



Monterey Bay National Marine Sanctuary

Sanctuary Office Report



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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 applauds the 21st Annual National Ocean Sciences Bowl finalists

NOAA congratulates the educators and students at the twenty-three high schools that advanced to the 21st Annual National Ocean Sciences Bowl (NOSB) finals competition in Boulder, Colorado. The finals competition will take place from April 19 – 22, 2018 at the Cooperative Institute for Research in Environmental Sciences (CIRES). CIRES is a partnership of NOAA and the University of Colorado Boulder. The NOSB, a program of the Consortium for Ocean Leadership, enriches science education through a nationally recognized and highly acclaimed academic competition. It serves as an educational forum for high school students to increase their knowledge of the marine sciences, integrating the science disciplines of biology, chemistry, physics, and geology. Above all, the NOSB addresses a national gap in environmental and Earth sciences by generating student interest and excitement about the ocean and providing them an opportunity to examine ocean

sciences, both as an in-depth area of study and as a possible career. For more information:

<http://www.noaa.gov/news/noaa-applauds-21st-annual-national-ocean-sciences-bowl-finalists>

Emissions of an ozone-destroying chemical are rising again

Chlorofluorocarbons, or CFCs, were once considered a triumph of modern chemistry. Stable and versatile, these chemicals were used in hundreds of products, from military systems to the ubiquitous can of hairspray. Then in 1987, NOAA scientists were part of an international team that proved this family of wonder chemicals was damaging Earth's protective ozone layer and creating the giant hole in the ozone layer that forms over Antarctica each September. The Montreal Protocol, signed later that year, committed the global community to phasing out their use. Production of the second-most abundant CFC, CFC-11, would end completely by 2010. For more information: <http://www.noaa.gov/news/emissions-of-ozone-destroying-chemical-are-rising-again>

Kilauea eruptions: The way the wind blows, so go the gas and the ash

While images of crimson-colored lava erupting from Hawaii's Kilauea volcano continue to captivate the world, one of the greatest concerns is toxic sulfur dioxide gas emanating from every new fissure in the volcano. Sulfur dioxide (SO₂), which mixes with other air pollutants, can harm the eyes, skin and the respiratory system. At a minimum, it causes short-term breathing difficulties and is particularly hazardous for those with conditions like asthma or emphysema. NOAA's HYSPLIT computer model helps forecasters estimate the concentration and movement of SO₂ in the air — vital information needed by Hawaii's emergency responders to make evacuation and other public safety decisions. The model uses wind and other weather data to predict when a plume of toxic gas might drift over population centers. For more information: <http://www.noaa.gov/news/kilauea-eruptions-way-wind-blows-so-go-gas-and-ash>

NATIONAL MARINE SANCTUARY NEWS

Cyclone Gita coral reef damage assessment, NMSAS

Cyclone Gita hit American Samoa on February 9, 2018. The cyclone was a category 1 but built into a category 2 while passing American Samoa. The cyclone brought sustained winds of 63 knots with gusts up to 87 knots mainly coming from the north. Wave action in the north was substantial with waves wrapping around the island on the east and west end. A manta tow was conducted in Fogama'a/Fagalua and Fagatele Bay on February 27, 2018 and around Aunu'u on March 19, 2018 to assess damage to the coral reef ecosystem. Fogama'a/Fagalua and Aunu'u showed very little to no damage to coral colonies. In contrast, Fagatele Bay sustained damage mostly affecting table Acropora coral, which due to their shape are prone to be ripped out by large wave action, and also branching Acropora coral, which seemed to be smashed by rolling around pieces of the table Acropora or other debris. The eastern part of the bay sustained the most damage with certain, distinct areas showing an estimated damage of around 20% of coral colonies.

New lionfish genotyping article published to Nature's Scientific Reports

A new paper titled, "Genetic homogeneity of the invasive lionfish across the Northwestern Atlantic and the Gulf of Mexico based on single nucleotide polymorphisms" was published to Nature's Scientific Reports. Genotyping through sequencing techniques were used to identify 1,220 single nucleotide polymorphic sites from 162 lionfish samples collected between 2013 and 2015 from two areas chronologically identified as the first and last invaded areas in US waters: the east coast of Florida and the Gulf of Mexico (including Flower Garden Banks National Marine Sanctuary). No significant differences in genetic structure or diversity were found between the east coast of Florida and Gulf of Mexico. Genomic analyses showed genetic homogeneity, with enough gene flow to erase previous signals of genetic divergence detected between these areas, secondary spreading, and bottlenecks in the Gulf of Mexico. These findings suggest rapid genetic changes over space and time during the invasion, resulting in one panmictic population with no signs of divergence between areas due to local adaptation. The article can be found online at <https://www.nature.com/articles/s41598-018-23339-w> Lionfish samples from Flower Garden Banks National Marine Sanctuary all came from Lionfish Invitational fish, a great outcome of science generated from these volunteer diver based removal trips run by the sanctuary in partnership with Ripley's Aquarium of Canada and Fling Charters every year. Also, the majority of the genetic analyses was done by undergrads learning these techniques in the marine science program at the Univ. of Miami.

Pacific Islander/Asian American Heritage Month in National Marine Sanctuaries

The Office of National Marine Sanctuaries (ONMS) launched a story map (<https://sanctuaries.noaa.gov/news/may18/pacific-islander-asian-american-heritage-month-in-nms.html>) celebrating the contributions and achievements of Pacific Islander/Asian Americans to our ocean, maritime traditions, and national marine sanctuary communities. The story map shares stories relevant to NOAA's National Marine Sanctuary System with a themed approach, such as Bestowing Stewardship, Defending the Nation, Inspiring Future Leaders, and Celebrating Life. It is the third of ONMS's Heritage Months 2018 projects, a year-long program using the seven recognized heritage months to honor the diverse communities, cultures, and voices of our nation. ONMS's Heritage Months 2018 Project and Heritage of the Blue website recognize and honor the diversity of our maritime nation.

Entanglement Response Team removes anchoring line entangling a gray whale off Olympic Peninsula

Response teams from NOAA Fisheries' Large Whale Entanglement Response Network attempted to free a juvenile gray whale entangled in fishing gear about 20 miles off Washington's Olympic Peninsula on Wednesday afternoon, May 9, 2018. The team removed some of the weighted fishing gear that had been entangling the whale for up to a month. Jeff Pederson on the FV Harvester of Harvesters Catch first reported the entangled whale to the U.S. Coast Guard early Tuesday morning. The Coast Guard relayed the information to the Entangled Whale Hotline, (877-SOS-WHALE or 877-767-9425) and NOAA Fisheries activated a response from teams based in Olympia and Seattle. Read more at <https://flashalert.net/id/NOAAFisheries/114326>



MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



MANAGEMENT

Monterey Bay National Marine Sanctuary Holds Advisory Council Meeting

On April 20th, the MBNMS Advisory Council (AC) met and received a series of presentations and updates on kelp and sea urchins, ocean acidification and a review of Management Plan Review Draft Action Plans. The next meeting will be held on June 15th 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.

RESEARCH AND MONITORING

MBNMS Staff Member Completes NOAA Diving Center's Field Trainer Course

Chad King, MBNMS Research Specialist, completed the Field Trainer course at the NOAA diving center in Seattle, Washington from March 12-16, 2018. This course prepared and certified the six attending Divemasters and Unit Dive Supervisors to certify future candidates as NOAA Divers. It is cost-prohibitive to send NOAA diver candidates to Seattle or Key West for a three-week course. This solution will reduce the cost of certifying NOAA divers and increase field sites' capabilities to deploy a larger, NOAA-certified team of divers to accomplish various diving projects.

Sanctuaries MBON Data Visualizations Presented at MARINE Annual Meeting

Jennifer Brown (MBNSM, CINMS) and Ben Best (EcoQuants) were invited to present preliminary work on MBON-funded data visualizations at the annual meeting of the [Multi-Agency Rocky Intertidal Network \(MARINE\)](#) on March 24 in San Pedro, CA. The presentation by Best provided background on the U.S. [Marine Biodiversity Observation Network \(MBON\)](#) and described the [Explorer and Infographic tools](#) being developed by the [Sanctuary MBON demonstration project](#) for interactive, data-driven storytelling and reporting. In particular, the interactive infographics were highlighted as a tool to help sanctuary managers better assess status and trends for Sanctuary condition reports. The presentation showed early progress on creating interactive maps and time series of sanctuary status and trend using MARINE's long-term monitoring data for rocky intertidal resources in both Monterey Bay and Channel Islands National Marine Sanctuaries. These data visualization tools were received with great interest from members of the MARINE group and will continue to be refined over the coming months. The Sanctuaries MBON demonstration project is linking federal and non-federal partners to help us better understand these important marine ecosystems and serve to inform resource managers on the current status of biodiversity and potential threats to biodiversity in sanctuaries

Ed Ricketts Memorial Award and Lecture held at Moss Landing Marine Laboratories

On April 10th, Dr. Steven Haddock of Monterey Bay Aquarium Research Institute was presented the Ed Ricketts Memorial Award, and provided the captivating lecture, "Beneath Pacific Tides: The wondrous glowing realm of deep-sea biodiversity." Approximately 50 members of the public and scientific community attended. Dr. Haddock described his early career, and how his interests developed in the fields of midwater ecology and biology, and bioluminescence. His research and scientific papers have advanced our knowledge of these bioluminescent and gelatinous animals. In February 2018, the US Postal Service issued a set of postage stamps showcasing bioluminescent animal images, of which Haddock was a contributor. The Ed Ricketts Memorial Lecture was created to honor scientists who have exhibited exemplary work throughout their career and advanced the status of knowledge in the field of marine science. The first award was presented in 1986. Recipients are

selected by the Monterey Bay National Marine Sanctuary Research Activity Panel. Award history can be viewed at: <http://montereybay.noaa.gov/research/ricketts.html>.

Beach COMBERS Receive Award for Outstanding Volunteer Service

At the April 20th Monterey Bay National Marine Sanctuary (MBNMS) Advisory Council meeting, Scott Benson and Karin Forney received the National Marine Sanctuaries Volunteer Service Award for their contributions to the Beach COMBERS program. Scott Benson developed the volunteer training course and methods for Beach COMBERS in 1997 with significant science and agency application advice from Dr. Karin Forney. Once the program was off and running and administered by NOAA's MBNMS, they naturally stayed on as volunteers. They have been monitoring the same 3-mile stretch of beach, monthly for 21 years, documenting beach cast birds and marine mammals. Both Scott and Karin show a dedication to MBNMS and have been model volunteers for these past 21 years by walking their beach, without fail, each month. Moreover, they happily contribute to annual volunteer appreciation and training events, sharing their scientific insights and a knack for riveting storytelling. MBNMS uses Beach COMBERS data to identify seasonal and long-term biological monitoring trends, and to detect any unusual human-cause or natural mortality events (UME), informing resource manager responses. Beach COMBERS data have been used to identify UME's for Common Murre seabirds affected by offshore drift gill nets (eventually leading to a fishing regulation change), to detect a variety of oil spills (resulting in response and mitigation), impacts from harmful algal blooms, and an average of 2.5 unusual mortality events per year. This kind of work is more than one agency can address with government employees, and the citizen science effort that Scott and Karin played a huge part in starting has resulted in 185 volunteers contributing to more than 31,000 hours of labor. 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.sanctuarysimon.org/monterey/sections/beachCombers/index.php?l=n>.

Deep-sea coral scientists develop science plan for west coast

Scientists conducting research on deep-sea coral and sponge habitats on the west coast met in Santa Barbara April 16-17 to discuss research priorities for the next four years. The meeting was sponsored by the NOAA Deep Sea Coral Research and Technology Program (DSCRTP) to identify priority projects for their West Coast Initiative 2018-2021. The ultimate end product to be borne out of this workshop will be the Science Plan for the West Coast Initiative; a document guiding the specific research, activities, products, and their applications planned through 2021. Academic and government scientists participated, including representatives from all five west coast sanctuaries. Collaborating with scientists in the west coast region will leverage resources, create efficiencies, and characterize deep-sea coral and sponge habitats.

MBNMS Research Activity Panel Meets at Monterey Bay Aquarium Research Institute

On May 11th, the Monterey Bay National Marine Sanctuary (MBNMS) Research Activity Panel (RAP) will meet at Monterey Bay Aquarium Research Institute (MBARI), in Moss Landing, CA. Agenda items included: Marine Biodiversity Observation Network update; Summary of April MBNMS Advisory Council meeting; Management Plan Review; Ship Strikes in Sanctuaries: New Mortality Model; 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>

Dive Unit Safety Assessment site visit

May 9-11, 2018 Roger Mays, the NOAA Dive Safety Officer from the Safety and Environmental Compliance Division (SECD), conducted an inspection of the Monterey Bay NMS dive unit. Every three years the dive unit undergoes an inspection by the DSO. The DUSA evaluates diving unit administrative records, diving equipment, dive compressor and gas storage systems, support equipment, operational procedures, and rescue procedures at NOAA Diving Units. Inspections ensure safe operations and compliance with diving rules and regulations.

MBNMS Staff attends Ocean Exploration Trust's Science Communication Workshop at URI

From April 23-25, Chad King (MBNMS Research Staff) attended Ocean Exploration Trust's (OET) Science Communication Workshop at the University of Rhode Island to prepare for October's research expedition aboard the exploration vessel Nautilus. Chad will be chief scientist, and the purpose of this workshop was to present the science objectives of each expedition, meet the research and communications staff, tour the Inner Space Center, and discuss additional logistics, needs and requirements with OET staff. The Ocean Exploration Trust was founded in 2008 by Dr. Robert Ballard to engage in pure ocean exploration. The expedition in October will use two deep-sea remotely operated vehicles to explore a previously unexplored rocky reef area southeast of the Davidson Seamount up to depths of 3,500 meters. The expedition can be followed at nautiluslive.org. Collaborating with Ocean Exploration Trust will greatly extend MBNMS' outreach capacity before, during and after the expedition. This expedition also has the chance of making significant discoveries and/or observations in deep-sea ecology.

RESOURCE PROTECTION

Agricultural Water Quality Alliance Meeting (AWQA)

MBNMS Agricultural Water Quality Coordinator, Pam Krone, organized a meeting held on 3/21/18 for agricultural stakeholders to learn about pesticide detection in MBNMS watersheds and the ocean, as well as to learn about management practices that can be implemented on farms to remove pesticides from water and sediment. The AWQA meeting was attended by approximately 30 growers, technical service providers and researchers. Speakers included the California Department of Pesticide Regulation, Central Coast Cooperative Monitoring Program, Central Coast Long-Term Environmental Assessment Network, Granite Canyon Lab and MBNMS. Helping the agricultural community understand the severity of the pesticide problem in local waterbodies, the ocean and the ecosystems can help motivate the drive to discover and implement solutions that can improve water quality from field runoff and entering MBNMS.

MBNMS and CPUC release Final EIR/EIS for Monterey Peninsula Water Supply Project

On March 27, 2017, MBNMS and the California Public Utilities Commission (CPUC) released a jointly prepared Final Environmental Impact Report/Environmental Impact Statement (FEIR/EIS) for the proposed Monterey Peninsula Water Supply Project. In 2015, California American Water Company (CalAm) submitted a permit application for the construction and operation of its proposed MPWSP with the purpose to MPWSP replace existing water supplies for CalAm's Monterey District service area. The project includes various proposed facilities and improvements including: a subsurface intake system; a 9.6-million-gallons-per-day reverse osmosis desalination plant; desalinated water storage and conveyance facilities; and expanded Aquifer Storage and Recovery facilities. The FEIR/EIS identifies Alternative 5a (a smaller 6.4 mgd desal project plus Pure Water Monterey) as the environmentally superior/environmentally preferred alternative, assuming implementation of the Pure Water Monterey Groundwater Replenishment Project. Federal, state, and local agencies will use the Final EIR/EIS to consider related permits or other approvals. NOAA will issue a Record of Decision at the same time CPUC issues their decision on the project. CalAm is under court order (cease and desist) to reduce removal of water from the Carmel River and its watersheds in order to restore steelhead habitat and associated watersheds.

As federal lead agency under NEPA, MBNMS has the authority and responsibility to ensure the project does not harm or have negative environmental impacts to sanctuary resources and is consistent with the MBNMS Desalination Guidelines, which were produced in coordination with NOAA Fisheries and the California Coastal Commission.

MBNMS participates in small boat whale entanglement training

On March 26, Pieter Folkens (L4) coordinated spring training for our network of whale entanglement rescue agencies and volunteers aboard the R/V Fulmar. West Coast Regional Office, NMFS, USCG, WET volunteers and others participated in the training. The skills and exercises were designed for L2 and L3 responders to practice launching small boats, and use of respective equipment for disentangling whales. Scenarios included working on mobilization, communications, acquisition techniques and devices, telemetry deployment and keggings. Weather conditions were nominal yet all scenarios were completed safely. Training for entanglement events are an important element for effective coordination required by the agencies (NMFS, ONMS, US Coast Guard, Stranding Network) and WET partners (a long list that includes the whale watch industry).

CA Dungeness Crab Fishing Gear Working Group

The California Department of Fish and Wildlife, in partnership with the National Marine Fisheries Service and the California Ocean Protection Council, have prioritized addressing the recent spike in whale entanglements occurring in California waters. In response to this, a diverse stakeholder group was established to tackle the challenge of reducing the risk of whale entanglements in California Dungeness crab fishing gear. MBNMS serves as the regional sanctuaries representative and as an advisor. The DCrab WG has had a series of calls over the past month to discuss a variety of topics including: a mid season risk assessment, the MBNMS management plan language on entanglement, a discussion on SB 1309, which addresses the WG budget and goals, and exploring gear modification such as ropeless technologies. Lastly, the group discussed the agenda for the upcoming in person meeting April 23-24 and planning for the Bodega Bay discussion on April 25. Engaging in stakeholder efforts such as the DCrab Working Group will potentially reduce the numbers of whale entanglements through agencies and fishermen working cooperatively together on risk assessments and other collaborative projects.

Conservation Working Group (CWG) meets at MBNMS Office

The CWG has been developing a work plan for 2018, and the two main topics that are under discussion for focused efforts are Extended Producer Responsibility, and wildlife disturbance guidelines. During the March 28th meeting, a number of action items were identified for the upcoming May 16th meeting including inviting a speaker on EPR and reviewing existing resources on wildlife etiquette to explore as a potential project for the CWG. The CWG is a working group of the Sanctuary Advisory Council and advises staff and the Council on marine conservation issues related to the Sanctuary.

MBNMS Staff participate in California Statewide MPA Collaborative Network Meetings

MBNMS Staff Lisa Uttal (co-chair Santa Cruz Collaborative) attended the *MPA Collaborative Network Leadership Forum* at the University of Southern California (USC) Wrigley Marine Science Center. This gathering was represented by 14 Statewide MPA Collaboratives and 25 co-chairs to learn about statewide goals and priorities as well as discuss both successes and challenges amongst the various Collaboratives. Co-chairs were able to share their projects and materials that had been funded by the state to the Collaboratives. There are 124 State MPAs in California. Monterey Bay National Marine Sanctuary is a federally protected MPA where many of the state MPAs reside within. Messaging and collaboration at a local level with the SC and Monterey Collaboratives is critical to educating the public and doing outreach to heighten the awareness both State and Federal MPAs in California.

MBNMS Water Quality Team Finalizes Report for Lovers Point Watershed Monitoring

Bridget Hoover and Lisa Emanuelson finalized the monitoring report for the Lovers Point Beach Water Quality Improvement Initiative. Monitoring focused on determining effectiveness of infrastructure repairs and replacement within the Lovers Point Beach watershed in reducing fecal indicator bacteria (*E. coli* and enterococcus). The Lovers Point Beach watershed is one of the largest watersheds in Pacific Grove and has been shown to have high FIB in storm drain flows during both wet and dry weather months. The City of Pacific Grove improved and in many places replaced both sanitary and storm drain lines to prevent exfiltration from the sanitary sewer and infiltration to the storm drain system. A comparison of monitoring results taken before and after the infrastructure repair and replacement showed an average of an 86% decrease in *E. coli* concentrations from the seven sites monitored, and a 98% decrease in enterococcus concentrations. Storm drain systems carry water from neighborhoods and commercial areas to Monterey Bay National Marine Sanctuary without treatment or filtering. High levels of bacteria, metals and nutrients can significantly impact resources within the sanctuary. By improving on land-based sources of contamination, water quality will be improved within Monterey Bay National Marine Sanctuary.

Final Action on Groundfish Essential Fish Habitat and Rockfish Conservation Area which included 15 MBNMS proposed areas

On April 10, 2018, the Pacific Fishery Management Council took final action to modify the current configuration of Essential Fish Habitat Conservation Areas (EFHCAs) where groundfish bottom trawl gear is prohibited west coast wide. They also reopened the groundfish trawl Rockfish Conservation Area (RCA) in Oregon and California to bottom trawling, and included a new EFH Conservation Area prohibiting groundfish bottom trawl gear in most of the Southern California Bight. MBNMS and GFNMS submitted proposals in 2013, and participated in the Council's 5-year review process until this week to facilitate information through the Council process. The 2013 MBNMS Collaborative proposal to modify trawl EFH CAs within the Sanctuary was led by MBNMS and included Monterey Bay trawl fishermen, the City of Monterey, Oceana, Natural Resources Defense Council, Ocean Conservancy, The Nature Conservancy, the California Risk Pool (aka CA Groundfish Collective) and Environmental Defense Fund. The MBNMS approach used a framework of local stakeholder collaboration combined with newly collected benthic habitat and fisheries data since amendment 19 with local fishermen knowledge, to develop a collaborative proposal for modifying EFHCA boundaries. The proposal uniquely considered new protections for groundfish EFH coupled with opportunities for fishermen to access valuable fishing grounds, by opening portions of EFHCAs that are less environmentally sensitive. The MBNMS proposal served as a model for the Coastwide Collaborative, and the Council's final decision incorporated all fifteen of the Sanctuary's proposed modifications into groundfish EFHCAs. In summary, 168 sq miles of priority habitat (i.e., hard substrate, canyon), will be closed to trawling and 99 sq miles of historically trawled area will be re-opened to fishing. MBNMS and local stakeholders (fishermen/NGOs) have been engaging with NMFS and the PFMC over the past 6 years on proposed modifications to Essential Fish Habitat Conservation Areas. The Sanctuary worked closely with NMFS and PFMC and was able to achieve a number of positive outcomes that protect valuable habitat from trawling impacts and allow fishermen access to historically trawled fishing grounds.

19 Years of Successful Snapshot Day Water Quality Monitoring Events

The 19th Annual Snapshot Day water quality monitoring event took place on Saturday, May 5th. On Snapshot Day, 129 volunteers collected water samples at 115 sites in creeks 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. An event of this magnitude is not possible without the amazing volunteers, many who have participated for the past 19 years. With each year, the results become more valuable in showing long-term status and trends of many waterbodies flowing into the sanctuary, some of which are only monitored on this one day each year. Volunteers collected lab

samples for analysis of nitrate, phosphate, and *E. coli*; and conducted field measurements for temperature, pH, dissolved oxygen, conductivity and transparency. 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 and raise awareness of the importance of our local creeks, clean water, and the connection of land and sea.

EDUCATION, VOLUNTEER AND OUTREACH PROGRAMS

CA State Parks docents join Coastal Discovery Center docents to visit Santa Cruz Island

Sea Life Stewards' kayak docents from CA State Parks in Morro Bay joined Coastal Discovery Center docents this week to hike Santa Cruz Island National Park and snorkel in the waters of Channel Island NMS as part of a volunteer enrichment. Led by a Channel Islands Naturalist Corps volunteer representing Channel Islands National Park and Channel Islands National Marine Sanctuary, the visiting group enjoyed island wildlife and amazing views while bonding with fellow docents. As a result of this docent enrichment trip, volunteers from both CA State Parks and MBNMS learned about another National Marine Sanctuary and National Park while exchanging ideas and experiences with docents from other agencies.

Monterey Bay National Marine Sanctuary joins Earth Day Celebration in Cambria

MBNMS joined Greenspace Cambria Land Trust and other local partners for a 2018 Earth Day Celebration this weekend. Situated alongside Santa Rosa Creek, MBNMS' table activity focused on how to keep local watersheds healthy with the use of a watershed model. The model demonstrated to 130 visitors how land debris and oil can reach the ocean, followed by discussion on actions we can all take to reduce and eliminate marine debris. Community Earth Day events such as this allow MBNMS to showcase what they are doing to address healthy watersheds, and to reconnect with their partners who represent agencies, NGOs and academic institutions involved in education and research in coastal conservation. Goals and accomplishments Greenspace - the Cambria Land Trust can be viewed on: <https://www.landcan.org/local-resources/Greenspace--The-Cambria-Land-Trust/33/>

MBNMS leads a marine mammal field trip for Friends of Fiscalini Ranch Preserve

Twenty- five visitors and docents from FFRP joined Carolyn Skinder at the Fiscalini Ranch coastal boardwalk last Saturday to learn about common seals, sea lions and sea otters that share our shores, and about the whales that migrate by and feed along the coast of San Simeon and Cambria. Using marine mammal artifacts, guides and binoculars, participants learned how to identify marine mammals, seasonality of whale migrations, how to report injured and stranded marine mammals and how MBNMS helps to protect these magnificent animals. Partners such as Fiscalini Ranch Preserve help conserve coastal habitat through the restoration of native grasslands and the upkeep of a coastal boardwalk that borders southern MBNMS, as well as monthly public education programs. By speaking to this group, MBNMS is able to share its mission with FFRP volunteers, who will in turn share with others. To learn more about FFRP, go to: <http://www.ffrpcambria.org/>

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 (MPA's) for the public on Saturday, April 28, 2018. MBNMS joined several other conservation organizations for the celebration to educate park visitors about national marine sanctuaries, marine protected areas, and marine reserves. The event featured exhibits for visitors to touch, feel and learn about some of the spectacular underwater wildlife in Whalers Cove with live specimens. 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. The event was attended by over 500 visitors to the park. 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.

Monterey Bay National Marine Sanctuary participates in National Safe Boating Week Event

The United States Coast Guard held its annual National Safe Boating Week event at Monterey Station to highlight the importance of safe boating practices and served as a showcase for USCG assets for the public on Saturday, May 19, 2018. MBNMS joined several other agencies, including California Department of Fish and Wildlife, to bring awareness about resource protection along the coast. The event featured displays and activities by the USCG, a mock ocean helicopter rescue demonstration, and public tours of USCG enforcement vessels. MBNMS education staff provided information for the public on NOAA's role in promoting safe boating, and the WCRO facilitated public tours aboard the R/V *Fulmar*. As part of our mission to educate about the significance and importance of national marine sanctuaries, MBNMS participates in partner events to share messages of ocean awareness, inspiration, and conservation of important sanctuary resources to the public.

Santa Cruz MPA Collaborative presentation and meeting held at Cabrillo College, Santa Cruz, CA

Monterey Bay National Marine Sanctuary staff Lisa Uttal and partner Cabrillo College coordinated and held an MPA science and policy event at Cabrillo College which drew almost 100 Santa Cruz community members and college students. A presentation by Dr. Rick Starr (Moss Landing Marine Laboratories) and Cyndi Dawson (Ocean Protection Council) culminated in a panel discussion with the speakers, Calla Allison (Director MPA Collaborative Network, Nicole Crane (Co-chair SC MPA Collaborative) and MBNMS staff member Lisa Uttal (co-chair SC MPA Collaborative). Events like these that are co-sponsored and coordinated by multiple partners is an effective way to educate the public about sanctuary as MPAs.

Point Sur Lighthouse Volunteers trained by MBNMS staff

For the 3rd year in a row, MBNMS staff Lisa Uttal trained 15 Point Sur Lighthouse Volunteers in their annual training session on MPAs. Along with discussing MPAs, the presentation included live observation of plankton under a microscope projected on a screen. Discussing plankton is a great way to introduce the incredible biodiversity of MBNMS and to discuss threats like ocean acidification. Pt. Sur lighthouse and its supporting lightstation buildings, now a California State Historic Park, stand atop a dramatic volcanic rock just off-shore in Big Sur, California overlooking MBNMS and 2 state MPAs. Educating volunteers from other organizations is a way to spread the word about MBNMS and to help discuss MPAs which are largely unknown as offshore, out of site protected areas.

MBNMS Education Specialist, Nick Ingram presents to Sierra Club Ventana Chapter

On Thursday, May 17, Nick Ingram was invited to present to the Santa Cruz / Ventana chapter of the Sierra Club. Every other month this chapter hosts speaker to present to the public on various topics including those related to local conservation issues and resource protection. Nick provided a broad overview of the National Marine Sanctuary system including the location and general focus of all current sanctuaries as well as newly proposed sites. Further information was provided regarding the designation of Monterey Bay National Marine Sanctuary as well as what makes it an ecologically and culturally significant area and what MBNMS is doing to protect these significant resources. Public presentations such as this raise awareness about National Marine Sanctuaries and the important role they play in resource protection, research, and education. Below are a couple written comments in response to the presentation.

“Excellent presentation with engaging speaker! I learned a number of new insights and information about our marine sanctuaries.”

“It's a shame that there weren't more people. Nick was an outstanding presenter: interesting, engaging, and a great sense of humor.”

NEWS COVERAGE

[Final environmental report for Cal Am desal project released](http://www.montereyherald.com/article/NF/20180328/NEWS/180329823)

<http://www.montereyherald.com/article/NF/20180328/NEWS/180329823>

Monterey Herald – March 28, 2018

[Earth Matters: Experience the songs of the ocean](http://www.santacruzsentinel.com/article/NE/20180405/FEATURES/180409822)

<http://www.santacruzsentinel.com/article/NE/20180405/FEATURES/180409822>

Santa Cruz Sentinel – April 5, 2018

[Land of lost balls](https://www.newsreview.com/chico/land-of-lost-balls/content?oid=26106597)

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[25 things to do on Saturday](http://www.sanluisobispo.com/news/local/article208884049.html)

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The San Luis Obispo Tribune – April 13, 2018

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Monterey County Weekly – April 18, 2018

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[Eavesdropping on the deep-New live streaming audio from a deep-sea hydrophone](https://phys.org/news/2018-04-eavesdropping-deepnew-streaming-audio-deep-sea.html)

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[Kayaker's dauntingly close encounter with whale captured in photos](https://bnqt.com/2018/04/27/kayakers-dauntingly-close-encounter-with-whale-captured-in-photos/)

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[Local kelp forests are giving way to barrens of sea urchins. Divers want to fight back.](http://www.montereycountyweekly.com/news/local_news/local-kelp-forests-are-giving-way-to-barrens-of-sea/article_4c02da80-4e5f-11e8-8a16-17337c3bd6f5.html)

http://www.montereycountyweekly.com/news/local_news/local-kelp-forests-are-giving-way-to-barrens-of-sea/article_4c02da80-4e5f-11e8-8a16-17337c3bd6f5.html

Monterey County Weekly – May 3, 2018

[Boucher Trail in San Simeon is a treasure trove of marine mammals](https://www.independent.com/news/2018/may/08/boucher-trail-san-simeon-treasure-trove-marine-mam/)

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[Celebrating O'Neill Sea Odyssey's 100,000th student](http://www.tpgonlinedaily.com/celebrating-oneill-sea-odysseys-100000th-student/)

<http://www.tpgonlinedaily.com/celebrating-oneill-sea-odysseys-100000th-student/>

Aptos Times – May 11, 2018

[Have you wondered what the deep of the sea sounds like? These scientists finally discovered](http://www.maritimeherald.com/2018/have-you-wondered-what-the-deep-of-the-sea-sounds-like-these-scientists-finally-discovered/)

<http://www.maritimeherald.com/2018/have-you-wondered-what-the-deep-of-the-sea-sounds-like-these-scientists-finally-discovered/>

Maritime Herald – May 21, 2018

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

★★ **Check out these updated 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.

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.sanctuarysimon.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
Erica Burton – Research Specialist
Jennifer Brown – SIMoN Ecosystem Scientist
Chad King – SIMoN Data Analyst
Steve Lonhart – SIMoN Senior Scientist

Education

Amity Wood – Education and Outreach Coordinator
VACANT – SEC Gift and Bookstore Manager
VACANT – Program Specialist (SEC)
Nick Ingram – Volunteer Coordinator (SEC)
Brijonnay Madrigal – 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
Pamela Krone – Agriculture Water Quality Coordinator

Program Operations

Raymond Chisolm – Program Specialist
Nichole Rodriguez – Advisory Council Coordinator
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>

National Data Buoy Center

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

- Contact Information -

Monterey Bay National Marine Sanctuary

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