

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

Carbon dioxide levels breach another threshold at Mauna Loa Carbon dioxide levels averaged more than 410 parts per million in April and May at NOAA's Mauna Loa Atmospheric Baseline Observatory, surging past yet another climate milestone. This is the sixth consecutive year of steep global increases in concentrations of the greenhouse gas, scientists from NOAA and Scripps Institution of Oceanography announced today. Carbon dioxide levels are tracked closely by the world's scientists as a measure of how human activity is changing the planet's atmosphere. The concentration of CO₂ in the atmosphere increases every year, and the rate of increase is accelerating. While it averaged about 1.6 ppm per year in the 1980s and 1.5 ppm per year in the 1990s, the growth rate increased to 2.2 ppm per year during the last decade. For more information: http://www.noaa.gov/news/carbon-dioxide-levels-breach-another-threshold-at-mauna-loa

NOAA teams up with India to strengthen ocean observations

In a remote region of the Indian Ocean lies the source of a mysterious

weather pattern with tentacles that stretch across the tropics, influencing everything from monsoons in India to heat waves and flooding in the United States. Not as well known as El Nino, this phenomenon is called the Madden-Julian Oscillation, named for Rolland Madden and Paul Julian, two scientists who discovered it in the 1970s. It starts when water vapor rises out of the Indian Ocean every 30 to 60 days to create a major ocean storm that travels west to east from near the Seychelles off Africa toward India, crosses into the tropical Pacific Ocean and eventually affects weather patterns across the nation. In the next week, a team of 20 NOAA scientists will journey to Goa, India, to meet with 200 of India's leading ocean, atmosphere, and fisheries scientists to mark a decade of productive collaboration on ocean and atmospheric observations, with life-saving economic benefits for both nations. The most significant result is the vitally important Indian Ocean observing system of buoys, the world's key tool for early detection of monsoons which affect the safety, food supply, and economies of one-third of the world's population. For more information: http://www.noaa.gov/news/noaa-teams-up-with-india-to-strengthen-ocean-observations

GOES-17 releases "First Light" imagery from its Advanced Baseline Imager (ABI)

While experts continue to <u>address an issue with the cooling system of the satellite's imager</u>, new views from GOES-17 show that its ABI is providing beautiful – and useful – imagery of the Western Hemisphere. This imagery was created using two visible bands (blue and red) and one near-infrared "vegetation" band that are functional with the current cooling system performance. The imagery also incorporates input from one of the ABI's "longwave" infrared bands that is functional during a portion of the day despite the cooling system issue.

When combined as a "GeoColor" image, depicting the Earth in vivid detail and colors intuitive to human vision, these bands provide valuable information for monitoring dust, haze, smoke, clouds, fog, winds and vegetation. ABI imagery also provides information on cloud motion, helping meteorologists monitor and forecast severe weather and hurricanes. The improved resolution and faster scanning ability of the instrument compared to the previous generation of GOES allow forecasters to more rapidly detect and analyze storms as they are developing and intensifying. For more information: https://www.nesdis.noaa.gov/content/goes-17-releases-%E2%80%98first-light%E2%80%99-imagery-its-advanced-baseline-imager-abi

NATIONAL MARINE SANCTUARY NEWS

Greater Farallones sanctuary experiences spike in human-caused whale strandings

Since May 6 an unusual cluster of dead whale strandings has occurred in Greater Farallones National Marine Sanctuary and adjacent waters. Of five dead whales, four were due to shipstrike and/or line entanglement. Although most involved gray whales, two were fin whales, an endangered species not commonly encountered nearshore. The location and source of the strikes or entanglement remains unknown. One fin whale rode into San Francisco Bay on the bow of a ship: the strike could have occurred anywhere between ports. The Greater Farallones and adjacent sanctuaries are major feeding sites for endangered whales such as blues, fins, humpbacks and others. Greater Farallones, Cordell Bank, researchers, the shipping industry and others are working together to reduce human-caused whale deaths. In 2013 shipping lanes were changed, and a voluntary ship speed reduction program is in effect throughout feeding season, late spring into fall. See https://farallones.noaa.gov/eco/vesselstrikes/welcome.html Greater Farallones NMS is the gateway to several major shipping ports in the San Francisco Estuary system. Reducing anthropogenic wildlife impacts of all kinds is a major sanctuary challenge and concern.

Scientific Paper shows Barnacles are not at all "boring"

A paper titled "Depth and coral cover drive the distribution of a coral macroborer across two reef systems" was published to PLOS ONE this week. The paper is available online at: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0199462. Authors Rebecca L. Maher (Oregon State Univ.), Michelle A. Johnston (NOAA), Marilyn E. Brandt (Univ. of Virgin Islands), Tyler B. Smith (Univ. of Virgin Islands), and Adrienne M. S. Correa (Rice Univ.) present an accurate and efficient method for quantifying macroborer densities from stony coral hosts via image analysis, using the bioeroding barnacle, *Lithotrya dorsalis*, and its host coral, *Orbicella franksi*, as a case study. Authors found that in 2014, *L. dorsalis* densities varied consistently with depth and host percent cover in two Atlantic reef systems: the Flower Garden Banks (FGB, northwest Gulf of Mexico) and the U.S. Virgin Islands (USVI). Although average barnacle density was nearly 4.5 times greater overall in the FGB than in the USVI, barnacle density decreased with depth in both reef regions. Findings suggest that depth and host coral cover, and potentially, local factors may strongly influence the abundance of macroborers, and thus the rate of CaCO3 loss, in a given reef system. The image analysis method for quantifying macroborers can be standardized across historical and modern reef records to better understand how borers influence host growth and reef health. Images used from FGB were from the long-term monitoring program in partnership with BOEM.

CINMS Research Team records fish vocalizations at Aquarium of the Pacific

On Monday, June 25, 2018, members of the Research Team from Channel Islands National Marine Sanctuary (CINMS) visited the Aquarium of the Pacific (AOP) in Long Beach, California and used a hydrophone to record fish vocalizations in the Honda Blue Cavern tank. AOP aquarists and volunteer SCUBA divers assisted CINMS researchers with hydrophone placement and communicating to public viewers. There were three adult giant sea bass in the tank, two males and one female, which were the species of interest. Growing up to 7 feet long, giant sea bass are the largest kelp forest fish and currently recovering from overfishing in Southern California. Little is known about how they use sound to navigate, locate prey, and breed. CINMS Soundscape Project interns will manually classify all the sounds captured on the recordings, which will be used to verify sounds recorded within the sanctuary. The Honda Blue Cavern tank streams a live webcam at

http://www.aquariumofpacific.org/exhibits/southern_california_baja_gallery/webcam_blue_cavern and the giant sea bass are often visible. As part of the ONMS Sanctuary Soundscape initiative, CINMS is developing a collaborative, comprehensive passive acoustic monitoring network. Characterizing both natural and

anthropogenic aspects of the sanctuary's soundscape will support research and resource protection objectives, as outlined in NOAA's Ocean Noise Strategy.



MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



MANAGEMENT

Monterey Bay National Marine Sanctuary Holds Advisory Council Meeting

On June 15th, the MBNMS Advisory Council met and received a series of presentations and updates on the southern region of MBNMS, acoustic research and progress on a soundscape program, progress of the Friend to the Sanctuary program and adapting to sea level rise and managing retreat. Actions taken included: a resolution for MBNMS to coordinate with the State of CA on collaborative purple sea urchin removal projects and elections for MBNMS Advisory Council Executive Committee. The next meeting will be held on August 17th in Marina. 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 operation of a national marine sanctuary.

RESEARCH AND MONITORING

Supporting Expansion of Sanctuary and IEA Program Collaboration to New Sites

Jennifer Brown (MBNMS & CINMS) and Chris Caldow (CINMS) participated in a kick-off meeting of a new collaboration between the Integrated Ecosystem Assessment Program (Gulf of Mexico region) and the Florida Keys National Marine Sanctuary on May 18, 2018 in Key West. Chris and Jennifer provided information on processes, products and tools for indicator development, risk assessment, and condition report updates that have been developed in a collaboration between MBNMS, CINMS, and the California Current regional IEA program. The purpose of this meeting was to determine how these or other IEA program products and processes can contribute to the scientific and decision-making needs of FKNMS. NOAA's IEA program supports ecosystem-based management by providing a process and tool to help transfer scientific knowledge to management. National marine sanctuaries are an ideal setting to apply IEA processes and tools because sanctuaries encompass a wide range of marine environments with a high density of research and monitoring efforts, as well as nearby coastal communities that depend on the ocean for business and recreation.

MBNMS Participates in CeNCOOS Governing Council Meeting

MBNMS participated in the spring meeting of the Central & Northern California Ocean Observing System (CeNCOOS) Governing Council at the Exploratorium on May 3, 2018. MBNMS coordinates with CeNCOOS to better link observing data on critical parameters to sanctuary condition reports. Seabird and marine mammal strandings on MBNMS beaches is one critical parameters that is in progress for integration into the CeNCOOS data portal with support from the Sanctuaries Marine Biodiversity Network (MBON) demonstration project. Governing council members received updates from the new CeNCOOS director, program manager and research technician and the new U.S. IOOS program director. Updates were also provided by six CeNCOOS working groups. The afternoon discussions focused on management, operation, and budget. A larger meeting is being planned for autumn of 2018, to include a day to hear highlights from the observations and theme experts, as well as a second day for management and operations including elections for seats on the Governing Council. Cooperation and coordination among NOAA offices leverages limited resources to more effectively deliver observing information in support of resource management needs.

Divers assess urchin dominated system along Sonoma Coast

July 12-14, 2018 research divers from Monterey Bay NMS and the ONMS West Coast Region teamed up with California Department of Fish and Wildlife research divers to conduct surveys along the southern coastline of Sonoma County, in the Greater Farallones NMS. Several co-occurring natural phenomena (e.g., warm water

events, high urchin recruitment, and a loss of sea stars that consume small urchins) have switched the nearshore subtidal waters from one dominated by bull kelp to one dominated by purple urchins. This has had cascading effects on the red abalone fishery (closed for 2018) and is altering both community structure and function along much of northern CA nearshore subtidal systems. Aboard the RV FULMAR and with ancillary CDFW small boats, 10 divers accessed two sites over three days, making multiple dives per day. These data will support state and sanctuary management, and assist in an assessment of the status and trends of marine resources within GFNMS.

Joint research cruise to Sur Ridge

In early July, MBNMS participated in a research cruise to Sur Ridge, led by the Monterey Bay Aquarium Research Institute. The cruise assessed the effectiveness of deep-sea coral transplant techniques, which were demonstrated to be successful. Regional, local and small scale ocean current measurements were taken to characterize this biologically diverse Sanctuary Ecologically Significant Area. Individual corals were also studied for age, growth, predation and feeding mechanisms. Sur Ridge is a Sanctuary Ecologically Significant Area, where research is encouraged to address spatial ecosystem management. Moreover, the coral transplant techniques being developed will be useful for wide ranging deep-sea restoration efforts.

RESOURCE PROTECTION

Conservation Working Group members meet at MBNMS Office

On May 16 and July 11, 2018, the CWG met at the MBNMS Conference room to continue discussing the priority issues for 2018. In February, members had decided to move forward with a focus on Extended Producer Responsibility (EPR), which is an extension of their 2017 work on plastic pollution through recommendations that were forwarded to the Sanctuary Advisory Council and MBNMS staff and are now incorporated into the new marine debris action plan. The last two meetings have included a presentation from Canada's EPR program director, and a discussion on a proposal from Save Our Shores on how to address the issue locally in MBNMS, as well as statewide. Other topics of interest include wildlife disturbance and aquaculture. At some point in the near future, the CWG will bring this to the Advisory Council for input and advice. The Conservation Working Group (CWG) a working group of the MBNMS Advisory Council and includes groups such as Save Our Shores, Surfrider, Sierra Club, American Cetacean Society and Blue Theology. The CWG meets monthly, and advises the SAC and sanctuary staff on conservation issues.

EDUCATION, VOLUNTEER AND OUTREACH PROGRAMS

MBNMS hosts presentation on Sea Star Wasting Disease in Cambria

MBNMS speaker series in Cambria recently hosted Dr. Steve Lonhart to give an update on sea star wasting disease attended by a group of docents representing 5 volunteer groups, the San Simeon Chamber of Commerce and local residents. A tide pool field trip led by Carolyn Skinder, Southern Program Coordinator for MBNMS, was held the next morning with 4 of the participants. The southern region of MBNMS has hundreds of volunteers who interpret the natural history of the ocean and conservation messaging to over a million visitors annually. Presentations such as this are attended by docent group leaders who in turn share the information, with references to MBNMS and SIMoN websites, to their volunteers. This enhances the quality of information given while introducing volunteers to MBNMS resources.

MBNMS' Coastal Discovery Center joins first Community Volunteer Fair in San Simeon

As the number of volunteer groups and clubs have grown to 60 in Cambria and San Simeon, so has the competition to recruit volunteers. In response to this challenge, the San Simeon Tourism Alliance (SSTA) and its members, including MBNMS' Carolyn Skinder, formed a committee to organize a volunteer fair. Hosted by SSTA at the Cavalier Hotel in San Simeon, over 15 volunteer groups participated, with about 100 potential

volunteers in attendance. Events like this will facilitate the effort to attract volunteers regionally and locally for both volunteers and docent programs like the Coastal Discovery Center. The fair also educates citizens as to what exists in San Simeon and Cambria, like the MBNMS office and the Coastal Discovery Center.

Sanctuary Exploration Center Collaborates with Save Our Shores and Apple for Beach Cleanup On June 22, 2018, the MBNMS Exploration Center a guided tour and lunch for Apple software engineers following a Save our Shores beach cleanup event. In a continuing effort to partner with Save Our Shores, this was the second lunch after a beach cleanup hosted in the Center this month. Chelsea Prindle presented information on the marine sanctuary including its extent, what lives here, and what activities are prohibited within the sanctuary. The 60 engineers ate lunch in the classroom, then headed upstairs to enjoy the exhibits and learn more about the marine sanctuary. These beach cleanup opportunities allow employees of companies like Apple to learn about something outside of their field and give back to the community. Collaborations with Save Our Shores encourage more beach cleanups in the area, which bring companies from more inland areas to help boost the health of the sanctuary.

Sanctuary Exploration Center Celebrates World Oceans Day by Reducing Plastic Waste and Litter On June 9, 2018, the MBNMS Exploration Center had videos and crafts to encourage visitors to reduce their plastic waste for World Oceans Day. Children made turtles and octopuses with recycled plastic water bottles, which they could take home as a reminder of organisms impacted by plastics. Guests were also encouraged to bring in litter off the beach and sidewalk to be entered into a raffle for a reusable straw. 535 visitors came to the center, four reusable straws were given away, and the beach was much cleaner at the end of the day. By showing the impact that plastics have on the ocean, visitors were able to learn more about the importance of reducing their use of plastics for the health of the sanctuary and beyond. World Oceans Day provides an opportunity to connect with the public and show them a way that they can directly improve the health of the oceans.

Save the Vaquita Day at Monterey Bay National Marine Sanctuary's Exploration Center

On July 7 th, the Monterey Bay National Marine Sanctuary Exploration Center hosted Save the Vaquita day to bring awareness to the struggle of the porpoise which lives off the coasts of Mexico. A special film was shown every hour throughout the day to discuss how threatened these creatures are. Save the Whales hosted the event, bringing stickers and pamphlets to raise awareness of the threat of fishing nets and other human impacts on the vaquita. The vaquita is considered critically endangered, which means that there is a high risk of them going extinct and is the most endangered of all cetacean species. This event allowed the public to learn more about the vaquita, a species at high risk of extinction which many people have not heard of due to its low numbers

Monterey Bay National Marine Sanctuary Exploration Center Hosts Waves and Wildlife Photo Exhibit In collaboration with Save our Shores, on Friday July 6th the Monterey Bay National Marine Sanctuary hosted an event showcasing photographs taken in the sanctuary and MPAs in the area. Over 200 photos were submitted, and the winners were displayed during the monthly Art Walk event. 186 visitors came to explore the center and see the beauty of the sanctuary captured in the photographs. Popcorn and beverages were also provided to guests. The photos are currently still on display at the MBNMS Exploration Center throughout the month of July. Showcasing photography of marine reserves within the sanctuary increases the public's awareness of state marine reserves, as well as fueling their desire to get out into their sanctuary to explore.

NEWS COVERAGE

Monterey's new harbormaster John Haynes settles in

http://www.montereyherald.com/government-and-politics/20180521/montereys-new-harbormaster-john-haynes-settles-in

Monterey Herald – May 21, 2018

Rule changes could re-open some areas to fishing for rockfish

http://www.montereyherald.com/article/NF/20180525/NEWS/180529892 Monterey Herald – May 25, 2018

Harbor District inches closer to moving sand

https://www.hmbreview.com/news/harbor-district-inches-closer-to-moving-sand/article_e743cfe0-69cb-11e8-b3e1-3f6efb2cdb87.html

Half Moon Bay Review – June 6, 2018

O'Neill Sea Odyssey that turns ocean into classroom celebrates 100,000th student

http://goodtimes.sc/cover-stories/oneill-sea-odyssey-turns-ocean-classroom-celebrates-100000th-student/ Good Times Weekly – June 19, 2018

Coast Line: Wildlife photo exhibit opens July 6 in Santa Cruz

http://www.santacruzsentinel.com/article/NE/20180625/NEWS/180629850

Santa Cruz Sentinel – June 25, 2018

Dan Haifley, Our Ocean Backyard: Beach cleanups fight plastic pollution

http://www.santacruzsentinel.com/environment-and-nature/20180630/dan-haifley-our-ocean-backyard-beach-cleanups-fight-plastic-pollution

Santa Cruz Sentinel – June 30, 2018

Longtime Cambrian reporter, columnist Kathe Tanner to serve as Pinedorado grand marshal

https://www.sanluisobispo.com/latest-news/article214633990.html

San Luis Obispo Tribune – July 10, 2018

Hang Ten: Learn to surf (at least) at 6 California surfing schools

http://www.7x7.com/6-surf-lessons-california-2585542352.html# 7x7 - July 11, 2018

Dan Haifley, Our Ocean Backyard: The benefits of national marine sanctuaries and marine national monuments

http://www.santacruzsentinel.com/article/NE/20180714/NEWS/180719880

Santa Cruz Sentinel – July 14, 2018

NOAA research ship in Monterey to study Davidson Seamount

http://www.ksbw.com/article/noaa-research-ship-in-monterey-to-study-davidson-seamount/22502574 KSBW – July 20, 2018

Community briefs, July 27

https://register-pajaronian.com/article/community-briefs-july-27

Register-Pajaronian – July 27, 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) and Twitter (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.catlinseaviewsurvey.com

SIMON

https://www.sanctuarysimon.org

Seasons in the Sea

http://www.seasonsinthesea.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/

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Bridget Hoover – Water Quality Protection Program Director

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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: 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 Papahänaumokuäkea Marine National Monument. Visit the ONMS web site at: https://www.sanctuaries.nos.noaa.gov/

Get involved and stay informed!

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

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

- Contact Information -

Monterey Bay National Marine Sanctuary

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