



# Monterey Bay National Marine Sanctuary

## Sanctuary Office Report



Volume 11, Number 4

A REPORT FOR THE SANCTUARY ADVISORY COUNCIL MEMBERS

REPORTING PERIOD: AUGUST 1 – OCT 6, 2014

### 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

#### Collaborating to Develop a Data Collection Tool for Shoreline Surveys

##### OFFICE OF RESPONSE AND RESTORATION (OR&R)

On Aug. 28, OR&R's Emergency Response Division responders, managers, and developers met with oil spill responders from the California Office of Spill Prevention and Response and U.S. Environmental Protection Agency in Sacramento, California. The meeting kicked off a collaboration to develop a new handheld Shoreline Cleanup and Assessment Technique (SCAT) data collection tool. The new mobile-friendly tool will integrate field data collection with GPS information in a state-of-the-art GIS and telecommunications system. Each organization has assigned personnel to a steering committee that will define the data standards, operational requirements, and a development pathway. Initial plans are to deliver the new tool to the response community before the International Oil Spill Conference in 2017. When completed, this tool will greatly improve the speed and accuracy of field data collection during oil spills.

#### August 2014 was the hottest August on record for the globe, driven largely by record warm oceans

Excerpted from a larger article at <http://www.ncdc.noaa.gov/sotc/global/2014/8>

The average August temperature for the global oceans was record high for the month, at 0.65°C (1.17°F) above the 20<sup>th</sup> century average, beating the previous record set in 2005 by 0.08°C (0.14°F). It was also the highest departure from average for any month in the 135-year record, beating the previous record set just two months ago in June 2014 by 0.03°C (0.05°F). Record warmth was observed across much of the central and western equatorial Pacific along with sections scattered across the eastern Pacific and regions of the western Indian Ocean, particularly notable in the waters east of Madagascar. After cooling briefly in July, ocean temperatures in the Niño 3.4 region—the area where ENSO conditions are monitored—began warming once again. NOAA's Climate Prediction Center estimates that there is a 60–65 percent chance that El Niño conditions will develop during the Northern Hemisphere fall and winter. This forecast focuses on the ocean surface temperatures between 5°N and 5°S latitude and 170°W to 120°W longitude.

#### U.S. initiates prototype system to gauge national marine biodiversity

NOAA, NASA and the Department of the Interior's Bureau of Ocean Energy Management (BOEM) have joined together to support three demonstration projects that will lay the foundation for the first national network to monitor marine biodiversity at scales ranging from microbes to whales. The projects, to be funded at approximately \$17 million over the next five years, subject to the availability of funds, will demonstrate how a national operational marine biodiversity observation network could be developed. Such a network would serve as a marine resource management tool to conserve existing biodiversity and enhance U.S. biosecurity against threats such as invasive species and infectious agents. The three demonstration marine biological observation networks will be established in four locations: the Florida Keys; Monterey Bay and the Santa Barbara Channel in California; and on the continental shelf in the Chukchi Sea in Alaska. For full story visit: [http://www.noaanews.noaa.gov/stories2014/20141006\\_boem.html](http://www.noaanews.noaa.gov/stories2014/20141006_boem.html)

## NATIONAL MARINE SANCTUARY NEWS

### **Thunder Bay National Marine Sanctuary Celebrates Expansion**

On Sept. 5, NOAA released a final rule and environmental impact statement expanding the boundaries of Thunder Bay National Marine Sanctuary in Lake Huron from 448 square miles to 4,300 square miles. A product of nearly seven years of scientific research and stakeholder input, the boundary expansion extends federal protection to an additional 100 known and suspected historic shipwreck sites. The expansion sanctuary was driven by strong support from Alpena and other northeast Michigan communities. In celebration of this historic achievement, the sanctuary hosted more than 200 people at a community appreciation day on Sept. 6 at NOAA's Great Lakes Maritime Heritage Center featuring fun activities and special guests including Senator Carl Levin, Dr. Jane Lubchenco, and Dr. Robert Ballard. Expansion of Thunder Bay National Marine Sanctuary is a tremendous milestone for NOAA and the state of Michigan. By extending federal protection to new shipwrecks in the Great Lakes, the sanctuary will play a key role in studying these pieces of our nation's history, protecting them for future generations, and promoting appreciation of our shared maritime heritage.

### **GRAY'S REEF ANNOUNCES NEW SUPERINTENDENT - SARAH FANGMAN**

Sarah Fangman has been named superintendent at Gray's Reef National Marine Sanctuary. Fangman, program coordinator for the Southeast Atlantic, Gulf of Mexico and Caribbean Region of the Office of National Marine Sanctuaries, succeeds George Sedberry, who served as interim acting sanctuary superintendent. Sedberry now returns to his role as science coordinator for the region. Fangman has been working with the sanctuary program since 1998, with Gray's Reef since 2005, and she assumed additional duties as acting science coordinator and acting deputy superintendent in 2013. She brings to her new role more than a decade of experience in research, planning, and communications across the sanctuary system and internationally, and also in leading and conducting dive research at Gray's Reef. "I've been very fortunate to have worked in different sanctuaries, at the regional level, and internationally," said Fangman. "I look forward to reflecting on lessons learned through these experiences and to discovering strategies for leading Gray's Reef in new directions."

### **Hypoxia Monitoring Moorings Recovered at Cordell Bank**

NOAA's Cordell Bank National Marine Sanctuary research staff recovered two moorings with sensors to measure dissolved oxygen and temperature at Cordell Bank on Sept. 17. The moorings were deployed for three months and were recovered in good condition at the original deployment location. Low dissolved oxygen levels had been recorded along the north central California coast in 2013 and 2014, but it was unknown if low oxygen conditions existed at the bank, which is inhabited by a vibrant invertebrate and rockfish community. With funding provided by the Cordell Marine Sanctuary Foundation, sanctuary staff worked with the UC Davis Bodega Marine Lab to build, deploy, and recover the moorings aboard Bodega Marine Lab's R/V *Mussel Point*. Analysis of the data is underway, but an initial look indicates that brief hypoxic or near-hypoxic events may have occurred. Hypoxic conditions have had significant impacts in other regions, particularly in Oregon. Scientists and managers need to assess the presence of hypoxic conditions in Cordell Bank National Marine Sanctuary and understand how this may impact the ecosystem.

### **Dr. Robert Miller presents at CINMS Advisory Council on demonstrating an effective marine Biodiversity Observation Network in the Santa Barbara Channel**

On September 19, 2014 Dr. Robert Miller from the Marine Science Institute at the University of California Santa Barbara presented at the Channel Islands National Marine Sanctuary (CINMS) Advisory Council meeting regarding the formation of a Biodiversity Observation Network in the Santa Barbara Channel to measure and monitor biodiversity. Dr. Miller shared that Biodiversity Observation Networks are now being extended to marine environments in order to identify future threats to the ocean. The project goals are to integrate and catalog regional biodiversity data, develop methods to monitor biodiversity, and implement a trade off framework to optimize allocation of sampling efforts. Challenges associated with these goals include deciding on the appropriate temporal and spatial scales and collecting samples from different habitats. An optical imaging approach is being developed that will apply algorithms to automatically identify common species within photographs, which has the potential to analyze large volumes of information in a short time frame. The network is also investigating technology that will have the ability to sample DNA in water samples and identify species that are or were present.



## MONTEREY BAY NATIONAL MARINE SANCTUARY NEWS AND PROGRAM UPDATES



### MANAGEMENT

#### **Monterey Bay's Sanctuary Advisory Council Meets**

On Friday, August 22, Monterey Bay National Marine Sanctuary's Advisory Council (AC) met in Monterey at the Elks Lodge. Topics covered included a desalination information item, a report on the most recent research cruise to the Sur Ridge, a breakdown of council member's feedback from individual meetings with the AC Coordinator on AC operations, an update on the progress on the AC's charter revision and the formation of a national acoustics working group, superintendent's reports from both Monterey and Gulf of the Farallones NMSs, working group reports and member announcements. The council reviewed a resolution coming out of the national AC supporting recreation and tourism activities, which passed.

#### **MBNMS Research Activity Panel Meets at Sanctuary Exploration Center**

On September 12th, the MBNMS Research Activity Panel (RAP) met at the Sanctuary Exploration Center in Santa Cruz, CA. Agenda items included: Sanctuary Exploration Center update, Making the Grades: Turning Masses of Water Quality Data into Geo-Referenced Report Cards for Resource Managers, summary of August 22nd SAC meeting at Monterey, 2015 Currents Symposium theme and Ricketts Award, Recent deep-water exploration at Sur Ridge, and a self-guided tour of the Sanctuary Exploration Center.

#### **MBNMS staff visit Big Sur during all-day retreat**

On September 23, Monterey Bay National Marine Sanctuary staff members headed down the coast to Big Sur for an all day retreat. Members from the Education, Resource Protection, and Research teams gave presentations while on site at resource issue locations. In addition to learning about overflight regulations, sensitive bird nesting sites, water quality sampling efforts, and characterization of nearshore subtidal resources, staff had a chance to connect with one another informally, both during the scenic drive and while at each of the stops made along this majestic and world-famous stretch of coastline.

#### **HQ Mini-Tourism Grant for Recreation & Business Exposure**

Monterey Bay National Marine Sanctuary staff secured a HQ mini-grant to pursue recreation, travel, & tourism opportunities in an effort to cross-promote the presence of MBNMS. In this instance, staff are capitalizing on the first annual *Monterey Beach SportsFest* as a vehicle for promoting increased awareness. Their tagline: 'Healthy People, Healthy Oceans!' is an appropriate pairing for positive MBNMS exposure. Staff hosted an event at the Museum of Monterey Thursday night (10/02/2014) to serve as an opportunity for networking and idea generation for future partnerships with local businesses, while sponsoring a high-profile energizing evening. Staff made a concerted effort to reach out to key influential members of the business community, recreation and tourism sectors and the hospitality industry to encourage a positive view of the sanctuary. 265 images taken on the first day of the inaugural Monterey Bay SportsFest, which was co-sponsored by ONMS, were placed on the SIMoN (Sanctuary Integrated Monitoring Network) Photo Library (<http://sanctuarysimon.org/photos/index.php>). Images of swimmers racing in the sanctuary, outriggers crossing Monterey Bay, and doubles beach volleyball are all on the web site. To see all of the SportsFest images, go to the link above and in the keyword search box type in "mbsportsfest" without the quotes.

## RESEARCH AND MONITORING

### **SIMoN staff assists with fish behavior study inside and outside state MPAs**

This week, SIMoN (Sanctuary Integrated Monitoring Network) staff member Dr. Steve Lonhart completed his part in a four-month project led by Ms. Olivia Rhoades, a Ph.D. student from Bodega Marine Lab, UC Davis. Olivia and her technician completed over 100 dives in Monterey and Carmel Bays between April and September, collecting data on fish behavior in response to the presence of divers mimicking spearfishers. Lonhart assisted with boat operations and collected about 5% of her data for the season, including sites inside and outside MPAs, where legal fishing pressure is quite different. In a preliminary look at the data, Olivia says there were strong differences in behavior based on human pressure: areas with high access and high pressure had fish with more rapid responses to diver approach as compared to areas with regulations in place.

### **UCSC Institute of Marine Sciences appoints SIMoN staff as Research Associate**

On August 11, SIMoN (Sanctuary Integrated Monitoring Network) staff member Dr. Steve Lonhart was notified by Dean Paul Koch that UC Santa Cruz has extended a courtesy appointment as a Research Associate in the Institute of Marine Sciences. Dr. Lonhart has held such status since 2004. Access to common research facilities and the University Library will continue through 2019. Research Associate status was established by the Regents of the University of California to give appropriate official recognition to scholars working at a UC campus who are not primarily employed by the University. This appointment recognizes past contributions to the University and facilitates future interactions with IMS scientists and staff, further linking the University and MBNMS.

### **SIMoN staff updates information on Sporadic Events**

On August 27th, SIMoN (Sanctuary Integrated Monitoring Network) staff updated the SIMoN News web site, which captures recent news stories and Sporadic Events, odd occurrences that crop up periodically. During the summer of 2014, two events took place: a dense bloom of the green alga *Ulva*, which coated beaches in Monterey Bay for several days (<http://sanctuariesimon.org/news/2014/07/2014-july-bloom-of-the-seaweed-ulva/>), and a later-than-usual inundation of beaches by *Verella verella*, a jelly that appeared on our shores by the thousands (<http://sanctuariesimon.org/news/2014/08/jellies-cover-beaches-2002-2003/>). Providing succinct, news-like stories on events and odd natural phenomena via the web is an excellent mechanism of disseminating the information to staff and public alike, and also serves as a record of such occurrences.

### **SIMoN Photo Library images used in new Google Tour of central CA MPAs**

Google has a new tool that helps web users explore underwater parks and Marine Protected Areas (MPAs) along the central California coast: <https://tourbuilder.withgoogle.com/builder#play/ahJzfmd3ZWltdG91cmJlYWxkZXJyDAsSBFRvdXIYvrEhDA>. The central coast Google MPA Tour features detailed descriptions of each of the central coast MPAs, National Marine Sanctuaries, and National Estuaries, with stunning photos and videos, and links to local "things to do." TourBuilder is a Google Earth experiment, and was recently used by the MPA Education and Outreach Initiative (<http://www.californiampas.org/index.html>), and many of the photos come from the SIMoN (Sanctuary Integrated Monitoring Network) Photo Library (<http://sanctuariesimon.org/photos/index.php>). Providing high quality and interesting photos, both underwater and on land, the SIMoN Photo Library is a widely used resource both by ONMS staff and external users. Access to free images of our sanctuary resources from the SIMoN web site facilitates development of outreach, education, and science materials outside of the sanctuary program and increases ONMS exposure.

### **SIMoN expansion discussed with CINMS**

On September 12, SIMoN (Sanctuary Integrated Monitoring Network) staff member Dr. Steve Lonhart traveled to Santa Barbara to discuss expanding the SIMoN web site to include the Channel Islands NMS. Lonhart met with new Research Coordinator Chris Caldwell to discuss how SIMoN can help Chris and the rest of the CINMS staff. Superintendent Chris Mobley and his staff attended a "SIMoN 101" overview, which highlighted some of the tools that staff at other sites (e.g., MB, GF, and CB NMS) have found useful. With some additional WCR funding, the expansion team developed a plan for adding CINMS to the SIMoN portfolio, and making use of many of the tools that SIMoN has to offer. The Sanctuary Integrated Monitoring Network has always been designed to function as a regional asset, with plans since its inception in 2001 to eventually expand to include all sites within the ONMS. With support from WCR, expansion plans are once again being implemented. SIMoN serves as an umbrella for web-based tools that are designed to make information readily accessible to staff and the public alike, thereby increasing efficiency and effective exploration, study, and protection of sanctuary resources. In addition, SIMoN is an excellent outreach tool, connecting with tens of thousands of people each month. <http://sanctuariesimon.org>

### **MBNMS Research Activity Panel Meets at Sanctuary Exploration Center**

On September 12th, the MBNMS Research Activity Panel (RAP) met at the Sanctuary Exploration Center in Santa Cruz, CA. Agenda items include: Sanctuary Exploration Center update, Making the Grades: Turning Masses of Water Quality Data into Geo-Referenced Report Cards for Resource Managers, summary of August 22nd SAC meeting at Monterey, 2015

Currents Symposium theme and Ricketts Award, Recent deep-water exploration at Sur Ridge, and a self-guided tour of the Sanctuary Exploration Center. 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.

### **SIMoN staff reviews Vulnerability Assessments**

On September 19, SIMoN (Sanctuary Integrated Monitoring Network) staff member Dr. Steve Lonhart completed reviewing vulnerability assessments generated by participants of a workshop hosted and led by Gulf of the Farallones staff, including Sara Hutto and Kelley Higgason. The Vulnerability Assessment Workshop for the North-central California Coast and Ocean Climate-Smart Adaptation Project brought together agency and academic scientists alike, and asked them to assess the vulnerability of certain species and habitats to projected climate change. Lonhart reviewed assessments on the southern sea otter, red and purple urchins, red abalone, blue rockfish, coralline algae, and kelp forests. As part of the Ocean Climate Initiative and the GFNMS Ocean Climate Center of Excellence, EcoAdapt and Gulf of the Farallones National Marine Sanctuary staff are on the cutting edge of evaluating how managers should prepare for upcoming changes in our ecosystems and habitats. <http://farallones.noaa.gov/manage/climate/welcome.html>

### **SIMoN staff participates in NOAA AIS quarterly teleconference**

On September 18, SIMoN (Sanctuary Integrated Monitoring Network) staff member Dr. Steve Lonhart participated on a teleconference with the NOAA Aquatic Invasive Species (AIS) team. Representatives come from NMFS and NOS, and covered the entire US and as far away as Saipan in the Northern Mariana Islands. Much of the call was focused on the second NOAA AIS Workshop, which is slated to take place on the west coast (the first meeting was 2012 in DC). Currently Steve is coordinating with NOAA staff at HQ to determine if the workshop can be hosted in Santa Cruz. The meeting will likely take place at the end of March 2015. NOAA has recognized that aquatic invasive species (freshwater and marine) pose a serious threat to resources managed by the agency, and that staff across line offices are working on these issues but doing so in isolation relative to NOAA. The NOAA team is attempting to build bridges across line offices and support scientists working on AIS.

### **MBNMS Field Tests Small Unmanned Aircraft System (UAS) in Monterey Bay**

On September 14 and 15, MBNMS assessed the capabilities of the Puma™ AE (All Environment) small unmanned aircraft system to detect and count various living marine resources within Monterey Bay. Although the primary targets, leatherback turtles and their jellyfish prey, were not found, the UAS made four successful 90-minute flights in northern Monterey Bay. The operational platform was the MBNMS research vessel, R4107. OMAO pilots manually launched the UAS off the back deck of the R4107 and would control it from a laptop within the ship's cabin. A live image was transmitted from the UAS and viewed by MBNMS staff on a small tablet, and by a pilot in a shaded viewfinder. The camera on the UAS has a 360 degree continuous pan, +10 to -90 degrees tilt and infrared modes, allowing the pilot to "lock on" a target for further investigation. The UAS never flew more than one mile from the vessel, and flew at altitudes ranging from 200 to 1000 feet. Weather conditions were fantastic for both operational days, but a third operational day was cancelled due to mechanical problems on the R4107. Operations never entered overflight restriction areas, thus never came within three miles of shore. The UAS is completely silent after launch, as it runs on a battery, and there was no evidence of any disturbance to any animals in the area. The UAS proved very effective in detecting many Humpback whales that were present near the Monterey Canyon, and at low altitudes (200-300 feet), could still image birds, although species identification could not reliably be made. Presumably, the UAS would be able to detect leatherback turtles, as several ocean sunfish (*Mola mola*) were easily seen. Since dark green drift kelp was also visualized at low altitudes, it could be presumed that patches of jellyfish would be detectable. A full report will be released in the coming months, complete with imagery and maps of the UAS track lines. This field test assessed the capabilities of the UAS to detect and characterize living marine resources within MBNMS, which is an important part of the overall mission of MBNMS. This could be a less expensive, and safer alternative to sending observers up in a plane to conduct marine mammal and seabird surveys. This system could also be useful to characterize sporadic events such as harmful algal blooms, mass migrations and die-offs, or used to potentially find injured or entangled marine mammals previously reported by vessels.

### **Surveys of fishes in state MPA kelp forests completed for 2014 season**

On October 1, Sanctuary Integrated Monitoring Network (SIMoN) senior scientist Dr. Steve Lonhart assisted Dr. Mark Carr and other science divers to collect survey data inside and outside of state MPAs. Annual, quantitative fish surveys are conducted by the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) at the University of California at Santa Cruz (UCSC) and partnering agencies, such as MBNMS. Since late July, PISCO and its partners have been collecting density and size-frequency data on benthic and midwater fishes in kelp forests from Santa Cruz to Carmel Highlands. This is part of a tightly-linked and long-term collaboration between PISCO UCSC and MBNMS, and contributes significantly to continuing the longest and largest dataset on kelp forests in central California.

## **RESOURCE PROTECTION**

### **MPA Collaborative Group meets in Monterey**

On August 18<sup>th</sup>, staff participated in the 3<sup>rd</sup> MPA Collaborative meeting hosted by OPC's MPA Collaborative Implementation Project. The purpose of this meeting was to propose and discuss potential community outreach projects that focus on the State MPAs. MBNMS staff proposed a concept for Incorporating Central Coast MPA Outreach into the Bay Net and Team OCEAN volunteer programs. This was one of three proposed projects that will be considered for allocation of up to \$10K in support funds. On a related topic, the California Marine Sanctuary Foundation has developed a donor webpage to help raise awareness and funding for these valuable programs. The new webpage is: <http://www.californiamsf.org/pages/donate-teamoceanbaynet.html>

### **MRSWMP Report Finalized**

The 2013-2014 Monterey Regional Storm Water Management Program (MRSWMP) report of the Dry Run, First Flush, Second Flush and Summer Run urban runoff monitoring programs is complete and was submitted to the MRSWMP Committee for final approval. This year two wet weather events were conducted (First Flush and Second Flush) and a comparison of the two events is included in the report. This is the 14<sup>th</sup> year of First Flush monitoring at outfalls draining into Monterey Bay National Marine Sanctuary. Data from dry and rainy season monitoring aids local cities in determining which watersheds require source tracking or BMP implementation.

### **Discussions and updates on Noise in Sanctuaries**

Staff provided an update to the West Coast Leadership Team on regional acoustic issues, including the formation of the National Noise Working Group. The group consists of HQ, regional and site reps, and is conducting monthly calls to discuss and coordinate noise related topics. The latest call was August 27<sup>th</sup>, and some of the projects discussed included funding and installation of hydrophone mooring buoys developed by NOAA to capture noise from shipping traffic, marine mammal calls, sounds from fish, and storm and wave action among other noise contributors. Also, the group compiled ideas for a social media campaign to engage the public. Noise is an emerging issue in sanctuaries, and a national working group will help provide coordination and consistency regarding research and education on this important issue.

### **Resource Protection Issues discussed at MBNMS Advisory Council meeting**

At the August 22<sup>nd</sup> Sanctuary Advisory Council meeting, staff provided an update on all currently proposed desalination projects including the recently MBNMS developed EA for the California American Water test slant well and the Monterey Bay Regional Water Project from DeepWater Desal. The SAC was very engaged and interested in these large-scale water supply efforts, and requested to be kept informed as the projects continue to develop. In addition, staff updated the Advisory Council on the newly formed ONMS Noise or Acoustic Working Group, which has started on a few targeted projects for 2014/15. The Council will be following up to express support for the efforts to further characterize and provide outreach on noise in the sanctuaries.

### **Food Safety and Water Quality Co-Management Forum - A Great Success**

On August 20<sup>th</sup> the Farm Food Safety and Conservation Network, coordinated by the MBNMS Ag Water Quality Coordinator, hosted a very successful Food Safety and Water Quality Co-Management Forum at the Salinas UC Cooperative Extension auditorium. One goal of the event was to present practical strategies to manage agricultural production while ensuring food is safe and environmental conservation practices are implemented. Panel discussions included "Balancing Water Resources and Food Safety in a Drought" and "Co-Managing for Food Safety and the Environment". The afternoon was spent on a field trip to a local organic farm to explore design and management strategies that meet production and conservation goals. Over 75 people were in attendance from all aspects of agriculture including; regulators, researchers, growers, conservation groups, and industry. Agriculture is the primary economic driver on the central coast of California and one of the major contributors of nutrients to the MBNMS. Events like these, bring together all perspectives of the co-management issue to learn, problem solve and recognize solutions in dealing with a complicated issue.

### **Bren School Intern completes summer fellowship with Resource Projection Team**

Ms. Hilary Waleka of the Bren School in Santa Barbara completed some valuable projects for the RP team this summer. The projects included a draft web page on acoustics issues, an edited Sanctuary Ecologically Significant technical report, added information and graphics to the Central Coast MPA Google Tour, outreach to the Shipping Industry on the AIS vessel traffic analysis report and finalized the MERITO Academy curriculum modules, which will be posted on the website for teachers to download. The link to the newly developed Google MPA Tour is: <https://tourbuilder.withgoogle.com/builder#play/ahJzfm3ZWltdG91cmJlYWxkZXJyDAsSBFRvdXIYvrEhDA/ahJzfm3ZWltdG91cmJlYWxkZXJyIgsSBFRvdXIYvrEhDAsSCVBsYWNlbWFyaxiAgICAwKC7Cgw> Hilary also attended some RP and staff meetings and gained real life experience on how sanctuary staff manage projects and coordinate with partners.

### **Two Whales Entangled in Monterey Bay**

A humpback whale was sighted on Friday the 12<sup>th</sup> in the middle of Monterey Bay trailing 2 yellow & orange 10-20' crab buoys, and has not been re-sighted as of the 15<sup>th</sup>. A second whale, a large adult humpback was reported entangled in Monterey Bay on Saturday the 13<sup>th</sup> and the Whale Entanglement Team responded and were able to successfully deploy a

telemetry buoy on Sunday. The whale was trailing a spot prawn trap and the grounding line was difficult to access, yet they were able to cut the line to the pot with a grapple. The whale still has multiple buoys (3 poly balls, pot float, and telemetry buoy) still attached and is headed south from the Bay. They will continue to monitor this whale as it moves down south toward Santa Barbara. This is the second incident that includes a pair of whales entangled in fishing gear since July 2014. Abandoned or lost fishing gear continues to be a resource protection issue for marine mammals and other wildlife in sanctuaries, and requires concerted effort and significant resources by rescue teams.

### **First Flush and Dry Run Training and Monitoring Underway for 2014**

On September 8th and 10th, First Flush (FF) trainings were conducted in Santa Cruz and Monterey. The San Mateo training is scheduled for September 27th. On September 13th, the Dry Run occurred in Santa Cruz and Monterey where over 39 volunteers went to their FF sites to practice for the FF event and collect water samples, where there was flow, for the same urban pollutants that will be measured during the first storm event of the year. This event is an opportunity to highlight the importance of human actions in the watersheds and the direct link (both positive and negative) to their impacts in the ocean. The FF monitoring event would not be possible without the WQPP volunteer programs. Events such as First Flush provide valuable information to resource managers as to the quality of water flowing into the ocean from urban sources. It also provides an opportunity to remind people that the Monterey Bay National Marine Sanctuary exists and the need to protect it.

### **New Resource Protection webpage launched on Acoustic Impacts**

A new webpage was launched this week on Acoustic Issues in MBNMS. Please visit <http://montereybay.noaa.gov/resourcepro/resmanissues/acoustic.html>. The page focused on three main components - Acoustic (Noise) impacts, How are Sanctuaries involved, and More information on available web resources such as reports, publications and podcasts.

### **Storm Drain Discharge Investigation Underway**

During monthly sampling of storm drain outfalls, an abnormal substance was found trickling out of one of the outfalls. WQPP staff collected water samples for E. coli, enterococcus, copper, zinc, lead, nitrate (as N), phosphate (as P), urea and TSS at the outfall and in the ocean receiving water. On the same day, parties responsible for potential discharge were contacted and photos of the substance and outfall were sent to try and determine what the green/blue substance was and how it got into the storm drain outfall. Test results are still pending. Responsible parties were quick to work collaboratively to identify potential sources. The WQPP works closely with many organizations within the watersheds to ensure that the best quality of water is flowing into the ocean. Through monitoring programs using volunteers and other types of effectiveness monitoring for management practices, WQPP staff are regularly checking outfall conditions and reporting back to responsible parties when a situation arises.

### **Santa Rita Creek Restoration Breaks Ground**

After 5 years of delays and contract negotiations, a creek restoration in Salinas, CA is underway. WQPP staff established a Clean Streams program in the Santa Rita Creek watershed in 2006-2007 through a state funded grant. During that time, the monitoring revealed extremely high concentrations of nutrients and indicator bacteria. MBSF received a grant to restore a portion of the creek, work with the agriculture community to target the source of the contaminants while engaging the local residents to help plant natives and measure water quality. This holistic approach to a severely impacted urban stream will hopefully result in improved habitat and water quality in the creek. This effort is based on EPA's Measure W to focus holistically on a small sub-watershed to address all possible sources of impairment to a waterbody in order to measure improvement in habitat and water quality. Santa Rita Creek is located in one of the most polluted watersheds that flows to Monterey Bay National Marine Sanctuary.

### **ASBS Mooring Field Monitoring Completed for the Season**

In a contract with Applied Marine Sciences, WQPP staff assisted with wet weather monitoring and mooring field monitoring in Areas of Special Biological Significance along the Central California coast. The mooring field monitoring was required monthly in Still Water Cove offshore of Pebble Beach, CA from June through September. WQPP staff conducted the monitoring on busy boating weekends throughout the summer in order to determine the contribution of metals, oils, and indicator bacteria that could be coming from the boating community. This is the first of two years that both wet weather and mooring field monitoring is required by the CA State Water Resources Control Board. ASBS monitoring will provide an extremely valuable dataset of information on the quality of water in the nearshore environment. To date, except for the CCLEAN program, there was no comprehensive water quality monitoring of ocean receiving waters on the Central Coast. The ASBS monitoring will provide background reference conditions and pair end of pipe monitoring with receiving water to better understand the anthropogenic impacts on the nearshore environment.

### **MBNMS Highlighted at Monterey County Environmental Compliance Workshop**

On September 24th, WQPP staff both tabled and presented at the Monterey County Environmental Compliance Workshop in Salinas, CA. The workshop was attended by over 150 inspectors, city staff, agriculture industry and consultants. Topics ranged from regulatory compliance, emergency response and environmental protection. The workshop coordinators highlighted the MBNMS as one of the major reasons and purpose for the work everyone is doing to control pollution at its source so as not to pollute surface waters and the sanctuary downstream. Having strong partnerships in the watersheds draining to the MBNMS provides opportunities to increase awareness of the sanctuary and foster more meaningful progress towards improving habitat and water quality. By minimizing pollution at its source, we can more efficiently protect our natural resources.

### **New Agriculture Water Quality Alliance (AWQA) Website Launched**

The new AWQA website was launched this week with an all new look, responsive design and a simpler navigation menu ([www.awqa.org](http://www.awqa.org)). The website also includes a new section of “toolkits,” funded by a USDA Western Sustainable Agriculture Research and Education Program (SARE) grant. These toolkits were compiled by AWQA partners including the Monterey Bay National Marine Sanctuary, California Central Coast Resource Conservation Districts, National Resource Conservation Service, and University of California Cooperative Extension. The toolkits include online links to resources and publications, how-to SOP documents, and excel sheets that help conservation professionals and growers with farm practices to improve irrigation efficiency, irrigation scheduling and nutrient management. The AWQA website provides information and procedures developed by researchers and conservation professionals that can be used to extend the capacities of individuals and organizations to manage the application of irrigation water and nutrients on crops. By better managing the quantities added to meet plant growth needs, resources can be conserved and the level of pollution entering ground and surface water can be reduced.

### **Water Quality Protection Program Uploads Thousands of Data Points to the California Environmental Data Exchange Network (CEDEN)**

Monterey Bay National Marine Sanctuary’s WQPP Team has been working tirelessly to upload water quality data from our citizen monitoring programs to the statewide CEDEN database. Upload to this database is not a small feat; it requires tremendous documentation of data quality assurance and quality control. We uploaded 5,068 lines of Snapshot data and 260 monitoring sites complete with meta-data. The WQPP has been encouraging all organizations with regional and long-term water quality monitoring programs to use CEDEN as a centralized database for water quality results. Now a comprehensive analysis is possible for answering multiple questions as to the spatial, temporal, and magnitude of water quality conditions within MBNMS from many disparate yet comparable data sets. It also is a huge accomplishment for citizen science.

### **California Climate Action Network Farm (CalCAN) Tour**

The Monterey Bay National Marine Sanctuary’s Agricultural Water Quality Coordinator participated in an organic field tour on 9/25/14 of three exceptional farms implementing extensive conservation practices to reduce greenhouse gas emissions, store carbon in the soil, and reduce water use. The tour included Senator Monning, Assembly members Mark Stone and Susan Eggman as well as staff members of CalCAN, California Certified Organic Farmers, and the Santa Cruz County Resource Conservation District. The three farms toured were Pinnacle Farm, High Ground Organics and Pie Ranch. The field tours demonstrated the capability of highly committed and innovative small organic farms to engage in practices that simultaneously reduce greenhouse gas emission and save water. These practices include cover crops, composting, hedgerow planting and crop rotation, all of which build the health of the soil and promote healthier plants while accomplishing multiple objectives. By providing California legislators the opportunity to see what can be achieved through adopting these practices, they can help develop funding mechanisms and legislative support to make these practices more available to California farmers.

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

### **MBNMS holds a meeting to discuss Plankton Monitoring and Education**

Monterey Bay National Marine Sanctuary and the University of California - Santa Cruz, O’Neill Sea Odyssey, Elkhorn Slough Estuarine Research Reserve, the Exploratorium and CeNCOOS came together in a meeting to discuss plankton collection and monitoring in the sanctuary. The goal of this meeting was to discuss what and where plankton was being collected, the stories behind these organisms, what scientific questions were being asked and what kind of plankton data could potentially be collected by citizens. Effort was also put into identifying the nexus between the science, education and policy so in the future when plankton is collected and viewed at the Sanctuary Exploration Center, it can be useful as a long-term data set for both policy and research.

### **Volunteers Celebrated!**

On the evening of August 23rd, the Monterey Bay National Marine Sanctuary honored and celebrated the volunteers that contribute to and support volunteer programs at the MBNMS: Beach COMBERS, First Flush, Snapshot Day, Urban Watch, Team OCEAN, Bay Net, Coastal Discovery Center and Sanctuary Exploration Center. Volunteers were treated to a presentation of the accomplishments of all volunteer programs, Mark Stone California Assembly member and the presentation of the Volunteer of the Year plaque to Sandy Cohen who generously donated her time to the Sanctuary Exploration Center in Santa Cruz. Volunteers are crucial to the functioning of the MBNMS through collecting water quality samples, talking with kayakers, walking beaches and introducing visitors to the Monterey Bay National Marine Sanctuary. In all volunteers donate hundreds of hours worth hundreds of thousands of dollars.

### **Sanctuary Exploration Center's Garden Certified "Monterey Bay Friendly"**

The Sanctuary Exploration Center (SEC) is happy to announce its native landscaping has been among the first to be certified through the Monterey Bay Friendly Landscape program. Getting certified requires compliance with ten different criteria, which include harvesting rainwater, drought tolerant plantings serviced by drip irrigation, appropriate spacing and species of plants and a landscaping contractor who uses ecological methods. The SEC garden is one of the very first to be certified and will be immediately used as a teaching garden to train landscaping contractors on rating and creating Monterey Bay Friendly Landscapes. The Monterey Bay Friendly Landscape program, funded by the State Water Resources Control Board and developed and coordinated by Ecology Action (a local 501(c)(3)), provides regional standards and public recognition for commercial landscapes and home gardens who reduce waste, conserve water and energy, and manage stormwater on site.

### **Bay Net provides education on fishing debris along the US Coast Guard Jetty**

On September 28<sup>th</sup>, US Coast Guard and Bay Net volunteers conducted a first time event at the Coast Guard pier to educate anglers and the public about the importance of cleaning up and disposing of their used fishing line, hooks and other debris. Additional participating organizations included NOAA Office of Law Enforcement, Monterey Bay NMS, Marine Mammal Center, SPCA Wildlife Center, and the US Coast Guard Auxiliary. Approximately 300 visitors visited the jetty that day. The event was catalyzed through the dedicated efforts of two Bay Net volunteers - Marge Brigadier and Kim Worrell - who have tirelessly worked on this issue for a number of years. Local TV news channel KION ran a story on the event which can be viewed here: <http://www.kionrightnow.com/news/local-news/hidden-danger-of-fishing-line-and-hooks/28307348>. USCG expects to conduct this type of event at the same time next year, as the goal is to reach more of the local anglers vs. those coming in the summer tourist season. Ongoing education and outreach to anglers is needed on recycling leftover fishing line and hooks. Marine mammals such as sea lions, harbor seals and otters, as well as birds and other marine wildlife can be harmed from entanglement with fishing gear.

## NEWS COVERAGE

Peter Greenberg Worldwide—Cannery Row, Monterey, California

<http://petergreenberg.com/2014/08/31/peter-greenberg-worldwide-cannery-row-monterey-california-august-30-2014/>  
Peter Greenberg.com Travel News-Aug 31, 2014

[Monterey Bay region becomes a stronghold for strictest plastic bag ...](#)

[http://www.montereycountyweekly.com/news/local\\_news/monterey-bay-region-becomes-a-stronghold-for-strictest-plastic-bag/article\\_c88d378e-2e2f-11e4-8ae6-0017a43b2370.html](http://www.montereycountyweekly.com/news/local_news/monterey-bay-region-becomes-a-stronghold-for-strictest-plastic-bag/article_c88d378e-2e2f-11e4-8ae6-0017a43b2370.html)  
Monterey County Weekly-Aug 28, 2014

[California plastic bag ban finally passes the Assembly.](#)

[http://www.montereycountyweekly.com/blogs/news\\_blog/california-plastic-bag-ban-finally-passes-the-assembly/article\\_b4b644ee-2ef2-11e4-a54f-001a4bcf6878.html](http://www.montereycountyweekly.com/blogs/news_blog/california-plastic-bag-ban-finally-passes-the-assembly/article_b4b644ee-2ef2-11e4-a54f-001a4bcf6878.html)  
Monterey County Weekly (blog)-Aug 28, 2014

[Docents draw line in the sand between humans, wildlife](#)

[http://www.sanluisobispo.com/welcome\\_page/?shf=/2014/09/04/3227584\\_docents-draw-line-in-the-sand.html](http://www.sanluisobispo.com/welcome_page/?shf=/2014/09/04/3227584_docents-draw-line-in-the-sand.html)  
The San Luis Obispo Tribune

[Coastal Cleanup Day: Where to volunteer on the North Coast](#)

[http://www.sanluisobispo.com/2014/09/04/3227584\\_docents-draw-line-in-the-sand.html?rh=1](http://www.sanluisobispo.com/2014/09/04/3227584_docents-draw-line-in-the-sand.html?rh=1)  
The Cambrian Sep 10 06:18pm

[The Scenic Route - California's Pacific Coast Highway](#)

<http://www.independent.ie/life/travel/world/the-scenic-route-californias-pacific-coast-highway-30559260.html> Irish Independent-Sep 7, 2014

[The Green Beer Fest Celebrates Clean Water for Colorado Craft ...](#)

[http://www.huffingtonpost.com/wade-norris/the-green-beer-fest-celeb\\_b\\_5847098.html](http://www.huffingtonpost.com/wade-norris/the-green-beer-fest-celeb_b_5847098.html)  
Huffington Post- Vicki Nichols-Goldstein and the Colorado Ocean Coalition

[Sailboat allegedly bumps into pod of whales repeatedly](#)

<http://www.ksbw.com/news/sailboat-allegedly-bumps-into-pod-of-whales-repeatedly/28097308>  
KSBW The Central Coast

[California American Water Awarded \\$1M State Grant For ...](#)

[http://www.wateronline.com/doc/california-american-water-awarded-\\$1-state-grant-for-desalination-test-well-0001](http://www.wateronline.com/doc/california-american-water-awarded-$1-state-grant-for-desalination-test-well-0001)  
Water Online (press release)

[Santa Cruz's Seymour Marine Discovery Center blends fun and ...](#)

[http://www.mercurynews.com/eat-drink-play/ci\\_26520277/santa-cruzs-seymour-marine-discovery-center-blends-fun](http://www.mercurynews.com/eat-drink-play/ci_26520277/santa-cruzs-seymour-marine-discovery-center-blends-fun)  
San Jose Mercury News-Sep 15, 2014

**WEB SITE (<http://montereybay.noaa.gov/>)**

**Follow MBNMS on [Facebook](#) and [Twitter](#)!**

*Please take a few moments to peruse the site. Your feedback is greatly appreciated.  
Comments and suggestions can be sent to [andrew.white@noaa.gov](mailto:andrew.white@noaa.gov).*

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

**Seasons in the Sea**  
<http://www.seasonsintthesea.com>

**Thank You Ocean**  
<http://www.thankyouocean.org/>

**NOAA Online Media Library**  
<http://sanctuaries.noaa.gov/photos>

**SIMON**  
<http://www.sanctuariesimon.org>

**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/>

## **MBNMS STAFF**

**Paul Michel** – Superintendent

**Dawn Hayes** – Deputy Superintendent

### Research

**Andrew DeVogelaere** – Research Coordinator

**Erica Burton** – Research Specialist

**Jennifer Brown** – SIMoN Ecosystem Scientist

**Steve Lonhart** – SIMoN Senior Scientist

**Chad King** – SIMoN Data Analyst

### Education

**Liz Love** – Acting Education Coordinator

**Lisa Uttal** – Interim Exploration Center Director

**Carolyn Skinder** – Southern Region Program Coordinator

**Chelsea Prindle** – Education Specialist

**Nick Ingram** – Program Assistant (SEC)

**Michael Ray** – Exploration Center Gift and Bookstore Manager

**Steven Ellmore** – Program Assistant (SEC)

**Nicole Uibel** – Program Assistant (CDC)

### Resource Protection

**Karen Grimmer** – Resource Protection Coordinator

**Scott Kathey** – Regulatory/Emergency Response Coordinator

**Deirdre Whalen** – Government and Community Relations Coordinator

**Sophie De Beukelaer** – GIS Analyst/Permit Coordinator

**Pamela Krone-Davis** – Agriculture Water Quality Coordinator

**Bridget Hoover** – Water Quality Protection Program Director

**Lisa Emanuelson** – Citizen Watershed Monitoring Network Coordinator

### Program Operations

**Raymond Chisolm** – Program Specialist

**Vacant** – Advisory Council Coordinator

**Andrew White** – Network Manager and Webmaster

**Chris Young** – Exploration Center Operations Specialist



## **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://www.montereybay.noaa.gov/intro/advisory.html>

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

The 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#educate>

## **- Contact Information -**

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

99 Pacific Street, 455A

Monterey, CA 93940

Phone (831) 647-4201

Fax (831) 647-4250