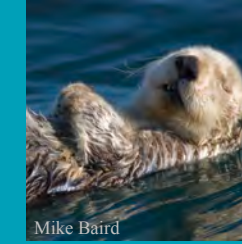


# MONTEREY BAY NATIONAL MARINE SANCTUARY



## Accomplishments

2010



### WELCOME

It's gratifying to look back this year and appreciate all we've accomplished together with the support of our dedicated partners. Today our goals and programs are more ambitious than ever, as we continue to advance our mission of understanding and protecting the coastal ecosystem and cultural resources of the Monterey Bay National Marine Sanctuary.

One of our proudest moments last year was when community members and dignitaries joined us to celebrate the ground breaking for the new Sanctuary Exploration Center in Santa Cruz. We're excited that the vision and planning for this interpretive facility is becoming a physical reality – and we couldn't have done it without the support of our committed partner, the city of Santa Cruz. We look forward to the day when visitors young and old alike can walk through its doors to learn about the ocean and be inspired to care for and protect the sanctuary.

Our programs to reach out to local communities and encourage deeper connections with the sanctuary such as MERITO for multicultural communities, volunteer citizen monitoring like Snapshot Day, First Flush and BeachCOMBERS, as well docents who help interpret the sanctuary through Bay Net, Team Ocean and the Coastal Discovery Center in San Simeon help us engage thousands of people. They are taking action to make a difference in their neighborhoods, bringing awareness of the sanctuary and creating a better future for themselves and their community.

Further afield our work to spread sanctuary messages to a broader audience went very national and international this year. Between our involvement with the U.S. Open Golf tournament and the BLUE Ocean Film Festival, we reached millions of people around the world, showcasing the wonders of the sanctuary. In addition we were honored that the U.S. Navy airship USS *Macon* was successfully nominated to the National Register of Historic Places.

Building relationships with the remarkable assemblage of ocean science talent in the region, we worked more closely than ever with partners such as California State University, Monterey Bay and Partnership for Interdisciplinary Studies of Coastal Oceans to further our understanding of the sanctuary ecosystem and the role marine protected areas (MPAs) can play in conserving marine resources. From mapping the continental shelf and monitoring state MPAs to exploring the wonders of the Davidson Seamount, collaborations like these allow us to learn more about the sanctuary and will help inform critical management and policy decisions in the future.

Scientists around the world continue to document dramatic changes to the marine environment as a result of human activities, from the decline of marine habitats and water quality to the rise of ocean acidity and dead zones. In response, we are stepping up efforts by taking our commitment to manage and protect the sanctuary to a higher level. Buoyed by President Obama's adoption of a new National Ocean Policy, we have launched a new Ecosystem-based Management Initiative for the sanctuary. By bringing together diverse stakeholders to make informed and coordinated decisions about how to use sanctuary resources, we can ensure that a healthy marine ecosystem and diverse human uses are supported for the future.

As ocean advocates, I'm grateful to you for providing the resources, encouragement and actions necessary to make possible all that we achieve – and I'm looking forward to working with you to ensure a healthy future for our sanctuary.

Paul Michel  
Superintendent

AMERICA'S UNDERWATER TREASURES

# PROTECTION & MANAGEMENT

*Ensuring the sanctuary's natural and cultural resources are protected and restored.*

## Fishing Gear Removal Project Completes Year Two

During a two-week period in September, sanctuary staff and partners conducted the second year of a five-year project to remove lost fishing gear from deep-water habitats within the sanctuary. Aboard the fishing vessel *Donna Kathleen*, crew deployed a remotely operated vehicle to successfully remove 410-feet of rockfish gill net, two crab pots, a spot prawn trap and 600 pounds of lead weights between depths of 300 to 1000 feet. This year's efforts focused on refining removal methods in locations both within and outside of state designated marine protected areas (MPAs). The team has determined that MPAs tend to contain older, "legacy" gear, as opposed to locations that are still being fished, which typically have newer gear that is more likely to trap marine life.



## Twin Otter Provides Interagency Law Enforcement Collaboration

With the addition of NOAA's *Twin Otter* aircraft, staff has been coordinating flights to assist law enforcement partners with a wide range of natural resource protection interests. Use of the *Twin Otter* enables NOAA and partner enforcement agencies to survey the entire sanctuary over four to five hours for a real-time assessment of human activities and environmental conditions. A single flight can provide information about

motorized personal watercraft compliance, shipping lane compliance, state marine protected areas compliance, aircraft zone compliance, coastal construction, historical site protection, vessel patterns, discharges, oil sheens, river flows, turbidity plumes and species assemblages.



## Wreck of Airship USS Macon Added to National Register of Historic Places



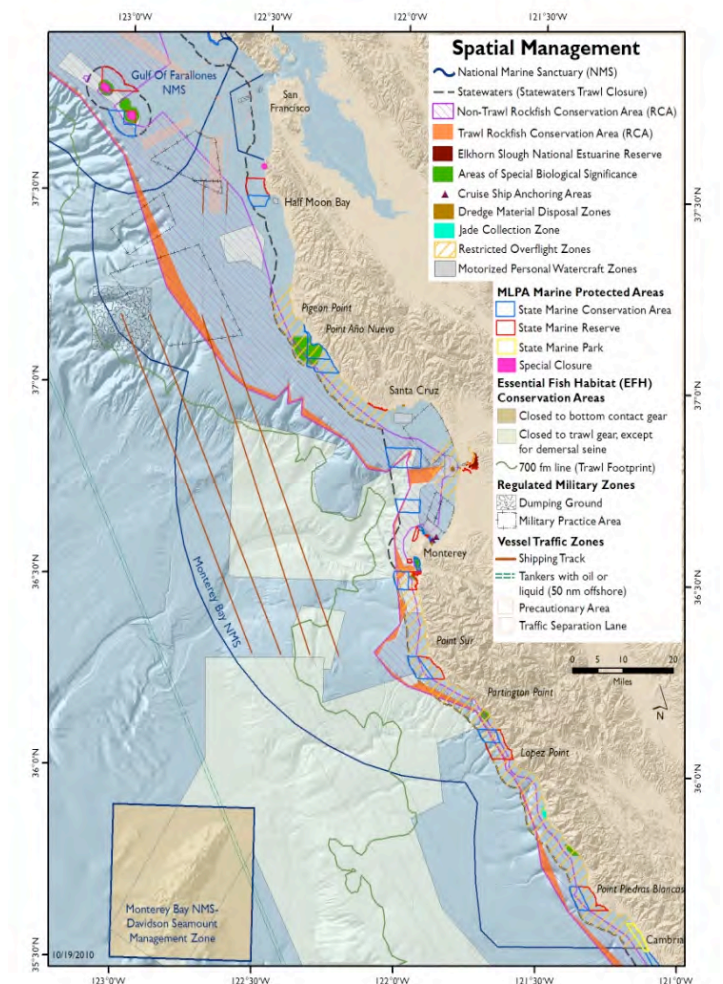
To commemorate the 75th anniversary of the loss of the U.S. Navy airship *USS Macon*, the Monterey Bay National Marine Sanctuary successfully nominated the sunken remains of the wreck site to the National Register of Historic Places in February 2010. One of the largest airships in the world, the 785-foot dirigible was intended to serve as a scout ship for the Pacific Fleet and had the ability to launch and recover Sparrowhawk biplanes. In service less than two years, the *Macon* was damaged in a storm on February 12, 1935 and sank off the Big Sur coast near Point Sur. All but two of the *Macon's* 83 crewmen were rescued by nearby Navy ships. The National Park Service's National Register of Historic Places is the official list of the nation's historic places worthy of preservation. The *Macon* wreck is the second site in the Monterey Bay National Marine Sanctuary to be included on the National Register.

## New Ecosystem-based Management Initiative

This past year we embarked on a new initiative to improve ecosystem-based management and inform coastal and marine spatial planning in the sanctuary in order to: maintain/restore marine ecosystem health and function; ensure protection of unique and rare features; facilitate research to differentiate between natural variation and human impacts; and facilitate ecologically and economically sustainable uses, including fisheries.

Worldwide the ocean is facing declines in the marine environment and conflicts from expanding human activities – from coastal and energy development to aquaculture and the depletion of marine resources. Now more than ever, agencies responsible for the stewardship of marine ecosystems, like sanctuaries, must pursue innovative ways to accommodate multiple ocean uses, ensure continued public access for recreational and commercial activities, and sustain healthy marine ecosystems. In recognition of these challenges, President Obama adopted a new National Ocean Policy in July 2010 that includes the implementation of ecosystem-based management (EBM) and coastal marine spatial planning.

Historically multiple agencies with different priorities and jurisdictions have managed human activities in the sanctuary using a variety of regulations (see figure below) – often resulting in an uncoordinated approach to management and protection. This initiative will take a holistic and comprehensive ecosystem-based approach, in step with NOAA's effort to move towards multi-sector, multi-objective management rather than single sector, single-objective management. By applying the best available science and coordinating with partners and stakeholders, the process will develop recommendations to maintain healthy and resilient ocean resources while allowing for multiple sustainable uses for the benefit of present and future generations.



# EDUCATION & OUTREACH

*Teaching people to understand and care about  
the ocean.*

## A Momentous Groundbreaking Ceremony for the Sanctuary Exploration Center

A milestone was celebrated in July with the groundbreaking ceremony for the long-awaited Sanctuary Exploration Center, which will become the largest sanctuary visitor center on the West Coast. Assistant Secretary of Commerce for Oceans and Atmosphere, Dr. Larry Robinson, Congressman Sam Farr, officials from the Office of National Marine Sanctuaries and city of Santa Cruz joined more than 220 community members to celebrate the culmination of eight years of project planning and approvals. NOAA funded the construction of the 12,600 square foot green building that will house exhibits, classrooms and office space. The grand opening for the center, located across from Santa Cruz's famous Beach Boardwalk, is anticipated in spring 2012. As a gateway to the sanctuary, the center will serve the entire Central California region and foster stewardship of the sanctuary by connecting people to its diverse ecosystems and extraordinary marine life.



## U.S. Open Is Not Just About Golf



What does golf have to do with a national marine sanctuary? If you were one of nine million viewers who watched the U.S. Open Golf Tournament televised live from Pebble Beach, CA last June, you might well know! Many months of communication and relationship building between the sanctuary and the national golf community paid off when the sanctuary was highlighted throughout the week-long tournament's broadcast. ESPN and ESPN International aired 40 hours of live coverage with snippets about the sanctuary to viewers in 134 countries including the U.S., Asia, Canada, Caribbean, Israel, Latin America, Middle East and Northern Africa. In addition the sanctuary was featured prominently on the United States Golf Association web site, which received approximately six million hits during the event.

## MERITO Reaching New Audiences

Our Multicultural Education for Resources Issues Threatening Ocean (MERITO) program continues to expand, for the first time offering adult education to 120 participants at the Salinas Adult School last spring. After assessing adult education needs in the city of Salinas, the MERITO team developed and piloted a new curriculum, integrating watershed and ocean literacy, Salinas local economy, land use history, coastal ecology and career pathways leading to green job opportunities in the Salinas watershed. Multicultural Voices for Ocean Literacy, a youth serving program linking digital storytelling and ocean literacy was also pilot tested in the spring. The program's goal is to promote self-directed learning about the ocean and local marine protected areas. Through our MERITO Academy, we implemented 25 watershed and ocean science programs at 20 sites, provided training for 44 teachers and served a total of 734 5th-8th-grade students in Watsonville, Marina, Seaside, Freedom, and Salinas. MERITO staff continued to host professional development trainings at a number of regional and national conferences, offering outreach on multicultural pedagogy to members of the environmental education community.



## BLUE Ocean Film Festival Comes to Monterey



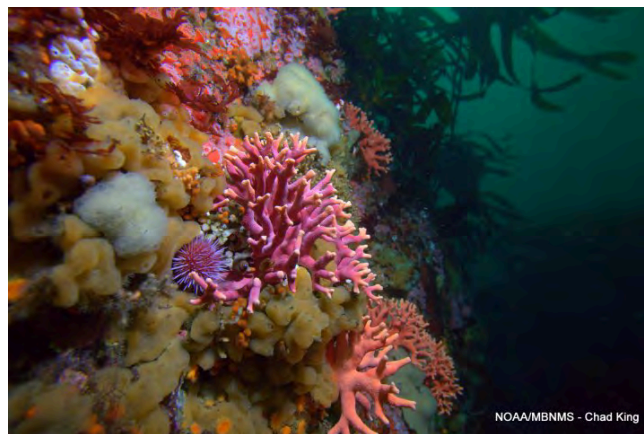
Monterey Bay Sanctuary staff helped organize a myriad of activities for Monterey's inaugural year hosting the world-renown BLUE Ocean Film Festival last August. In addition to giving presentations, providing exhibits and conducting live broadcasts, staff supported the kick-off event -- an adventurous 25-swim across the bay by Bruckner Chase. Enduring stinging swarms of jellies, Chase swam for 14 hours straight to draw attention to both the sanctuary and film festival. As part of our international collaboration with Italy, we hosted a series of Italian films at the Maritime Museum and provided a tasty Sicilian reception for attendees. Staff also coordinated all festival activities for elementary through high school students. As a result, 150 elementary students were able to see the award-winning film "Bag It" and take part in a panel discussion on plastic pollution; 70 high school students participated in NOAA's Adopt a Drifter buoy program learning about buoys tracked by NOAA's Climate Change Office; and more than 150 elementary and high school students representing eight area schools produced 20 films that were shown at the festival.

# RESEARCH & MONITORING

*Increasing scientific understanding of the sanctuary to inform management and policy.*

## Monitoring State Marine Protected Areas along the Central Coast

In the summer and fall, sanctuary and research divers from U.C. Santa Cruz's Partnership for Interdisciplinary Studies of Coastal Oceans surveyed numerous locations along the Big Sur coastline as part of a concentrated effort to study the effectiveness of marine protected areas (MPAs) established by the state of California in 2007. More than 212 dives were made to count invertebrates and algae in an on-going effort to assist the California Department of Fish and Game in monitoring the marine protected area network along the central coast of California. Researchers were able to complete surveys at many remote sites that are difficult to access with the use of the sanctuary's research vessel *Fulmar*. The R/V *Fulmar* is capable of performing multi-day cruises with a full complement of divers and is an invaluable asset to state MPA monitoring efforts.



## Characterizing the Sanctuary's Continental Shelf



In collaboration with the California State University of Monterey Bay's Institute for Applied Marine Ecology, staff completed the fourth year of fieldwork to characterize habitats, fishes and invertebrates on the continental shelf between 250-450 meters. Site characterization – a management goal of all National Marine Sanctuaries – is undertaken to explore, describe and catalogue the natural resources of each sanctuary. Video surveys taken from a remotely operated vehicle and towed camera sled were conducted in Soquel, Carmel and La Cruz Canyons, as well as the Point Sur shelf and slope. Images from these characterization surveys can be viewed on the interactive sanctuary characterization web site at <http://sep.csUMB.edu/ifame/scid/>

## Davidson Seamount is a Hotspot for Both Wildlife and Science



Research at the Davidson Seamount has been richly rewarding as new discoveries continually come to light. The seamount was added to the sanctuary just over a year ago – the first seamount to be protected in the United States. Featured as a "spotlight" seamount in the March 2010 special issue of *Oceanography* magazine, it's one of the better-explored seamounts in the world. To date a total of 17 ROV dives have enabled observations of 168 identified fish and invertebrate taxa, including new species such as sponges, corals and sea stars. In order to learn more about the population of marine mammals and seabirds that visit the seamount, NOAA deployed its research ship *McArthur II* and *Twin Otter* aircraft last summer to conduct surveys of the area. The abundance of life over the seamount astonished scientists as they recorded several thousand Cooks Petrels, a large group of fin whales (45 individuals were sighted within a 45 minute period) and many other species including Arctic Terns, Xantus' Murrelets, Leach's Storm-Petrels, South Polar Skuas, Laysan Albatross, Cuvier's beaked whales and sperm whales. Adding to the excitement this year, the Monterey Bay Aquarium Research Institute released a new high-resolution map of Davidson Seamount produced using autonomous underwater vehicle technology.

## Sanctuary Currents Symposium – Voices of Hope: Science and Innovation for the Ocean

Scientific experts gathered at our annual symposium to discuss and inform the public about the cutting-edge science and technologies they are using to help solve critical problems facing the environment. We heard stories about fishermen and conservationists working together to help protect seafloor habitat, how scientists are converting pollutants into algae-based biofuels and how one company is sequestering CO2 and turning it into environmentally friendly cement. These creative efforts inspire new hope for the future of our ocean. Dr. Rikk Kvitek from California State University, Monterey Bay was honored for his scientific achievements and gave the annual Ricketts Memorial Lecture on the development of marine mapping techniques presenting: "From You've Got to Be Kidding! To "Ah-Ha!" In addition scientists, students and environmental organizations displayed more than 70 research posters and exhibits.

