



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

Scientists launch unprecedented effort to discover how El Niño affects weather

A team of NOAA scientists and partners have embarked on a land, sea, and air campaign in the tropical Pacific to study the this year's El Niño and gather data in hopes to improve weather forecasts thousands of miles away. The El Niño Rapid Response Field Campaign will deploy NOAA's Gulfstream IV research plane, the NOAA Ship *Ronald H. Brown*, NASA's Global Hawk unmanned aircraft equipped with specialized sensors, and researchers stationed on Kiritimati (Christmas) Island in the Republic of Kiribati, which lies approximately 1,340 miles south of Honolulu. Scientists will collect atmospheric data from this vast and remote expanse of the tropical Pacific where El Niño-driven weather systems are spawned.

<http://www.noaa.gov/scientists-launch-unprecedented-effort-discover-how-el-ni%C3%B1o-affects-weather>

Study: California blowout led to largest U.S. methane release ever

When pilot Stephen Conley of Scientific Aviation first flew above the leaking Aliso Canyon natural gas well in southern California, he thought the instruments in his specially equipped plane had gone haywire. They hadn't. "This was just a huge event," Conley said. Conley and NOAA's Tom Ryerson quickly built a team of researchers to investigate the blowout of the SoCalGas well. The results, published Feb. 25 in the journal *Science*, showed that the accident released over 100,000 tons of the powerful greenhouse gas methane before the well was plugged on February 11. At its peak, the Aliso Canyon well leaked enough methane every day to fill a balloon the size of the Rose Bowl, doubling the rate of methane emissions from all other sources in the Los Angeles basin combined. The study confirmed that this was largest methane leak in U.S. history and was temporarily the largest point-source of methane anywhere in the United States. The team's work has implications for states or countries trying to meet pollution targets in the future. "Our results show how failures of natural gas infrastructure can significantly impact greenhouse gas control efforts," said Ryerson. <http://www.noaa.gov/study-california-blowout-led-largest-us-methane-release-ever>

Five years after Japan's tsunami: What we've learned about marine debris

It has been five years since Japan was hit with one of the worst natural disasters in its history. The 9.0 magnitude earthquake and tsunami that followed claimed nearly 16,000 lives, injured 6,000 more, and damaged or destroyed countless structures and property. It also led to an estimated 5 million tons of marine debris that were pulled into the Pacific by the massive tsunami wave, adding to an existing marine debris problem. As the lead U.S. federal agency addressing marine debris, the NOAA Marine Debris Program has worked closely with partners in the Pacific states, Canada, and Japan for the last five years to respond to tsunami marine debris and share information. <http://www.noaa.gov/five-years-after-japans-tsunami-what-weve-learned-about-marine-debris>

Revealing secrets of the deep sea, one stomach at a time

Ever wonder how scientists monitor populations of mysterious marine creatures like the octopus, who spend much of their life hiding at the bottom of the ocean floor? If you are a NOAA scientist in Alaska, you might want to do a gut check — not your own, but into the stomach of a Pacific cod, one of the octopus' predators. By examining the stomachs of cod in the Bering Sea and Aleutian Islands, scientists can focus on critical elements of the octopus' population structure, and determine appropriate fishing limits for the reclusive species. <http://www.noaa.gov/revealing-secrets-deep-sea-one-stomach-time>

NATIONAL MARINE SANCTUARY NEWS

Humpback Whale Incidents

In contrast to early media reports of not very many humpback whales around, there have been more reports recently of vessel whale contacts and entangled whales. On Maui, there were two separate reports of vessel whale contacts. A tour operator self-reported a “glancing contact” to an adult humpback whale off Kihei Boat Ramp on January 25th. Prior to that, on January 14, there was a report of a vessel making contact with an adult humpback whale off Puu Olai (south of Makena), Maui. Two reports of entangled humpback whales occurred on January 23, one on O‘ahu near Makapu‘u and the other on Maui near Lahaina. On Maui, a response was initiated with the sanctuary vessel *Koholā*, but they were unsuccessful in attaching a telemetry buoy due to the lateness of the hour and whale being difficult to work so the effort was terminated. Mariners are asked to keep a sharp lookout for this and other entangled animals, but not to approach closely or attempt to free them. While well intentioned, freeing a 40-ton animal is extremely dangerous for the animal and the would-be rescuer. Getting in the water is especially dangerous. People have been killed. As a result, only trained and well-equipped responders that are authorized under NOAA Fisheries’ Marine Mammal Health and Stranding Response Program are permitted to disentangle whales. Hawaiian Islands Humpback Whale National Marine Sanctuary monitors and responds as necessary to reports of entanglement and vessel strikes to humpback whales. The sanctuary keeps records of these reports in order to monitor the impact of these threats to humpback whales over the years.

Four New Species of Algae Described from Hawaiian Deep-Water Reefs

This month, scientists working with PMNM announced the discovery four new species of deep-water algae from Hawai‘i. The new species were sampled during surveys in PMNM by NOAA divers using advanced SCUBA diving technologies, as well during past expeditions throughout the Main Hawaiian Islands using submersibles operated by the Hawai‘i Undersea Research Laboratory. Scientists consulted with the Native Hawaiian community to develop meaningful names for the new species to honor the great importance that algae have in Hawaiian culture. One species was named *Ulva iliohaha*, which refers to the foraging behavior of ‘Īlioholoikauaua, the endangered Hawaiian monk seal, one of the best-known inhabitants of PMNM. The study describing the new species was published in the latest issue of the *Journal of Phycology*. The article, titled “New Ulvaceae (Ulvophyceae, Chlorophyta) from mesophotic ecosystems across the Hawaiian Archipelago,” is featured as the journal’s cover story and can be accessed at <http://onlinelibrary.wiley.com/doi/10.1111/jpy.12375/full>. PMNM using state of the art technologies to make new discoveries about previously unexplored ecosystems of the Monument. Research conducted by PMNM reaches international audiences via publication in a prestigious peer-reviewed scientific journal. Supporting PMNM’s mission to work with the Native Hawaiian community and integrate traditional knowledge in scientific research.

ACCESS Data in Publication on Community Shifts in Response to Oceanographic Conditions

Shifts in oceanographic conditions in Cordell Bank National Marine Sanctuary (CBNMS) and Greater Farallones National Marine Sanctuary (GFNMS) result in changes in the abundance and species composition of the copepod community as reported in a new publication in the peer reviewed journal, *Progress in Oceanography*. Scientists at Point Blue Conservation Science and University of California, Davis - Bodega Marine Lab used data collected during the sanctuaries’ monitoring program, Applied California Current Ecosystem Studies (ACCESS), to examine the zooplankton response to oceanographic conditions during years of stronger versus weaker upwelling. The study found copepods were more abundant in years of stronger upwelling, and in these years the copepod community had more species of the lipid-rich “boreal” or northern species. These copepods are more nutritious for the fish that prey on them, including ecologically and commercially important salmon species. CBNMS and GFNMS are in a strong upwelling zone, which is a driver of regional ocean productivity. Climate change is expected to result in changes in upwelling zones and this study provides some insight into how these changes may impact the sanctuaries’ ecosystem. ACCESS is a collaborative effort of CBNMS, GFNMS, and Point Blue Conservation Science for ongoing data collection to understand status and trends of sanctuary resources, ecosystem health, and response to climate change.

ONMS Uses Unmanned Aircraft Systems Towards Whale Research and Response

The Office of National Marine Sanctuaries’ Collaborative Center for Unmanned Technologies and Hawaiian Islands Humpback Whale National Marine Sanctuary led a collaborative effort to test the use of small Unmanned Aircraft Systems (UAS) to remotely assist with whale research and large whale entanglement response efforts. Equipped with tiny but powerful cameras, small, quiet, electric quadcopter UAS platforms can provide a safe, cost-effective, low-impact way to assess, document, and even collect biological samples (e.g. breath collection) from whales. Quadcopters can also assist in disentangling activities led by the sanctuary, by hovering above animals in distress to allow photographic and visual evaluation of the entanglement and their condition. While no entangled whales were reported during the two-week study, the team of researchers observed more than 15 humpback whales and documented a behavior not often seen – “sailing”. In addition to the Office of National Marine Sanctuaries, the project also included Woods Hole Oceanographic Institution, The Sterling Group, and NOAA Fisheries Office of Protected Resources’ Marine Mammal Health and Stranding Response Program (MMHSRP). The effort was authorized under the Federal Aviation Administration, the state of Hawaii Department of Land and Natural Resources, and NOAA’s MMHSRP. The potential advantages of UAS technology for marine mammal

work are numerous for the sanctuary. The use of small UAS platforms likely reduce risks associated with research and response efforts by allowing all-important assessment to be gained without humans actually approaching the animals.



MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



MANAGEMENT

Monterey Bay National Marine Sanctuary Holds Advisory Council Meeting

On February 19th, the MBNMS Advisory Council met and received a series of presentations and updates on the OLE response to the Advisory Council's letter, the National Marine Sanctuary Advisory Council Summit, Advisory Council recruitment process, CEMEX sand mine and Management Plan Review prioritization of issue topics. The next Advisory Council meeting will be on April 21st, 2016 in Santa Cruz. 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.

Superintendent Paul Michel represents Monterey Bay National Marine Sanctuary at "Bay of Life, a Celebration of California's Central Coast"

Superintendent Michel attended University of California Santa Cruz' Seymour Marine Discovery Center "Bay of Life, a Celebration of California's Central Coast" presentation by renowned National Geographic photographer Frans Lanting. Following opening remarks from John Laird, California Secretary for Natural Resources, Frans shared stunning images of the terrestrial and marine environments to show the dynamic linkages between them, demonstrating the Monterey Bay region as one of the hottest hotspots of biodiversity. Despite this richness, there are only 10 enforcement officers for both Monterey Bay's coastal State Parks and the sanctuary. Superintendent Michel discussed with the audience the role of Monterey Bay National Marine Sanctuary and the importance of resource protection and citizen science programs like Team Ocean and Baynet to help educate the public about critical issues such as wildlife interaction and disturbance. Sanctuary volunteers also tabled at the event distributing materials to the public. Community events such as "Bay of Life" exemplify the important role Monterey Bay National Marine Sanctuary has in public education and resource protection and strengthens the federal and local partnerships at the community level.

MBNMS Superintendent meets new State Parks Superintendent and Piedras Blancas Manager in San Simeon

On February 1st, Paul Michel and Dawn Hayes met with the new San Luis Obispo Coast District Director for California State Parks, Dan Falat and the BLM/Piedras Blancas Light Station manager, Ryan Cooper. Meeting goals were to make personal introductions, examine the future of the Coastal Discovery Center at San Simeon State Park and to discuss potential collaborative opportunities. MBNMS relies heavily on its agency partners to realize its goals. Face to face meetings with other state agencies is the first step towards establishing long-term working relationships.

RESEARCH AND MONITORING

Davidson Seamount mesopelagic fishes deposited at California Academy of Sciences, fishes added to SIMoN Photo Library

A mesopelagic fishes survey was conducted within Sanctuary Ecologically Significant Areas (SESAs) of Monterey Bay National Marine Sanctuary (MBNMS), including the Davidson Seamount Management Zone (DSMZ), aboard NOAA SHIP Bell M. Shimada during May 2015. MBNMS staff and California Academy of Sciences Ichthyology Research Associate recently completed fish identifications of the thirteen mid-water trawling stations; and in February 2016 deposited the preserved specimens at the California Academy of Sciences in San Francisco, California. More than one thousand fishes, representing thirty-two species, were deposited. The fishes from Davidson Seamount are a unique collection, as there have been very few fishes collected, preserved, and catalogued from the area. Fishes in the best condition were photographed and added to the SIMoN Photo Library (38 images representing 36 fish species were added). Mesopelagic fishes are under-represented in the SIMoN Photo Library. As a result of this study, 33 species are new additions to the photo library database. Mesopelagic fish images from this study can be viewed at:

http://www.sanctuariesimon.org/photos/photo_search.php?search=kw&keywordSearchTerm=NOAA+SHIP+Bell+M.+Shim

[ada](#) Conducting research within SESAs will increase our understanding of communities and processes in focal areas, and improve our ability to adaptively manage these important resources.

MBNMS Provides High Definition Video to NSF

MBNMS research staff provided high-definition video of the California sea hare (*Aplysia californica*) to the National Science Foundation for a story about research on this opisthobranch. Many photo and video requests come from exposure from the photo library on sanctuarymonitoring.org. This site not only continues to be a popular public asset, providing over 5,000 images of marine life and Sanctuary seascapes and activities for non-commercial use, but also fosters collaboration with many organizations, universities, publications, etc., throughout the world.

MBNMS Research Activity Panel Meets at Sanctuary Exploration Center

On March 11th, the MBNMS Research Activity Panel (RAP) will meet at the Sanctuary Exploration Center in Santa Cruz, CA. Agenda items include: Summary of February 19th SAC Meeting; Bell M. Shimada Cruise Update; Regional Sound Research Effort Update; Nancy Foster Scholars and Other Grant Support Requests; How They Fit Together: SIMON, MBON, IEA, Condition Report, and the RAP; and Role of RAP to MBNMS. The MBNMS Research Activity Panel (RAP) is a working group of the MBNMS Advisory Council. The RAP meets six times per year, and advises SAC and sanctuary staff on basic and conservation science issues.

<http://montereybay.noaa.gov/sac/rap/rapma.html>

RESOURCE PROTECTION

EcoFarm Conference at Asilomar

The Agricultural Water Quality Coordinator attended the EcoFarm Conference in Asilomar on January 21-22, 2016. The EcoFarm conference provides an opportunity for education and collaboration among researchers, conservation professionals, suppliers, large grower and food processing operations, and small farmers regarding how agriculture affects the environment in terms of water quality, climate change and social issues. Growers and ranchers share how they have modified their ranch or means of production to achieve benefits such as conserving water, increasing aquifer recharge or storing CO₂ in soils. Researchers discuss innovations that can help growers farm more ecologically, such as planting buffer zones for beneficial insects, soil microbial communities affect on human health, and how hoop houses impact water quality. Farmers share what works and what doesn't work to create sustainable agriculture and healthy ecosystems. Attending the EcoFarm Conference provides insight into how the most dedicated and innovative growers and ranchers are improving their practices to make farms into carbon banks and efficient water users. These methods and insights often start on small scale farming systems can be promoted more broadly to larger farmer on the watersheds that drain into Monterey Bay National Marine Sanctuary.

Volunteers Journey to San Simeon to View Elephant Seals

Saturday January 23rd a modest group of 12 Bay Net and Team OCEAN volunteers traveled to San Simeon to view the Piedras Blancas elephant seal colony. Along the way a stop at the Coastal Discovery Center was fit in with a brief tour and discussion with the centers manager Carolyn Skinder. After lunch the volunteers, led by Friends of the Elephant Seal and CDC and Team OCEAN volunteer Phil Adams, viewed the elephant Seals at the rookery. A birth was observed as was mating, fighting by males, nursing and territorial disputes between females. All in all the day was a huge success and the volunteers all mentioned taking another trip in March to see the weaners. Providing volunteers with enrichment activities broadens the scope and breadth of what volunteers will be able to share with visitors and furthers the volunteers desire to learn more. Additionally, having enrichment activities strengthens the bond between volunteers and the sanctuaries.

Uploading MBNMS data to the Environmental Response Management Application® (ERMA)

Monterey Bay National Marine Sanctuary staff was trained by staff from the Spatial Data Branch of the Assessment and Restoration Division of the Office of Response and Restoration to upload data to Environmental Response Management Application® (ERMA). ERMA is a web-based Geographic Information System (GIS) tool that integrates real-time and static data to provide spatial visualization of various situations and improves communication and coordination among responders and environmental stakeholders. MBNMS staff now has the capacity and knowledge to add essential Sanctuary data to ERMA which can aid preparations and decrease response time to an incident. ERMA can also be used to query data for a variety of purposes, such as permit application analysis. ERMA has been designated as the spatial analysis tool to be

used in the incident command center during an oil spill. Therefore, it is essential to have the most up-to-date data regarding MBNMS in the tool so that decisions are based on the best data available.

Pajaro Compass Stakeholder Group

The Agricultural Water Quality Coordinator met on 2/26/16 in Hollister, CA with the diverse group of landowners, ranchers, agencies and nonprofit organizations known as the Pajaro Compass to develop objectives and an action plan for collaborative work. Through coordination of efforts and integration of diverse values into planning and action taking, the objective is to improve water quality and other ecosystem values in the Pajaro River watershed. Other stakeholder meetings attended in the past week were the Nutrient Coop meeting, the Irrigation and Nutrient Management Training Module meeting for the USDA grant, and the Santa Rita Creek Watershed meeting. The Pajaro Compass stakeholders are an ad hoc group formed to improve outreach and management of projects in the Pajaro Valley to accomplish ecosystem objectives including improved water quality, carbon storage and biodiversity. Through working collaboratively and engaging the community in planning, more direct community involvement in improving the Pajaro watershed can be accomplished.

Bay Net/ Team OCEAN Info Meeting

An informational meeting was held the evening of March 2nd to inform interested volunteers about the Team OCEAN Kayaker Outreach and Bay Net Shoreline Naturalist Programs. The evening's presentation covered Monterey Bay National Marine Sanctuary requirements of both volunteer programs, training schedule and field trip dates. Veteran volunteers offered their insight into the programs, what it means to volunteer with MBNMS and what it means to be part of a volunteer team. The informational meeting is integral to getting new volunteers oriented to the programs and the community of volunteers that donate their time. In the field volunteers interact with over 47,000 Monterey Bay National Marine Sanctuary visitors annually. These in-the-field programs reach visitors who are not part of the "choir" in that they have not sought us out and may not be visitors we would interact with in a visitor center. 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.

Monterey Regional Storm Water Management Program (MRSWMP) 2015 Monitoring Report Complete

MBNMS WQPP staff and volunteers collected water samples from storm drains for the Monterey Regional Storm Water Management Program (MRSWMP) prior to the first major rainstorm of the year (Dry Run) and during the first major rainstorm of the winter season (First Flush). A report of the Dry Run and First Flush results has been completed and will be available on the MBNMS website as well as MontereySEA.org. The report details results from the Dry Run and First Flush monitoring conducted in the fall of 2015 and compiles data collected since 2006 for the MRSWMP program. Highlights from the report include: lower concentrations of bacteria (*E. coli* and enterococcus) in storm water than in previous years, although concentrations are still above the U.S. EPA's Water Quality Objective (WQO); MBAS Surfactant levels above the WQO at all sites during the First Flush; total zinc results not above the WQO for any sites during the First Flush. Data from First Flush aids local cities in determining which watersheds require source tracking or BMP implementation while also providing long term data that can point to trends in pollutants flowing off of urban areas. Volunteers are essential to large scale monitoring programs seeking to collect samples at the same time from many outfalls that are geographically distant.

ASBS Reference Site Monitoring in Big Sur Comes to a Close

Areas of Special Biological Significance (ASBS) monitoring in Big Sur comes to a close as the most recent storms passed by the central coast. WQPP staff conducted monitoring of 5 sites on Sunday March 6th and Monday March 7th at coastal confluences along the rugged Big Sur coastline. ASBS samples are tested for a multitude of analytes including pesticides, heavy metals and toxicity. Big Sur reference sites are deemed less impacted by development or human activity and serve as a "clean" comparison to samples collected in urban areas along the central coast. ASBS monitoring has been conducted since 2014 and is now concluded with this most recent set of storms. Determining sources of pollutants entering the ocean and the Monterey Bay National Marine Sanctuary is the first step in prevention. Monitoring for the ASBS program further informs the determination of natural water quality as well as identifying sources of pollutants.

Santa Rita Creek Work Group

Monterey Bay National Marine Sanctuary staff members met with the Resource Conservation District Monterey County and Central Coast Preservation Inc. in Salinas on 2/25/16 to continue planning for projects and actions to improve water quality in Santa Rita Creek. Plans include sediment detention basins, irrigation and nutrient management workshops, and potential aquifer recharge locations. Santa Rita Creek is a tributary to the Moro Coho Slough. Nutrients leaving Moro Coho Slough near Moss Landing harbor contribute to the hypoxic conditions found in Elkhorn Slough. Sediments leaving Santa Rita Creek may carry pesticides to MBNMS. Through working collaboratively with other organizations on reducing agricultural contaminants, we can create healthier conditions in rivers and the ocean.

Salinas Ag Expo

Monterey Bay National Marine Sanctuary was represented at the Ag Expo, hosted by the Monterey County Ag Commissioner's office for Spanish speaking growers. Materials in Spanish were provided that highlighted marine life in MBNMS and ways community members can help prevent pollution from entering the Sanctuary. Additional Spanish materials developed by NRCS and Resource Conservation Districts were provided for conservation practices growers can employ to improve the water quality of runoff leaving their farm. Many Spanish speaking growers and their families live in the Salinas and Pajaro watersheds and farm the land in these areas. Gaining their appreciation of the spectacular ocean inhabitants and tremendous biodiversity of MBNMS will encourage their participation in its preservation.

Old Cannery Row Fuel Bunker Cleaned Up

On February 11, MBNMS was notified that fresh oil and evidence of long-term leaching had been discovered amid the ruins of an old fish cannery on a small pocket beach along Cannery Row in Monterey. Throughout February and early March, MBNMS coordinated with the property owner, the Coast Guard, and other responding agencies to survey the site and develop a cautious remediation plan due to past discoveries of abandoned fuel storage tanks and fuel bunkers at other former cannery sites in the area. During remediation activities on March 15 and 16, the response team discovered that the source of the oil at the incident site was a 20 ft X 10 ft X 3 ft concrete oil bunker situated right at the mean high water line and periodically flooded during high water conditions. Remediation crews slowly excavated the vault, exposing and removing approximately 62 cubic yards of heavily oiled contaminated sediment and debris and 750 gallons of oil/water liquid waste. The interior of the vault was then pressure washed with hot water, cleaned to standards set by the Unified Command, and backfilled with sand. The incident illustrated the importance and effectiveness of mature agency partnerships and collaboration in crafting oil remediation efforts that minimize direct and collateral negative impacts to the marine environment. MBNMS' role in response efforts was instrumental in reducing the potential for inadvertent release of oil to the ocean from survey and remediation operations due to site-specific knowledge of past similar threats and the immediate and significant threats posed to local marine resources of the sanctuary. The investment for incident response training of sanctuary personnel pays large dividends during these events.

MBNMS Removes Research Mooring Left On-Station in Violation of Sanctuary Permit

On March 16, MBNMS staff aboard NOAA R/V FULMAR removed a research mooring left at sea for more than 30 days after the sanctuary permit for its temporary placement had expired. The permittee failed to recover the mooring in accordance with the terms of their permit and indicated an inability to recover the mooring when instructed to do so. Recovery of the mooring by a specified date was critical due to its presence and potential entanglement hazard within a narrow transit corridor for migrating gray whales. MBNMS coordinated with the permittee to accompany the FULMAR crew and MBNMS staff for recovery and reimbursement of NOAA costs. This incident highlights the importance of 1) permittees maintaining financial and technical capabilities to fulfill their requirements 2) maintaining site capability to enforce permit conditions designed to protect sanctuary resources during the execution of permitted activities 3) highlights the key role of readily-available, NOAA-owned vessels in supporting MBNMS management objectives and policies that protect marine resources of the sanctuary.

Enforcement Action Initiated Against Last Beach Sand Mine in the United States

On March 17, the California Coastal Commission sent a 9-page "Notification of Intent to Commence Cease and Desist Order and Restoration Order Proceedings and Administrative Civil Penalties Proceedings" to the Western Region office of RMC Pacific Materials, LLC (dba CEMEX) in Houston, Texas, notifying the multinational corporation that its coastal sand mining plant adjacent to MBNMS in Marina, California is operating in violation of the California Coastal Act. The letter states that the decades-old beach sand mining operation and related development was never legally permitted by various

state and local agencies and has significantly altered sand movement through the littoral sediment transport cell, contributing directly to coastal erosion rates south of the plant that are the highest in the state.

EDUCATION, VOLUNTEER AND OUTREACH PROGRAMS

Monterey Bay National Marine Sanctuary participates in 2016 WhaleFest

Whalefest 2016 took place on January 23th and 24th in Monterey at the Old Fisherman's Wharf and Custom House Plaza. This free, fun and educational, interactive family event for all ages celebrated the gray whale migration. Sanctuary Superintendent Paul Michel and staff Dr. Steve Lonhart, Karen Grimmer and Scott Kathey gave talks at an all-day symposium. The Sanctuary Exploration Center gift store went mobile and sold MBNMS logo items at the event. Ten MBNMS Volunteers from Team Ocean, BayNet and Sanctuary Exploration Center in Santa Cruz worked together to host an educational and interactive booth to inspire and involve the public in the sanctuary.

Sanctuary Exploration Center holds First Friday Art/Science Event

On February 5th 2016, MBNMS' Exploration Center hosted a first Friday art and science family night. The event's theme was Monterey Bay: A Migration Magnet, and featured local art, art activities and science demonstrations focusing on Monterey Bay's most impressive migrating species. Featured local artist, Doug Ross held a pop-up gallery and hosted a DIY silk-screening activity where visitors could make their own prints of a leatherback sea turtle or elephant seal. The event also included science demonstrations and information from guest agencies including The Marine Mammal Center, Marine Life Studies and CA State Parks. 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. Additionally, merging art and science allows people to learn and be inspired in new and creative ways, ultimately reaching a broader audience of future ocean stewards. <http://www.santacruzsentinel.com/environment-and-nature/20160205/exploration-center-joins-first-friday-of-santa-cruz>

Marine Debris Awareness Event

MBNMS staff and volunteers participated in an event hosted by Coastal Habitat Education & Environmental Restoration (CHEER) in Moss Landing, CA. The day-long event was held to raise awareness of non-point source pollution coming from local watersheds into Monterey Bay National Marine Sanctuary. One of the major elements of the event - a diver cleanup at the mouths of the Salinas and Pajaro Rivers was not able to happen due to poor conditions, but will be rescheduled for a later date. The event centerpiece was CHEER's "Garbage Museum" a 75'x75' attraction featuring discarded items retrieved in watershed cleanups. This very visual display of human impact is highly sought after for school presentations and local community events. Creativity is the key to reaching the local communities with messages connecting their daily actions with the health of the ocean and MBNMS. This tangible representation of littering and illegal dumping is shocking and it's bilingual messaging key for engaging the local demographic.

MBNMS speaks at California Polytechnic State University's Wildlife Career Symposium

Carolyn Skinder, southern region program coordinator for MBNMS in San Simeon, recently addressed approximately 50 undergraduate wildlife majors about her career with MBNMS, and the route it took to get there. Keenly interested in how to chose their own career path, attendees were able to freely converse and ask questions of Skinder and nine other speakers in wildlife conservation and enforcement over lunch. Introducing students to the field of marine conservation by using MBNMS as an example adds to the possibility of career choices while educating students about the National Marine Sanctuary System.

MBNMS' Coastal Discovery Center Assists Elephant Seal Researchers

On Saturday, Feb 6th, Sarah Keinle and her team from Dan Costa's lab and Tagging of Pacific Predators (TOPP) program, came to San Simeon Cove to retrieve a SMRU tag from the head of a 9-year-old, 2-ton elephant seal named, "Mike." The animal was part of a study that examines the diving behavior and foraging ecology of the male northern elephant seal, and the tag collects information about the seal's diving behavior and foraging locations at sea, transmitted via satellite. Mike had been tagged at Ano Neuvo last August, and then swam up to Alaska where the tag stopped transmitting information. In order to obtain the rest of the information, the tag had to be retrieved. Mike and his head antenna were spotted on San

Simeon Beach in January. He also had B821 written on his back, making it easy to identify him to the researchers at the Costa lab. The seal soon claimed a spot by stairs near the beach on a regular basis, which was communicated to the research team by MBNMS staff, Carolyn Skinder. When the research team drove from Santa Cruz to retrieve the equipment and take samples from the seal, Mike was not on the beach and a 4-hour search by foot began. About 1.5 hours before sunset, Mike appeared in the surf and hauled out in his usual spot. MBNMS staff, Coastal Discovery Center docents, state park rangers and kayak guide, Cubby Cashen, worked to keep visitors back while the research team quickly and expertly tranquilized the animal, removed the tag and took samples and measurements to determine its physiology. For more information on northern elephant seal research, go to: <http://costa.eeb.ucsc.edu/research/> Due to the communication and teamwork of MBNMS staff and docents, the Costa Lab research team was able to retrieve the SMRU tag and the missing data set on this animal, contributing towards the overall understanding of the life history of the northern elephant seal while at sea.

MBNMS participates in UC California Naturalist Course held in Cambria

The first UC CA Naturalist Certification Course to be held in Cambria, CA was completed by 18 participants statewide on Feb 21st. The course was organized by Camp Ocean Pines in collaboration with MBNMS' Carolyn Skinder, CA State Parks, CA Polytechnic State University and Ken Norris Rancho Marino Reserve, and led by Dr John Menke, docent at the Coastal Discovery Center. Among presentations and field trips held throughout the week that focused on coastal ecosystems and conservation efforts, Skinder talked about the National Marine Sanctuary System and Monterey Bay National Marine Sanctuary, and led field trips focused on citizen science programs such as Long Term Monitoring Program and Experiential Learning for Students (LiMPETS) and California's Marine Biotoxin Monitoring Program. Participating in the California Naturalist Program allows MBNMS to explain and demonstrate the role they play in resource protection, education and ocean stewardship, in partnership with other agencies and NGOs.

Listening in on Monterey Bay National Marine Sanctuary: Sounds from the Sea

Monterey Bay Aquarium Research Institute and MBNMS hosted a demonstration this past weekend at the Sanctuary Exploration Center, sharing sounds with the public from Monterey Bay. John Ryan, MBARI scientist was on hand with a custom sound system enabling the public to listen to humpback whales, blue whales, dolphins and the rarely seen offshore Cuvier's Beaked whale. The public also had an opportunity to record their own voices which was then visualized on a spectrogram. MBARI is recording sounds continuously from 900 meters depth using an ultra-sensitive hydrophone. These recordings are revealing a complex and dynamic "soundscape", comprised of vocalizations from a great diversity of marine mammal species, the sounds of wind and rain at the ocean surface and the sounds of human activities. Knowing what sounds are in the bay can tell us about the location and time of year marine mammals come into the sanctuary as well as help understand interactions of marine mammals and ships and threat of whale ship strikes.

Sanctuary Exploration Center participate in State Park's Migration Festival

On February 13th, MBNMS Exploration Center staff and volunteers participated in the Natural Bridges State Parks Open Streets Santa Cruz Migration Festival. MBNMS' booth educated participants on the goals of Monterey Bay Sanctuary, provided awareness of the Exploration Center, and gave specialized information on Leatherback Sea Turtles. Additionally, participants completed a community mural by coloring and adding animals along their migration routes across the Pacific Ocean, which is now on display at the Exploration Center. By participating in public outreach events, MBNMS is able to outreach to members of the general public who might not be aware of the existence or goals of the sanctuary. Additionally, it is a great way to provide awareness of the Exploration Center for community members who have not yet visited.

Partnering Tourism Board Recognizes MBNMS upon Receiving State Award

The San Luis Obispo County Tourism Business Improvement District (CBID) and its Stewardship Traveler Program (STP) recently received the state's Visit California Poppy Award in the tourism marketing category of "Commitment to Community" on February 23, 2016. Criteria for the award included; the ability to affect positive change through sustainable practices; making infrastructure improvements or other contributions to the community; creativity in strategy and execution; and for achieving project objectives. Southern region program coordinator for MBNMS and director of the Coastal Discovery Center in San Simeon, Carolyn Skinder, played an important part of the success of the Stewardship Travel from its inception in 2012. Skinder advised the Stewardship Travel team, attended meetings with various regional tourism boards, educated and invited partners to join the Stewardship Program, collaborated with CBID to play conservation-themed films at Hearst Theater, and modeled stewardship programs at the Coastal Discovery Center. "Carolyn has been an invaluable partner in the start-up and the continued success of the Stewardship Travel Program. She has helped

ground the STP leadership and tourism partners in the importance of science and education in all that we do, and she and her teams are so appreciated," commented Di Strachan, Stewardship Travel Program Director. CBID's Stewardship Travel program has helped to promote and highlight the importance of science education and marine conservation at the Coastal Discovery Center and MBNMS via inclusion in media outreach, websites, maps and brochures, and has helped educate thousands of tourists visiting the central coast by including important wildlife viewing etiquette messages in public service announcements and in a high profile interview with Skinder at the center in a travel video series entitled, "On the Road With Jo."

Sanctuary Exploration Center Making Waves Art/Science Event

On March 4th 2016, the MBNMS Exploration Center hosted an art and science family night, which was attended by over 325 people. The event's theme was Making Waves and featured local art, art activities, films and science demonstrations focusing on waves! Featured local artist, Lucas Elmer held a pop-up gallery and hosted a DIY wood block printing activity where visitors could make their own to take home. The event also included wave-science demonstrations by Moss Landing Marine Lab students and screenings of surf films by local film makers Tiffany and Thomas Campbell. 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. Additionally, merging art and science allows people to learn and be inspired in new and creative ways, ultimately reaching a broader audience of future ocean stewards.

130 Students from San Lorenzo Valley Middle School Visit Sanctuary Exploration Center

In March 2016 six separate 6th grade classes visited the Sanctuary Exploration Center in Santa Cruz. While on the field trips students participated in a guided tour of the Exploration Center and a guided activity on the beach where they participated in marine debris survey. These classes not only helped the Exploration Center pilot a new field trip program, but also enabled five new volunteer guided tour leaders to finish their training and practice their new tour skills. The Sanctuary Exploraiton Center's goals are: to educate visitors about the sanctuary's unique and fascinating coastal and marine environment, to foster a more personal connection with the sanctuary and the ocean's relevance in people's daily lives and to encourage stewardship of the sanctuary and a better understanding of how to responsibly enjoy and protect the ocean.

NEWS COVERAGE

[Dan Haifley, Our Ocean Backyard: New exhibits grace Sanctuary Exploration Center](http://www.santacruzsentinel.com/environment-and-nature/20160130/dan-haifley-our-ocean-backyard-new-exhibits-grace-sanctuary-exploration-center)

<http://www.santacruzsentinel.com/environment-and-nature/20160130/dan-haifley-our-ocean-backyard-new-exhibits-grace-sanctuary-exploration-center>

Santa Cruz Sentinel-January 30, 2016

[Why Microsoft wants to sink your data beneath the sea](https://www.mainstreet.com/article/why-microsoft-wants-to-sink-your-data-beneath-the-sea)

<https://www.mainstreet.com/article/why-microsoft-wants-to-sink-your-data-beneath-the-sea>

MainStreet-February 5, 2016

[Political drama is nothing new to California Coastal Commission](http://www.latimes.com/local/lanow/la-me-california-coastal-commission-political-drama-20160211-story.html)

<http://www.latimes.com/local/lanow/la-me-california-coastal-commission-political-drama-20160211-story.html>

Los Angeles Times-February 11, 2016

[MBARI has new technology to gather information on harmful toxins in Monterey Bay](http://www.kionrightnow.com/news/local-news/mbari-has-new-technology-to-gather-information-on-harmful-toxins-in-monterey-bay/38136440)

<http://www.kionrightnow.com/news/local-news/mbari-has-new-technology-to-gather-information-on-harmful-toxins-in-monterey-bay/38136440>

KION-February 22, 2016

[CPUC: Cal Am can submit revised desal project description](http://www.montereyherald.com/article/NF/20160225/NEWS/160229821)

<http://www.montereyherald.com/article/NF/20160225/NEWS/160229821>

Monterey Herald-February 25, 2016

[New tool to study sound in Monterey Bay](http://www.santacruzsentinel.com/environment-and-nature/20160226/new-tool-to-study-sound-in-monterey-bay)

<http://www.santacruzsentinel.com/environment-and-nature/20160226/new-tool-to-study-sound-in-monterey-bay>

Santa Cruz Sentinel-February 26, 2016

[Monterey Harbor dredging project helps fight beach erosion](http://www.ksbw.com/news/monterey-harbor-dredging-project-helps-fight-beach-erosion/38326456)

<http://www.ksbw.com/news/monterey-harbor-dredging-project-helps-fight-beach-erosion/38326456>

KSBW-March 3, 2016

[Monterey Bay marine wildlife: Don't get too close](http://www.montereyherald.com/environment-and-nature/20160312/monterey-bay-marine-wildlife-dont-get-too-close)

<http://www.montereyherald.com/environment-and-nature/20160312/monterey-bay-marine-wildlife-dont-get-too-close>

Monterey Herald-March 12, 2016

[Oil leak cleanup at Monterey beach underway](http://www.ksbw.com/news/oil-leak-cleanup-at-monterey-beach-underway/38530050)

<http://www.ksbw.com/news/oil-leak-cleanup-at-monterey-beach-underway/38530050>

KSBW-March 15, 2016

[Marina gives way to Coastal Commission on Cemex investigation, enforcement](http://www.santacruzsentinel.com/article/NE/20160316/NEWS/160319722)

<http://www.santacruzsentinel.com/article/NE/20160316/NEWS/160319722>

Santa Cruz Sentinel-March 16, 2016

[Plastic pellets deadly to wildlife washing ashore](https://sfbay.ca/2016/03/23/plastic-pellets-deadly-to-wildlife-washing-ashore/)

<https://sfbay.ca/2016/03/23/plastic-pellets-deadly-to-wildlife-washing-ashore/>

SF Bay-March 23, 2016

[Drone harassment of marine mammals rising on California coast](http://www.myrtlebeachonline.com/latest-news/article68184792.html)

<http://www.myrtlebeachonline.com/latest-news/article68184792.html>

Myrtle Beach Sun-March 24, 2016

Web Site (<http://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.*

FUN, OCEAN RELATED WEB SITES

Caitlin Seaview Survey

<http://www.catlinseaviewsurvey.com>

SIMON

<http://www.sanctuariesimon.org>

Seasons in the Sea

<http://www.seasonsintthesea.com>

Waterlust

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

Thank You Ocean

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

NOAA Online Media Library

<http://sanctuaries.noaa.gov/photos>

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

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

National Oceanic & Atmospheric Administration

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

Your Sanctuary TV

<http://yoursanctuarytv.org/>

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

To learn more about the Sanctuary Advisory Council please visit:
<http://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:
<http://www.sanctuaries.nos.noaa.gov/>

Get involved and stay informed!

To learn how to get involved in the Sanctuary visit:
<http://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:
<http://montereybay.noaa.gov/intro/elists.html>

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