OFFICE OF NATIONAL MARINE SANCTUARIES
COORDINATION REPORT (April 2025)

Introduction

The National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries (ONMS) serves as trustee for the nation's system of marine protected areas (MPAs). Through active research, management, and public engagement, national marine sanctuaries sustain healthy environments that are the foundation for thriving communities and stable ocean-dependent economies. One of the purposes of the National Marine Sanctuaries Act (NMSA) is to provide authority for comprehensive and coordinated conservation and management of marine areas (Great Lakes included) of special national significance, while also promoting multiple uses. Six national marine sanctuaries are located on the U.S. west coast: Olympic Coast, Greater Farallones, Cordell Bank, Monterey Bay, Chumash Heritage, and Channel Islands (OCNMS, GFNMS, CBNMS, MBNMS, CHNMS, and CINMS, respectively).

Purpose of the Annual Coordination Report

The West Coast Regional Office (WCRO) within ONMS appreciates the invitation to provide this annual coordination report to the Pacific Fishery Management Council (PFMC or Council). Since the first invitation in 2017, our relationship has continued to improve through knowledge and recognition of our individual mandates and shared responsibilities. The report contains an update of the following activities implemented in 2024 and likely activities in 2025: CHNMS designation; condition reports, management plan reviews; assessing changing ocean conditions; research and restoration work on deep-sea coral, kelp forests, ocean access, and passive acoustic monitoring; outreach and partnerships including fishing trips and shoreline cleanups; and resource protection work including vessel speed reduction efforts to mitigate risk of ship strikes on whales and whale entanglement response and prevention.

CHUMASH HERITAGE NATIONAL MARINE SANCTUARY DESIGNATION

- **CHNMS Designation - WCRO**

  (https://sanctuaries.noaa.gov/chumash-heritage/)

  Purpose: Chumash Heritage National Marine Sanctuary (CHNMS) was designated in order to protect and manage the nationally significant natural, cultural, historical, biological resources within central California's coastal and ocean waters, consistent with NOAA's mandate under the NMSA. The new sanctuary spans 116 miles of the central California coastline across San Luis Obispo and Santa Barbara counties, totals 4,543 square miles, and reaches up to 60 miles offshore. The region has remained home to coastal, ocean-going Indigenous Peoples for time immemorial, and as such its lands and waters hold significant Indigenous cultural, spiritual, and historical significance. Special geologic features, such as Rodriguez Seamount, Arguello Canyon, and Santa Lucia Bank shape the area's unique ecology. The sanctuary's internationally significant meeting point

of warm and cold ocean environments combined with upwelling from the California Current supports dense aggregations of marine life, including many threatened or endangered species, such as blue whales, snowy plovers, black abalone, and leatherback sea turtles. Over 200 shipwrecks are documented in the region, including the Yankee Blade, which is listed on the National Register of Historic Places. Designation as a national marine sanctuary provides regulatory protections for these special marine resources and a single forum for comprehensive, ecosystem-based and community-based planning for multiple uses. Sanctuary programs will provide new opportunities for research, education, recreation, and sustainable tourism in local coastal communities.

Outcome: CHNMS was designated as America's 17th national marine sanctuary on November 30, 2024. Each national marine sanctuary has its own set of regulations to protect important cultural and natural resources, while still allowing people to enjoy and responsibly use these areas. CHNMS regulations are generally similar to other national marine sanctuaries along the U.S. West Coast. There are no prohibitions that directly affect lawful fishing activities. In summary, the following activities are prohibited in the new sanctuary: new oil and gas development; seafloor disturbance; discharges; disturbing a historical resources; unauthorized take of marine mammals, sea turtles, or birds; deserting a vessel; attracting a white shark; introducing an introduced species; special protections for Rodriguez Seamount; and interfering with an enforcement action. This summary list should not substitute for understanding the final regulatory details – a complete list of prohibited activities in CHNMS is provided in 15 C.F.R. § 922.232(a)(1) through (11).

Timeline: Public comments were given careful consideration before NOAA finalized the designation documents, along with NOAA's consultations with federal agencies, government-to-government consultation with the federally recognized Santa Ynez Band of Chumash Indians, engagement with other interested Tribal and Indigenous groups, and consideration of state and federal conservation and renewable energy goals. NOAA summarized and responded to these comments in Appendix A of the final environmental impact statement (Volume II), and original submissions are posted on regulations.gov. NOAA published the final environmental impact statement (Volume I and Volume II) on September 6th, 2024; subsequently, NOAA published the final rule, final management plan, and record of decision on October 11, 2024. Per the NMSA, after a final rule for sanctuary designation is published, 45 days of continuous congressional session are provided for potential congressional review and for a final review opportunity for the governor of affected state waters. On November 30, 2024, following 45 days of continuous congressional session after NOAA published the final rule, CHNMS became effective. This Federal Register notice provides more information.

CONDITION REPORTS

- **Condition Report Update – GFNMS**

Purpose/Process: The now completed condition report will serve as the basis to initiate the joint GFNMS-CBNMS management plan review process (see below). The report documents the condition of sanctuary resources and ecosystem services between 2010 and 2022. NOAA expanded the sanctuary in 2015 and this condition report is the first

sanctuary assessment to include the expansion area. The condition report also includes ecosystem services as part of the assessment of the overall condition of GFNMS.

Timeline: The GFNMS condition report was published on July 8, 2024.

Partners: MBNMS, Point Blue Conservation Science, NOAA Fisheries, Central and Northern California Ocean Observing System (CeNCOOS), NOAA National Centers for Coastal Ocean Science (NCCOS), University of California (UC) Davis, San Francisco State University (SFSU), California Department of Fish and Wildlife (CDFW), California Department of Public Health (CDPH), National Park Service (NPS), Marine Mammal Commission (MMC), Oregon State University (OSU), Cascadia Research, Alvaro's Adventures, Greater Farallones Association (GFA), U.S. Fish and Wildlife Service (USFWS), Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), Multi-Agency Rocky Intertidal Network (MARINe), Farallon Institute, Bureau of Ocean Energy Management (BOEM), California State University (CSU) Fullerton, and CSU Long Beach.

- **Sanctuary Watch / Web-Enabled Condition Reports**

  Purpose: Easy access to information for tracking ecosystem conditions, human connections, and management impacts is critical to timely, effective, and community-based resource management. The Sanctuary Watch website, https://sanctuarywatch.ioos.us/, hosts interactive ecosystem tracking tools to better inform sanctuary management. These tools pair artwork with information to make it easy to explore and track how ecosystem conditions are changing at a sanctuary. Sanctuary Watch data products and information are developed in collaboration with our data partners at the site, regional, and national level along with science communicators and educators.

  Outcome: In 2024, sanctuary staff made significant technical improvements to the Sanctuary Watch platform (https://sanctuarywatch.ioos.us/). These changes facilitate collaborative content creation and support improved interactivity of the infographics and associated data. The team is leading the development of new condition tracking tools for MBNMS along the west coast and supporting the development of related tools for Stellwagen Bank and American Samoa national marine sanctuaries. Launches of these new Sanctuary Watch instances are expected to be live in 2025. Additionally, the Sanctuary Watch toolbox is expanding to include tools for characterizing newly designated sanctuaries and for exploring system-wide topics such as maritime heritage and sanctuary valuation.

  Critical data sets that will be featured in Sanctuary Watch include the West Coast National Marine Sanctuaries Marine Heatwave Tracker which contains a portfolio of maps and time series products developed in collaboration with Andy Leising, Greg Williams, and Lynn deWitt (California Current Integrated Ecosystem Assessment (CCIEA) team). Some of these maps and figures were used in the assessment of changing ocean conditions for OCNMS that was released in January 2025 and showcased in the January 2025 IEA Newsletter:

Furthermore, we are in the process of repeating that effort using the Groundfish Trawl survey data to create a West Coast National Marine Sanctuary deep seafloor community tracker. This time, the Sanctuary Watch team is working with Erica Burton (MBNMS), Lynn deWitt (Southwest Fisheries Science Center (SWFSC)), and Greg Williams and Nick Tolimieri (Northwest Fisheries Science Center (NWFSC)).

Timeline: Ongoing.

Partners: NOAA's U.S. Integrated Ocean Observing System (IOOS), CeNCOOS, SCCOOS, California Cooperative Oceanic Fisheries Investigations (CalCOFI), CCIEA Program, NOAA NCCOS, U.S. Marine Biodiversity Observation Network, MARINe, PISCO, Southern California Coastal Water Research Project (SCCWRP), UC Santa Barbara, UC Santa Cruz, NPS, SWFSC, and NWFSC.

MANAGEMENT PLAN REVIEWS

The NMSA requires NOAA to "evaluate the substantive progress toward implementing the management plan and goals for the sanctuary" and "revise the management plan and regulations as necessary to fulfill the purposes and policies of this chapter" at intervals not exceeding five years (NMSA section 304(e)). Over the last decade, ONMS has strived to complete a sanctuary condition report, which describes the conditions of the sanctuary ecosystem in advance of a comprehensive management plan review for each sanctuary site. The condition report sets the stage for evaluating previous management efforts as well as the relevance of existing goals and objectives of the sanctuary. When a sanctuary pairs the condition report with the onset of sanctuary management plan review it helps create a clear link between resource protection needs and management priorities.

The revised management plans for MBNMS and CINMS were published in 2021 and 2023, respectively. The new management plan for CHNMS was published on October 11, 2024 as part of the final designation. Below is a summary of regional progress for the other west coast sanctuaries currently engaged with management plan review:

- **Management Plan Review – OCNMS**

  (https://olympiccoast.noaa.gov/management/mpr)

Purpose/Process: An update of the OCNMS 2011 management plan to evaluate substantive progress toward implementing the goals for the sanctuary, and to make revisions to the plan as necessary to fulfill the purposes and policies of the NMSA. NOAA released the Notice of Intent to Conduct Scoping for the OCNMS Management Plan Review on January 30, 2023 and accepted public comments through April 3, 2023. OCNMS staff, in consultation with tribal governments, has drafted a revision to the management plan, incorporating public comments. This draft management plan has undergone review by Sanctuary Advisory Council working groups. ONMS anticipates management plan changes will require preparation of an environmental analysis.

Outcome: An updated sanctuary management plan containing programmatic strategies to guide sanctuary activities for 5–10 years, supported by an environmental analysis. The action plans focus around four priority areas, including collaborative management, research and monitoring, resource protection, and education/outreach.

Timeline: NOAA aims to release the draft management plan and draft environmental analysis document by mid-2025.

Partners: Hoh Tribe, Makah Tribe, Quileute Tribe, Quinault Indian Nation, Olympic Coast Intergovernmental Policy Council, OCNMS Advisory Council, Washington State, and other experts from local, state, and federal partner agencies.

- **Management Plan Review – GFNMS/CBNMS**

  Purpose/Process: ONMS will be initiating management plan review for GFNMS and CBNMS to evaluate progress toward the sanctuaries' goals, to develop a unified management plan for both sanctuaries, and to make revisions as necessary to fulfill the purposes and policies of the NMSA. NOAA is not currently planning changes to regulations as part of this management plan review process.

  Outcome: An updated sanctuary management plan containing programmatic strategies to guide sanctuary activities for the next decade, supported by an environmental analysis.

  Timeline: ONMS aims to start the process with a request for information and public meetings in Spring/Summer 2025.

ASSESSING CHANGING OCEAN CONDITIONS

This science-based effort identifies how and why focal resources (habitats, species, ecosystem services, and maritime heritage resources) across a sanctuary region are likely to be affected by future ocean conditions. The goal of these assessments is to provide expert-driven, scientifically sound assessments to enable marine resource managers to respond to, plan, and manage for the impacts of changing conditions to habitats, species, ecosystem services, and maritime heritage resources within that region. This information can help prioritize management actions, and can help managers understand why a given resource may or may not be vulnerable to change, enabling a more appropriate and effective management response.

- **GFNMS and CBNMS**

Purpose/Process: ONMS conducted an update to the assessment for GFNMS and CBNMS together in 2023; both sites completed an extensive assessment of the North-central California region in 2014. This update consisted of expert review of the 2014 scores, revised scores based on new literature, and extensive review by multiple additional subject matter experts.

Outcome: The Addendum to the report provides updated information for 25 of the 40 resources assessed in 2014, and presents first-time assessments for three maritime heritage resource categories. Of the 40 resource assessments conducted in 2014, 25 were identified by experts as requiring revision based on continued changing ecological conditions and improved scientific understanding since the 2015 publication. Revisions included modifications to the vulnerability scores and new information for the narrative descriptions based on experts' current understanding of the resource's exposure to change, sensitivity to change, and/or its capacity to adapt to these changes. These revisions resulted in increased vulnerability scores for 17 species and 6 habitats. The primary driving factor for increased vulnerability is increased exposure and sensitivity to elevated water temperatures due to the increasing frequency and severity of marine heatwaves. A few resources in particular stand out as having high increases in vulnerability to change since the 2015 report, including kelp forest and rocky intertidal habitat, and red abalone, blue whale, pteropod, and krill species. Newly assessed, the potential impact of changing ocean conditions on maritime heritage resources was rated as high for both nearshore shipwrecks and doghole ports, and low for offshore shipwrecks.

Timeline: The Addendum to the report was published in February 2024, and the findings are currently being considered to develop priority issues to address during management plan review.

Partners: The following institutions/organizations have provided expert input and/or review: Several NOAA offices (Office for Coastal Management (OCM), NOAA Fisheries, Office of Protected Resources, and MBNMS), CDFW, U.S. Geological Survey (USGS), USFWS, Elkhorn Slough NERR, NPS, Point Blue Conservation Science, GFA, UC Santa Cruz, UC Davis Bodega Marine Lab (BML), CSU Monterey Bay, San Jose State University (SJSU) Moss Landing Marine Laboratories (MLML), UC Berkeley, and SCCWRP.

- **OCNMS**

Purpose/Process: The OCNMS Advisory Council convened a working group to conduct the assessment. Adaptation and mitigation strategies were also developed as part of the assessment which was presented through the Sanctuary Advisory Council as recommendations to the OCNMS Superintendent for consideration in sanctuary management.

Outcome: The assessment report highlights vulnerability in the Olympic Coast region to stressors. Of the 66 focal resources assessed, salmon, forage fish, Southern Resident killer whales, sunflower sea stars, tufted puffins, marbled murrelets, subsistence harvest, and consumptive and non-consumptive recreation were assessed as having the highest

vulnerability to changing ocean conditions. From this assessment, adaptation and mitigation strategies are being considered for potential management priorities in the sanctuary's management plan review.

Timeline: The assessment report underwent review and approval by the SAC and the Coastal Treaty Tribes before undergoing peer review. The OCNMS assessment report was released in January 2025.

Partners: The assessment report was completed with support of the Sanctuary Advisory Council working group, which included the following entities: Hoh Tribe, Makah Tribe, Quileute Tribe, Quinault Indian Nation, University of Washington, Washington Sea Grant, NOAA Pacific Marine Environmental Laboratory (PMEL), NWFSC, Northwest Indian Fisheries Commission, Olympic National Park (ONP), OSU, U.S. Navy, and Sanctuary Advisory Council members representing the Research, Commercial Fishing, and Community at-large seats.

- **MBNMS and CINMS**

  Purpose/Process: The assessments for MBNMS and CINMS complement similar assessments that have been completed or are being conducted by other west coast national marine sanctuaries, NOAA Fisheries, and CDFW. The MBNMS assessment is based on the assessments for GFNMS, CBNMS, and OCNMS, with the exception of one new resource assessment for black abalone (*Haliotis cracherodii*). The CINMS assessment is based on a hybrid workshop that was conducted in Fall 2023.

  Outcome: The MBNMS assessment assessed 29 species, 8 habitats, 4 ecosystem services, and 2 maritime heritage resource categories. Over 80 experts contributed to and/or reviewed individual reports. The CINMS assessment analyzed 22 species representing 6 habitats, as well as 2 maritime heritage resource categories. Over 45 experts contributed to individual assessments during a hybrid workshop. The CINMS assessment workshop report is currently being written, and additional experts are expected to review report drafts.

  Timeline: The MBNMS assessment report is expected to be completed and formatted by Summer 2025. An early draft of the final report was presented to the MBNMS Advisory Council in Fall 2023 and the final findings were presented in Summer 2024 in advance of kicking off a Sanctuary Advisory Council working group for adaptation planning. An overview of the CINMS assessment workshop was presented to the Sanctuary Advisory Council in November 2023 and they will receive a presentation on the workshop report after it is completed. The CINMS assessment report is expected to be completed in 2025 and will be used for future adaptation planning efforts.

  Partners: The following institutions/organizations have provided expert input and/or review: BOEM, UC Davis BML, Cal Poly Pomona, CSU Long Beach, CSU Monterey Bay, CSU Fullerton, Elkhorn Slough NERR, Marine Applied Research and Exploration, Monterey Bay Aquarium Research Institute (MBARI), CINMS, MBNMS, SJSU MLML, NOAA Fisheries, NPS, Oikonos, Paua Marine Research Group, Point Blue Conservation Science, San Diego State University, SCCWRP, UC Berkeley, UC Los Angeles, UC San

Diego, UC Santa Barbara, UC Santa Cruz, USFWS, and USGS.

RESEARCH and RESTORATION

- **Research and Restoration Areas for Deep-Sea Corals**

  Purpose: GFNMS and MBNMS coordinated closely with NOAA Fisheries and PFMC on a process to designate discrete areas for deep-sea coral (DSC) research and restoration that are protected from potential impacts from the Pacific Coast groundfish fisheries, while minimizing impacts to the fisheries. PFMC led the process with input from NOAA Fisheries and ONMS, and early in the process limited the scope from 10 areas in GFNMS and MBNMS to three areas in MBNMS. During the three-meeting process, MBNMS coordinated with the Groundfish Advisory Subpanel and Enforcement Consultants to modify two of the areas to limit impacts to the sablefish trap fishing sector. All areas proposed are already in areas closed to groundfish bottom-trawl gear.

  Outcome: PFMC selected a Final Preferred Alternative to recommend a Groundfish Exclusion Area (GEA) closed to bottom-contact gear at one area in MBNMS, at Sur Ridge (depth 820–1560 meters; 48.5 square miles). The management measures would apply exclusively to the Pacific Coast groundfish fishery. The selection of only one location limits the opportunity for NOAA and others to conduct research and restoration for DSC at other locations, depths, and suitable habitats.

  Timeline: MBNMS and GFNMS coordinated with NOAA Fisheries, PFMC, and the fishing community from December 2022 through 2024. PFMC selected the Final Preferred Alternative at the June 2024 meeting and NOAA Fisheries published the Notice of Availability for Sur Ridge GEA: Amendment 34 on October 9, 2024 and the associated Proposed Rule on October 23, 2024. The next and final step is for NOAA Fisheries to publish the final regulations for the Sur Ridge GEA in the Federal Register.

  Partners: NOAA Fisheries, PFMC, fishermen, CDFW, DSC scientists from NOAA, and MBARI.

- **Kelp Forest Research and Restoration – MBNMS**

  Purpose: In 2021, the California Fish and Game Commission (CFGC) amended sport fishing regulations to allow for unlimited take by recreational divers, using hand-held tools, of purple and red sea urchins in a designated area in Monterey Bay, called Tanker Reef. A collaborative effort to monitor urchin and kelp densities began in April 2021, with research divers from CDFW and MBNMS, which was independent from data collected by divers from Reef Check California (RCCA) and recreational divers (i.e., sport fishers). In addition, CDFW and MBNMS collected data for a centimeter-scale study assessing whether hand-held tools used by sport fishers would 1) damage the reef directly and 2) damage organisms under or adjacent to culled urchins.

  Initial results to date from the centimeter-scale study:
  - Brittle organisms (e.g., bryozoans) may suffer major/lethal damage;
  - Many organisms (e.g., algae, tunicates) show minor signs of damage;

- Some organisms (e.g., anemones) exhibit behavioral responses (such as contracting into a hole) to minimize damage in spite of being particularly vulnerable to punctures by spines from urchins (hiding in the holes);
- Collateral damage occurs to both organisms and the physical reef itself;
- The extent of collateral damage due to culling using hand-held tools by divers is unknown; and
- The magnitude of collateral damage vs. natural damage is unknown.

Timeline: During the February 2024 meeting, the CFGC allowed the fishing amendment at Tanker Reef to sunset as originally planned, on April 1, 2024. Monitoring of kelp and urchins at Tanker Reef will continue through 2025 to determine whether urchin densities remain low in the culled area and if giant kelp continues to grow in the culled area. In a separate study at Tanker Reef, the centimeter-scale project data are being analyzed, and a manuscript is being written for submission to a peer-reviewed journal.

Partners: CDFW, California Ocean Protection Council (OPC), RCCA, and Giant Giant Kelp Restoration (G2KR).

- **Kelp Forest Research and Restoration – GFNMS**

Purpose: Greater than 90% of kelp forest biogenic habitat in northern California and within GFNMS has been lost since 2014 and has not recovered due to repeated warm water events lowering reproduction rates of kelp, and disease events removing top predators of kelp forest grazers, red (*Mesocentrotus franciscanus*) and purple sea urchins (*Strongylocentrotus purpuratus*), leading to increased grazing pressure. Recreational red abalone (*Haliotis rufescens*) and commercial red sea urchin fisheries in the region have collapsed, with deleterious cascading effects for other ecosystem components. Research on bull kelp restoration techniques is needed to understand whether and how restoration can be effective on the north coast of California.

Outcome: Activities are underway in GFNMS to determine the best methodologies to restore bull kelp, led by GFA in partnership with GFNMS. In 2025 the team will conduct research and restoration efforts at Fort Ross Cove, Timber Cove, Ocean Cove, and Shell Beach. Key efforts include removing purple urchins, outplanting kelp, environmental monitoring, and subtidal and aerial surveys.

The project team is currently evaluating restoration techniques and strategies, and is working with a network of partners and experts to contribute to the effort to support restoration of bull kelp in GFNMS. A total of $9.2 million in funding was received from: federal appropriations, NOAA Office of Habitat Conservation, Coastal Resilience Fund administered by the National Fish and Wildlife Foundation, Environmental Enhancement Fund administered by CDFW, Pacific States Marine Fisheries Commission, San Francisco Bay Estuary Fund, California Sea Grant, and OPC. These funds have supported coastal workers, such as through purchasing purple urchins from commercial divers, who remove them from restoration sites.

Timeline: Research will be ongoing and restoration success after 2 years of activities is currently being evaluated.

Partners: MBNMS, CINMS, GFA, National Marine Sanctuary Foundation (NMSF), CDFW, SJSU MLML, Sonoma State University, Stanford University, UC San Diego Scripps Institution of Oceanography (SIO), UC Santa Cruz, UC Davis BML, UC Davis Coastal and Marine Sciences Institute, UC Los Angeles, CSU Monterey Bay, Woods Hole Oceanographic Institution, University of Wisconsin Milwaukee, Fort Ross Conservancy, California Ocean Science Trust, California State Parks, NPS, The Nature Conservancy, Kashia Band of Pomo Indians, Sherwood Band of Pomo, and local commercial divers.

- **Commercial Fisheries and Deep-Sea Corals – CINMS**

  Purpose: To understand the benefits that DSCs bring to commercial fisheries and the economy of California.

  Outcome: CINMS and the NOAA DSC program reviewed known associations between DSCs and all of the marine species that are commercially landed in California (CDFW Fishticket data 2010–2020). This project serves as a baseline for an economic analysis of the value of DSC-associated fisheries to California's economy.

  Timeline: Throughout 2023–2024, CINMS completed review of associations between commercially landed marine species and DSCs. An associated paper is currently in internal NOAA review. In 2024, CINMS completed an economic analysis of the value of DSC-associated species landed by commercial fisheries. The analysis used IMPLAN[1] and NWFSC IMPLAN multipliers. CINMS also interviewed fishermen about fishing gears commonly used in fisheries that catch DSC-associated species. In 2025, CINMS plans to submit the association paper, write the economic valuation paper, and conduct spatial analysis of locations with high landings values associated with DSCs.

  Partners: SWFSC, NOAA Fisheries DSC Program.

- **California Ocean Access and Management – CINMS**

  Purpose: OPC funded a social science project to address knowledge gaps surrounding activities (including recreational fishing), values, and cultures associated with the ocean in five coastal counties: Santa Barbara, Ventura, Monterey, Santa Cruz, and San Francisco. The survey also considers the distribution and types of barriers that may prevent people in California from obtaining benefits from the ocean and coasts.

  Outcome: The project aims to learn how people from different groups, including recreational fishers and the Tribal community, use and value the ocean, barriers to ocean access, and how these experiences are influenced by management and social and environmental change. The project has received two additional years of funding to expand to five new coastal counties in 2025–2027: San Diego, Los Angeles, Sonoma, Humboldt, and Del Norte.

  Timeline: In 2023, the project was awarded, and CINMS conducted a literature review and conducted interviews with community leaders. In 2024, CINMS piloted a survey, then

[1] IMPLAN is a widely used economic software that produces input-output models.

deployed a full survey and administered it in person and online; over 2,000 people took the survey. CINMS then conducted preliminary analysis of data, and conducted interviews with people from the Tribal community. In 2025, CINMS will complete analyses, host focus groups, and develop management recommendations from survey results.

Partners: UC Santa Cruz, California Marine Sanctuary Foundation (CMSF), Native Coast Action Network, Stanford University, University of Washington, UC Santa Barbara, Literacy for Environmental Justice, Regeneracion, The Sea League, Merito Foundation, Reel Guppy Outdoors, and OPC.

- **West Coast Soundscapes Work**

  Purpose: All west coast sanctuaries are situated within the ecologically productive California Current Ecosystem. Some parts of sanctuaries are adjacent or near to highly populated cities serving as epicenters of shipping, military, fishing, offshore energy development, construction, and recreational activity. All of these human activities generate sound on varying levels and can negatively impact living marine resources, such as marine mammals, fish, and invertebrates. ONMS is charged with supporting multiple uses of sanctuary waters and a thriving blue economy, while minimizing negative impacts to living resources and habitat. Underwater noise presents a unique challenge in balancing these objectives because it is widespread and variable, and is also influenced by the environment, including the changing climate. It is also unregulated. Sound data is uniquely useful in providing insight into the presence of marine animals, environmental conditions, and human uses—and importantly how all three overlap in time and space, known comprehensively as the "soundscape." Passive acoustic monitoring is a critical observation approach to characterize marine habitats, describe human uses, identify species distributions and seasonal presence within sanctuaries, measure impacts, and support resource protection activities.

  Outcome: Passive acoustic monitoring in and around sanctuaries provides continuous, long-term observations of the broadband soundscape at 18 listening stations across the west coast. These 18 observation stations are maintained by a team of partners and coordinated by ONMS. This sanctuary-focused array of underwater recorders is further coordinated within a broader national Ocean Sound Observation Network (OSON) of listening stations. Across OSON, sound data is collected, quality controlled, and analyzed according to established field standards, and both raw data and products are archived at NOAA's National Centers for Environmental Information (NCEI) passive acoustic data repository (ncei.noaa.gov/products/passive-acoustic-data). Sound indicators (e.g., vessel noise, fish presence, marine mammal distributions) inform each sanctuary's condition reporting process by tracking status and trends of resources and describing impacts. Passive acoustic monitoring in the CHNMS region supported the sanctuary designation process and established baseline understanding of conditions ahead of any increase in human activity offshore, such as offshore wind development. In 2023, two new listening stations along the central California coast were initiated via partnerships across NOAA, industry, and academic institutions just south of the Morro Bay Wind Energy Area, and inside an area off Vandenberg Space Force Base approved for a floating wind farm project, known as CADEMO (cademo.net). The CADEMO station only had one year of

funding, so it was removed at the end of 2024. In early 2025, another new listening station will be initiated in the Humboldt Wind Energy Area.

Through a large west coast region partnership with agencies, foundations, industry, consulting firms, and academic institutions, sound data from sanctuary monitoring provides quantitative measurements of ocean noise reduction resulting from vessel speed reduction voluntary programs, such as Blue Whales Blue Skies (bluewhalesblueskies.org). Reduction of noise radiated from ships is one of three conservation benefits of slowing ships in important whale habitat, like sanctuaries. In 2017, Blue Whales Blue Skies expanded from the Santa Barbara Channel region (CINMS) north through CBNMS and GFNMS and, in 2023, the program expanded to include MBNMS. Three of our 18 listening stations across this expanded region were analyzed in 2024 to quantify ship noise reduction benefits from ships participating in the Blue Whales Blue Skies program and reported to participating industry, the public, and sanctuary advisory councils. In the future, we could measure ship noise reduction benefits from NOAA seasonal voluntary vessel speed reduction zones, which also extend across four of the California sanctuaries. Additionally, we use acoustic data from the sanctuary listening station on the northern boundary of OCNMS, on the U.S.-Canadian border in the shared shipping lanes, to measure ocean noise benefits of the Canadian vessel speed reduction in that region. We provide this data and the noise metrics to our partners at the Port of Vancouver's Enhancing Cetacean and Habitat Observation (ECHO) voluntary vessel speed reduction program.

Timeline: While sanctuary partners have been monitoring sound along the west coast for decades, the U.S. Navy and ONMS began a nationally coordinated sanctuary soundscape monitoring program in 2018 called "SanctSound." The seed investment for the SanctSound project sunset in 2022 and the project culminated with releasing web and data portals (sanctsound.ioos.us). In 2022, ONMS used SanctSound as a springboard to enhance and expand passive acoustic monitoring in sanctuaries and has continued monitoring with a cost-share model across agencies (e.g., NOAA, BOEM, U.S. Navy), foundations, academic institutions, and other partners. Long-term sound monitoring in sanctuaries will continue indefinitely (sanctuaries.noaa.gov/science/monitoring/sound).

Partners: U.S. Navy, Naval Postgraduate School, NOAA Fisheries, UC San Diego SIO, MBARI, Cal Poly San Luis Obispo, UC Santa Cruz, NOAA IOOS, NOAA NCEI, Southall Environmental Associates, Monterey Bay Aquarium, CMSF, NMSF, SJSU MLML, Axiom Data Science, BOEM, OSU, NOAA PMEL, Protecting Blue Whales and Blue Skies Program, Enhancing Cetacean Habitat and Observation (ECHO) Program, Cal Poly Humboldt, and SFSU.

OUTREACH and PARTNERSHIPS

- **Get Into Your Sanctuary (GIYS) – MBNMS**

  Purpose: On July 27, 2024, six veterans, two National Guard/Reservists, and one active duty U.S. Air Force member along with their families were taken on a recreational fishing charter trip out of Monterey, CA.

Outcome: 40 participants learned tips and tricks for recreational fishing, responsible wildlife viewing, and were part of ONMS' annual GIYS activities. The trip was a meaningful way to express our gratitude to these families for their service and sacrifices to our country.

National Park Trust, a film maker, and crew came to the MBNMS Exploration Center to interview military families and partners, which resulted in creating a film about a military family and their recreational fishing experience in the sanctuary: https://parktrust.org/national-marine-sanctuary-foundation/

Timeline: January 15–November 15, 2024.

Partners: National Park Trust, NMSF, MBNMS, and NOAA Fisheries.

- **GIYS – OCNMS**

  Purpose: On August 3, 2024, 14 Neah Bay- and Forks-based veterans joined OCNMS staff aboard the Windsong charter vessel for a five-hour fishing and wildlife viewing trip in sanctuary waters as a small token of our appreciation for their service.

  Outcome: This year's trip engaged nearly twice the number of veterans in bottom fishing and wildlife viewing compared to last year's trip. In addition to rockfish and lingcod, fishers captured a Cabezon, and were able to view an amazing show of gray whales, sea otters, Steller sea lions, tufted puffins, common murres, and of course gulls. Staff shared information on the sanctuary, sustainable fishing, and wildlife viewing etiquette with the guests.

- **GIYS – GFNMS/CBNMS**

  Purpose: Sanctuary education staff led two GIYS kayak excursions on Tomales Bay, one of four estuaries in GFNMS. Ocean Guardian Youth Ambassadors, Ocean Guardian Teachers, and Bay Watershed Education and Training (B-WET)-funded educators joined the first excursion on August 18, 2024 and a group from Salted Roots, a San Francisco-based non-profit, joined the second excursion on August 31, 2024.

  Outcome: The two GIYS excursions provided the opportunity for 33 participants to experience an accessible part of the GFNMS and enjoy the recreational opportunities the sanctuary offers while learning responsible wildlife viewing and creating a deeper appreciation for Tomales Bay and the conservation work the sanctuary is leading there.

- **Fisherman in the Classroom – GFNMS/CBNMS**

  Purpose: This educational program is an exciting opportunity to bring the people who make a living from the sea into schools to share and discuss this vital and challenging industry. Each fisherman brings their particular background and personality to the program, making the Fisherman in the Classroom program culturally rich, experiential, and grounded in real-life career experiences. During the program, the fishermen use games, slide shows, and aids (such as crab traps, salmon dissections, Dungeness crabs, and

fishing gear depending on their specialty or focus) to provide a lively and interdisciplinary program weaving together a diversity of subjects including biology, economics, social science, and oceanography.

Outcome: Over the last 5 years, we have focused on bringing sea urchin fishers into the classroom to highlight the impact of the extensive kelp die-off on the north coast of California and how urchin harvesters have had to quickly adapt to an ocean undergoing rapid change. The urchin fishers bring urchins and underwater video to make the presentation lively and impactful. Our Education Specialist facilitates all the programs, introducing the concept of what national marine sanctuaries are and the importance of the fishing communities these sanctuaries sustain. 61 middle school and high school students were engaged in Fisherman in the Classroom programming during Fiscal Year 2024.

Timeline: Ongoing, offered year round to 7–12th grade students.

Partners: Commercial fishermen and schools.

- **Island Shoreline Cleanups with Commercial Lobstermen – CINMS**

  Purpose: Remove debris and lost fishing gear, improve CINMS and Channel Islands National Park habitats, and work together with the fishing community.

  Outcome: Over two cleanup events, 40+ people, six boats, 125 lobster traps, and over 3,000 pounds of debris including fishing gear and plastics were removed.

  Timeline: August and October 2024.

  Partners: Commercial Fishermen of Santa Barbara, NMSF, CMSF, and volunteers.

RESOURCE PROTECTION

- **California MPA Petitions**

  Purpose: CFGC received 20 petitions from 16 individuals/organizations. The petitions contained 80+ proposed actions in seven general categories: boundary change, change in take allowance, classification/designation change, add/remove MPAs, regulation change, gear change, and non-regulatory actions. The proposed changes affect 49+ MPAs and special closures statewide.

  Several petitions call for amendments to state MPAs in California sanctuaries. One petition requests CINMS amend federal MPAs within its boundaries.

  Outcome: The state and CINMS are in the process of initiating petition review. ONMS WCR will coordinate with the state to review petitions to amend MPAs within national marine sanctuary boundaries.

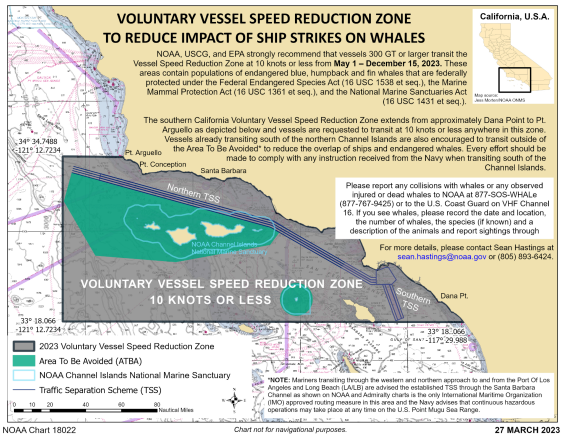
  Timeline: Petitions are currently under review; CDFW is in Phase 2 of its 3-phased petition evaluation framework. See more information here.

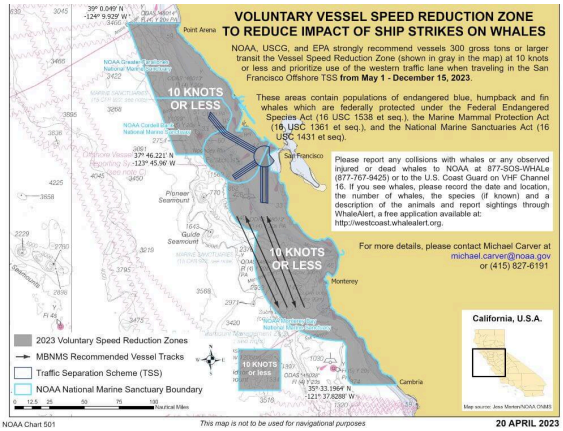
  Partners: Sanctuary Advisory Councils, CDFW, CFGC, and PFMC.

- **Shipping and Whales**

  Purpose: The purpose of the voluntary seasonal Vessel Speed Reduction (VSR) program off California is to reduce the risk of fatal ship strikes to endangered blue, fin, and humpback whales, reduce ocean noise, and protect public health within and near GFNMS, CBNMS, MBNMS, and CINMS. These species are protected under the Federal Endangered Species Act (16 U.S.C. 1538 et seq.), the Marine Mammal Protection Act (16 U.S.C. 1361 et seq.), and the NMSA (16 U.S.C. 1431 et seq.). Any unauthorized take of whales, even if unintentional, by vessels transiting in U.S. waters violates federal statutes.

  In 2024, between May 1, 2024 and January 15, 2025, NOAA, U.S. Coast Guard (USCG), and U.S. Environmental Protection Agency (EPA) requested all ocean-going vessels (≥ 300 gross tonnage) traveling through the VSR zones voluntarily reduce speeds to 10 knots or less.





  Outcome: Results from the 2024 season are:

  - In the southern California VSR zone, ocean-going vessels transited 770,929 nautical miles with an overall cooperation rate of 67%, up from 64% in 2023.
  - In the San Francisco/Monterey Bay VSR zone, ocean-going vessels transited 233,016 nautical miles with an overall cooperation rate of 72%, up from 67% in 2023.
  - Modeling work suggests that levels of cooperation achieved by these voluntary VSR efforts have contributed to an estimated 25% reduction in fatal ship strike risk for humpback and blue whales in these areas off California.

  Timeline: The VSR season started on May 1, 2024 and ended on January 15, 2025.

  Looking Ahead: Scoping possible expansion of a voluntary VSR measure in OCNMS through a collaborative working group, pending funding.

  Partners: NOAA Fisheries, USCG, EPA, and Protecting Blue Whales and Blue Skies Program.

- **Whale Entanglement Response and Prevention**

  Purpose: NOAA Fisheries West Coast Region, in partnership with ONMS WCR and the National Marine Sanctuary Foundation (NMSF), host annual entanglement response trainings in MBNMS and CINMS to allow members of the California Large Whale Entanglement Response Team to practice advanced response techniques and test visibility of new line marking approaches.

  Additionally, NMSF has been expanding its innovative gear library in Santa Cruz, CA to support the development and testing of on-demand fishing gear designed to reduce the risk of whale entanglements in California. Gear innovations represent a potential solution for reducing marine life entanglement risk while allowing for continued fishing activity. NMSF is prioritizing loans to commercial fishermen operating in CA's fixed gear fisheries, particularly Dungeness crab fishermen affected by seasonal closures.

  ONMS WCR continues to participate in the California Dungeness Crab Fishing Gear Working Group, which was established by CDFW in partnership with OPC and NOAA Fisheries West Coast Region.

  Outcome: Sanctuary research vessels R/V Shearwater (CINMS) and R/V Fulmar (WCRO) were utilized in multiple entanglement response trainings in Santa Barbara, CA and Monterey, CA, respectively.

  Last year, CFGC approved NMSF's application for an Experimental Fishing Permit (EFP) to test innovative pop-up fishing gear in the California Dungeness crab fishery with local fishermen in real world fishing conditions. The new gear types are intended to reduce the risk of entangling protected whales and sea turtles while providing increased fishing opportunities for fishermen. Fishermen will have the opportunity to experiment with multiple gear types and share their expertise and feedback on the reliability and performance of the gear under fishing conditions. Fishermen will also receive training on how to operate the gear and funding support for their participation in the project. Fishermen interested in borrowing gear from NMSF's gear library can submit a request here: https://marinesanctuary.org/innovative-gear-library/. As of October 20, 2024, participating fishermen have completed 744 trials with five different pop-up fishing systems.

  Timeline: Entanglement response trainings including ONMS WCR vessel crew and staff have been occurring annually in Monterey (MBNMS) and Santa Barbara (CINMS) since 2022.

  CFGC approved NMSF's application for an EFP in June 2023.

  Looking Ahead: More entanglement response trainings are being planned for 2025 and NMSF is working to expand pop-up gear testing into other fixed-gear fisheries in California, such as spot prawn.

  ONMS WCR will also be participating on NOAA Fisheries' forthcoming Take Reduction Team to address the incidental mortality and serious injury of humpback and blue whales

in several trap/pot fisheries along the U.S. West Coast.

Partners: NOAA Fisheries, NMSF, California Large Whale Entanglement Response Network, fishermen, OPC, CDFW, Pacific States Marine Fisheries Commission, and California Dungeness Crab Fishing Gear Working Group.