



# Monterey Bay National Marine Sanctuary

## Sanctuary Office Report



Volume 15, Number 2

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

#### NOAA satellites aid in the rescue of 275 lives in 2017

Last July, a sailboat with two people onboard caught on fire several hundred miles off the coast of Jacksonville, Florida. Luckily for the crew, a NOAA satellite picked up the distress signal from their emergency beacon, enabling the U.S. Air Force and Coast Guard to rescue them. They are among the 275 people rescued within the United States and its surrounding waters with the help of NOAA satellites last year. Of the 275 rescues, 186 were in water, 15 were from aviation incidents and 74 were on land using personal locator beacons, or PLBs. NOAA satellites are part of the international Search and Rescue Satellite Aided Tracking System, or COSPAS-SARSAT, which uses a network of U.S. and international spacecraft to detect and locate distress signals quickly from emergency beacons aboard aircraft, boats and from handheld PLBs. For more information: <https://www.nesdis.noaa.gov/content/noaa-satellites-aid-rescue-275-lives-2017>

#### Spotlight on the North Pacific Right Whale — An Interview with

#### NOAA Fisheries Marine Mammal Scientist Jessica Crance

The North Pacific right whale is split into two populations, the western and eastern. The Eastern North Pacific right whale is one of the most critically endangered large whales in the world. With only 30 individuals left, if this population goes extinct, it is highly likely that we would never see any more right whales in the Eastern Bering Sea or along the west coast of the United States. Before whaling they used to cover the entire Bering Sea and Gulf of Alaska, but now their distribution range is quite small. For more information: <https://www.fisheries.noaa.gov/video/spotlight-north-pacific-right-whale-interview-noaa-fisheries-marine-mammal-scientist>

#### Four different algal toxins found in San Francisco Bay mussels

Scientists have identified four kinds of algal toxins in mussels collected from San Francisco Bay. The study, published in *Harmful Algae*, is the first to report the co-occurrence of both freshwater and marine toxins in mussels consumed by humans and animals. The researchers, led by Dr. Misty Peacock while at the University of California Santa Cruz (currently at Northwest Indian College), found nearly all mussels collected from the bay were contaminated with at least one of the detected algal toxins, and 37 percent contained all four—one of which originates in freshwater.

Mussels in the bay were contaminated with the following toxins:

- **Domoic acid** – a neurotoxin that causes amnesic shellfish poisoning in humans, and is produced by marine diatoms in the genus *Pseudo-nitzschia*.
- **Paralytic shellfish toxins** (saxitoxins) – cause paralytic shellfish poisoning, and are associated with marine dinoflagellates in the genus *Alexandrium*.
- **Dinophysis shellfish toxins** (okadaic acid and derivatives) – cause diarrhetic shellfish poisoning, and are produced by marine dinoflagellates in the genus *Dinophysis*.
- **Microcystins** – hepatotoxins that cause liver damage in people and animals, and are produced by freshwater cyanobacteria in the genus *Microcystis*.

For more information: <https://coastalscience.noaa.gov/news/four-different-algal-toxins-found-san-francisco-bay-mussels/>

## NATIONAL MARINE SANCTUARY NEWS

### **FKNMS concludes Hurricane Irma ESF-10 Florida response operations**

In mid-January, after almost 120 days and more than 900 vessel removals, the Unified Command response organization concluded operations under the Hurricane Irma Emergency Support Function 10 (ESF-10) Mission Assignment. Florida Keys National Marine Sanctuary deployed nine staff for more than 1,300 hours in support of the operations. Staff served as technical specialists in the Incident Command Post Environmental Unit providing guidance on debris and vessel removal operations, classifying potential targets for removal, developing environmental consultations and best management practices to minimize and avoid resource impacts, coordinating a statewide Natural Resource Advisor (NRA) program, and as NRAs in the field. The NRA program included 45 resource management personnel from around the state using local knowledge and expertise to observe vessel removal operations and provide high quality, concise and consistent guidance that supported pollution response and the removal of vessels and other debris, while considering impacts to sensitive natural and cultural resources. Although facilities and many staff homes were impacted by Hurricane Irma, FKNMS was able to deploy trained, skilled and experienced staff in support of the response. FKNMS participation directly supports the NOS priority for coastal resilience: preparedness, response, and recovery by enhancing NOS' response and recovery posture for all- hazards events.

### **Farallones launches marine mammal-themed winter mini-camp**

On January 3, Greater Farallones National Marine Sanctuary and the Greater Farallones Association launched the second in a new series of Farallones Mini-Camps. Twelve campers, ages seven to 10, took part in the three-day program, where they received 24 hours of field and classroom studies focused on marine mammal biology and behaviors. The camp incorporated several outdoor activities highlighting the special adaptations of seals, sea lions, sea otters and whales: air-breathing yet ocean-dwelling mammals. The Farallones marine sanctuary supports 36 species of marine mammals, due to its biological abundance and diversity. The camp included excursions to Año Nuevo State Park to view breeding elephant seals on their rookery, including two battling bulls. They also visited The Marine Mammal Center to learn about marine mammals' challenges to survival, and their rescue and rehabilitation. A field based mini-camp provides children with direct experiences to connect with their national marine sanctuaries and increase their ocean literacy through exploration and discovery.

### **Maritime practice causes concern**

Olympic Coast National Marine Sanctuary has recently become aware of the continued transport of unsecured scrap metal on open deck barges through the waters of the sanctuary. A tug towing a cargo of crushed cars and other scrap metal was observed by sanctuary staff west bound in the Strait of Juan de Fuca. Further research confirmed that the vessel's transit was from a salvage yard in British Columbia to Portland, Oregon, through the sanctuary. In 2010, a tug lost an entire load of cars, when its barge capsized off the Columbia River. The sanctuary is also aware of four separate cases of Makah Tribal fishermen hauling up crushed cars in their trawl nets in their treaty protected fishing grounds. The sanctuary was aware that this activity had taken place in the past, but until last week did not know it was still occurring. The sanctuary is concerned that future ocean dumping could occur and will be consulting with United States Coast Guard and maritime industry advisors on the situation. Since Olympic Coast National Marine Sanctuary staff first became aware of crushed cars on the seafloor of the sanctuary, they have been working with NOAA Office of Law Enforcement, General Counsel Enforcement and Natural Resources Sections on a course of action to address the violations of sanctuary regulations. Research has included a contracted side-scan and ROV survey that identified a debris field of cars off Cape Flattery in the sanctuary and the Makah Tribe's treaty protected fishing grounds.





## MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



### MANAGEMENT

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

On February 16<sup>th</sup>, the MBNMS Advisory Council (AC) met and received a series of presentations and updates on AC member responsibilities, the AC Chair Summit, the MBNMS AC 2018 Work Plan and a review of MBNMS Management Plan Review Draft Action Plans. Actions taken included: a comment letter for a draft proposed program for Outer Continental Shelf oil and gas lease sales. The next meeting will be held on April 20<sup>th</sup> in Moss Landing. 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.

### RESEARCH AND MONITORING

#### **Research Dive Data Archived at CSU Monterey Bay**

California State University Monterey Bay (CSUMB) received funding to archive regional research dive data (e.g., digital video tapes and associated data), with the goal of creating a long-term, temperature-controlled repository of regional data for students to archive and analyze. Monterey Bay National Marine Sanctuary (MBNMS) archived data from 24 research cruises (1999-2011) at CSUMB. The archive project is in collaboration with the NOAA Center for Coastal and Marine Ecosystems (CCME). The goal of the NOAA Center for Coastal and Marine Ecosystems (CCME) is to recruit, train, and graduate students, particularly from underrepresented communities, for the agency mission workforce.

#### **Sanctuaries MBON research and tools presented at Ocean Sciences conference**

Recent research and data tools developed by the Sanctuaries Marine Biodiversity Observation Network (MBON) demonstration project were presented at the Ocean Sciences Meeting in Portland, OR on February 13, 2018. Maria Kavanaugh (Oregon State University) provided an overview of seascapes as a tool to improve monitoring and understanding of pelagic ecosystem change in Monterey Bay and Florida Keys National Marine Sanctuaries. Using remotely-sensed data on physical and biological properties of water masses, seascapes help track the dynamic spatial footprint of biological, chemical, physical patterns and processes in the pelagic ocean. This project is investigating relationships between seascapes and the phytoplankton and forage communities associated with them. Satellite-derived seascapes are emerging as a promising tool for monitoring and predicting biodiversity in near real time, and improving our understanding of habitat occupancy patterns of commercially important fisheries and species of management concern. The Sanctuaries MBON demonstration project is linking federal and non-federal partners to improve understanding of these important marine ecosystems and serve to inform resource managers on the current status of biodiversity and potential threats to biodiversity in sanctuaries.

#### **Scientific Publication Uses Monitoring Data from Beach COMBERS Citizen Science Program**

Data from the long-term monitoring program Coastal Ocean Mammal and Bird Education and Research Surveys (Beach COMBERS) was recently used and published in the science journal *Geophysical Research Letters* in the paper entitled, “Massive Mortality of a Planktivorous Seabird in Response to a Marine Heatwave.” The paper describes the massive mortality event in Cassin’s Auklet during the 2014-2016 marine heatwave in the Northeast Pacific. This long-term monitoring program of beached marine birds and mammals has enabled resource managers to determine trends in deposition to better identify significant events affecting wildlife including oil spills, fishery interactions, harmful algal blooms, and natural starvation events. Several documented events were of regional significance occurring along the west coast of North America, including the 1997-98 El Niño, and

2003 Fulmar die-off. The documentation of other events made important contributions to science, including 1998 domoic acid bloom, 2007 mystery foam, S/S *Luckenbach* oil spill, and gill-net bycatch. During the last 20 years, approximately 185 volunteers have participated in the program; contributing more than 31,000 hours. Today, there are more than 90 volunteers; many of them long-term participants. This program is a collaboration among Moss Landing Marine Laboratories, Monterey Bay National Marine Sanctuary, U.S. Geological Survey, U.S. Fish & Wildlife Service, California Department of Fish & Wildlife, and Save The Earth. Since 1997, trained volunteers have surveyed beached marine birds and mammals monthly at selected sections of beaches throughout the Monterey Bay area, with the specific goal of using deposition of beach cast carcasses as an index of the health of the sanctuary. On average, Beach COMBERS detect 2.5 events per year, where baseline numbers of dead organisms are significantly surpassed. These could be natural events (e.g., a low productivity year for food) or human caused (e.g., an oil spill). Beach COMBERS accomplishments and information can be found on the web site <http://www.sanctuariesimon.org/monterey/sections/beachCombers/index.php?l=n>.

### **MBNMS Research Activity Panel Meets at Moss Landing Marine Labs**

On January 12th, the Monterey Bay National Marine Sanctuary (MBNMS) Research Activity Panel (RAP) met at Moss Landing Marine Laboratories (MLML), in Moss Landing, CA. Agenda items included: Current Condition of River Mouth Estuaries Flowing to MBNMS; Summary of February MBNMS Advisory Council meeting; Management Plan Review; Long-term Water Quality Monitoring; 2018 MBNMS Ship Time; and 2018 Ricketts Award. The MBNMS Research Activity Panel (RAP) is a working group of the MBNMS Advisory Council (AC). The RAP meets five times per year; and advises AC and sanctuary staff on basic and conservation science issues. <http://montereybay.noaa.gov/sac/rap/rapma.html>

### **Beach COMBERS Citizen Science Program featured in "Year in Review 2017"**

The South Chapter of the citizen science monitoring program Beach COMBERS (Coastal Ocean Mammal and Bird Education and Research Surveys) is featured in Ventura's US Fish and Wildlife Service (FWS) Office "Year in Review 2017" (<https://www.fws.gov/ventura/newsroom/release.cfm?item=438>). In 2013, the South Chapter was established, and included 13 beaches between Morro Bay and Los Angeles. In the wake of the 2015 Refugio Beach oil spill that resulted from a pipeline rupture in Santa Barbara County, California, FWS biologists and scientists from California Department of Fish and Wildlife, National Oceanic and Atmospheric Administration and California State Parks are using Beach COMBERS data to help understand how the oil spill impacted the environment. The program was first established in 1997 by Monterey Bay National Marine Sanctuary (MBNMS) and Moss Landing Marine Laboratories, with 22 Beach COMBERS surveying 11 beaches in MBNMS. Today nearly 90 volunteers collect data from Santa Cruz to Los Angeles County. This long-term monitoring program of beached marine birds and mammals has enabled resource managers to determine trends in deposition to better identify significant events affecting wildlife including oil spills, fishery interactions, harmful algal blooms, and natural starvation events. During the last 20 years, approximately 185 volunteers have participated in the program; contributing more than 31,000 hours. This program is a collaboration among Moss Landing Marine Laboratories, Monterey Bay National Marine Sanctuary, U.S. Geological Survey, U.S. Fish & Wildlife Service, California Department of Fish & Wildlife, and Save The Earth. Since 1997, trained volunteers have surveyed beached marine birds and mammals monthly at selected sections of beaches throughout the Monterey Bay area, with the specific goal of using deposition of beach cast carcasses as an index of the health of the sanctuary. On average, Beach COMBERS detect 2.5 events per year, where baseline numbers of dead organisms are significantly surpassed. These could be natural events (e.g., a low productivity year for food) or human caused (e.g., an oil spill). Beach COMBERS accomplishments and information can be found on the web site <http://www.sanctuariesimon.org/monterey/sections/beachCombers/index.php?l=n>.

## **RESOURCE PROTECTION**

### **Millions of gallons of untreated sewage flow into Monterey Bay:**

On Saturday, January 20<sup>th</sup> at 07:34, MBNMS staff was notified of a sewage spill into MBNMS from Monterey One Water (M1W), the local waste water treatment plant. The original estimate went from one million gallons to 4.4 million gallons. Monterey County Environmental Health closed beaches from the Salinas River mouth to Carmel Bay due to the southerly currents and very large ocean swell at the time. Eleven samples for fecal indicator bacteria and ammonia were collected offshore at the outfall pipe and at more than 7 local beaches on January 20<sup>th</sup>. All sample results were within acceptable regulatory limits except for one unrelated to the discharge at Del Monte beach in Monterey. NOAA OLE was contacted and opened an investigation. MBNMS staff requested additional analysis of the raw sewage for all CA Ocean Plan constituents to determine potential impacts on marine resources. On January 31<sup>st</sup>, MBNMS staff visited the M1W treatment plant to understand exactly why the discharge occurred. The failure of an analog input card caused alarms and bar screen rakes to fail, thus releasing sewage to overflow a 300,000 gallon sump bypassing any treatment and discharging directly into Monterey Bay for 9.25 hours. Engineering analysis later determined that no more than 2.8M gallons of untreated sewage reached Monterey Bay with that number likely being lower due to mixing with treated effluent and desal project waters. Multiple efforts were taken to ensure this never happens again including but not limited to; installing cameras, level sensors, updated software and additional staff conducting rounds after hours. National Marine Sanctuaries are special places requiring and deserving of protections from discharges of contaminated effluent, to assure protection of habitats, wildlife, and environmental integrity. MBNMS works with dischargers and the State to respond to sewage spills and encourage improved facility operations so that these incidents are not repeated in the future.

### **Healthy Soils and Green House Gas Mitigation Grant Kick Off Meeting**

The first Advisory Team meeting for the Healthy Soils Demonstration Project was held in Moss Landing on Friday 2/23/28 with input from key leaders from several organizations interested in initiatives to store carbon into soils on working lands, including USDA's NRCS, the Carbon Cycle Institute, Point Blue, UC Cooperative Extension and the Resource Conservation District. This Project will include the installation of management practices on two ranches, monitoring for increased soil carbon and other indicators of soil health, as well as outreach events to inform other ranchers about practice potential and outcomes. These ranches will serve as Demonstration Projects to better understand and show other stakeholders the multiple benefits related to economic, environmental and ranch productivity that can be achieved by changes in management practices. If California increases carbon storage by 1% on its 46 million acres of grasslands, pasture and arable lands, the CO<sub>2</sub>e sequestered would be 1.5 billion metric tons (Carbon Cycle Institute 2016). Demonstrating practices that improve soil health and sequester carbon on working lands can encourage wider adoption of these practices on agricultural land. Slowing global warming will benefit the marine ecosystem through slowing temperature and chemistry changes such as ocean acidification.

### **Conservation Working Group (CWG) members meet to discuss work plan for 2018**

On February 22, the CWG met at the MBNMS Conference Room to discuss a work plan for 2018. A survey to members had resulted in top 10 issues being identified, and of those 4 issues were brought forward for further discussion and included climate change, healthy habitats, plastics, and water quality. Members decided to move forward with a focus on Extended Producer Responsibility, which is an extension of their 2017 work on plastic pollution through recommendations that were forwarded to the Sanctuary Advisory Council and MBNMS staff and are now incorporated into the new marine debris action plan. They will also discuss the issue of wildlife disturbance messaging, and the idea of developing some consistent messaging that can be shared between volunteer groups. The next meeting is scheduled for March 28<sup>th</sup> at 3pm at the Sanctuary office. The Conservation Working Group (CWG) is a working group of the MBNMS Advisory Council and includes groups such as Save

Our Shores, Surfrider, Sierra Club, American Cetacean Society and Blue Theology. The CWG meets monthly, and advises SAC and sanctuary staff on conservation issues.

### **Elkhorn Slough Scientific Workshop and TMDL Meeting**

The Central Coast Regional Water Quality Control Board hosted a meeting to review and discuss the scientific basis and considerations for establishing Water Quality Objectives and Total Maximum Daily Load (TMDL) criteria for Elkhorn Slough on 2/17/18. MBNMS Agricultural Water Quality Coordinator participated in the discussion, making suggestions that would improve water quality and suggesting criteria relevant to increasing the health of Elkhorn Slough for shellfish growth, marine mammal habitat and as a fish nursery. Agricultural runoff and excess nitrogen causes eutrophication in the Slough and can be better controlled through agricultural management practices. By establishing relevant TMDLs for the Moro Cojo Slough and working collaboratively with growers in this region, runoff can be controlled and excess nitrogen can be removed prior to water entering Elkhorn Slough from upland locations. Through time, establishing these practices could help return eutrophic areas of Elkhorn Slough to a healthy fish nursery and shellfish grounds.

### **Monterey Bay National Marine Sanctuary participates in international Global Waves Conference**

Global Waves Conference 2018 March 4-7 brought together 300 members of the international surf community, scientists, educators and environmentalists representing NGOs, public agencies (City, State, Federal) and community members in a 3-day conference in Santa Cruz, CA. The general goal was to inspire (through keynotes), inform and equip (through panels and presentation) attendees to implement ocean advocacy and conservation around the world. The main themes were The Land Sea Connection, MPAs and Surf, Climate Change and Innovation. The presentations were multidisciplinary (science, storytelling, surfing reserves, business and sustainable products) focusing coastally protected areas in the world. The goals of the conference were: 1. To unite the surf, conservation and technology/innovation communities, and mainstream surfing into the marine conservation. 2. To raise awareness and share best practices from across the world to address ocean plastics, water quality, coastal development, and climate change/sea level rise. 3. To create new working connections between diverse geographies and communities. Surfing in Santa Cruz is iconic and a large part of the MBNMS recreation and tourism culture and activities. MBNMS staff attended this conference, engaged with the surf community and held an evening event for the conference at the Sanctuary Exploration Center with over 250 attendees.

### **Bay Net- Team OCEAN Kick-off Informational Meeting**

On the evening of February 28th, interested and veteran volunteers gathered to learn about Bay Net- Team OCEAN training for 2018 in an Informational Meeting held at the MBNMS offices. New volunteers learned about the 2018 training coming up at the end of March, and veteran volunteers offered stories of volunteering, wildlife, and community interactions. Ten interested volunteers and 12 veteran volunteers attended the informational meeting. Bay Net and Team OCEAN combined, talk with over 45,000 people per year on the water and on the shores of MBNMS. By providing field-based volunteer programs we expand the reach of Monterey Bay National Marine Sanctuary's mission of understanding and protecting the cultural resources and coastal ecosystem found in Central California. These two programs have been the models for new outreach programs started in Hawaiian Island Humpback Whale Reserve and Morro Bay.

### **MBNMS Volunteer Monitoring Coordinator Interviewed by Local High School Students**

On February 27th, Volunteer Monitoring Coordinator, Lisa Emanuelson, was interviewed by the Carmel High School Environmental Club for their online program "Earth Experts". Interview questions spanned MBNMS volunteer programs, recruitment of volunteers, to environmental and water quality issues in local central California coast watersheds. The students produce a television program that is shown on local public access, but

can also be accessed via YouTube. YouTube Link: <https://youtu.be/WXCUt4QOIM0>. Interviews provide an avenue for expanding the reach of MBNMS, by taking the message to a wider audience. High school students with environmental interests are a perfect audience to encourage involvement in volunteer programs, start their own environmental initiative, or help educate family and peers.

### **Lovers Point Watershed Monitoring Program Complete**

At the end of February, the Lovers Point Watershed Monitoring program concluded after 6 months of wet and dry sampling of seven sites within the Lovers Point storm drain system. This monitoring program aimed to determine effectiveness of system improvements installed by the City of Pacific Grove in 2016 and 2017. Samples were collected bi-monthly and tested for *E. coli*, enterococcus, and human sourced bacteria through Qualitative Polymerase Chain Reaction (QPCR). MBNMS actively works with local jurisdictions to address water quality issues through identification and tracking of water quality that could impact MBNMS resources. MBNMS' Water Quality Protection Program works with local jurisdictions as well as local area farmers to improve water quality of sources flowing into MBNMS.

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

### **Monterey Bay National Marine Sanctuary co-coordinates 8th Annual Whalefest**

The 8th Annual Whalefest took place on January 26th and 27th in Monterey at the Old Fisherman's Wharf and Custom House Plaza. MBNMS collaborated on organizing this free, fun and educational interactive family event for all ages celebrating the gray whale migration and Monterey Bay National Marine Sanctuary, hosting approximately 10,000 local, national and international visitors. Sanctuary superintendent Paul Michel presented on the latest scientific happenings in the sanctuary during the Science Symposium, including the black abalone relocation project in Big Sur at the Mud Creek slide, and valuable research, resource protection and education partnerships supporting MBNMS management goals. Alongside MBNMS staff, sanctuary volunteers engaged over 1,000 event attendees to educate about sanctuary resources and protection at the NOAA/MBNMS booth. Live plankton samples were presented for awareness of MBNMS' incredibly productive food web and biodiversity. 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 partners with Friends of the Elephant Seal to host northern elephant seal field experience**

Saturday field trips to the elephant seal rookery in San Simeon this winter have begun at the Coastal Discovery Center where visitors listened to a presentation on the life history of northern elephant seals before traveling to the Piedras Blancas rookery only 5 miles away. There, visitors applied lessons learned with the help of docents from Friends of the Elephant Seal. By partnering with Friends of the Elephant Seal, MBNMS has been able to teach visitors about resource protection in action within Monterey Bay National Marine Sanctuary.

### **Coastal Discovery Center's Tidepool Saturdays a big hit with local tourism board**

MBNMS' Coastal Discovery Center has been taking advantage of the minus tides this winter by offering tide pool field trips to the public at San Simeon Cove. Advertised through the CA Highway One Discovery Route, the tidepool field trips have attracted visitors nationwide, and add to the visitor experience. Tidepool lessons include zonation, invertebrate community ecology and tidepool etiquette through fun, interactive activities. Thousands of tourists come to the Central Coast of CA each year to experience our pristine beaches. By partnering with local tourism boards to advertise field trips, MBNMS can teach visitors to protect the very resources they come to explore.

### **MBNMS invited to speak by Cal Poly's Wildlife Club**

MBNMS' Carolyn Skinder spoke to wildlife biology majors at California Polytechnic State University this week during an annual meet and greet day with the Wildlife Club and local professionals in wildlife conservation. The goal of the day was to expose students to varied careers in conservation as well as advice on how to obtain jobs in their field. Events such as this create an opportunity to inform university students about MBNMS, as well as help them realize the connection between land and sea in future career choices.

### **Sanctuary Exploration Center Hosts "Event Santa Cruz: One Ocean".**

On February 23<sup>rd</sup> 2018, Monterey Bay National Marine Sanctuary Exploration Center hosted an Event Santa Cruz event. Event Santa Cruz hosts mixers and lightning talk sessions monthly across Santa Cruz to showcase local business, industry and non-profit organizations. The theme for this event was Our Ocean and showed how government agencies, businesses, individuals and non-profit organizations can all contribute to ocean conservation. Over 500 people attended the three-hour event, which included two lightning talk sessions with eight people who, through various avenues, work to protect the ocean. Community events not only attract new visitors to the Exploration Center, but also attract people to come back and learn more about Monterey Bay National Marine Sanctuary. Inspiring visitors to make a conscious effort in their everyday lives to protect the ocean is a goal of MBNMS and the Sanctuary Exploration Center.

### **Sanctuary Exploration Center Hosts Free Film Screening of "Straws" with Panel Discussion**

On February 28<sup>th</sup> 2018, in partnership with Save Our Shores, the Sanctuary Exploration Center hosted a free film screening of the award-winning film *Straws* followed by a panel discussion with representatives from Save Our Shores, Okeanos and The Last Plastic Straw Initiative. Sixty community members attended the screening and discussion. The film and discussion educated participants on the negative impacts of plastics to our oceans, and inspired them to refrain from using single-use plastic products in their lives. This film screening was the first in a three-part film series hosted by the Sanctuary Exploration Center this spring. The films *Chasing Corals* and *Tomorrow* will be screened in March and April respectively. A goal of MBNMS and the Sanctuary Exploration Center is to inform and educate the public on critical resource protection issues and inspire conservation practices. Plastic pollution is a major threat to the sanctuary and one, which can be prevented through public education.

### **Monterey Bay National Marine Sanctuary Exploration Center Hosts New Art Installation Unveiling**

On March 2, 2018 the MBNMS Exploration Center hosted a First Friday public unveiling of a new art installation: *Miniature Storm* by Kathlene Powers. *Miniature Storm* is made up of 150+ Ceramic sea stars that form a "constellation" across the front lobby of the visitor center. Participants were able to view the installation, interact with the artist, and partake in a hands-on mini ceramic sea star workshop led by Kathlene herself. Over 50 members of the public participated in the event. Community events such as First Fridays are a perfect opportunity to bring art, activities and science together as an innovative education tool to promote and inspire visitors to protect and conserve the health of Sanctuary ecosystems.

### **California WASC committee visits the Coastal Discovery Center**

An evaluation team representing the Accrediting Commission for Schools -Western Association of Schools and Colleges for California visited Carolyn Skinder at the Coastal Discovery Center this week. Eight years ago, Carolyn and Grant Phillips, a teacher from Leffingwell Alternative High School (LHS), joined forces to design an experiential marine biology curriculum made up of field trips, labs and guest speakers from San Simeon and Cambria. Field trips included; history of old San Simeon, water quality and HAB sampling, rocky intertidal monitoring, introduction to algae, an abalone farm tour, marine mammal and seabird identification and conservation, elephant seal life history, a visit to a local light station and exploring kelp forests via kayak.

Leffingwell classes also took part in community service projects, oftentimes for the sites visited on their field trips. To date, about 80 students have gone through the class, and it has made an impact. Students have opened up their eyes to what is in their own “front yard”, most experienced kayaking for the first time, and all make connections with local experts with whom they otherwise may have never come into contact. Comments from LHS students:

*"I loved the Marine Biology program. It was better to have the hands-on experience than reading about it in a textbook in class. I felt I learned more by being taught outside near the ocean and seeing/doing it myself. Each activity was always fun." - Faith Romero*

*"Being able to learn other than in a classroom, and having the opportunity to be outside being taught nature with what's actually in front of my eyes, was a very exciting experience. I would want to take this class again." Alex Campos*

*"This program was great because it was more than just marine biology. It gave me insight into history, chemistry, and biology." - Daniel Wedel*

At the completion of their site visit, the WASC committee stated the marine biology program was a key component to the Leffingwell science program, and was one of the highlights that helped with the accreditation of LHS. This class has influenced Leffingwell HS students to become ocean stewards and ambassadors for MBNMS in an area that sees up to one million visitors a year.

### **Sanctuary Exploration Center Hosts Global Waves Conference Event**

On March 5 2018, Monterey Bay National Marine Sanctuary Exploration Center hosted a Global Waves Conference Event at the Sanctuary Exploration Center. The 5<sup>th</sup> annual global waves conference was held in Santa Cruz, CA from March 5<sup>th</sup>-7<sup>th</sup>, 2018 with the goal to bring together the best international minds from surfing, conservation and innovation communities to tackle the worlds most challenging ocean issues. The World Surfing League (WSL) and Surfrider hosted the event as part of the conference at the Sanctuary Exploration Center to bring awareness to the WSL's new PURE (Protecting, Understanding and Respecting the Environment) initiative. Over 200 participants and 15 non-profit organizations shared resources, networked and listened to speeches from PURE's Director as well as MBNMS's superintendent Paul Michel. Community events not only attract new visitors to the Exploration Center, but also attract people to come back and learn more about Monterey Bay National Marine Sanctuary. Showcasing how government agencies, businesses, and non-profits can all contribute to ocean conservation Additionally, inspiring visitors to make a conscious effort in their everyday lives to protect the ocean is a goal of MBNMS and the Sanctuary Exploration Center.

### **MBNMS Staff Present to Santa Cruz Rotary**

On March 9, Sanctuary Exploration Center (SEC) Manager presented to the Santa Cruz Rotary on the accomplishments of the Sanctuary Exploration Center during the first five years of operation. The Rotary hosted a fundraiser in 2012 to raise money to outfit the SEC classroom. Members of the club were interested in how the classroom and the Center overall are being used as an educational center and community resource. We were happy to share over the first five years of operation over 3,000 students have been reached through field trips and 325,000 people overall have visited the Center. Continuing to engage with the local business community is important in order to build relationships between MBNMS and local business. Additionally, many of these community members have never been to the Sanctuary Exploration Center and may be inspired to come with family in the future.

## NEWS COVERAGE

### [NOAA investigating massive sewage spill into Monterey Bay](http://www.montereyherald.com/general-news/20180125/noaa-investigating-massive-sewage-spill-into-monterey-bay)

<http://www.montereyherald.com/general-news/20180125/noaa-investigating-massive-sewage-spill-into-monterey-bay>  
Monterey Herald – January 25, 2018

### [A deeper dive into marine sanctuary at Whalefest](http://www.ksbw.com/article/a-deeper-dive-into-marine-sanctuary-at-whalefest-monterey/15904305)

<http://www.ksbw.com/article/a-deeper-dive-into-marine-sanctuary-at-whalefest-monterey/15904305>  
KSBW – January 27, 2018

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WordPress.com – March 20, 2018

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

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

*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).*

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

### **Caitlin Seaview Survey**

<http://www.catlinseaviewsurvey.com>

### **SIMON**

<https://www.sanctuariesimon.org>

### **Seasons in the Sea**

<http://www.seasonsintthesea.com>

### **Waterlust**

<http://www.waterlust.org/about/>

### **Thank You Ocean**

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

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

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

### **Oceans Live**

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

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

<http://www.sanctuaries.nos.noaa.gov/>

### **NOAA Ocean Explorer**

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

### **Encyclopedia of the Sanctuaries**

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

### **National Data Buoy Center**

<http://www.ndbc.noaa.gov/rmd.shtml>

### **National Ocean Service**

<https://www.nos.noaa.gov/>

### **National Oceanic & Atmospheric Administration**

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

### **Your Sanctuary TV**

<http://yoursanctuarytv.org/>

## **MBNMS STAFF**

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**Dawn Hayes** – Deputy Superintendent

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**Andrew DeVogelaere** – Research Coordinator  
**Erica Burton** – Research Specialist  
**Jennifer Brown** – SIMoN Ecosystem Scientist  
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**Nick Ingram** – Volunteer Coordinator (SEC)  
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**Chelsea Prindle** – SEC Manager  
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**Randall Fertig** – SEC Maintenance Specialist  
**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 -**

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