.

West Coast Deep Sea Coral Initiative

Deep-sea corals and sponges (DSCS) are another compelling example of science collaboration opportunities. The West Coast Deep-Sea Coral Initiative initiated focused research on DSCS for the region in 2018. ONMS and NMFS, lead partners of this four-



year effort, explored the Santa Lucia Bank with 16 ROV and AUV visual surveys in 2018 and 2019. Analyses of the surveys yielded collectively 30-37 species of fish, 17-20 species of sponges, and 12-13 species of corals. An additional survey of Santa Lucia Bank and Escarpment (west of the bank) is planned for October 2020, aboard the E/V *Nautilus*. Goals of the survey could shift due to coronavirus disease 2019 (COVID-19), but include using newer map products at higher resolution to explore deeper areas and features of the Santa Lucia Escarpment, collecting DSCS specimens, and further assessing the species richness and diversity of the bank.

Kelp Forest Monitoring

Kelp forests are an important habitat for countless commercial and non-commercial species. Recent kelp losses, particularly along Marin and Sonoma counties, have been linked to primary effects (e.g. higher temperatures) and secondary effects (e.g. sea star wasting disease) of a warming ocean. In 2019, California initiated long-term monitoring of kelp forest habitat in the state's marine protected area (MPA) network. One of the state MPAs being monitored is Point Buchon State Marine Reserve, in the proposed CHNMS (California Sea Grant 2020). A sanctuary could be a key partner with the state MPA network by offering trained divers, vessel support, and outreach and education expertise, as has been done at the other national marine sanctuaries in California (CINMS, MBNMS and Greater Farallones National Marine Sanctuary (GFNMS)).

Management Consideration 2: Education (MC-2)

2015 Nomination (MC-2)

The 2015 nomination described existing ONMS education opportunities that could be expanded into the proposed CHNMS. The nomination further described new areas of ocean literacy and curriculum development that use or could use the proposed sanctuary as a laboratory to teach climate change, weather events, paleo-oceanography and paleo-climates, human-caused ecosystem disruption, Chumash heritage, and historic shipwrecks.

New Information (MC-2)

Five years later, the existing education opportunities described in the nomination have advanced. New programs and strategies have been developed to increase the accessibility of programs that build ocean literacy and stewardship for various audiences.

K-12 Education

Since 2015, ONMS has enhanced its K-12 education resources through telepresence technology. An E/V *Nautilus* expedition to Arguello Canyon within the proposed CHNMS in 2016 streamed 57 live ship to shore interactions to over 525 students per day (Claire Fackler, pers. comm. 2020). ONMS has also developed other virtual education techniques, such as educational curricula for ocean acidification and deep sea coral and sponges. The proposed sanctuary would more directly offer ocean education opportunities created by ONMS and NOAA to students and educators in the area.

Education Grants

On behalf of NOAA, ONMS administers two education grants that fund ocean sustainability projects: B-WET (Bay Watershed Education and Training) and Ocean Guardian, both programs that work with local schools to develop the next generation of ocean and coastal stewards. Since 2015, 15 educational institutions in San Luis Obispo and Santa Barbara counties received funding from these two programs; however, only three were adjacent to the proposed CHNMS (Table 2). The others were adjacent to CINMS, indicating that presence of sanctuary staff nearby benefits local schools by increasing chances of securing grant funding from these programs (Naomi Pollack, pers. comm. 2020).

Grant	Recipient	Project
2015 B-WET	Lompoc Unified School District	Aquarium SeaQuest Program
2017 B-WET	SLO County	Watershed Education Project
2018 Ocean Guardian	Morro Bay Montessori Family Partnership Charter School	School-Yard Habitat Project

Table 2. Educational organizations within the proposed CHNMS that have received B-WET and Ocean Guardian grants from 2015 to 2019.

Collaboration with Colleges

UCSB collaborates with CINMS in managing the Center for Ocean Advancement in Science and Technology (COAST), a data innovation hub that has indicated interest in research partnerships in the proposed CHNMS. Cal Poly collaborates with CINMS and MBNMS, as well as the Morro Bay National Estuary Program (NEP) adjacent to the proposed CHNMS on ecosystem-based management research. Designation of the proposed sanctuary would extend these and other higher education research opportunities.

Volunteer and Citizen Science

ONMS administers six volunteer and citizen science outreach programs, such as beach survey programs and watershed monitoring in nearby sanctuaries. A number of these programs could extend their reach into the proposed CHNMS.

Public Outreach

ONMS conducts outreach to the general public on numerous sanctuary resource issues. Two examples of projects of interest include the 2018 essay by Eva Pagaling, describing the local indigenous Chumash canoe voyage to the Channel Islands (ONMS 2019b), and a short film documenting such a voyage released online in 2019 (ONMS 2019c). Additionally, the SS *Montebello* shipwreck was the subject of several public lectures (ONMS 2017). Similar opportunities to engage the public with local cultural and natural heritage exist in the proposed CHNMS.

Management Consideration 3: Threats (MC-3)

2015 Nomination (MC-3)

The 2015 nomination described in detail a number of adverse impacts from current or future uses and activities that threaten the proposed area's natural and cultural resources. Threats from climate change and oil/gas exploration, exemplified by the May 2015 ExxonMobil pipeline rupture, are of concern due to potential adverse effects to ecological resources, as well as to Chumash coastal and submerged sacred sites. Further, this region of the California coast has witnessed an increase in other offshore industrial activities and proposed development being funneled into the area between CINMS and MBNMS. Potentially impactful activities include harmful discharges, such as untreated agricultural irrigation from the Central Valley, existing sewage outfalls and waste water treatment, once-through cooling from the Diablo Canyon nuclear power plant, and seismic surveys. Proposed offshore industrial activities, such as wave and wind energy installations, and pressures associated with human population growth are additional threats. The nomination also explicitly calls out the emerging impacts from climate change.

New Information (MC-3)

The new information relevant and responsive to MC-3 incorporates information submitted by 27 public comments. The threats to the proposed national marine sanctuary have become more defined and evident in the past five years. Below is a summary of the most significant threats affecting this area of the California coast since October 2015.

Changing Climate

The impacts of global warming on the oceans are due to increasing atmospheric carbon dioxide (CO₂) emissions worldwide (IPCC 2019). Marine impacts from a warming ocean, sea level rise, and ocean acidification have profound impacts on species, ecosystem function and dynamics, and human infrastructure. The broader California Current region suffered through several extreme warming episodes the past seven years (Frölicher et al. 2018, NOAA 2020); however, the southern portion of this ecosystem, including the area of the proposed sanctuary, has rebounded relatively quicker than areas further to the north. More detail is noted below.

Sea-Level Rise

Projections of sea-level rise in California for 2100 are approximately 1 to 8 feet at San Francisco, and likely to be similar within the proposed CHNMS. These projections forecast a rate of sea level rise 30-40 times faster than the sea level rise experienced over the last century (Griggs et al. 2017). The rise in sea level exacerbates coastal flooding, shoreline erosion, saltwater intrusion into groundwater aquifers, and inundation of wetlands and estuaries. Sea-level rise also threatens cultural and historic resources, as well as built-infrastructure (e.g., harbor breakwaters).

Warming Ocean Temperatures

Organisms with a wide thermal window may be able to adapt to rising ocean temperatures, but others with a narrower window may need to shift their range northward or to deeper, cooler waters. The proposed CHNMS contains a known, prominent ecological break at Point Conception, where warm water from the south mixes with cold water from the north. This critical break could be an ideal place to study the ecological range extensions of marine species, and, importantly, the rate of change in ocean temperatures.

Ocean Acidification

As described in MC-1, California waters are becoming acidic twice as fast as the global ocean average (Osborne et al. 2020). Disruption of the base of the food chain has potentially catastrophic results for all organisms higher up. Detrimental impacts of ocean acidification also extend to commercial fisheries, shellfish aquaculture, and the local economies that depend on these sources of income. Research is needed to better characterize the potential impacts of ocean acidification to the mix of commercial species landed at Morro Bay, Port San Luis, and Santa Barbara harbors.

Introduced Species

Introduced species are organisms not native to an ecosystem, introduced by human activity that generally pose significant threats to human health, the economy, and the

environment. Because attempts to eradicate introduced species are mostly unsuccessful and costly, prevention of species introductions through management of their transport pathways is the most effective way to prevent their spread. In addition to existing, known introduced species within the proposed CHNMS, another introduced species of concern to the area is *Sargassum horneri*, a brown algal species from Asia causing considerable damage to kelp forests within CINMS. It was discovered in 2020 off Cannery Row in MBNMS and could well be in the proposed CHNMS (ONMS 2020).

Proposed Offshore Wind Development on the Outer Continental Shelf

According to the Energy Policy Act of 2005 BOEM has no authority to lease for renewable energy within a national marine sanctuary (or national park, refuge, monument), leaving such a decision potentially to the sanctuary (or park or refuge) manager. The amount of offshore wind energy to develop in this part of the coast is an issue of considerable discussion among federal and state agencies and numerous elected officials, as well as the wind development industry. Two potential wind development areas defined by BOEM overlap with the proposed CHNMS: Morro Bay and Diablo Canyon Call Areas (Figure 4). Concerns related to offshore wind installations in this area include: risk of collisions by marine birds and bats with the turbine blades; whale entanglement with platform cables; disturbance to seafloor communities from anchor placement (for floating platforms) and cable laying; potential electromagnetic field emissions from submarine power cables; accidental harmful discharges from platforms; noise impacts from construction and operation; and displacement of existing ocean users, such as fishermen, scientists, and marine transportation. Since the nomination was submitted in 2015, offshore wind planning has only accelerated and become more defined in California, particularly for the area proposed as a national marine sanctuary.

Oil and Gas Development on the Outer Continental Shelf (OCS)

Offshore oil and gas development remains a key issue and concern in this area (Figure 4). The 2015 Refugio oil spill, very near this proposed sanctuary, amplified those concerns. Three different aspects of ongoing or potential oil and gas development are briefly described.

Ongoing, Existing Oil and Gas Development

Threats to the natural and cultural environment exist from ongoing oil and gas development, in particular from accidental discharges. The Point Pedernales Unit, including platform Irene, continues to produce oil and gas within the area proposed for CHNMS. BOEM (2020a) expects those operations to continue well into the future.

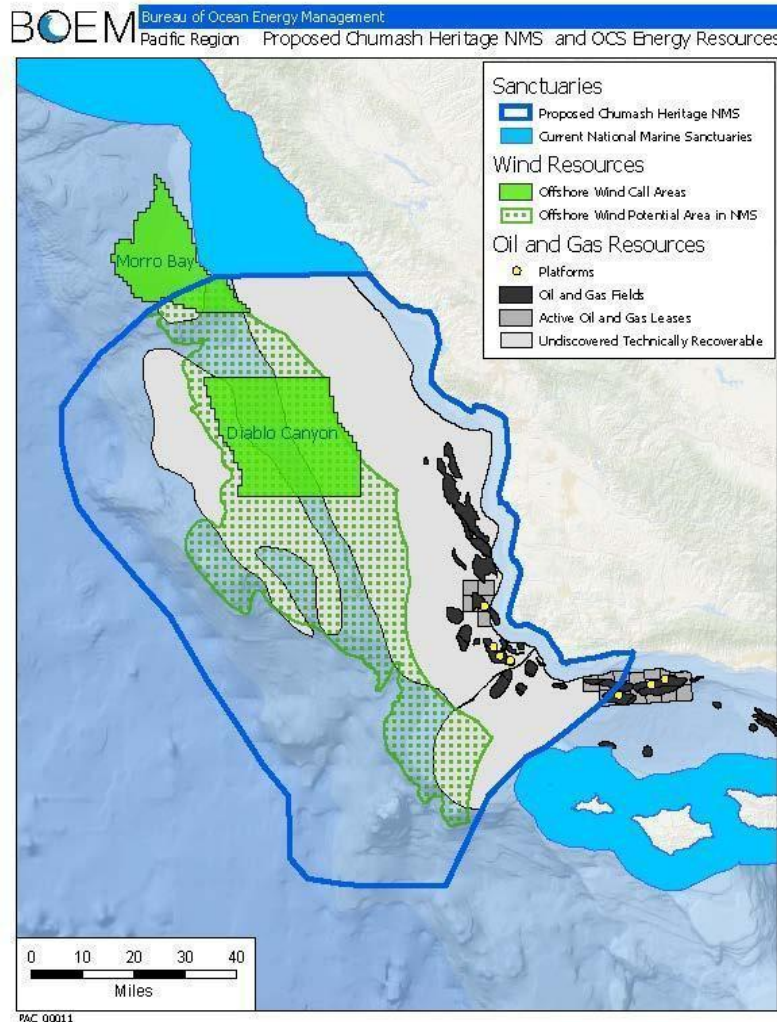


Figure 4. Map depicting existing and potential energy development in the proposed CHNMS area. Credit: BOEM


A portion of the Santa Ynez Unit, but none of its three platforms, is within the proposed CHNMS. That project remains shut-in due to the Refugio oil pipeline rupture and other onshore pipeline repairs. However, the operator, ExxonMobil, has requested approval to restart the Santa Ynez Unit by trucking produced oil to markets.

Shutdown and Abandonment of Existing Oil and Gas Development

The proposed CHNMS includes the Point Arguello Unit, which has three platforms that have been shut-in and are in the process of abandonment and removal. Potential future impacts include seabed disturbance from platform and pipeline removal, noise, vessel traffic, potential for spills, and future use decisions on existing offshore infrastructure.

Potential New Oil and Gas Leasing

The proposed CHNMS falls within BOEM's Southern California Planning Area for oil and gas leasing. The current National OCS Program of 2017 - 2022 offers no new lease



sales off Washington, Oregon, and California. BOEM initiated the development of a new National OCS Program for 2019-2024 by issuing a draft proposed program (DPP) in early 2018 for public comment. The process is now on hold. The DPP estimates that approximately 2.18 billion barrels of oil and 2.00 trillion cubic feet of natural gas exist in unleased lands within the proposed CHNMS (BOEM 2020a).

Energy Development in State Waters

The California State Lands Commission (SLC) manages energy development in state waters. The SLC has received three applications for offshore renewable energy development in state waters off Vandenberg Air Force Base from two developers. Both developers have expressed interest in conducting demonstration projects with up to four floating wind platforms. The applicants are in the process of consulting with Department of Defense and coordinating with SLC staff to amend and complete their applications. The state does not have a competitive bid process, as BOEM does, and leases can be issued to an applicant that first completes the application process.


Military/Rocket Launching Activities

The Department of Navy operates the Point Mugu Sea Range (PMSR) off southern and central California, overlapping substantially with the proposed CHNMS. The Navy has conducted military readiness training and testing activities within the vicinity of the proposed CHNMS for 80 years, including: weapon systems testing and evaluation in an instrumented environment; and military training in warfare (air, land, and sea). Additionally, the Western Space and Missile Center at Vandenberg conducts space lift, ballistic missile test, and aeronautical operations in the PMSR (DON 2020). Through the recent offshore wind development planning, Department of Defense has expressed concerns with the call areas established by BOEM.

Typically, national marine sanctuary designations have included exemptions for ongoing testing and training conducted by the military. National marine sanctuary managers often consult with military agencies to reduce impacts to marine resources from activities such as: discharges from spills of hazardous substances used for military operations or during routine vessel activity; sound from military operations, which can include behavioral alterations of marine animals; and displacement of ocean users such as fishermen and marine scientists.

Diablo Canyon Nuclear Power Plant Closure

Since the proposed CHNMS was accepted in the inventory in 2015, the planned closure of PG&E's Diablo Canyon nuclear power plant in 2024 has become more defined. With the slated closure of the nuclear plant in 2024, operational impacts to marine organisms from entrainment in once-through cooling water or exposure to elevated ocean discharge will cease. Full decommissioning of the plant is estimated to take decades and



cost nearly \$4 billion. Numerous threats to the marine environment from decommissioning the plant have been hypothesized, but few have been analyzed in detail.

Management Consideration 4: Unique Conservation and Management Value (MC-4)


2015 Nomination (MC-4)

The nominators in 2015 described national marine sanctuaries as providing the only effective and comprehensive ecosystem-based management regime that allows for multiple uses compatible with preservation, such as recreation, tourism, and commercial activities. The proposed area's ecosystem and submerged Chumash sites would benefit from sanctuary regulations prohibiting petroleum development, benthic habitat disturbance, and harmful discharges. ONMS's expert staff could guide programs in resource protection, incident response, maritime heritage, research and monitoring, citizen science, outreach and education, and travel and tourism. A sanctuary advisory council would provide local input to sanctuary management and a platform for the community's extensive involvement in public issues.

New Information (MC-4)

The nomination's vision of a national marine sanctuary providing unique conservation and management values to the nominated area persists. These values stem from the NMSA, which promotes comprehensive place- and ecosystem-based management to maintain and enhance natural biodiversity, and historical and cultural heritage. Further, the NMSA promotes sustainable uses compatible with resource protection, and encourages strong community engagement via diverse programs including an advisory council made up of representative local stakeholders and users. The local voices are knowledgeable experts and powerful advocates for the area and the long-standing and traditional uses performed therein. Consistent public involvement implemented according to the NMSA facilitates long-term compliance by affected parties and local communities (Patlis et al. 2014), thereby cultivating sustained protection of the marine ecosystem. In addition to effective community engagement the NMSA also promotes marine research, education, outreach and stewardship to realize the potential of ecosystem-based management of special areas.

Two public comments highlighted how the NMSA and the nomination process itself encourage communities, including indigenous peoples, to nominate their most treasured places in the marine and Great Lakes waters for consideration as national marine sanctuaries. The nomination process has enabled these communities to advocate



for the value of protecting special places their ancestors and generations since have depended on for livelihoods, spiritual connection and identity.

Management Consideration 5: Supplement or Complement (MC-5)

2015 Nomination (MC-5)


The nominators in 2015 described national marine sanctuary staff as potential collaborators to supplement and complement state marine management. For example, coordination with California's network of MPAs would benefit from sanctuary regulations and programs. A national marine sanctuary would complement other marine resource agencies, such as USCG and the Morro Bay NEP. A national marine sanctuary would enhance communication and collaboration with land-based managers to enhance protection of area watersheds.

New Information (MC-5)

Since the nomination was submitted in 2015, ONMS and partners have advanced programs and started new initiatives to supplement and complement existing regulatory and management authorities relevant to the CHNMS nomination. Consequently, people and natural resources of the proposed sanctuary have in some instances already indirectly benefited by virtue of proximity to MBNMS and CINMS. If CHNMS were designated, the area could benefit more directly from the many existing and new programs implemented across the national marine sanctuary system. Moreover, national marine sanctuary management activities are more often non-regulatory rather than regulatory. Thus, presented below are several recent activities and programs representing the breadth of ecosystem-based management and inclusive approaches ONMS staff engage in that would be relevant to CHNMS conservation and management goals. Precise management and regulatory actions would be developed only during the designation process, involving extensive consultation with stakeholders and partner local, state, and federal agencies. The new information relevant and responsive to MC-5 incorporates information submitted by six public comments.

Cultural Resource Management

ONMS and several NOAA programs have improved collaborations with indigenous people, ranging from formal consultation to less formal engagement. For example, NOAA assembled best practices for collecting and using traditional ecological knowledge, regardless of federal recognition status (NOAA 2019). Further, the ONMS Maritime Heritage Program recently adopted a maritime cultural landscape approach to



better understand and interpret human (including tribal) connections to the marine environment within the NMSS (Delgado et al. 2016). Finally, in 2018 the MPA Federal Advisory Committee, completed an online “Cultural Resources Toolkit” to improve engagement with indigenous people and the ways MPAs can protect culturally important places and resources (NMPAC 2018). These improvements would assist with amplifying the cultural significance of Chumash heritage and ways to best conserve them in the proposed sanctuary.


Whale Conservation

Over the past five years, national marine sanctuaries on the west coast have implemented various programs to reduce the incidents and impacts of vessel collisions on and entanglement of large whale species. The programs involve coordinating with USCG, NMFS, CDFW, the shipping industry, and fishermen. A novel partnership with regional air quality management districts involves their providing monetary incentives to shipping companies to slow vessels down in the San Francisco Bay region and within the Santa Barbara Channel. The program aims to reduce air emissions and, incidentally, chances of a fatal ship strike to whales. From 2014 – 2019 the incentive-based program has resulted in 1,595 ship transits slowing to 10 knots or less. Many of these ships transit through and on the western edge of the proposed sanctuary boundary.

Another threat to large whales is entanglement in fishing gear or buoy lines. To improve our ability to separate the co-occurrence of whales and fishing gear or large vessels, ONMS has helped develop a mobile application for smartphones and tablets that allows users to report whale sightings in real-time. ONMS also coordinates with NOAA’s Marine Debris program, UC Davis SeaDoc Society, and fishermen to remove from the water derelict fishing gear that can entangle whales and other wildlife. Finally, as members of NOAA’s Large Whale Entanglement Response Network, the ONMS West Coast Regional Office (WCRO) has provided use of ONMS vessels to participate with sanctuary-trained staff in 11 whale entanglement responses (2014-2019). In this period, 204 whales became entangled off California, of which eight were reported in the proposed CHNMS. The response network in the proposed sanctuary is not well represented at this time; a NOAA-sanctioned team would benefit responses to entangled whales in the area.

Coordination with Fishery Managers and Fishermen

Since 2017 the ONMS WCRO has improved coordination and collaboration with the Pacific Fishery Management Council (PFMC) through enhanced communication. Early and frequent communication has increased trust and fostered an appreciation of the supplemental and complementary management activities each program provides. A key



example of complementary management is the collaborative proposal of MBNMS, fishermen, and environmental NGOs, submitted to PFMC to modify fishery closures. The proposal was the first to propose *re-opening* of areas previously closed by federal fishery managers, as well as closures acceptable to stakeholders. The MBNMS collaborative process was well-regarded by PFMC and fishermen, and subsequently replicated by others for Oregon and Northern California, resulting in consensus support for additional re-openings and closures.

Regarding recreational fishermen, in 2019, NMFS and ONMS signed a Memorandum of Agreement (MOA) with recreational fishing organizations to realize greater social and economic benefits from sustainable recreational fishing and boating within federal marine waters, including national marine sanctuaries. Since signing of the MOA, a new collaboration developed between CINMS and Kevin Brannon, founder of Reel Guppy Outdoors, a recreational fishing program in Southern California that has served over 2,400 youth. The program exposes kids and families to outdoor adventures, frequently in the wildlife-rich waters of CINMS, and teaches them about the sanctuary ecosystem and stewardship (ONMS 2019d).

Management Consideration 6: Partnerships (MC-6)

2015 Nomination (MC-6)


The 2015 nomination did not have firm partnership commitments. It instead highlighted potential partnerships such as expansions of collaborations among existing national marine sanctuaries and local programs in coastal management and education. The nomination also proposed new potential partnerships with the business and tourism sectors, thereby boosting the local economy.

New Information (MC-6)

ONMS forms strong partnerships with organizations that share common goals in research, resource protection, education, and maritime heritage. Partnership opportunities include sharing information benefitting multiple organizations, sharing resources for docent and volunteer training, sharing scientific data across agency regions, and sharing space, such as interpretive facilities and offices. The new information relevant and responsive to MC-6 presented here incorporates material and information submitted by one public comment.

Federal Partners

Several federal programs within the proposed sanctuary offer ideal partnership potential to enhance wildlife protection and management. Science collaborations with BOEM have already been noted. In 2020, the Ventura office of the U.S. Fish and



Wildlife Service began evaluating expansion and management of the BeachCOMBERS (Beach Coastal Ocean Mammal and Bird Education and Research Surveys) program, ensuring a reliable and consistent manager for the valuable long-term dataset of California's ocean conditions. In 2020, the Central and Northern California Ocean Observing System (CeNCOOS) completed its five-year Strategy to Advance Ocean Observing in Central and Northern California. The plan includes monitoring climate change factors influencing coastlines as well as working with indigenous tribal communities to improve communication for shared interests and concerns in coastal areas (CeNCOOS 2020). Cal Poly operates an ocean observing system south of Monterey Bay and north of Point Conception, including the Morro Bay NEP, and contributes data to CeNCOOS.

State Partners

Existing ONMS partnerships with state entities would be enhanced with the creation of a CHNMS. In 2017, using ONMS programs as prototypes, docents at the State Parks Morro Bay Museum of Natural History developed SeaLife Stewards, an on-the-water wildlife education program in the Morro Bay estuary, funded by a grant from the Morro Bay NEP (MBNEP 2017). Further, the SLO MPA Collaborative includes leadership from State Parks, California Coastkeeper, yak tit'vu tit'vu yak tilhini tribe (a Northern Chumash tribe). This local MPA Collaborative would benefit from ONMS staff participation accompanying a local national marine sanctuary, as have MPA collaborative leadership teams adjacent to CINMS, MBNMS, and GFNMS.

Business and Tourism Partners

In the last five years, ONMS has invested in partnerships with tourism and recreation purveyors to promote visitation to national marine sanctuaries. The annual Get into Your Sanctuary (GIYS) event, as expanded since 2015, aims to inspire and share the many ways recreation can be enjoyed in national marine sanctuaries and encourages people to “get into your sanctuary” and swim, boat, fish, surf, whale watch, or enjoy the simple and peaceful feeling of the ocean (Figure 5). Additional goals are to build relationships with local tourism and recreational businesses, and showcase responsible recreational and sustainable tourism opportunities within national marine sanctuaries via social media and other outreach. By enhancing awareness about national marine sanctuaries as tourism and recreation destinations, sanctuaries strengthen communities and support local economies by increasing sales, personal income, and jobs.

Examples of some business and tourism partners adjacent to the proposed sanctuary are the SLO County Tourism Business Improvement District, which created an annual county-wide Coastal Discovery Celebration, including a film festival. Another is the California 101 Traveler's Guide, started in 2018 as a print-and-online magazine, featuring travel and real estate in Ventura, Santa Barbara and SLO counties. The spring 2020 edition highlighted whale watching businesses in all three counties (Roest 2020).



Figure 5. Visiting Painted Cave at Santa Cruz Island during Get Into Your Sanctuary (Credit: Robert Schwemmer/NOAA).

Nonprofit Groups

Since 2015, potential partnerships have developed or existing partnerships have expanded for the proposed sanctuary as follows:

- SLO Botanical Garden hosts opportunities for community involvement with its Chumash Kitchen event series sponsored in part by Northern Chumash Tribal Council members (SLOBG 2017).
- In 2019, the Morro Bay City Council unanimously agreed to endorse the Central Coast Aquarium's proposal to create a new aquarium on the footprint of the former Morro Bay Aquarium on the Embarcadero. Planning has moved forward with completion of early funding targets (Garcia 2019).
- The Morro Coast Audubon Society hosts the Morro Bay Winter Bird Festival, promoting awareness of environmental issues of the central coast. Since 2016, the event has been supported by a grant from the Morro Bay Tourism Board as an eco-tourism attraction.
- The Gaviota Coast Conservancy is working to preserve one of the last undeveloped areas of California and believes establishing a Chumash Heritage National Marine Sanctuary would build upon its work.
- The Morro Bay Maritime Museum opened its doors to the public in 2018. The museum features an exhibit on the shipwreck *SS Montebello*, which is within the proposed CHNMS (Morro Bay Maritime Museum 2020).
- The Cambria Historical Society features an exhibit on the *SS Montebello* (Cambria Historical Society 2020).

Management Consideration 7: Community Support (MC-7)


2015 Nomination (MC-7)

The 2015 sanctuary nomination aptly described the community support for a proposed CHNMS as “numerous and diverse”. The nomination package included a lengthy attachment with the names of approximately 500 community members, several hundred Cal Poly students, approximately 60 businesses and dozens of environmental, recreational, and tribal NGOs and organizations. The package also included letters of support from many elected officials, including various State Senators and Assemblymembers, county Supervisors whose districts are adjacent to this proposed sanctuary, and city councils and local elected officials. While not included in the nomination packet, NOAA later received a letter of support for the nomination from the then U.S. Representative (now retired) in whose district the nominated area lies.

New Information and Public Comment (MC-7)

Presented here is a characterization of the community support manifest through public comments received in 2020. The public comment period ONMS undertook for this five-year review demonstrated considerable levels of continued community-based support expressed by a broad range of interests for the proposed CHNMS. For this five-year review, NOAA received a total of 14,357 public comments submitted as unique comments, form letters and signatures on petitions (see Public Comments in Background for a breakdown of comment source). Of the 843 unique comments: 599 expressed support for the nomination continuing in the inventory, with most also asking for the nominated sanctuary to be designated; 226 expressed opposition for the nomination to continue in the inventory, similarly opposing designation; and 18 commenters were neutral. When the total of form letters and petitions were considered, the number of supporters was approximately 13,805 and opponents was 534.

Letters from elected officials or elected bodies such as city councils is always an important measure. The 2020 public review process yielded support letters from members of Congress, including California’s two Senators, the local Representative and three Representatives from adjacent congressional districts or related committees. A former U.S. Cabinet Secretary submitted a letter of support. The Secretary for California’s Natural Resources Agency submitted a letter of support, as did his predecessor and the California Coastal Commission. One of the three San Luis Obispo County Supervisors, whose district abuts this nomination, wrote a letter of support for continuing the CHNMS nomination, as well as the county Supervisor of Santa Barbara County, whose entire district is adjacent to the proposed sanctuary. The Mayor of SLO and the Mayor and City Council of Santa Cruz also sent in letters of support. Two letters



of opposition from elected offices were from a State Assemblyman from a district adjacent to the proposed sanctuary and the Mayor of the City of Morro Bay.

Stakeholders supporting the continued nomination in 2020 included tribal organizations, environmental organizations, local business owners, a land trust involved in coastal preservation, members of the academic community and local students were prevalent. Stakeholders that submitted comments in opposition to maintaining the nomination on the inventory were primarily (but not solely) from the fishing sector, such as businesses or associations related to fishing, ports and harbors representatives, and recreational fishermen.

The reasons for support cited most by commenters, form letters and petitions included many of the factors analyzed in the criteria above, such as the benefits of comprehensive ecosystem protection, concerns about climate change/ocean acidification and how a sanctuary could help address them, the myriad environmental threats facing oceans including this area of the California coast, and the importance of protecting the values and beauty of this stretch of coast. A new theme (since 2015) offered by some supporters related to social inequities and related issues facing America today, and thus made the point that extending the nomination and eventually designating CHNMS would offer some opportunity to increase awareness of Native American culture. Reasons cited for opposition included most often a concern that there are too many regulations affecting commercial and recreational fishing, fear that designation of CHNMS would adopt new closures affecting access for fishing, and general concerns about too many state and federal regulations, taxes, and fees.

The geographic diversity of those in support was extensive. Hundreds of supporters were from the two local counties adjacent to this nomination, and hundreds more from elsewhere in California. Petition signatories in support indicated hometowns from around the country. Many of the tribal and environmental NGOs in support were from other parts of the country or work on issues affecting oceans nationally, and in some cases, globally. The geographic diversity of the 534 comments opposed to the nomination were predominantly from California, with the majority from southern California counties (i.e., south of Santa Barbara County).

Appendix A: Sanctuary Nomination Process Criteria

National Significance 1 (NS-1)

The area's **natural resources and ecological qualities** are of special significance and contribute to: biological productivity or diversity; maintenance or enhancement of ecosystem structure and function; maintenance of ecologically or commercially important species or species assemblages; maintenance or enhancement of critical habitat, representative biogeographic assemblages, or both; or maintenance or enhancement of connectivity to other ecologically significant resources.

National Significance 2 (NS-2)

The area contains submerged **maritime heritage resources** of special historical, cultural, or archaeological significance, that: individually or collectively are consistent with the criteria of eligibility for listing on the National Register of Historic Places; have met or which would meet the criteria for designation as a National Historic Landmark; or have special or sacred meaning to the indigenous people of the region or nation.

National Significance 3 (NS-3)

The area supports present and potential **economic uses**, such as: tourism; commercial and recreational fishing; subsistence and traditional uses; diving; and other recreational uses that depend on conservation and management of the area's resources.

National Significance 4 (NS-4)

The **publically-derived benefits** of the area, such as aesthetic value, public recreation, and access to places depend on conservation and management of the area's resources.

Management Consideration 1 (MC-1)

The area provides or enhances opportunities for research in **marine science**, including marine archaeology.

Management Consideration 2 (MC-2)

The area provides or enhances opportunities for education, including the understanding and appreciation of the marine and Great Lakes environments.



Management Consideration 3 (MC-3)

Adverse impacts from current or future uses and activities **threaten** the area's significance, values, qualities, and resources.

Management Consideration 4 (MC-4)

A national marine sanctuary would provide **unique conservation and management value** for this area or adjacent areas.

Management Consideration 5 (MC-5)

The existing regulatory and management authorities for the area could be **supplemented or complemented** to meet the conservation and management goals for the area.

Management Consideration 6 (MC-6)

There are commitments or possible commitments for **partnerships** opportunities such as cost sharing, office space, exhibit space, vessel time, or other collaborations to aid conservation or management programs for the area.

Management Consideration 7 (MC-7)

There is **community-based support** for the nomination **expressed** by a **broad range of interests**, such as: individuals or locally-based groups (e.g., friends of group, chamber of commerce); local, tribal, state, or national elected officials; or topic-based stakeholder groups, at the local, regional or national level (e.g., a local chapter of an environmental organization, a regionally-based fishing group, a national-level recreation or tourism organization, academia or science-based group, or an industry association).

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