



# Monterey Bay National Marine Sanctuary

## Sanctuary Office Report



Volume 16, Number 3

A REPORT FOR THE SANCTUARY ADVISORY COUNCIL MEMBERS

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### ABOUT THE SANCTUARY

Designated in 1992, Monterey Bay National Marine Sanctuary (MBNMS or Sanctuary) is a federally protected marine area offshore of California's central coast. Stretching from Marin to Cambria, MBNMS encompasses a shoreline of 276 miles and 6,094 square statute miles of ocean.

Supporting one of the world's most diverse marine ecosystems, it is home to numerous mammals, seabirds, fishes, invertebrates and plants in a remarkably productive coastal environment. MBNMS was established for the purpose of resource protection, research, education and public use of this national treasure.

### NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) AND OFFICE OF NATIONAL MARINE SANCTUARIES (ONMS) NEWS

#### Tagging reveals secrets of southern California's largest sharks

The basking shark, the largest shark in the waters off Southern California, is also the most elusive. NOAA Fisheries researchers are now seeking to unravel the mysteries of basking sharks by tagging them with satellite transmitters that will reveal their movements and behavior as they roam the waters around Channel Islands National Marine Sanctuary and beyond. Often mistaken for great white sharks because of their similar dorsal fin, basking sharks are even bigger—but far less fearsome. The near school bus sized sharks swim through the current, filtering the water for dense clumps of copepods. These tiny crustaceans, about the size of a grain of rice, are their main prey.

Despite its impressive size, little is known about the basking shark's habitat, behavior, and migratory patterns. NOAA researchers expect the satellite tags to provide important new details about the sharks that spend at least part of their lives in Channel Islands National Marine Sanctuary.

For more information: <https://www.fisheries.noaa.gov/feature-story/tagging-reveals-secrets-southern-californias-largest-sharks>

#### Scientists monitor coral reef ecosystems throughout the Hawaiian Archipelago

Our scientists and managers depend on research surveys to monitor the status and trends of the coral reef ecosystems across the Hawaiian Archipelago over time. Coral reefs around the globe, including Hawai'i, are threatened by climate change, disease, land-based sources of pollution, and unsustainable fishing practices. During expeditions this spring and summer, teams of scientific divers from NOAA's Pacific Reef Assessment and Monitoring Program will assess reef fish and corals in the context of changing environmental conditions. They will collect images of the ocean floor to create 3D models of the reefs. The abundance and distribution of reef fish and coral reef organisms are used to characterize the conditions and integrity of our coral reef ecosystems. Over time, we can see how they have changed—an important part of managing and conserving reef-associated life in the region. For more information: <https://www.fisheries.noaa.gov/feature-story/scientists-monitor-coral-reef-ecosystems-throughout-hawaiian-archipelago>

#### Citizen science volunteers devote valuable time and data to national marine sanctuaries

A volunteer stands on the front deck of a whale watching vessel and captures the perfect photograph of a blue whale tail fluke to send to the Cascadia Research Collective. Another volunteer standing next to her logs the whale species and their behavior into the Spotter Pro app, which also locks in the GPS coordinates of the marine mammal sighting. In between sightings during this four-hour whale watching excursion, these volunteers walk around the vessel sharing knowledge of the natural history of the Santa Barbara Channel and Channel Islands National Marine Sanctuary and National Park and answer questions from residents and visitors. For more information: <https://sanctuaries.noaa.gov/news/apr19/citizen-science-volunteers-in-national-marine-sanctuaries.html>

## NATIONAL MARINE SANCTUARY NEWS

### **Make-a-Wish Foundation and FKNMS grant wish to become a marine biologist**

On March 27, 2019, seven-year-old Tristan Cureton, who struggles with the effects of cystic fibrosis, traveled to Key West from Carlsbad, New Mexico to live out his dream to be a marine biologist. He got the opportunity to tour the Florida Keys Eco-Discovery Center during a VIP, behind-the-scenes experience that included feeding fish at the Mote Marine Laboratory Aquarium exhibit and leading a plankton tow to examine undersea life, all while dressed as his favorite sea creature: the squid! After viewing his plankton sample under a microscope, Tristan was presented with a certificate establishing him as an honorary marine biologist for Florida Keys National Marine Sanctuary. Granting wishes of children with critical illnesses is the mission of the Make-a-Wish Foundation. Encouraging children to pursue careers in marine science is important for creating positive environmental behavior change and instilling a marine conservation ethic for future generations.

### **Meteorite Hunt Continues in Olympic Coast National Marine Sanctuary**

In March 2018, a massive meteorite broke up and fell into the waters of Washington state's Olympic Coast National Marine Sanctuary (OCNMS), and the cosmic event was captured in data from NOAA's NEXRAD weather radar system. Dr. Marc Fries, NASA's Cosmic Dust Curator, has been using NEXRAD data since its inception to locate and model meteorite falls in the U.S. and calculate the resulting debris field using his sophisticated 'dark flight model'. Based on the modest success of last summer's meteorite hunt with Ocean Exploration Trust on the E/V *Nautilus* during which a 2mm sample of meteorite fusion crust was recovered, Dr. Fries is again working with colleagues to hunt meteorites in OCNMS, this time on the Schmidt Ocean Institute's R/V *Falkor*. During the cruise, which is planned over four days in early June 2019, collaborators will investigate another portion of the debris field where numerous smaller fragments are likely concentrated and attempt to recover additional meteor fragments from the soft, silty seafloor using novel tools created expressly for this purpose by the R/V *Falkor's* engineers. OCNMS Research Coordinator, Jenny Waddell, will join Dr. Fries and colleagues from NASA, Rice University and Harvard University on the cruise to promote OCNMS and contribute to the mission. Engaging new audiences with information about National Marine Sanctuaries expands recognition for the sanctuary system and broadens support for National Marine Sanctuaries, two objectives that fall under Goal 3 of the ONMS Strategic Plan, 2017-2022.

### **New coral described in Cordell Bank National Marine Sanctuary**

A new coral species has been described from Cordell Bank National Marine Sanctuary (CBNMS) and named *Chromoplexaura cordellbankensis*. The species was described by Dr. Gary Williams of California Academy of Science and his colleague Dr. Odalisca Breedy in the *Proceedings of the California Academy of Sciences* on May 15, 2019. The coral was observed by CBNMS scientists Danielle Lipski and Kaitlin Graiff during a CBNMS research expedition using remotely operated vehicle on Cordell Bank in 2017. In 2018, CBNMS scientists and collaborators returned to the location to make a collection of the coral. Subsequent reviews of imagery indicates the coral has been on the bank since at least 2004 but had never been collected or noted. News stories were published in [Bay Nature](#) and the [Marine Independent Journal](#). Exploration and characterization of species inventories and ecology of habitats is needed for effective management of sanctuaries.



## MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



### MANAGEMENT

#### **Monterey Bay National Marine Sanctuary Holds Advisory Council Meeting**

On April 19<sup>th</sup>, MBNMS' Advisory Council met and received a series of presentations and updates on the regional soundscape monitoring program, acoustic monitoring within MBNMS, harbor sediment projects, the Monterey Bay Fisheries Trust and the Monterey Bay National Marine Sanctuary Foundation. The next meeting will be held on June 21 in Cambria. Sanctuary Advisory Councils are community-based advisory bodies consisting of representatives from various user groups, government agencies and the public at large. The role of the council is to provide advice to the sanctuary superintendent on the designation and/or operation of a national marine sanctuary. For more information: <https://montereybay.noaa.gov/sac/2019/190419/agenda.html>

### RESEARCH AND MONITORING

#### **MBNMS Staff Dives in the *Alvin* Submersible at Davidson Seamount for BBC's Live Broadcast of "Blue Planet Live"**

MBNMS Research Specialist Chad King dove twice in the *Alvin* submersible; once at the summit of Davidson Seamount, and once at the "octopus gardens" that were discovered last October during a research expedition on the E/V *Nautilus*. Although both dives were short and were primarily pilot training dives, important observations were made and questions answered. Shimmering water was observed last October, indicating that warm water was seeping out of the seafloor, but it was only confirmed on these dives. The maximum temperature recorded was 9.9 degrees celsius, while ambient is only 1.6. It was also questionable if these Davidson octopus eggs were viable, as a similar area in Costa Rica had oxygen levels so low that it is assumed it cannot support growth of embryos. During an Alvin dive, not only were fully formed octopuses seen through translucent egg cases, but the Alvin occupants witnessed two octopuses hatching. Video of both newly hatched octopuses were recorded. Additional aggregations of octopuses were observed, and a conservative known population is estimated to be 1,500 or more. Both octopus eggs and whelks that were associated with the seeps were collected and will have their DNA sequenced. It is unclear whether these whelks and other fauna observed within the seeps are cosmopolitan or endemic. However, more surveys of the area will be conducted in October 2019 when MBNMS will revisit the area with the EV *Nautilus*. This population of brooding octopuses is only the second such discovered in the world, but it is much larger than the one near Costa Rica. Important questions were answered in regard to confirming warm water seeping from the seafloor and that this population does produce viable offspring. Information about this area and Monterey Bay National Marine Sanctuary were broadcast to a live audience in the UK, Canada and Russia through BBC's "Blue Planet Live" program. This may open additional doors to conducting research on this population, the geology, unique hydrology and additional faunal community that appears to occur only within these seeps.

#### **Fish behavior study published in prestigious scientific journal**

Dr. Olivia Rhoades, a recent doctoral student at UC Davis, has published another paper from her dissertation with Dr. Steve Lonhart and her advisor, Dr. Jay Stachowicz, as co-authors. Her paper, entitled "Human-induced reductions in fish predator boldness decrease their predation rates in kelp forests", was published this week in the Proceedings of the Royal Society B. It is a testament to Olivia's hard work and diligence in having this study published in a top flight journal, which recognizes her innovative and novel approaches in assessing fish behavioral responses to the age and level of protections from state MPAs within MBNMS. The paper can be accessed at: <https://royalsocietypublishing.org/doi/abs/10.1098/rspb.2018.2745>. Research within sanctuaries can improve our understanding of the resources we manage, and the effectiveness of human actions to conserve these

resources. Publishing in high-impact journals broadens dissemination of key findings and elevates the perception of the quality of the science we and our partners do within sanctuaries.

### **NOAA Center for Coastal and Marine Ecosystems (CCME) completes two internships at MBNMS**

MBNMS collaborates with the NOAA Office of Education and Cal. State University Monterey Bay in guiding graduate students studies to address resource management needs. Lauren Parker, studying fish associations with deep reef habitats, and Miya Pavlock-McAuliffe, studying beach erosion associated with climate change, recently completed internships at MBNMS. In addition to applying their research to the management plan update process, they participated in offshore research cruises, ongoing MBNMS research efforts, staff retreats, and learned what it's like to work in a NOAA office. This program is designed to prepare traditionally underrepresented groups for a job in NOAA or similar organization. These excellent students added skill and enthusiasm to the existing staff while receiving experiential learning and mentorship.

### **Corals studied during a research cruise to Sur Ridge**

MBNMS participated in a research cruise to Sur Ridge in collaboration with the Monterey Bay Aquarium Research Institution and the University of California at Santa Cruz (April 19 - 24). Coral transplants were evaluated, food availability and feeding mechanisms were assessed, ocean current measurements were made, coral growth was assessed, and site assessments were made for placement of a video camera monitoring system. These efforts are part of developing the MBARI coral observatory program. NOAA's West Coast Deep-Sea Coral Initiative is addressing characterization and applied research in the five west coast sanctuaries. Providing detailed information on coral growth, age, predation at the regularly visited Sur Ridge coral observatory provides additional context for the broader initiative. Moreover, coral transplant techniques developed at Sur Ridge may be useful in NOAA restoration efforts following of the Deep Horizon oil spill in the Gulf of Mexico.

### **Supporting Expansion of Sanctuary, MBON, and IEA Program Collaborations in Florida Keys**

The *Florida Keys National Marine Sanctuary, Marine Biodiversity Observation Network (MBON) & Integrated Ecosystem Assessment (IEA) Product Development Workshop* was held on April 24<sup>th</sup> and 25<sup>th</sup> in Miami, FL. Jennifer Brown (MBNMS/CINMS) provided background on products and tools for indicator development, condition report updates, and dynamic, web-based ecosystem conceptual models that have been developed in a collaboration between MBNMS, CINMS, MBON, and the California Current regional IEA program. The outcomes of this meeting included a priority list of indicator targets for development of data products to contribute to the scientific and decision-making needs of FKNMS.

### **Supporting Application of Sanctuary-IEA Program Collaborative Processes and Tools at Olympic Coast**

The *Olympic Coast National Marine Sanctuary Ecological Indicator Selection Workshop* was held on May 2nd in Bremerton, WA. Jennifer Brown (MBNMS/CINMS) supported workshop preparations and implementation by providing background information and advice on the application of processes and tools for indicator development and condition report updates previously developed for MBNMS and CINMS in collaboration with the California Current regional Integrated Ecosystem Assessment program. Workshop participants provided suggestions on draft portfolios of environmental and biological indicators for six habitats in OCNMS as well as sources of additional monitoring data and information for potential indicators. Results from this workshop will guide preparations for the upcoming 3-day expert workshop to assess the status and recent trend in condition of resources in Olympic Coast since 2008.

## **RESOURCE PROTECTION**

### **MBNMS Completes Environmental Assessment for Pure Water Monterey (PWM) Groundwater Replenishment Project**

MBNMS finalized an Environmental Assessment and FONSI for the Authorization of the NPDES permit for the Monterey One Water (MIW) Regional Wastewater Treatment Plant and Advanced Water Purification Facility (AWPF). This project will divert agricultural wash water, urban stormwater runoff, and two surface waters to the MIW treatment plant then combine them with existing wastewater inflow to the Treatment Plant to receive primary and secondary treatment before additional treatment at the PWM Project AWPF. 3,500 acre feet per year of highly purified water will be injected into the Seaside Groundwater Basin for later reuse and the reverse osmosis concentrate will be co-mingled with remaining treated wastewater and discharged into MBNMS. The purpose of the PWM Project is to create a reliable supply of water by replenishing the Seaside Groundwater Basin, providing additional recycled water for agricultural irrigation, diverting polluted surface waters for treatment and helping to prevent seawater intrusion in the Salinas Valley Groundwater Basin. While doing so, MBNMS must ensure that sanctuary resources will not be impacted and that was verified through the completion of the Environmental Assessment. <https://montereybay.noaa.gov/resourcepro/resmanissues/desal-projects.html>

### **MBNMS Coordinated Salvage of Two Vessels That Sank Separately On The Same Day**

In mid-afternoon on Friday, March 22, MBNMS received notice within the same hour of two vessels sinking in northern Monterey Bay. The sinkings were unrelated to one another. The 30-ft S/V *STAR* was discovered awash at the waterline 7 nm SW of Point Santa Cruz. The 53-ft M/V *ALBATROSS* sank at anchor 1.2 nm east of Soquel Point. There were no injuries or fatalities. Neither vessel was insured, and no owners took responsibility for salvage. MBNMS collaborated with Coast Guard Sector San Francisco to salvage and remove fuel from the *ALBATROSS*. MBNMS was the sole sponsor for salvage of the *STAR*. Both vessels were towed to Seacliff State Beach, where they were demolished over several days and sent to a waste facility. Over 100 gallons of diesel were pumped off the *ALBATROSS*. Salvage required a full week of continual effort. NOAA OLE has initiated investigations into both sinkings, with assistance from MBNMS. Vessel casualty cases pose immediate threats to sanctuary resources, so prompt emergency response is critical. But it is only possible through successfully coordinated efforts with NOAA OLE, NOAA procurement, ONMS Region, ONMS HQ, Coast Guard, state agencies, harbor masters, and other local partners. The dual sinkings occurred on a Friday afternoon, and two emergency salvage contracts were issued over the weekend in a very expeditious manner due to excellent NOAA internal teamwork. NOAA cut its share of salvage costs considerably by collaborating closely with Coast Guard salvage contracting efforts. OLE initiated an investigation quickly and captured critical ephemeral evidence in short order. State Parks allowed interruption of a major public beach for the salvage operation and provided oversight and security. MBNMS' deeply rooted partnerships in the community were a key to rapid response and minimal collateral impacts to sanctuary resources and qualities. Such institutional relationships are forged over years of diligent effort and yield significant tangible benefits for MBNMS and the national program.

### **Desalination Report released by White House and incorporates MBNMS best practices**

The White House released the report "Coordinated Strategic Plan to Advance Desalination for Enhanced Water Security" written by the Desalination Science and Technology (DST) Task Force, and Karen Grimmer served as the NOAA representative on the DST. A number of points on the use of best practices (based on MBNMS desal guidelines) are included in the final report. The report suggests priorities to advance technologies to reduce ecological impacts from desal plants and states the need to quantify impacts on ecosystem health from desal facilities to better understand a broad range of effects, which vary widely and are affected by a number of location-specific parameters, such as the local natural mortality rate of fish, invertebrate eggs, larvae, animal reproductive rates, and other biological parameters and ecosystem functions. These are two of a number of examples that were brought to the task force to consider, and incorporated into the final version.

Link to report: <https://www.whitehouse.gov/wp-content/uploads/2019/03/Coordinated-Strategic-Plan-to-Advance-Desalination-for-Enhanced-Water-Security-2019.pdf>

Link to announcement: <https://www.whitehouse.gov/articles/ensuring-our-nations-water-security/>

Desalination is increasingly being pursued as a drought-resistant water supply on California's central coast. Without careful planning and mitigation measures, desalination plants have the potential to negatively impact the sanctuary's sensitive marine environment. The collaborative non-regulatory guidelines were designed to protect the sanctuary's marine resources while also addressing the practical challenges surrounding water supply in the region, and they now serve as a model for the nation in the WH report.

### **Whale Entanglement Presentation for Cordell Bank National Marine Sanctuary (CBNMS) Advisory Council**

April 25th, MBNMS' Resource Protection Coordinator, who also represents California Sanctuaries as an advisor on the Dungeness Crab Fishing Gear Working Group, together with CDFW staff and a commercial crab fishermen, presented to the CBNMS Advisory Council an update on whale entanglements including the recently signed settlement between the State, the Center for Biological Diversity and PCFFA. The update discussed the settlement terms for this year (early closure of the crab fishery) as well as potential mitigations for future years, whale entanglement numbers over recent years, the Risk Assessment & Mitigation Program for humpbacks, blues and leatherbacks, and entanglement response and training. The presenters covered sources of data on whale densities and ocean/forage conditions and some preliminary results for ropeless gear testing, conducted by fishermen. The presentation seemed well received by the Advisory Council and they were quite interested in the gear innovation item. Fishermen Dick Ogg had a mini gear model to demonstrate and discussed a new line cutting tool, as well as the effects of the closure to the fishermen. A member also asked why gray whales are not currently included in the RAMP, due to the twenty plus gray whales stranding in 2019.

Whale entanglements are identified by the West Coast Regional Resource Protection Coordinators as a priority over the next 5 years as the issue represents one of the major threats to large whales. Sanctuary staff participates with a number of partners (NMFS Stranding Network, WET Responders, USCG, CDFW) in the effort to better understand and reduce this threat.

### **M/V Never Say Never Vessel Casualty at Año Nuevo in MBNMS**

On April 18, 2019, a 57' Criss-Craft motor vessel NEVER SAY NEVER began taking on water off Año Nuevo. A USCG helicopter lifted two people off the boat at 1730 hrs (PDT). At that time, the vessel was over a bottom depth of approximately 225 feet. No EPIRB was activated for the rescue. USCG estimate of potential fuel aboard was from 200 - 1,200 gallons of diesel. In addition, the boat had 12-20 qts of oil in the engine(s) and assorted standard household hazmat items (e.g. paints, solvents, bleach, epoxies, etc.). NOAA ERD provided a trajectory which put the floating top of the cabin washing ashore into Marina State Beach. The top of the cabin separated from the hull/engines/tanks which are presumed sunk somewhere between Año Nuevo and Marina. Much of the floating debris ended just north of Marina State Beach, and spread along the beach. The vessel owner was transiting from Vallejo to Half Moon Bay and on to Moss Landing's boat yard for a haul out. Beach cleanup efforts have been conducted and are ongoing.

### **20 Years of Successful Snapshot Day Water Quality Monitoring Events**

The 20<sup>th</sup> Annual Snapshot Day water quality monitoring event took place on Saturday, May 4<sup>th</sup>. On Snapshot Day 2019, 158 volunteers collected water samples at 119 sites in creeks and rivers draining to MBNMS from Half Moon Bay to Morro Bay. This event requires weeks of planning, 5 training events, and considerable coordination among many partners, most notably the Coastal Watershed Council and RCD of San Mateo County. Congressman Panetta (20th District CA) further honored the event by graciously entering Snapshot Day's 20th Anniversary in the Congressional Record. An event of this magnitude is not possible without the amazing volunteers, many who have participated for the past 20 years. Volunteer training occurred in each county bordering the sanctuary: the Coastal Discovery Center in San Simeon, REI in Marina, San Lorenzo Park in Santa Cruz, and the San Mateo Resource Conservation District in Half Moon Bay. With each year, Snapshot Day is conducted, monitoring results become more valuable in showing long-term status and trends of many

waterbodies flowing into the sanctuary, some of which are only monitored annually on this one day. Volunteers collected lab samples for analysis of nitrate, phosphate, and *E. coli*; and conducted field measurements for temperature, pH, dissolved oxygen, conductivity and transparency. Throughout the past 20 years of Snapshot Day events, 3,941 volunteers have participated and donated 19,863 hours to Monterey Bay National Marine Sanctuary while sampling 252 sites along 125 waterbodies. Each year this event provides valuable water quality results for the majority of creeks flowing to MBNMS. It is also an opportunity to promote the sanctuary program as well as raise awareness of the importance of our local creeks, clean water, and the connection of land and sea.

## **EDUCATION, VOLUNTEER AND OUTREACH PROGRAMS**

### **Monterey Bay National Marine Sanctuary participates in Underwater Parks Day**

California State Parks held the annual Underwater Parks Day at Point Lobos State Reserve to highlight the importance of state and federal Marine Protected Areas for the public on Saturday, April 13, 2019. MBNMS joined several other conservation organizations for the celebration to educate park visitors about national marine sanctuaries, marine protected areas, and marine reserves. MBNMS education staff provided information for guests on how to get involved in marine protected area monitoring programs and other volunteer programs, such as water quality and Team OCEAN. As part of our mission to educate about the significance and importance of national marine sanctuaries, MBNMS participates in community events to share messages of ocean awareness, inspiration, and conservation of important sanctuary resources to the public.

### **Coastal Discovery Center Participates in Cambria's Earth Day Event**

Coastal Discovery Center docents participated in Earth Day on April 21, hosted by Greenspace, a local land trust who works on land preservation through resource and ecosystem advocacy and environmental education. The 300 people attending the event celebrated the efforts of 15 agency and nonprofit groups whose shared goals are to protect coastal and ocean environments. MBNMS' Coastal Discovery Center staff and docents spoke directly to 100 visitors about healthy watersheds using the watershed model, advocated alternatives to plastics and promoted Snapshot Day. Sammy the Steelhead (fish costume) from San Luis Obispo County also made an appearance. Partnering closely with other local agencies and non-profit groups who work to preserve and protect coastal and marine environments strengthens messaging and stewardship while promoting MBNMS programs.

### **MBNMS Presents "Exploring the Davidson Seamount" at BLM's Meet the Scientists Day**

MBNMS' Carolyn Skinder was invited to present 2018/2019 updates on explorations of the Davidson Seamount to about 100 docents from partnering agencies at the annual Meet the Scientists Day last Sunday. Hosted by BLM at the Piedras Blancas Light Station, the event is held each spring during the annual grey whale count conducted by National Marine Fisheries Service. Attendees are invited to talk to whale scientists in the morning and then attend presentations in the afternoon by local researchers. In addition to NMFS and MBNMS, USGS, Cal Poly University, and Ventana Wildlife Society spoke about their research on sea otters, bird migrations, elephant seals and CA Condors. Due to the participation of Cambria and Morro Bay docents at a telepresence event during the E/V Nautilus cruise to Davidson Seamount last fall, and the well-publicized news of the "octopus garden," there was keen interest by participants to learn more about the conditions under which the octopus were laying and incubating eggs over the reported seep, as well as where to find information on future expeditions to the Davidson Seamount. Davidson Seamount was added to MBNMS in 2008 for the protection of its unique and fragile ecosystems. Continued protection of the seamount and support of research efforts rely on the public's understanding of the value of this special place. Continued updates on research expeditions to the seamount at public lectures help to achieve this goal.

### **Cambria Historical Society Invites MBNMS to speak on Whaling in San Simeon**

MBNMS' Carolyn Skinder spoke to a crowd of 50 curious members of the Cambria Historical Society this week about the old shore whaling operation in San Simeon Bay. Other topics covered were the overexploitation of

whales and the efforts of MBNMS and other sanctuaries to address current threats to whales. Of special interest was the connection of CA whaling to that of the East Coast. Shore whaling in CA began in 1854 by Captain Davenport, a whaler from New Bedford, MA who opened the first whaling station in Monterey, CA. Davenport's employee, Joseph Clark, began his own franchise in 1864 in San Simeon with a crew of 20 men who worked during months when whales migrated close to shore. From 1864-1891, at least 367 whales were killed in San Simeon Bay, mostly greys and humpbacks. By the early 1900s, shore whaling ended due to low numbers of whales and the discovery of petroleum, and conservation efforts to stop the commercial take of whales began worldwide. Attendees were surprised to learn that the last whaling station in the US closed in 1971 in San Francisco Bay. They also learned that in spite of laws to protect whales, whales face modern-day threats such as ship strikes, marine debris and entanglement by fishing gear. Using lecture topics such as shore whaling allows one to connect history to resource protection issues within the National Marine Sanctuary system to new audiences.

### **Pacific Grove Natural History Museum Volunteers Trained in Plankton Monitoring in Monterey Bay National Marine Sanctuary (MBNMS)**

A three-day MBNMS Plankton Monitoring Program training was completed for Pacific Grove Natural History Museum by staff member Lisa Uttal. PG Museum volunteers and staff first took a field trip to the Sanctuary Exploration Center in Santa Cruz where they were introduced to MBNMS and plankton, microplastics, ocean acidification and other important research and resource protection stories. Day 2 consisted of going out in the field to the Monterey Wharf to learn how to use the equipment and implement a standardized protocol. Volunteers collected both phyto and zooplankton as well as other ancillary data like weather, water temperature, salinity and wildlife observations. Day 3 involved collecting plankton and viewing under the microscope so volunteers could begin to learn to identify 10 target species for both phyto and zooplankton. Volunteers were enthusiastic and engaged during all 3 days of training. It is upwelling in Monterey Bay and there was a good diversity of plankton to view. Citizen science endeavors like plankton monitoring is both a way to conduct robust research and impactful education in our community. Plankton is the basis to the incredible biodiversity we see in MBNMS and phytoplankton creates one of every two breaths we breathe. Long term monitoring over multiple locations of plankton in the sanctuary with partners is critical for identifying plankton population changes both spatially and temporally.

### **New California Salmon Exhibit goes on display at MBNMS' Exploration Center.**

A California Salmon exhibit was installed at the Sanctuary Exploration Center in Santa Cruz, CA. Using Ray Troll art in the design, an interactive 3-panel exhibit was developed, designed and fabricated and installed in the Center's watershed area. Panel 1 highlights the salmon life cycle and the threats to California populations. Panel 2 highlights People and Salmon, everything from recreational fishing to salmon research to native people. Panel 3 highlights what the public can do in their daily lives to help protect salmon. A Panel 4 is in the works and will highlight Monterey Bay National Marine Sanctuary and US Forest Service Lands and the entire watershed that salmon traverse in California. The Sanctuary Exploration Center has been open for almost 7 years, new and changing exhibits are essential to keeping the community (public and volunteers) engaged and informed about MBNMS and resource protection. Salmon traverse from sanctuary waters up into the Sierras. The populations are a Species of Concern and are important to highlight in terms of sanctuary watershed resource protection. This exhibit would not have been possible without the strong partnership and collaboration between MBNMS, NOAA Fisheries, US Forest Service, National Marine Sanctuary Foundation and artist Ray Troll.

## NEWS COVERAGE

### [Two vessels recovered after one sinks near Seacliff](https://www.santacruzsentinel.com/2019/03/25/two-vessels-recovered-after-one-sinks-near-seacliff/)

<https://www.santacruzsentinel.com/2019/03/25/two-vessels-recovered-after-one-sinks-near-seacliff/>  
Santa Cruz Sentinel – March 25, 2019

### [Salvage crew, officials deal with two wrecked boats](https://www.register-pajaronian.com/article/salvage-crew-officials-deal-with-two-wrecked-boats)

<https://www.register-pajaronian.com/article/salvage-crew-officials-deal-with-two-wrecked-boats>  
Register Pajaronian – May 28, 2019

### [Celebrate Earth Day in Cambria with this local event organized by Greenspace](https://www.sanluisobispo.com/news/local/community/cambrian/article228737769.html)

<https://www.sanluisobispo.com/news/local/community/cambrian/article228737769.html>  
San Luis Obispo Tribune – April 2, 2019

### [How kayaks, drones and selfies can harm seals during pupping season](https://www.kazu.org/post/how-kayaks-drones-and-selfies-can-harm-seals-during-pupping-season#stream/0)

<https://www.kazu.org/post/how-kayaks-drones-and-selfies-can-harm-seals-during-pupping-season#stream/0>  
90.3 KAZU – April 10, 2019

### [Plastic straws, disposable food service-ware officially banned in Monterey](https://www.ksbw.com/article/plastic-straws-disposable-food-service-ware-officially-banned-in-monterey/27230736)

<https://www.ksbw.com/article/plastic-straws-disposable-food-service-ware-officially-banned-in-monterey/27230736>  
KSBW – April 22, 2019

### [‘Snapshot Day’ in Monterey to celebrate 20<sup>th</sup> anniversary](https://www.deeperblue.com/snapshot-day-in-monterey-to-celebrate-20th-anniversary/)

<https://www.deeperblue.com/snapshot-day-in-monterey-to-celebrate-20th-anniversary/>  
DeeperBlue.com – May 1, 2019

### [10 of the world’s best whale-watching holidays](https://www.luxurytraveladvisor.com/destinations/10-world-s-best-whale-watching-holidays)

<https://www.luxurytraveladvisor.com/destinations/10-world-s-best-whale-watching-holidays>  
Luxury Travel Advisor – May 1, 2019

### [Perfect pad to wine down! 80-acre Californian sanctuary estate that comes with a 30-foot bar, 3,500-bottle...](https://www.dailymail.co.uk/news/article-6989149/80-acre-Californian-sanctuary-estate-30-foot-onyx-bar-3-500-wine-cellar.html)

<https://www.dailymail.co.uk/news/article-6989149/80-acre-Californian-sanctuary-estate-30-foot-onyx-bar-3-500-wine-cellar.html>  
DailyMail.com – May 3, 2019

### [Photo of the day – water quality snapshot](https://www.santacruzsentinel.com/2019/05/04/photo-of-the-day-water-quality-snapshot/)

<https://www.santacruzsentinel.com/2019/05/04/photo-of-the-day-water-quality-snapshot/>  
Santa Cruz Sentinel – May 4, 2019

### [‘Snapshot’ keeps eye on waterways](https://www.hmbreview.com/community/snapshot-keeps-eye-on-waterways/article_b190d334-71d1-11e9-9fd3-d7b3935aa7e4.html)

[https://www.hmbreview.com/community/snapshot-keeps-eye-on-waterways/article\\_b190d334-71d1-11e9-9fd3-d7b3935aa7e4.html](https://www.hmbreview.com/community/snapshot-keeps-eye-on-waterways/article_b190d334-71d1-11e9-9fd3-d7b3935aa7e4.html)  
Half Moon Bay Review – May 8, 2019



[Community invited to coastal rail trail ribbon-cutting](https://patch.com/california/santacruz/community-invited-coastal-rail-trail-ribbon-cutting)

<https://patch.com/california/santacruz/community-invited-coastal-rail-trail-ribbon-cutting>

Patch.com – May 13, 2019

**Web Site** (<https://montereybay.noaa.gov/>)

★★ **Check out these MBNMS Advisory Council webpage links!** ★★

**Advisory Council Meeting Agendas & Minutes**

<https://montereybay.noaa.gov/sac/sacma.html>

**Advisory Council Actions and Results**

<https://montereybay.noaa.gov/sac/sacact.html>

**Advisory Council User Group Newsletters (seats and working groups/sub-committees)**

<https://montereybay.noaa.gov/sac/advisory-nwsltr.html>

**Sanctuary Tourism and Recreation Working Group**

<https://montereybay.noaa.gov/sac/rec-tour.html>

*Please take a few moments to peruse the site. Your feedback is greatly appreciated.*

*Comments and suggestions can be sent to [andrew.white@noaa.gov](mailto:andrew.white@noaa.gov).*

**Follow MBNMS on [Facebook](https://www.facebook.com/MBNMS)** (<https://www.facebook.com/MBNMS>) and **[Twitter](https://twitter.com/mbnms)** (<https://twitter.com/mbnms>)

## **FUN, OCEAN RELATED WEB SITES**

★★ **NEW link! NOS Ocean Facts: Ocean Life** ★★

<https://oceanservice.noaa.gov/factspage.php?siteName=oceanfacts&cat=Ocean%20Life>

**Caitlin Seaview Survey**

<http://www.caitlinseaviewsurvey.com>

**SIMON**

<https://www.sanctuariesimon.org>

**Seasons in the Sea**

<http://www.seasonsintthesea.com>

**Thank You Ocean**

<http://www.thankyouocean.org/>

**Oceans Live**

<http://oceanslive.gso.uri.edu/>

**NOAA Ocean Explorer**

<http://oceanexplorer.noaa.gov/>

**Encyclopedia of the Sanctuaries**

<http://www.ocean.com/Library/Encyclopedia/>

## **MBNMS STAFF**

**Paul Michel** – Superintendent  
**Dawn Hayes** – Deputy Superintendent

### Research

**Andrew DeVogelaere** – Research Coordinator  
**Jennifer Brown** – SIMoN Ecosystem Scientist  
**Erica Burton** – Research Specialist  
**Chad King** – SIMoN Data Analyst  
**Steve Lonhart** – SIMoN Senior Scientist

### Education

**Amity Wood** – Education and Outreach Coordinator  
**Ashlyn Adams** – SEC Gift and Bookstore Manager  
**Acy Wood** – Program Assistant (SEC)  
**Nick Ingram** – Exhibits/Facility Specialist (SEC)  
**Bri Madrigal** – Volunteer Coordinator (SEC)  
**Emily Pierce** – Program Assistant (SEC)  
**Chelsea Prindle** – SEC Manager  
**Carolyn Skinder** – Southern Region Program Coordinator  
**Lisa Uttal** – Education Specialist

### Resource Protection

**Karen Grimmer** – Resource Protection Coordinator  
**Sophie De Beukelaer** – GIS Analyst & Research Permit Coordinator  
**Lisa Emanuelson** – Citizen Watershed Monitoring Network Coordinator  
**Bridget Hoover** – Water Quality Protection Program Director  
**Scott Kathey** – Regulatory/Emergency Response Coordinator (on detail to GRNMS)  
**Pamela Krone** – Agriculture Water Quality Coordinator

### Program Operations

**Raymond Chisolm** – Program Specialist  
**Nichole Rodriguez** – Advisory Council Coordinator  
**Andrew White** – Network Manager and Webmaster



## **Learn More About Your Sanctuary**

The Sanctuary Office Report is produced bi-monthly by Monterey Bay National Marine Sanctuary staff in conjunction with Sanctuary Advisory Council meetings. To learn more about the Sanctuary please visit our web site at: <https://www.montereybay.noaa.gov>.

To learn more about the Sanctuary Advisory Council please visit:  
<https://montereybay.noaa.gov/sac/advisory.html>

## **The Office of National Marine Sanctuaries**

Monterey Bay National Marine Sanctuary is one of 14 marine protected areas in the National Marine Sanctuary System encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Papahānaumokuākea Marine National Monument. Visit the ONMS web site at:  
<https://www.sanctuaries.nos.noaa.gov/>

## **Get involved and stay informed!**

To learn how to get involved in the Sanctuary visit:  
<https://montereybay.noaa.gov/getinvolved/welcome.html>

Sign up for the MBNMS listserv to receive email notices about upcoming Sanctuary events, and public meetings of the Sanctuary Advisory Council and Working Groups:  
<https://montereybay.noaa.gov/intro/elists.html>

## **- Contact Information -**

### **Monterey Bay National Marine Sanctuary**

99 Pacific Street, 455A  
Monterey, CA 93940  
Phone (831) 647-4201  
Fax (831) 647-4250