

## 2023 Accomplishments

**Monterey Bay National Marine Sanctuary** is a special place of national significance within NOAA's National Marine Sanctuary System. As a large, complex area with numerous potential impacts and threats, it is important to prioritize resource protection efforts. With input received through the public management plan review process and from staff, the sanctuary developed management priorities for 2022-2027 to meet the challenges ahead that are in concert with NOAA Office of National Marine Sanctuaries (ONMS) [Five Year Strategic Plan](#). Collective work with partners and communities on these priorities in 2023 include:



The sanctuary's iconic kelp forests are dominated by the perennial giant kelp (*Macrocystis pyrifera*).  
Photo: Nathan Coy

### Priority: Iconic Kelp Forests

#### Formation of a Kelp Working Group

Kelp forests are an iconic feature of Monterey Bay National Marine Sanctuary (MBNMS). While northern California has exhibited a catastrophic loss of large brown algae in recent years, satellite data on kelp canopy cover indicates the central California coast has a mosaic of thriving and urchin-dominated areas where giant kelp was historically abundant. The public, government agencies, and other organizations have expressed interest in this topic and the need for sanctuary action. Therefore, a kelp working group of the advisory council was established to inform a MBNMS kelp action plan. MBNMS is developing a community-based plan incorporating stakeholder input to direct efforts that address monitoring, restoration, and recovery of this iconic habitat. The plan will be completed in 2024.



Purple urchins (*Strongylocentrotus purpuratus*) consume kelp and convert kelp-dominated rocky reefs into urchin-dominated rocky reefs. Photo: Steve Lonhart/NOAA

#### Tanker Reef Urchin and Kelp Project

Kelp has recently declined in several places throughout state waters due to a number of factors, including warmer ocean temperatures and an explosion of kelp-eating urchin populations. In certain locations, urchins have grazed kelp forests down to bare rock. In 2020, the California Fish and Game Commission amended sport fishing regulations to allow for unlimited take, using hand-held tools, of purple and red urchins in a designated area at Tanker Reef in Monterey Bay. Since then, a collaborative research effort began with the California Department of Fish and Wildlife (CDFW) and MBNMS to track changes in the ecosystem and better understand the effectiveness of urchin culling by volunteer sport fishing divers as a kelp restoration tool. Research divers collected data, using a centimeter-scale study, to assess whether hand-held tools used by sport fishers damaged the reef or damaged organisms under or adjacent to culled urchins. In February 2024, the Commission decided to end the Tanker Reef amendment in April 2024 to allow for the scientific process to evolve. The Commission will release a final report to inform the coast-wide restoration efforts. Monitoring of kelp and urchin populations by researchers at Tanker Reef will continue through 2024 to determine whether urchin densities remain low and if giant kelp continues to grow in the culled area.



Research divers collect underwater data on urchin culling activities at Tanker Reef in the sanctuary.  
Photo: Chad King/NOAA



Various human activities at the beach contribute to marine debris that can threaten sanctuary wildlife. Photo: Claire Fackler/NOAA



Community scientists involved in beach cleanups play a major role in preventing marine debris entering the sanctuary. Photo: Save Our Shores



Drip tape plastics from coastal agricultural areas can enter the sanctuary through wind and waterways. Photo: Karen Grimmer/NOAA



Field crew collecting stray agricultural field plastics from the fields, a key strategy for marine debris prevention. Photo: Jazmine Mejia-Muñoz/CMSF and –NOAA

## Priority: Reducing Marine Debris

### Marine Debris Five Year Report

Over a five year period from 2017-2021, beach cleanup volunteers collected more than one million pieces of marine debris along the sanctuary's 276-mile shoreline. A new report, *Marine debris on the shoreline of Monterey Bay National Marine Sanctuary: An assessment of behaviors contributing to marine debris, categories and composition, spatial distribution, and predictor variables*, analyzed data collected by more than 37,000 volunteers from five citizen science programs to identify the source and prevalent types of marine debris and their distribution. Various items collected included plastic food containers, balloons, fireworks, tires, straws, and appliances. Plastic fragments, wrappers, and cigarette butts composed 59% of marine debris collected by count. More than 52% of trash items found were linked to smoking, eating, and drinking. The report's findings provide sanctuary management and the public with possible actions needed to reduce marine debris in and along the shoreline. Scientists, policy makers, and resource managers can also use this information to monitor the types of trash found along the sanctuary coast.

### Plasticulture Pollution Prevention Efforts

MBNMS has been working with agricultural stakeholders to explore innovative technologies that can help prevent agricultural plastics from breaking down into microplastics (plastic less than five millimeters in length) and enter the sanctuary through surrounding watersheds. In 2023, several collaborative approaches were implemented with historically excluded farming communities, including the Mulch Removal and Recycling Program. Mulch polyethylene (plastic) films used in strawberry fields to cover crop beds are a high risk plastic pollutant that can enter MBNMS through wind and waterways. With funding from National Sea Grant Infrastructure Investment and Jobs Act Marine Debris Challenge Competition, and in partnership with California Marine Sanctuary Foundation (CMSF), California Sea Grant, engineers, and other agricultural stakeholders, the program led to the development of technology and in-field best practices that will maximize the removal of plastic mulch film from agricultural fields. In collaboration with CMSF, Regen, and Flipping Iron, MBNMS helped establish the Drip Tape and Hoop House Recycling Program, funded by The Nature Conservancy. Through this work, growers are incentivized to recycle plastics by paying a reduced drop-off fee of \$50 per ton rather than \$107 per ton for disposal. From July 2023 to January 2024, over two million pounds were diverted from landfills and sent out for recycling. MBNMS collaborated with partners on Soil Biodegradable Mulch Film Trails to implement alternative technology to the traditionally used polyethylene mulch films. At the end of the harvesting season, biodegradable mulch can be tilled into the soil and will naturally decompose by 90% within two years. This work is supported by an \$8 million grant from the U.S. Department of Agriculture's Specialty Crop Research Initiative.

## Priority: Climate Change Adaptation

### Climate Vulnerability Assessment

ONMS is taking action to understand the vulnerability of resources under their stewardship to climate change. With this information, sanctuary management plans can be adapted to reflect new and expected challenges, prioritize protecting at-risk resources, and target the sources of their vulnerability. MBNMS began conducting a climate vulnerability assessment (CVA) in 2023, a process used to qualitatively describe and evaluate how climate and non-climate stressors impact a species, habitat, or area's vulnerability to climate change in order to improve management approaches for long-term success. A CVA helps prioritize systems for management actions, identifies management strategies to target the mechanism(s) identified to be causing the vulnerability, and efficiently allocates necessary resources. The MBNMS CVA process includes 29 species, eight habitats, four ecosystem services, and two maritime heritage categories as focal resources, with more than 80 subject-matter experts having reviewed and contributed to these assessments. A comprehensive CVA report will be released in 2024.

### Healthy Soils Projects

In partnership with CMSF, MBNMS received five grants from the California Department of Food and Agriculture to support Healthy Soils Projects (HSP). The projects engage with growers and ranchers to increase soil health by utilizing best practices proven to increase carbon in the soil through plants, compost, and soil microbial communities. Removal of carbon dioxide (CO<sub>2</sub>) from the air supports healthy plant growth. The agricultural practices also increase water holding capacity and infiltration, drought resilience, and reduces the need for chemical inputs. In 2023, MBNMS and CMSF finalized a HSP project with an actively grazed ranch that focused on compost addition and native grass seeding. An increase of carbon capture and storage within soils results in less agricultural runoff and overall carbon entering the sanctuary, which would otherwise increase the acidity of the ocean water and impact marine ecosystems.

## Priority: Vessel Incident Response

MBNMS coordinates with a number of response agencies such as U.S. Coast Guard, NOAA Office of Law Enforcement, and CDFW's Office of Spill Prevention and Response on vessel beach groundings and sinkings. If not thoughtfully planned and managed, response and cleanup efforts can exacerbate the initial environmental damage caused by a vessel casualty. The sanctuary had 51 total incidents reported in 2023, with 15 vessel salvages. Federal, state, and local emergency response agencies have committed to improved communications and use of consistent protocols for responses. Early notification and coordination help provide more immediate responses in this region to protect sanctuary habitats from pollution and marine debris due to wrecked, abandoned, and sunken vessels along the coastline.



Climate change impacts are intensifying both globally and locally, threatening America's iconic underwater parks. Photo: Chad King/NOAA



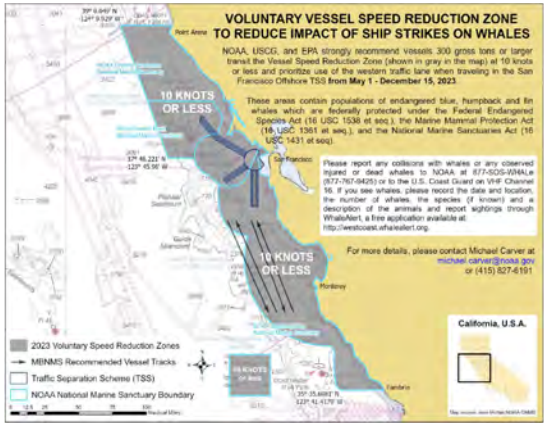
Healthy soil practices that capture and store carbon dioxide help conserve a healthier ocean. Photo: Pam Krone/CMSF and NOAA



Vessel groundings along sanctuary shorelines pose threats to sensitive habitats and wildlife. Photo: Keegan Angerer/NOAA



MBNMS contributes to response efforts from oil spills by providing natural resource information and assessing environmental damage. Photo: Bridget Hoover/NOAA



2023 Voluntary Vessel Speed Reduction Zones – San Francisco and Monterey Bay Region



The endangered blue whale (*Balaenoptera musculus*) emits low-frequency sounds that can travel hundreds of miles in deep water. Photo: NOAA



MBNMS works closely with multiple partners, including Monterey Bay Aquarium Research Institute (MBARI), to monitor underwater sounds. Image courtesy: MBARI



Sound can be utilized to sample fish populations due to their vocalizations and will be used to assess population shifts with climate change. Photo: Michael Alyono

## Priority: Whale Conservation Efforts

### Addressing Large Whale Ship Strikes

Ship strikes are a major source of human-caused mortality to large whale species. In 2012, Channel Islands National Marine Sanctuary began requesting large ships ( $\geq 300$  gross tonnage) to voluntarily slow their speed in the traffic separation scheme of the Santa Barbara Channel to reduce the lethality of a ship strike. Since then, the vessel speed reduction (VSR) program has expanded to include Greater Farallones and Cordell Bank National Marine Sanctuaries during summer and fall when large whales assemble in sanctuary waters to feed. The purpose of the VSR program also includes reducing ocean noise and improving air quality through partnerships with U.S. Coast Guard, NOAA Fisheries, Environmental Protection Agency, and local air resource districts. With recommendations from the Sanctuary Advisory Council in February 2023, MBNMS joined the VSR program on the scale of the entire sanctuary. Between May 1 and December 15, all ocean going vessels ( $\geq 300$  gross tonnage) traveling through the VSR zones were requested to voluntarily reduce speeds to 10 knots or less. Early results from the 2023 season include:

- In the San Francisco/Monterey Bay VSR zone, ocean going vessels transited 270,368 total nautical miles with an overall 67% cooperation rate.
  - In the southern California VSR zone, ocean going vessels transited 761,419 total nautical miles with an overall 64% cooperation rate.
- In 2022, there was a 61% cooperation in the San Francisco region and a 60% cooperation rate in Southern California.

### Underwater Noise Monitoring

Sanctuary Soundscape Monitoring Project (SanctSound), initially co-led by NOAA’s Office of National Marine Sanctuaries and the U.S. Navy, works with numerous scientific institutions to better understand underwater sound within the National Marine Sanctuary System. Currently, MBNMS partners with the NOAA Nancy Foster Scholar Program, Monterey Bay Aquarium Research Institute, Naval Postgraduate School, Stanford University’s Hopkins Marine Station, and Southall Environmental Associates to monitor ocean sounds using five underwater hydrophones. Standardized measurements assess sounds produced by marine animals, physical processes (e.g., wind and waves), and human activities. A directional hydrophone was successfully used to track fin and blue whales and match their movements to particular shifting oceanic features. Tracking the presence and movement of whales will help with future adaptive management strategies to minimize whale colocations with shipping traffic and crab fishing gear. Sound can also be utilized to sample fish populations due to their vocalizations and will be used to assess population shifts with climate change. A new web portal hosted by NOAA’s Integrated Ocean Observing System (<https://sanctsound.ioos.us>) provides for increased public understanding of the SanctSound project through the exploration of underwater sound in national marine sanctuaries.

## Priority: Expanding Community Connections

### Recreational Fishing

Each summer, ONMS hosts “Get into Your Sanctuary” celebrations to raise awareness about the value of national marine sanctuaries as iconic destinations for responsible recreation and stewardship through a series of special events. In July, MBNMS hosted zero waste “Fish Fest” events at the Coastal Discovery Center in San Simeon and the Sanctuary Exploration Center in Santa Cruz. The events featured kid-friendly art activities and guided recreational fishing opportunities along nearby piers. Fish Fest brought together partners NOAA Fisheries, California State Parks, National Marine Sanctuary Foundation, CDFW, Cambria Fishing Club, Bay Area Sportfishers Club, The Doormat Derby, Santa Cruz Boat Rentals, U.C. Santa Cruz’s Collaborative Fisheries Project, and the City of Santa Cruz. Hundreds of participants learned about sustainable fishing practices, including fishing line recycling, and responsible wildlife viewing.

### Indigenous Engagement

At least 11 Tribes have homelands situated adjacent to the sanctuary. MBNMS staff hosted several introductory engagements with Indigenous community members and participants of the Center for American Progress/Indigenous Ocean Solidarity Alliance. In preparation for the 2024 Cross Pacific Indigenous Exchange in the Monterey Bay area, staff began connecting with local Tribal leaders. These meetings provide a space to listen and share with each other, with the goal of creating and building new relationships while increasing understanding of Tribal interests in sanctuary waters.

### Serving Diverse Youth

MBNMS strives to serve diverse communities and help overcome access barriers for students from lower socioeconomic backgrounds to experience the sanctuary. In partnership with the National Marine Sanctuary Foundation, staff implemented bilingual and free education programs supported by a four-year grant from California State Parks Outdoor Equity Program to help advance California’s Outdoors for All Initiative. In 2023, the project served 300 students from Watsonville’s Pajaro Valley Unified School District with classroom programs and field trips to the Sanctuary Exploration Center in Santa Cruz. In addition, the grant supported five college internships for multicultural students to help lead education programs throughout the school year. In May, staff hosted the family-focused “Dia de la Comunidad” (Community Day) event at the Sanctuary Exploration Center. Students and their families had first-time experiences in kayaking, joined a beach scavenger hunt, and visited the Sanctuary Exploration Center to build connections, confidence, and stewardship for the marine environment. With education programs such as Dia de la Comunidad, staff are able to build strong partnerships with teachers, schools, and families, while supporting multi-generational learning for diverse communities that surround the sanctuary.



Cambria Fishing Club guides offer free recreational fishing from San Simeon Pier during the Fish Fest event. Photo: Amity Wood/NOAA



Annual Get into Your Sanctuary events raise awareness about responsible recreation and wildlife viewing. Photo: Lisa Uttal/NOAA



Dia de la Comunidad events at the Exploration Center bring in participants from local diverse communities. Photo: Amity Wood/NOAA



Students and their families at Dia de la Comunidad experience kayaking in the sanctuary for the first time. Photo: Amity Wood/NOAA



Outdoor coastal signs educate thousands of visitors each year, brings awareness of the sanctuary, and helps support resource protection. Photo: Amity Wood/NOAA



Council member volunteers act as vital liaisons between their communities and sanctuary management. Photo: NOAA



Volunteer citizen scientists are critical to the collection of long-term water quality monitoring data. Photo: Bridget Hoover/NOAA



Endangered black abalone (*Haliotis cracherodii*) are inhabitants of sanctuary intertidal areas. Photo: Steve Lonhart/NOAA

## New Coastal Signage

In collaboration with 13 resource protection partners, including California State Parks, CDFW, several harbor districts, and the cities of Pacific Grove, Santa Cruz, and Monterey, MBNMS installed 40 new coastal signs along key coastal access areas from Half Moon Bay to Cambria. The new wayside signs include essential interpretive messaging focused on resource protection issues and incorporate NOAA wildlife viewing guidelines, information for reporting wildlife disturbance, and state marine protected area information. The three-year project fulfills an important component of the MBNMS management plan to help educate the public about protection and the responsible enjoyment of natural resources.

## Sanctuary Advisory Council

The advisory council adopted an ambitious work plan to learn more about and support several of the sanctuary's key priorities. The council made recommendations on MBNMS participation in West Coast sanctuaries VSR program, formed a working group to provide recommendations for the MBNMS Iconic Kelp plan, and began to review the MBNMS draft CVA components. The MBNMS Research Advisory Panel (a working group) reviewed a contracted risk assessment related to the protection of whale species. Council members act as important liaisons between their constituents and MBNMS and serve in an advice-giving role for sanctuary management strategies. Community participation through the advisory council is key to long-term success in sanctuary resource protection.

## Water Quality Monitoring

MBNMS supports three water quality monitoring citizen science programs called First Flush, Snapshot Day, and Urban Watch. In 2023, 119 volunteers donated approximately 650 hours of their time. These programs are held in dry and wet weather conditions to monitor for common pollutants that could enter the sanctuary. By engaging with volunteers to get involved in collecting water samples and conducting field tests, the programs serve to inspire community members to take action, understand water quality issues, and foster stewardship in their community. Long-term data collection helps resource managers understand trends in water quality over time and helps prioritize efforts to address areas of water quality concern.

## Finding Sanctuary

Throughout 2023, staff published a monthly article series entitled *Finding Sanctuary* in two local newspapers, the Santa Cruz Sentinel and the Monterey Herald. By broadening the sanctuary's visibility through local print media, staff are able to better inform the public about MBNMS priorities and activities, sharing stories and accomplishments in research, education, and resource protection. Several topics included plastic threats to the sanctuary, Protecting Blue Whales and Blue Skies Program, endangered black abalone restoration, iconic kelp forests, water quality monitoring, and the importance of community input to sanctuary management.

## Web-enabled Condition Reporting

Easy access to information for tracking ecosystem conditions, human connections, and management impacts is critical to timely, effective, and community-based resource management. The new Sanctuary Watch platform (<https://sanctuarywatch.ioos.us>) hosts interactive tools to better inform sanctuary management, including the web-enabled Condition Reporting (WebCR) tool. WebCR pairs graphic artwork with information to make it easy for the public to explore and track how ecosystem conditions are changing in a sanctuary. In 2023, staff collaborated with regional data partners to develop visualizations of how key components of Monterey Bay National Marine Sanctuary ecosystem change over time. In 2024, MBNMS will release the Monterey Bay sanctuary WebCR which will centralize access to this information and other condition tracking data to help better understand and manage sanctuaries.

## Volunteer Field Interpreters

The sanctuary's Bay Net and Team OCEAN volunteer programs were active along coastal trailside interpretive stations and on-the-water in kayaks, engaging more than 29,000 visitors and community members in 2023. Bay Net volunteers educate shore visitors about the sanctuary's coastal wildlife and state marine protected areas to better foster public stewardship of sensitive coastal habitats. Team OCEAN kayak volunteers educate other on-the-water paddlers and promote responsible wildlife viewing by maintaining safe distances. Volunteers collect data of observed wildlife disturbances and report this information to enforcement agencies. This data also serves to inform resource managers in possible mitigation strategies to reduce or prevent future disturbances, including necessary outreach and enforcement efforts. A total of 157 wildlife disturbance incidents were reported to enforcement agencies by volunteers this year.

## Additional High Level Accomplishments

### Deep-sea Coral Protections

Corals are long-lived, slow-growing, and vulnerable to both direct and indirect disturbances, such as vessel groundings and bottom-contact fishing activities. MBNMS worked closely with Greater Farallones National Marine Sanctuary (GFNMS), NOAA Fisheries, and the Pacific Fishery Management Council (PFMC) on a process to establish protections in areas that are suitable for deep-sea coral research and restoration. The areas were identified through workshops with deep-sea coral scientists and further discussed during two public webinars. In September 2023, MBNMS and GFNMS provided PFMC a scoping document for consideration to address the current and future needs to conduct deep-sea coral research and restoration. PFMC agreed to move three areas in MBNMS (Año Nuevo, Ascension Canyon, and Sur Ridge) forward for consideration of potential management measures that would provide protections to deep-sea coral research and restoration from bottom-contact fishing gear.



Sanctuary Watch allows the public to explore and track how ecosystem conditions are changing in the sanctuary over time. Photo: Sam Bailey



Dedicated Bay Net volunteers educate coastal visitors about local wildlife and help protect sensitive species. Photo: Amity Wood/NOAA



Team OCEAN volunteers engage with on-the-water paddlers about responsible wildlife viewing from safe distances. Photo: Amity Wood/NOAA



Deep-sea corals, found beyond the reach of sunlight, face threats that can also impact the animals living among them. Photo: Ocean Exploration Trust/NOAA



The Octopus Garden, located near Davidson Seamount, is a significant reproduction site and is under protection within MBNMS. Photo: Ocean Exploration Trust/NOAA



A newly discovered sponge, *Megaciella sanctuarium*, is named in honor of MBNMS. Photo: Tom Turner/U.C. Santa Barbara



The sanctuary contains feeding grounds for numerous species of migrating mammals, fish, and birds. Photo: Douglas Croft



Local collaborative research efforts are underway to conserve and restore habitats in the Elkhorn Slough watershed. Photo: Lisa Carpenter

## Octopus Garden Study

The Octopus Garden, discovered near Davidson Seamount in 2018 during a research expedition aboard the ship E/V *Nautilus*, is one of a handful of known deep-sea octopus nurseries in the world. At a depth of over 11,000 feet, warmer seawater from deep-sea thermal springs at the nursery accelerates the development of octopus eggs, increasing hatchlings odds of survival. A scientific team, led by Monterey Bay Aquarium Research Institute, MBNMS, Moss Landing Marine Laboratories, University of Alaska Fairbanks, University of New Hampshire, and the Field Museum, studied the Octopus Garden to determine why such large numbers of these octopus (*Muusoctopus robustus*) are concentrated in this location. A recent study, published in *Science Advances*, concludes that octopus gather at this location solely to mate and nest.

## New Sponge Species Named After MBNMS

During a scuba dive in 2021, sanctuary research ecologist Dr. Steve Lonhart and Dr. Tom Turner, a professor at U.C. Santa Barbara, collected 29 different sponge samples from multiple sites in Carmel Bay. In 2023, a new paper was published in the journal *Zootaxa* that formally describes 12 new species, including a new orange sponge named after the sanctuary (*Megaciella sanctuarium*). This is the first species named after a national marine sanctuary, and recent discoveries highlight the ongoing need to further explore and characterize the diversity of life within MBNMS.

## CalCOFI Research Expedition

In April, staff joined the California Cooperative Oceanic Fisheries Investigations (CalCOFI) research cruise aboard the NOAA FSV *Bell M. Shimada* in MBNMS. In partnership with NOAA sanctuaries, CalCOFI added 18 new sampling stations within Monterey Bay, Channel Islands, and the proposed Chumash Heritage national marine sanctuaries. CalCOFI now has 116 sampling stations between San Diego and Point Reyes (up to 350 miles offshore) to conduct surveys on the distribution and abundances of ocean species, collect environmental DNA, and characterize the marine environment. With the addition of the new stations, this collaborative effort will allow scientists to further study the California coastal ecosystem and monitor for the indicators of El Niño and climate change.

## Erosion Monitoring in Elkhorn Slough

Elkhorn Slough National Estuarine Research Reserve and MBNMS staff completed 22 years of Elkhorn Slough bank erosion monitoring conducted on a biannual basis. The long-term monitoring data is used as a baseline for restoration projects, will serve to assess bank loss, detect crises and stimulate management intervention, identify local vs. regional patterns, and correlate trends to weather patterns or human actions. Bank erosion and vegetation retreat continue to occur throughout the slough at a rate of nearly 30 centimeters/year. Future bank erosion monitoring activities may be replaced by remote sensing.



## Pacific Harbor Seal Report

A new sanctuary report, *Effects of Land-Based Anthropogenic Noise on Reproductive Success in Harbor Seals (*Phoca vitulina*) in Monterey Bay National Marine Sanctuary*, analyzed the impact of land-based noise disturbance on harbor seals in Pacific Grove using Bay Net volunteer survey data from the 2021 and 2022 harbor seal pupping seasons. The study examined the magnitude and frequency of noise sources that the seals are exposed to, including human and animal disturbance, vehicles, and land-based construction. During the 2022 seal pupping season (February to June), road construction disturbance contributed to altered seal behaviors, including active and passive avoidance of beaches to rest during the daylight hours and give birth. The results highlight the need for continued research and management efforts to mitigate the impacts and help ensure the success of future harbor seal populations. MBNMS continues to coordinate and collaborate with the City of Pacific Grove on protections for the seals including installing temporary fencing and signage during pupping season and consulting on proposed construction projects in close proximity to the breeding colony.

## Sanctuary Excellence Awards and Recognitions

- **Tim Thomas** and **Linda Yamane** received 36th Ed Ricketts Memorial Award for significant contributions to Monterey area cultural and historical ecology.
- **Margaret (PJ) Webb** was recognized for 20 years of service (2002-2020) as the at-large advisory council seat from the southern MBNMS region.
- MBNMS education team members **Ariel Hunter**, **Rebecca Gustafson**, **Sophia Barwegen**, and **Michele Roest** received Lynker's Diversity and Inclusion Award for delivering hands-on marine science educational experiences for underrepresented youth from inland communities.
- **Jazmine Mejia-Muñoz**, MBNMS water quality program manager, received a National Ocean Service Team Member of the Year for dedicated service and leadership contributing to outstanding achievements in water quality.
- **Dawn Hayes**, MBNMS deputy superintendent, received a National Ocean Service Diversity, Equity, Inclusion, and Accessibility Program Award for exemplary contributions as a member of the NOAA Office of National Marine Sanctuaries Working Towards Racial Equity team.
- **Michele Roest**, MBNMS southern region community liaison, received John Laird Lifetime Achievement Award for Environmental Stewardship from Central Coast State Parks Association.



Local colonies of Pacific harbor seals (*Phoca vitulina*) rest, give birth, and nurse their pups on sanctuary beaches. Photo: Emily Pomeroy



Lingcod (*Ophiodon elongatus*) are commonly seen in sanctuary nearshore habitats, as males actively guard their nests from predators. Photo: Chad King/NOAA



Recipients of the 36th Ed Ricketts Memorial Award, Tim Thomas and Linda Yamane (center, left to right). Photo: Amity Wood/NOAA



California sea lions migrate from the Channel Islands to Monterey Bay to feed and rest. Photo: Robert Schwemmer/NOAA