

## OFFICE OF NATIONAL MARINE SANCTUARIES COORDINATION REPORT (March 2023)

### *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. The primary objective of the National Marine Sanctuaries Act (NMSA) is resource protection of marine areas (Great Lakes included) of special national significance, while promoting sustainable uses. Five national marine sanctuaries are located on the west coast: Olympic Coast, Greater Farallones, Cordell Bank, Monterey Bay, and Channel Islands (OCNMS, GFNMS, CBNMS, MBNMS, 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 2022: nominations and designations; condition reports; management plan reviews; climate vulnerability assessments; deep-sea coral and kelp research and restoration; indigenous workshops; U.S. Forest Service partnership; celebrating the 50th anniversary of ONMS; and new shipping protections for whales.

### **NOMINATIONS and DESIGNATIONS**

- **Sanctuary Nomination Process – WCRO**

([www.nominate.noaa.gov](http://www.nominate.noaa.gov))

**Purpose:** In response to widespread interest from the public, in June 2014 NOAA launched a revised process to accept new national marine sanctuary nominations (79 FR 33851). ONMS reviews sanctuary nominations against 11 criteria that are derived in large part from the NMSA. Nominations that successfully pass this review are added to an inventory of areas NOAA may consider for potential designation as a national marine sanctuary. The preamble to the final rule establishing the sanctuary nomination process states, “if NOAA takes no action on the nomination in the inventory, the nomination will expire after five years from the time it is accepted to the inventory.” NOAA subsequently clarified the process for assessing the continuing viability of nominations that are nearing the five- year expiration mark (84 FR 61546; November 2019), in essence to determine if the nomination after five years is still responsive to the 11 sanctuary nomination process criteria described in the 2014 final rule. A sanctuary nomination is not the same as a sanctuary designation. Designation is a separate process that by law is highly public and participatory, and often takes several years to complete.

**Outcome:** ONMS strives to maintain a vibrant list of relevant nominations on the inventory. On the west coast, the second submission for a proposed Chumash Heritage National Marine Sanctuary (CHNMS), off central California, was added to the inventory in October 2015. A five-year review was completed for CHNMS in October 2020, with the nomination remaining in the inventory. The St. George Unangan Heritage National Marine Sanctuary (SGUHNMS) nomination, surrounding St. George Island in the Bering Sea, was accepted and added to the inventory in January 2017. A five-year review was conducted in late-2021 and early-2022, with NOAA deciding to keep SGUHNMS in the inventory for another five years. In addition, NOAA has received a new sanctuary nomination from the Aleut Community of St Paul Island, Alaska. The nomination, Alaġum Kanuuġ (Heart of the Ocean; Pribilof Islands Marine Ecosystem (PRIME) Initiative; pronounced ahl-ah-GOOM ka-NOH) was submitted in December 2021 and was accepted into the inventory in June 2022. As a reminder, there have been two other nominations on the west coast that were not accepted into the inventory: 1) Aleutian Islands National Marine Sanctuary, covering most of Western Alaska, the Bering Sea, and the Aleutian Islands (declined in January 2015); and 2) Southern California Offshore Banks proposal, representing Cortes, Tanner, Cherry, and Northwest Banks, and Garret Ridge (declined in March 2018).

Timelines for Designation: Four nominations are in the designation process: Lake Ontario in New York (initiated in April 2019, Papahānaumokuākea in Hawaii (initiated in November 2021), Chumash Heritage in California (initiated in November 2021; see below), and Hudson Canyon in New York (initiated in June 2022).

**Other Nominations in the Inventory:** Lake Erie Quadrangle (accepted in February 2016); St. George Unangan Heritage (accepted January 2017); Mariana Trench (accepted in March 2017); and Alaġum Kanuuġ: Heart Of The Ocean (accepted in June 2022). ONMS continues to work with the Mariana Trench nominator to review the nomination before making a decision on the five-year review. As part of this process, the nominator is working to conduct outreach with the new leadership of the Commonwealth of the Northern Mariana Islands.

- **Chumash Heritage National Marine Sanctuary Designation - WCRO**

**Purpose:** The purpose of the CHNMS nomination is to protect, study, and interpret the proposed area's abundant natural resources and maritime heritage, including Indigenous cultural heritage. The nomination stretches from Cambria along the San Luis Obispo County coast to Gaviota Creek in Santa Barbara County, then offshore along the western edge of the Channel Islands and boundary of CINMS, and back offshore to the north reconnecting near Cambria, along the southern boundary of MBNMS. It contains an internationally-significant ecological transition zone, supporting high biological diversity and densities of numerous important species. Important features within the proposed sanctuary include Rodriguez Seamount, Arguello Canyon, and the Santa Lucia Bank. The nomination submitted by a large community consortium led by the Northern Chumash Tribal Council stated their view that the proposed sanctuary should not impose future sanctuary regulations affecting commercial fisheries or recreational fishing. The

nomination identified considerable threats to resources including existing and potential future oil and gas development, offshore wind farms, fiber-optic subsea cables, marine transport of spent nuclear waste, and others for which a sanctuary could be ideal to address. The nomination recognized national marine sanctuaries can provide a single forum for comprehensive, ecosystem-based planning for multiple uses. The nomination was added to the inventory of candidate sites for future designation with community support from the public, elected officials, businesses, scientists, and environmental groups. See the sanctuary designation website for more information:  
<https://sanctuaries.noaa.gov/chumash-heritage/>.

**Outcome:** NOAA announced on November 10, 2021 that the agency was initiating a process to consider designating CHNMS. Public scoping meetings were held (virtually) in December and early January 2022. The public comment period ended January 31, 2022. Comments were uploaded via regulations.gov using docket # NOAA-NOS 2021-0080. The thousands of comments received during public scoping have helped to shape detailed plans for designating the sanctuary, what it will manage and focus on, its regulations, and general management considerations. Scoping comments and input from tribes, federal agencies, state agencies, and local governments are also helping NOAA determine what boundary and regulatory alternatives to evaluate in the draft environmental impact statement, required under the National Environmental Policy Act (NEPA).

Per the NMSA and past inter-agency agreements, if NOAA anticipates needing sanctuary regulations that would regulate fishing, NOAA staff will bring any such need to the PFMC (or California Fish and Game Commission as relevant) for its consideration, feedback, or action. ONMS attended the September and November 2022 Council meetings to answer questions regarding the proposed sanctuary and NMSA section 304(a)(5) requirements. After a review of existing fishing regulations, including those designed for habitat and ecosystem protections, and hearing from ONMS and the public, PFMC determined that additional fishing regulations are not warranted at this time. Should additional information arise which may warrant additional fishing regulations within the proposed sanctuary (or other sanctuary waters), the Council understands that it could consider additional fishing regulations at that time, as part of a future PFMC process.

Throughout 2022, ONMS staff have been evaluating scoping comments and conducting necessary assessments to produce the key designation documents. Staff have held more than 30 meetings with agencies, elected officials and ocean users. These have also included public workshops or community meetings, some held virtually, to understand and receive feedback on issues such as research and monitoring needs, wildlife disturbance, education and outreach, water quality, and collaborative management with Indigenous tribes. These include interagency and tribal consultation meetings such as the PFMC meetings in September and November 2022.

**Timeline:** The process to designate will take roughly 12–18 more months to complete. NOAA intends to distribute for public review and comment, a draft management plan, draft regulations and terms of designation in a proposed rule, and draft environmental impact statement, likely in the spring of 2023. NOAA will consider all public comments prior to moving forward with a sanctuary designation. If NOAA decides to pursue

designation, the agency will prepare final documents for the sanctuary management plan, regulations, and environmental impact statement. The NMSA provides various consultation review periods for the governor and Congressional committees before a sanctuary designation becomes final. For more information contact Laura Ingulsrud (laura.ingulsrud@noaa.gov) or Paul Michel (paul.michel@noaa.gov).

## **CONDITION REPORTS**

- **Condition Report Update – OCNMS**

**Purpose/Process:** Sanctuary staff have completed an updated OCNMS condition report, which was released in March 2022. The completed report, which documents the condition of sanctuary resources and ecosystem services between 2008 and 2019, concludes that overall, most habitats within the sanctuary are in good condition, but there are some growing concerns about the effects of climate change—especially for open-ocean habitats through trends such as marine heatwaves and ocean acidification.

**Outcome:** While many aspects of the sanctuary, including water quality, seafloor habitat, many fish and marine mammal species, the condition of maritime archaeological resources, and several ecosystem services appear healthy and stable, we believe that current and projected impacts from climate change pose significant threats to the sanctuary. During this assessment period, starting in 2008, NOAA has observed impacts from climate change that have influenced many of the status and trends presented throughout the report, e.g., the 2014–2016 marine heatwave that triggered a large harmful algal bloom that affected the Dungeness crab fishery as well as hypoxic events that resulted in fish kills on some Olympic Coast beaches. The condition report will now form the basis for NOAA in initiating the management plan review process for OCNMS (see below). Links: [Full Report](#), [Quick Look](#), [Webstory](#), [Interactive Ecosystem Tracking Tool](#).

**Timeline:** The OCNMS condition report was released in March 2022.

**Partners:** Olympic Coast Intergovernmental Policy Council, Hoh Tribe, Makah Tribe, Quileute Tribe, Quinault Indian Nation, State of Washington, OCNMS Advisory Council, National Marine Fisheries Service (NMFS)/Northwest and Southwest Fisheries Science Centers (NWFSC and SWFSC), California Current Integrated Ecosystem Assessment Program, Washington Sea Grant, NOAA’s Pacific Marine Environmental Laboratory, Olympic National Park, and academic partners.

- **Condition Report Update – CBNMS**

**Process:** The report is currently being copy edited and prepared for publication. The completed report will document the condition of sanctuary resources and ecosystem services between 2009 and 2021.

**Outcome:** The sanctuary expanded in 2015 and this condition report will be the first sanctuary assessment of the expansion area. The condition report will also include ecosystem services as part of the assessment of the overall condition of CBNMS. When completed the condition report will serve as the basis to initiate the CBNMS management

plan review process (see below).

**Timeline:** Final condition report publication should occur in the spring/summer of 2023.

- **Condition Report Update – GFNMS**

**Process:** GFNMS has completed the first phase of the condition report update process by hosting expert workshops in 2022 to rate the condition of sanctuary resources and ecosystem services between 2011 and 2022. Staff has completed the first draft which will undergo expert review in early 2023. .

**Outcome:** The sanctuary expanded in 2015 and this condition report will be the first sanctuary assessment of the expansion area. The condition report will also include ecosystem services as part of the assessment of the overall condition of GFNMS. The completed condition report will serve as the basis to initiate the management plan review process for GFNMS (see below).

**Timeline:** The condition report will be subject to several review processes in 2023 and may be complete by winter 2023/2024.

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

**Purpose:** The [Sanctuary Watch](#) platform, now available on [IOOS.us](#), provides web-enabled, interactive tools to track and better understand the changing nature of sanctuary ecosystems. Easy access to information for tracking ecosystem conditions, human connections, and management impacts is critical to timely, effective, and community-based resource management. Sanctuary Watch data products and information are developed in collaboration with our data partners along with science communicators and educators. Among other tools such as the Sanctuary Soundscape Monitoring Project interface, this site will provide an access point to the web-enabled condition reports. This platform pairs artwork with information to make it easy to explore and track how ecosystem conditions are changing at a sanctuary. These tools are used by sanctuary managers, integrated ecosystem assessment teams, and others to keep their finger on the pulse of these dynamic ecosystems and to help us to better understand and manage our sanctuaries together.

**Outcome:** This year NOAA will be rebuilding these tools on a WordPress site to ensure ease of updating and maintenance. NOAA will also be harmonizing the existing sanctuary sites and adding 1-2 additional sites.

**Timeline:** NOAA intends to update the tools by fall 2023.

**Partners:** Sanctuary Watch is an example of the power of NOAA’s National Ocean Service offices coming together to answer questions about the health and vitality of our nation’s special places. This collaboration leverages expertise across NOAA, including [U.S. IOOS Office](#) (including the [Marine Biodiversity Observation Network](#)), [Integrated Ecosystem Assessment Program](#), [National Centers for Coastal Ocean Science](#), and the [Office of National Marine Sanctuaries](#).

## **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.

Nearly all national marine sanctuaries on the west coast are currently engaged with condition report development or management plan review, yet at different stages of the process. Here follows a summary of regional progress with the sites furthest along in the process (i.e., finalizing management plan review) mentioned first.

- **Management Plan Review – CINMS**

(<https://channelislands.noaa.gov/manage/plan/revision.html>)

**Purpose/Process:** An update of the CINMS 2009 management plan to address new priority issues. In 2019, CINMS initiated a public process to update the site’s 2009 management plan. The process to review the management plan was preceded by an update to the CINMS condition report, which was released and distributed in the spring of 2019 (<https://sanctuaries.noaa.gov/science/condition/cinms/>). After receiving and incorporating public and agency input on a draft management plan released in December 2021, the final updated plan was developed by staff to strategically orient sanctuary programs to address priority issues relevant to current and future management needs over the next 5–10 years. The CINMS final management plan will address a range of priority issues through five issue-based action plans: climate change, marine debris, introduced species, vessel traffic, and zone management. In addition, six additional programmatic action plans focus on the functional areas of: research and monitoring, education and outreach, resource protection, maritime heritage, cultural heritage, and operations and administration. ONMS is not pursuing any new or modified actions or regulations that directly or indirectly affect fish, fisheries, or fisheries management. Prior to release of draft documents in 2021, sanctuary staff reached out to coordinate with the PFMC, as well as the California Department of Fish and Wildlife (CDFW) and NMFS, to provide information about the nature of the proposed management plan and fisheries management.

**Outcome:** An updated sanctuary management plan containing programmatic strategies to guide sanctuary activities for 5–10 years, supported by an environmental assessment. NOAA did not propose any amendments to CINMS regulations or terms of designation during this draft management plan review.

**Timeline:** ONMS expects the final management plan and final environmental assessment

to be released by the end of February 2023.

**Partners:** The CINMS Advisory Council and other experts from local, state, and federal partner agencies.

- **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 anticipates management plan changes will require preparation of an environmental analysis under NEPA. NOAA released the Notice of Intent to Conduct Scoping for the OCNMS Management Plan Review on January 30, 2023. NOAA is currently inviting comments on the scope of management plan review and will conduct public scoping meetings to gather information and other comments from individuals, organizations, tribal governments, and government agencies on the scope, types, and significance of issues related to the OCNMS management plan and the proper scope of environmental analysis for the management plan review. The public scoping comment period will be open until April 3, 2023.

**Outcome:** An updated sanctuary management plan containing programmatic strategies to guide sanctuary activities for 5-10 years, supported by an environmental analysis.

**Timeline:** NOAA aims to release the draft management plan and draft environmental analysis document within a year of the end of public scoping.

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

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

**Process:** After release of the condition reports for GFNMS and CBNMS, NOAA will start the process of management plan review for both sanctuaries as one management unit that reflects a merger of the staff in 2021.

**Outcome:** An updated sanctuary management plan containing programmatic strategies to guide sanctuary activities for 5–10 years, supported by an environmental analysis.

**Timeline:** The timeline is to be determined based on finalizing the condition reports for GFNMS and CBNMS; the process may start in late 2023.

## **CLIMATE CHANGE**

- **Climate Vulnerability Assessment (CVA) – GFNMS and CBNMS**

**Purpose:** This science-based effort identifies how and why focal resources (habitats, species, and ecosystem services) across the north-central California coast and ocean region

are likely to be affected by future climate conditions. The goal of this assessment is to provide expert-driven, scientifically sound assessments to enable marine resource managers to respond to, plan, and manage for the impacts of climate change to habitats, species, and ecosystem services within the region. This information can help prioritize management actions, and can help managers understand why a given resource may or may not be vulnerable to a changing climate, enabling a more appropriate and effective management response. As the original CVA was completed in 2014 and published in 2015, this process is updating that information for use in the upcoming management plan review process for GFNMS/CBNMS, scheduled to begin in winter 2023/2024.

**Outcome:** A CVA revision summary report, which highlights changes in vulnerability scores since the 2014 assessment, and resulting changes to resource rankings and potential management priorities.

**Timeline:** The CVA revisions will be completed by early February 2023, and the results will be available for consideration at the first Sanctuary Advisory Council meeting of the year in late February. The summary report will be completed by April 1, 2023.

**Partners:** This update is being completed with support from Greater Farallones Association (GFA), and the following institutions/organizations are providing expert input and/or review: NMFS, Point Blue Conservation Science, University of California (UC) Santa Cruz, UC Santa Barbara, UC Davis, Bodega Marine Lab, San Diego State University, Moss Landing Marine Labs, California State University Monterey Bay, San José State University, U.S. Fish and Wildlife Service, Elkhorn Slough National Estuarine Research Reserve, CDFW, U.S. Geological Survey, Point Reyes National Seashore, and Reef Check California.

- **Climate Vulnerability Assessment (CVA) – OCNMS**

**Purpose:** This science-based effort identifies how and why focal resources (habitats, species, ecosystem services, and maritime heritage resources) across the Olympic Coast region are likely to be affected by future climate conditions. The goal of this assessment is to provide expert-driven, scientifically sound assessments to enable marine resource managers to respond to, plan, and manage for the impacts of climate change to habitats, species, ecosystem services, and maritime heritage resources within the region. This information can help prioritize management actions, and can help managers understand why a given resource may or may not be vulnerable to a changing climate, enabling a more appropriate and effective management response. The OCNMS Advisory Council convened a working group to conduct the CVA. Adaptation and mitigation strategies were also developed as part of the CVA which will be presented through the Sanctuary Advisory Council as recommendations to the Superintendent.

**Outcome:** A CVA report, which highlights vulnerability in the Olympic Coast region, and resulting adaptation and mitigation strategies that should be considered potential management priorities in the site's upcoming management plan review.

**Timeline:** OCNMS is scheduled to share the CVA draft with the Sanctuary Advisory Council working group by March 2023 for final review, and the results will be available



for consideration at the July or September 2023 Sanctuary Advisory Council meeting. The summary report is anticipated to be completed by late-2023.

**Partners:** The CVA is being completed with support of the Sanctuary Advisory Council working group, which includes the following entities: Hoh Tribe, Makah Tribe, Quileute Tribe, Quinault Indian Nation, University of Washington, Washington Sea Grant, NOAA Pacific Marine Environmental Laboratory, NOAA NWFSC, Northwest Indian Fisheries Commission, Olympic National Park, Oregon State University, U.S. Navy, and Sanctuary Advisory Council members representing the Research, Commercial Fishing, and Community at-large seats.

- **Climate Vulnerability Assessment (CVA) – At Additional West Coast Sanctuaries**

**Purpose:** ONMS plans to conduct further CVA, science-based assessments to identify at other west coast national marine sanctuaries how and why focal resources (habitats, species, and ecosystem services) across coastal and ocean communities are likely to be affected by future climate 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 climate change to habitats, species, and ecosystem services within the region. This information can help prioritize management actions, and can help managers understand why a given resource may or may not be vulnerable to a changing climate, enabling a more appropriate and effective management response.

**Outcome:** A CVA summary report, which highlights the most vulnerable resources in the two sanctuaries, and the leading stressors driving vulnerability

**Timeline:** For both sanctuaries, the CVA process is being initiated in early 2023. MBNMS intends to wrap up in late 2023, and the CINMS schedule shows completion in early 2024.

**Partners:** To be determined. Processes at both sanctuaries will follow those of GFNMS/CBNMS and OCNMS, and both sanctuaries will work closely with a number of academic and agency partners, including CDFW and NMFS.

## **RESEARCH and RESTORATION**

- **Deep-Sea Coral Work**

**Purpose:** Deep-sea habitats in sanctuaries off the west coast are home to a diverse array of deep-sea corals, sponges, and other habitat-forming invertebrates. Although extremely slow-growing, these long-lived invertebrates form complex three-dimensional structures that provide a number of important ecosystem services. For example, deep-sea corals and sponges are considered essential fish habitat, or habitat required for the growth, reproduction, and survival of fish and other marine organisms. Between 2018-present the Office of National Marine Sanctuaries, Northwest and Southwest Fisheries Science Center, together with parts of NOAA and other Federal Agencies teamed up for a multi-year deep-sea coral initiative.

**Outcome:** Large NOAA research vessels and smaller sanctuary vessels were utilized to conduct coast wide as well as more targeted surveys of the seafloor. Samples of eDNA and water quality as well as physical deep coral and sponge specimens were collected. ROV and AUV surveys took place in areas subject to change as a result of Amendment 28 and throughout the five west coast sanctuaries. We are currently in the process of writing up the final report. With delays due to lab closures we are also still processing samples and analyzing video data as well.

**Timeline:** The final report may be complete by fall 2023.

**Partners:** ONMS, SWFSC, and NWFSC.

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

The Sanctuary Advisory Council process can be an opportunity for communities throughout a sanctuary’s geographic area to provide input into decision-making and monitoring, research, recovery, and restoration efforts. The need for kelp restoration activities are frequently discussed at GFNMS and MBNMS Advisory Council meetings. Additionally, there are workshops, lecture series, and the Greater Farallones Kelp Network, which hosts quarterly virtual data-sharing forums that cover topics related to kelp restoration throughout California. These forums are open to the public.

Collaboration with fishing communities aids successful ecosystem restoration, and both sanctuaries are contributing information to collaborative kelp monitoring, research, recovery, and restoration efforts, including:

- Assisting with the Pacific States Marine Fisheries Commission-funded sea urchin socio-economic study with partners at California Ocean Protection Council (OPC), UC Santa Cruz, and California Sea Urchin Commission (GFNMS); and
- Coordinating with CDFW, OPC, Reef Check, and the Giant Kelp Restoration (G2KR) group since January 2021 on efforts by recreational divers with a valid sportfishing license to cull urchins at Tanker Reef (MBNMS). Through an amendment in the recreational fishing regulations by the California Fish and Game Commission (FGC), recreational divers with a valid sportfishing license can cull an unlimited number of urchins with handheld tools at Tanker Reef in MBNMS from April 2021 through April 2024.

***Tankers Reef Research and Restoration Project in MBNMS***

**Purpose:** There is considerable scientific evidence that the reduction of sea urchin grazing pressure can facilitate kelp regrowth in urchin-dominated habitats in the short term. To better understand kelp recovery dynamics, MBNMS has been monitoring the efforts of recreational divers focused on culling urchins in place. The concept of urchin culling (smashing or crushing sea urchins) has strong support within the California recreational dive community. MBNMS will continue to monitor efforts by the recreational dive community in 2023.

Because of the approach of urchin culling as a new tactic in sanctuaries to restore kelp and to better inform potential actions by CDFW to amend sportfishing regulations, MBNMS and CDFW monitor kelp and urchin densities independent of the culling activities of recreational divers. Monitoring takes place four times a year and is conducted by MBNMS and CDFW dive teams.

**Outcome:** After 18 months and 324 hours of culling urchins through September 2022 at the culling grid at Tanker Reef, MBNMS and CDFW staff found that purple urchin density was reduced from 8 to less than 2 per square meter, which was actually achieved within 3 months. Adult kelp density increased 15-fold, from 20 to 298 individuals. Juvenile kelp density also increased 15-fold, from 8 to 118 individuals. In contrast, at a nearby reference area, divers found no change in urchin density and almost no kelp recruitment (went from 2 to 4 individuals) and adult kelp increased from 2 to 12 individuals.

**Timeline:** The project is currently in the middle of a three-year long amendment to the sport fishing regulations. Four more agency surveys will occur in CY2023. The regulatory change is scheduled to end on April 30, 2024, when the final report is due to FGC.

### ***Bull Kelp Research and Restoration off Marin and Sonoma Counties in GFNMS***

**Purpose:** Greater than 90% of kelp forest biogenic habitat in northern California and within GFNMS has been lost since 2014 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 urchins (*Strongylocentrotus purpuratus*), leading to increased grazing pressure. Recreational red abalone (*Haliotis rufescens*) and commercial red sea urchin fisheries in the region have collapsed, and deleterious cascading effects for other nearshore fisheries are expected in the coming years. The rapid transition from kelp forest to urchin barren in this region threatens the recovery of these important northern California recreational and commercial fisheries. Restoration of kelp forest habitat is imperative to improving fishery conditions and ecosystem function, including potential contribution to carbon sequestration.

GFNMS in partnership with GFA, CDFW, and other organizations and tribal governments is working to transition urchin barrens to kelp forests by removing red and purple urchins to less than two urchins per meter squared, outplanting bull kelp (*Nereocystis luetkeana*) to increase annual recruitment and growth of bull kelp, and monitor the success and effectiveness of urchin management and accelerate regrowth of the kelp forest ecosystem.

**Outcome:** Since 2019, GFNMS, GFA, and our partners have actively worked to identify areas of kelp resilience and persistence in the sanctuary. We mapped areas identified in the restoration plan using uncrewed aerial systems (UAS), and investigated historical aerial imagery from plane-based surveys. These efforts have contributed to restoration site selection by identifying where current kelp growth exists within areas of high historical resilience. The restoration approach focuses on urchin removal and outplanting within these areas, both to protect new kelp forest growth and capitalize on elements of natural kelp forest resilience. Current research on kelp planting methods are occurring in Drake's Bay in Marin County. The four sites to receive urchin management and outplanting efforts

are Fort Ross Cove, Timber Cove, Ocean Cove, and Stillwater Cove in Sonoma County (Figure 1). Urchin removal efforts are focused within existing kelp beds to protect new kelp growth.

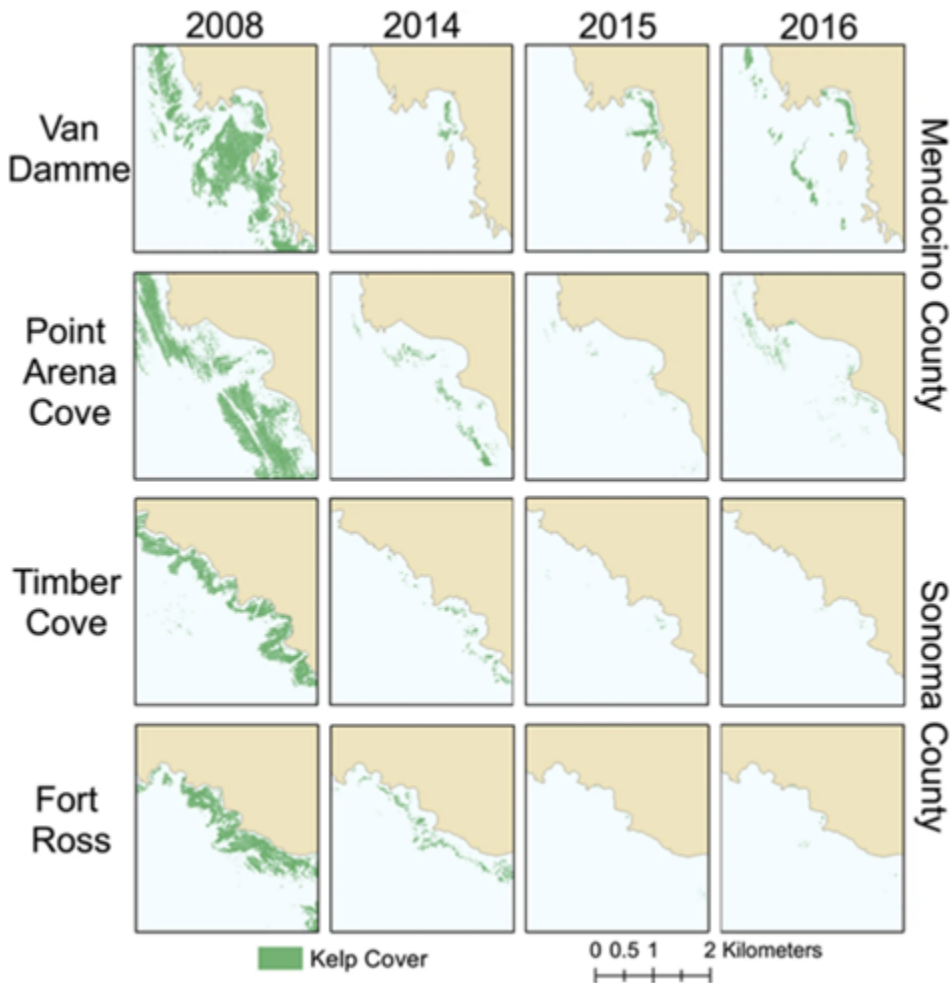


Figure 1. Maps showing greater than 90% reduction of kelp canopy at four important abalone fishery sites in Sonoma and Mendocino counties after 2014 (Rogers-Bennett and Catton 2019).

In 2021, ONMS led a restoration site assessment to investigate the subtidal ecology at these sites to determine urchin density, evaluate community structure, and identify natural urchin barriers. These data contributed towards kelp restoration planning and implementation. The ONMS research and restoration team is collaborating with local commercial fishermen to implement urchin population management as a method for bull kelp forest restoration. In 2022, active restoration occurred in collaboration with fishermen, CDFW, and other partners as follows:

- Using R/V *Fulmar*, the team deployed two moorings in Drakes Bay (Marin

County) with sensors to track wave intensity, temperature, salinity, dissolved oxygen, and pH in order to inform field operations and evaluate localized conditions that may impact kelp settlement and growth, map kelp forest canopy, and conduct a pilot project to outplant kelp near Double Point in partnership with Sonoma State University, CDFW, Fishbio, and Monterey Bay Seaweeds.

- Using R/V *Fulmar*, the team conducted a kelp restoration site assessment at four identified kelp restoration sites along the Sonoma coast in partnership with MBNMS and CDFW.
- Through use of UAS, the team conducted kelp canopy surveys to track kelp canopy dynamics and evaluate kelp forest recovery at restoration and reference sites at 13 sites in coordination with California State University Monterey Bay and Kashia Band of Pomo Indians.

UAS surveys and subtidal ecosystem surveys were conducted simultaneously to inform the development of a kelp biomass conversion formula, subsequently to determine the blue carbon potential of bull kelp forest habitat.

**Timeline:** Efforts will continue and expand in 2023 and 2024. GFNMS in partnership with GFA has supported a grant proposal to NOAA's Transformational Habitat Restoration and Coastal Resilience Grant program to expand restoration at the four identified sites over five years.

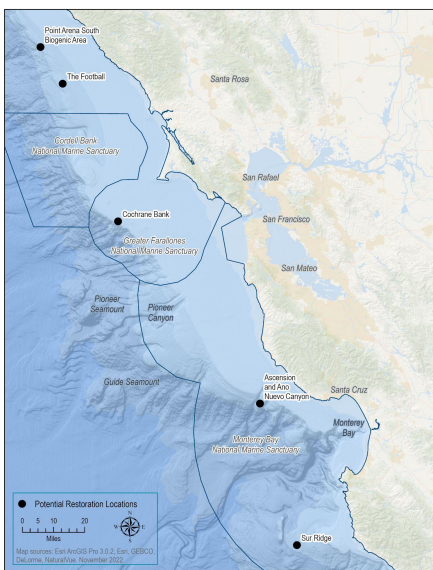
- **Draft Restoration Plan and NEPA Evaluation for the YFD-70 Dry Dock**  
([Draft Restoration Plan and NEPA Evaluation for the YFD-70 Dry Dock](#))

**Purpose:** Pursuant to the NMSA purposes and policies, NOAA is required to maintain natural biological communities in the national marine sanctuaries, and to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological processes. The NMSA includes legal authorities for damage assessment, civil action and enforcement; specific guidance in Section 309 of the NMSA guides sanctuaries to develop and test methods to enhance degraded habitats or restore damaged, injured, or lost sanctuary resources. Under these authorities sanctuaries on the west coast have engaged in many restoration activities over the years. The objective of the restoration planning is to identify alternatives to restore, rehabilitate, replace, or acquire the equivalent of sanctuary resources and their services that were injured or lost.

The draft Restoration Plan and NEPA Evaluation for the YFD-70 Dry Dock identifies a preferred alternative to restore the equivalent of sanctuary resources in an effort to compensate, to the extent possible, for sanctuary ecosystem services that were lost as a result of the sinking of the YFD-70 into MBNMS. The projects are designed to restore resources similar to those injured by the impact and long-term presence of the YFD-70. The sinking of the YFD-70 resulted in substantial, persistent, and ongoing impacts to sanctuaries seafloor and biota. It has also caused the permanent loss of habitat and ecosystem functions within the injury footprint because there is no feasible way to remove the YFD-70 due its deposition in 4,000 feet water depth. The cost of removal exceeds

available funding, and raises safety concerns, making removal of the vessel too difficult and cost prohibitive.

ONMS selected two restoration projects as the “preferred alternative”. These projects are appropriate, feasible, have a high likelihood of success, and, collectively, will provide restoration, to the extent possible, for the types of benthic habitats within the sanctuary that were injured or lost as a result of the sinking of the YFD-70 Dry Dock. This is the largest restoration project that has occurred in west coast sanctuaries in terms of scope and scale in part because the documented injuries were extensive. The calculated area impacted by the footprint of the YFD-70 is 69,777.80 square feet (6,482.57 meters squared) of seafloor habitat and a minimum of 1,713–3,672 organisms, including an estimated 646–1,305 octocorals, that were either displaced or crushed and killed by the YFD-70.



*Figure 2.* Map of potential coral restoration locations based on selection criteria. Full size image is available in the YFD-70 Draft Restoration Plan and NEPA Evaluation.

**Outcome:** On December 6, 2022, NOAA's ONMS released a draft restoration plan and evaluation of alternatives to help restore sanctuary resources that have been injured, lost, or destroyed as a result of the sinking of the YFD-70 dry dock into Pioneer Canyon, an area of MBNMS off the coast of San Mateo County that is administratively managed by GFNMS. Due to a technical error during the comment period, ONMS is extending the opportunity to provide public comment.

The draft restoration plan proposes two projects:

1. To remove objects/vessels/vehicles of all sizes that can be derelict, abandoned, grounded, or sunken and discarded from multiple sensitive habitat types in MBNMS and GFNMS; and
2. To outplant corals in 2-5 suitable habitat locations within MBNMS and GFNMS (Figure 2).

The draft restoration plan also provides an analysis of the environmental effects of the proposed projects pursuant to NEPA requirements.

ONMS intends to comment separately to the PFMC on how pending council actions could affect the sites for restoration, and vice versa.

**Timeline:** Public comment will reopen and should be open during the March PFMC meeting. The dates for the new public comment period will be available at: <https://farallones.noaa.gov>. The draft Restoration Plan can also be downloaded at this website. Comments must be submitted to: [gfnms.restoration@noaa.gov](mailto:gfnms.restoration@noaa.gov).

## **INDIGENOUS WORKSHOPS**

- **International Workshop on Indigenous Communities and Government Partnerships for Protected Area Management**

ONMS worked with partners, including the National Park Service, George Wright Society, with funding by the U.S. Department of State, to support an Indigenous-led U.S./Chile Indigenous Protected Areas Partnership Workshop held in Port Angeles, Washington in September 2022. This workshop was graciously hosted by the Lower Elwha Klallam Tribe. The workshop brought Indigenous representatives from Chile, Mexico, Canada, and the U.S. to share best practices and lessons about how Indigenous communities work with terrestrial and marine protected areas. A full workshop report is currently being developed in collaboration with the participants.

- **Cross-Pacific Indigenous Exchange**

The Makah Tribe, in collaboration with ONMS, hosted the Cross-Pacific Indigenous Exchange September 13–15, 2022, in Neah Bay, Washington. OCNMS partnered with ONMS Pacific Islands Region staff on securing funding. This Cross-Pacific Indigenous Exchange leveraged the presence of Indigenous leaders on the Olympic Peninsula at the U.S./Chile workshop. The meeting brought together Indigenous partners who have existing or emergent relationships with national marine sanctuaries across the Pacific to facilitate discussions on topics of shared interest among key tribal and Indigenous partners and facilitate a cultural exchange to strengthen and sustain cross-Pacific Indigenous relationships. A summary report is currently being developed in collaboration with Indigenous participants that attended the meeting.

## **OUTREACH and PARTNERSHIPS**

- **“Big Watershed” U.S. Forest Service – ONMS Partnership**

U.S. Forest Service Region 5 and NOAA’s ONMS WCRO initiated a partnership in 2016, acknowledging similar missions and compelling opportunities for collaboration. In 2017, progress was made on joint messaging, project descriptions, and outreach events. In 2018, a partnership work plan was established to guide partnership activity. The work plan, updated annually, focuses on education and outreach, habitat restoration in the watersheds that connect national forests and sanctuaries in California, and on enhancing institutional

knowledge through shared learning and agency engagement. Much of the education and outreach activity has utilized elements of the “salmonscape” exhibit at the Sanctuary Exploration Center in Santa Cruz, California. Panels 1–3 of the 4-panel exhibit focus on the natural history of salmon in California, the fishery, and the importance of healthy watersheds—a joint effort between NMFS and ONMS. The fourth panel shows the watershed and national forest – national marine sanctuary connections, and highlights the importance of conservation efforts both on national forests and in national marine sanctuaries. Habitat restoration work to date has only just begun to identify priority projects.

- **50th Anniversary of ONMS**

To celebrate the 50th anniversary of ONMS, NOAA developed a new five-year strategic plan, [Our Vision For America’s Treasured Ocean Places: A Five-Year Strategy For The National Marine Sanctuary System](#), and a new 20-year vision, [A Transformational Vision for National Marine Sanctuaries: National Marine Sanctuaries 2042](#). Together, these documents will guide actions and decisions to protect the extraordinary scenic beauty, biodiversity, historical connections, and economic productivity of the National Marine Sanctuary System into the future. The new strategic plan sets forth NOAA’s actions in the short to medium term as it strives to fundamentally change how national marine sanctuaries and other MPAs contribute to meeting the challenges ahead, preserve special marine places, and leave the generations that follow a model to emulate for marine conservation.

***FY22 MBNMS Enjoy Spectacular / Get into Your Sanctuary***

**Purpose:** MBNMS partnered with Santa Cruz-based Shared Adventures in their annual Day on the Beach (DotB) event at Cowell Beach. This activity was part of ONMS’ July 2022 Enjoy Spectacular/Get Into Your Sanctuary events to celebrate the 50th anniversary of ONMS and the 30th anniversary of MBNMS.

**Outcome:** DotB was an inclusive event that hosted over 300 people with special needs (both physical and mental disabilities), 400+ family members and friends, and over 250 enthusiastic volunteers who teamed up to share a full day of adaptive sports in the sanctuary. This included kayaking, outrigger canoeing, SCUBA diving, and beach wheelchair rides/floats. MBNMS Advisory Council members and volunteers engaged over 50 DotB participants in fishing from the Santa Cruz wharf. Fishing gear was rented from Capitola Boat and Bait Rentals (new business partner). CDFW was on-hand to educate the public regarding fishing regulations and fish identification. Anchovies, barred surf perch, and a tiny sculpin were the catches of the day. At the Sanctuary Exploration Center, NOAA SWFSC staff hosted a Gyotaku (fish printing) activity with the public and DotB participants. There were 345 visitors to the Sanctuary Exploration Center, the highest attendance since its reopening after two years. Preceding DotB, MBNMS hosted a webinar about responsible wildlife viewing and responsible fishing with guest speakers Jose Montes (Sanctuary Advisory Council) and Gena Bentall (Sea Otter Savvy).



**Timeline:**

- **July 6th:** Responsible wildlife viewing and sustainable fishing in the sanctuary webinar.
- **July 9th:** DotB event at Cowell Beach, Santa Cruz, California.

**Partners:** MBNMS, working collaboratively with Shared Adventures, CDFW, NMFS SWFSC Santa Cruz, Sanctuary Advisory Council members Jose Montes and Adam Helm, and local recreational businesses: Capitola Bait and Tackle, Monterey Bay Kayaks, Blue Water Adventures, and Venture Quest.

***FY22 CINMS Enjoy Spectacular / Get into Your Sanctuary***

**Purpose:** CINMS partnered with Reel Guppy Outdoors to offer a recreational fishing trip for at-risk youth in the sanctuary focused on best practices for responsible angling.. This activity was part of ONMS' July 2022 Enjoy Spectacular/Get Into Your Sanctuary events to celebrate the 50th anniversary of ONMS.

**Outcome:** CINMS partnered with Reel Guppy Outdoors to host a Get Into Your Sanctuary Youth Fishing Trip on the sportfishing vessel *Gentleman*, taking 40 participants from the Port Hueneme area on a recreational fishing charter in the sanctuary. The objective of the trip was to provide local youth and their families with an educational fishing experience in the sanctuary that emphasized messaging on sustainable fishing, environmental stewardship, and a healthy ecosystem. The aim was to engage and create awareness about human impact and our role in protecting marine ecosystems in the sanctuary. Participants learned about the importance of marine debris prevention and how our actions can have long-term impacts on marine life. For more information about the Reel Guppy Outdoors program: <https://www.reelguppyoutdoors.com/>. Trip participants took the ONMS wildlife pledge, received Ocean Guardian pledge cards and were encouraged to download the Park Passport app to earn their sanctuary site and activity badges.

**Timeline:**

- **July 13th:** Reel Guppy Outdoors orientation/webinar on responsible wildlife viewing and sustainable fishing webinar for trip participants.
- **July 28th:** Reel Guppy Outdoors fishing trip to CINMS.

**Partners:** CINMS, working collaboratively with Reel Guppy Outdoors, CDFW, Channel Islands Sportfishing, and local Reel Guppy youth participants from organizations including Homes with Hearts Foster Care, Gabriel's Lighthouse for battered women and children, United Parents, Police Activities League, and Pacifica High School Fishing Club.

**RESOURCE PROTECTION**

- **Shipping and Whales**

**Purpose:** The International Maritime Organization (IMO), the United Nations agency that governs safety and environmental standards for shipping worldwide, has adopted a U.S.

proposal to increase protections for endangered blue, fin, and humpback whales off the California coast. The proposal expands areas that vessels should avoid to give whales more space, and extends vessel traffic lanes west of, in, and around NOAA’s [Channel Islands National Marine Sanctuary](#).

**Outcome:** The U.S.-recommended adjustments will enhance navigation safety and protect whales from ship strikes in an area containing some of the highest densities of commercial maritime traffic in the world.

A 13-nautical-mile extension of vessel traffic lanes, known as the “traffic separation scheme,” will result in vessels lining up for port entry farther west and away from the continental shelf, in deeper waters where there are lower concentrations of whales. The area to be avoided by vessels is expanding by more than 2,000 square nautical miles, and will cover, in total, approximately 4,476 square nautical miles of important whale feeding habitat off Point Conception and Point Arguello in Santa Barbara County, California (Figure 3).

**Timeline:** The proposal takes effect June 2023.

**Partners:** NMFS, U.S. Coast Guard, Dept. of State, U.S. Navy, and the IMO.

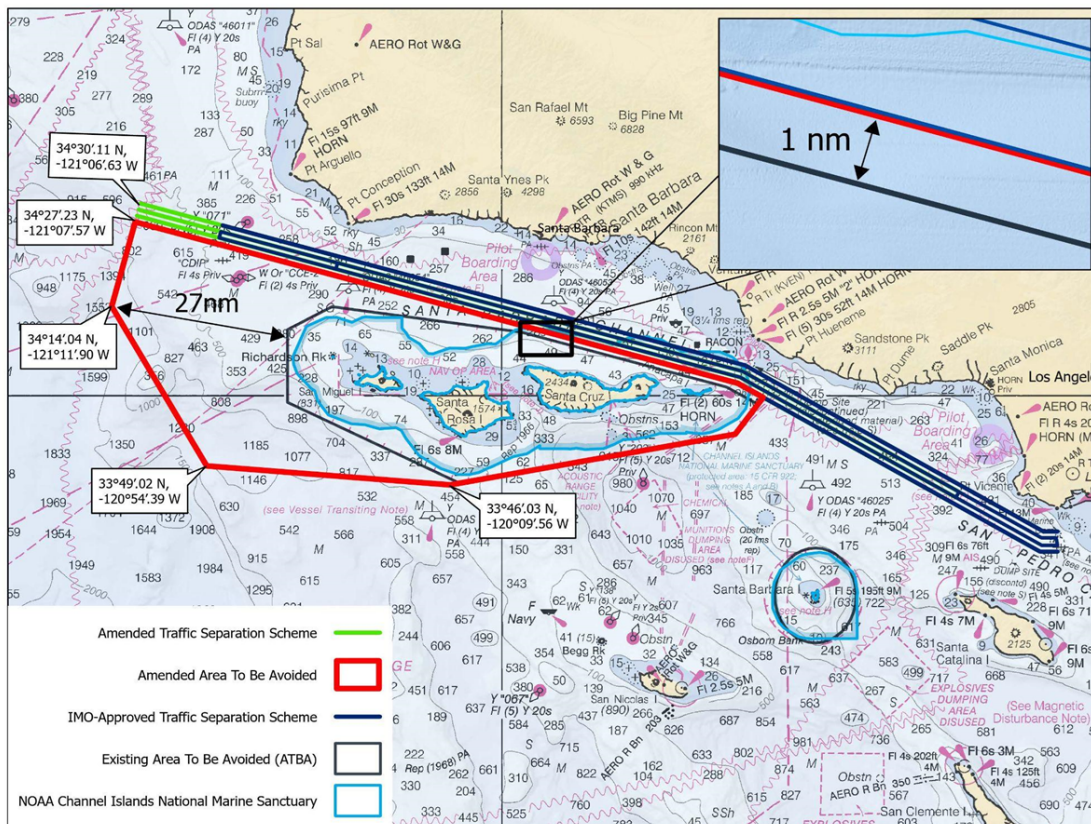


Figure 3. CINMS in relation to the newly amended traffic separation scheme and area to be avoided, overlaid with the existing IMO-approved traffic separation scheme and area to be avoided in the Santa Barbara Channel.