

A Look Ahead

Cordell Bank National Marine Sanctuary staff have been working on a number of projects expected to see significant progress in 2011. To increase the visibility of the sanctuary as a biodiversity hotspot among East Bay residents, the staff are advising the Oakland Museum of California during the museum reinvention. Opening in 2012, the museum's redesigned natural science wing will feature Cordell Bank, a remote and biologically rich public treasure off the coast of California.

The sanctuary has outgrown its office space over the last 10 years, and the building is scheduled to undergo a makeover and expansion in 2011. While the renovation is underway, staff will be relocated to PRBO Conservation Science, a close sanctuary science partner in Petaluma, Calif.

Additionally, to address issues with large vessels coming and going from San Francisco and traveling through the marine sanctuaries on the West Coast, the staff will be participating in a working group with the sanctuary advisory council and neighboring Gulf of the Farallones National Marine Sanctuary.

Supporting Jobs, Communities and Culture

As an offshore sanctuary, human activities within the Cordell Bank National Marine Sanctuary are limited. The primary activities include commercial shipping (vessels using the northern shipping lane of San Francisco Bay pass through the sanctuary), commercial and recreational fishing, wildlife viewing, research, and education. Fishing at Cordell Bank is strongly influenced by the weather. Strong winds and rough ocean conditions often prevent smaller boats from venturing out to the Bank. Wildlife viewing is an increasingly popular activity at Cordell Bank. Charter vessels from Bodega Bay and San Francisco make regular whale-watching trips to the Bank.

NOAA's Office of National Marine Sanctuaries is committed to supporting lives and livelihoods across the nation and in sanctuary communities through socioeconomic research and monitoring to understand the economic and social drivers of sanctuary resources and improve management practices.

Cordell Bank National Marine Sanctuary Advisory Council Members

Officers

Chair: Lance Morgan

Conservation: Lance Morgan
Alternate: Todd Steiner

Vice Chair: George Clyde

Community-at-Large – Marin:
George Clyde
Alternate: Liza Crosse

Non-Governmental Members

Community-at-Large - Sonoma: Bill Wolpert
Alternate: Sarah Hameed

Research: Edmund Smith
Alternate: Jaime Jahncke

Education: Victor Chow
Alternate: Bill McMillon

Maritime Activities: Kevin Krick
Alternate: John Berge

NOAA Monterey Bay NMS (non-voting):
Paul Michel

NOAA National Marine Fisheries Service
(non-voting): Dayna Matthews

U.S. Coast Guard (non-voting):
LT Steve Arnwine

NOAA Cordell Bank NMS (non-voting):
Dan Howard

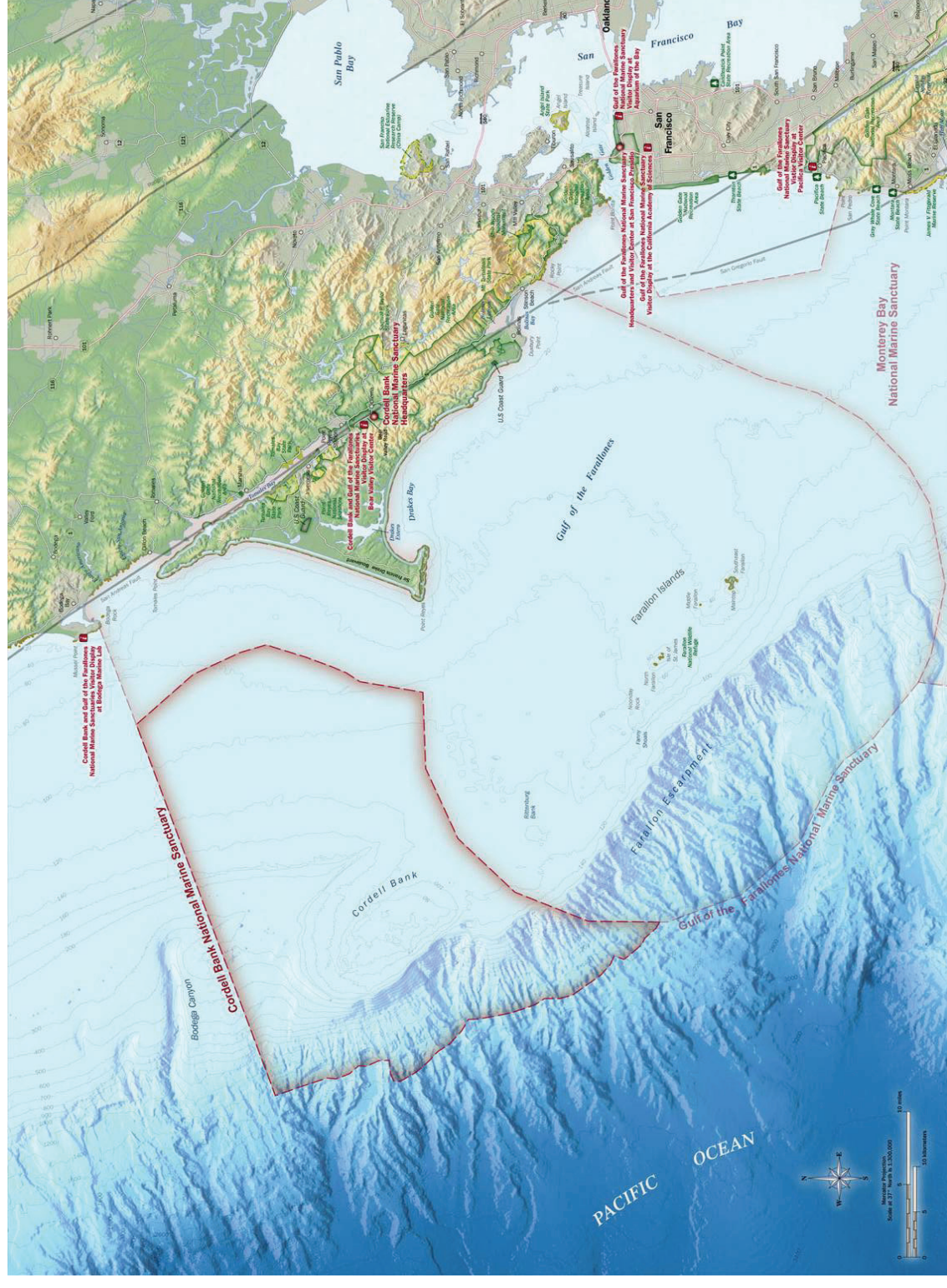
Council Coordinator
Kaitlin Graiff

Governmental Members

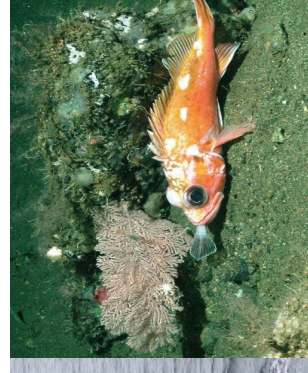
Federal Government
NOAA Channel Islands NMS (non-voting):
Chris Mobley

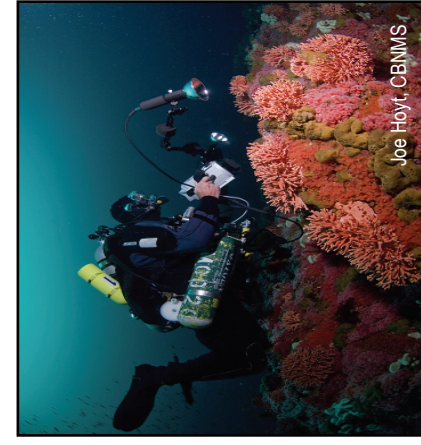
NOAA Gulf of the Farallones NMS
(non-voting): Maria Brown

2010 ACCOMPLISHMENTS



Cordell Bank National Marine Sanctuary gets its name from the underwater mountain that rises to within 115 feet of the ocean's surface off Point Reyes, California. Upwelling of nutrient-rich deep water supports a flourishing ecosystem on and around Cordell Bank, making the 529-square-mile sanctuary a productive feeding destination for diverse marine creatures. Common sanctuary inhabitants and migratory visitors include whales, dolphins, sea lions, seabirds, rockfish and Pacific salmon. Established May 24, 1989.





Joe Hoyt, CBNMMS

Divers Return to Cordell Bank After 30 Years

A technical dive team from NOAA's Office of National Marine Sanctuaries and the Cooperative Institute for Ocean Exploration, Research and Technology completed a series of deep dives in rigorous conditions on Cordell Bank. Working from the National Marine Sanctuary NOAA research vessel *Fulmar*, the team completed a series of dives down to 190 ft. in strong current. This was the first dive expedition to Cordell Bank since Cordell Expedition divers explored the Bank between 1977 and 1985. Divers returned to the boat astonished at the pristine nature and spectacular diversity of life covering the Bank's upper reef areas. The team was able to accomplish all the mission's science objectives including photo and video documentation and sample collection. This information will allow sanctuary staff to evaluate changes that have occurred on the Bank since the original survey 30 years ago, and establish species composition and reef conditions in 2010. The data will allow staff to analyze future changes that may be associated with climate, but in particular, the affects of ocean acidification on deep corals.



Website Overhaul Communicates Resources and Programs

Since Cordell Bank National Marine Sanctuary is fairly inaccessible to most people, the sanctuary's website is an important tool to communicate the incredible biodiversity that exists in this remote offshore ocean oasis. The sanctuary renovated its website in 2010 to update the look and feel, and conform to the NOAA Office of National Marine Sanctuaries' new visual standards. New content was added so users can learn about the diversity of habitats and programs. Videos, photos, podcasts, maps, science papers, program overviews, and educational resources for teachers are expanded, inviting anyone to learn about the riches of the Cordell Bank sanctuary.

Deepest Explorations of Cordell Bank Yield New Coral Observations

Scientists used a remotely operated vehicle to acquire the deepest images ever taken of Cordell Bank National Marine Sanctuary, including images of six species of deep-sea coral as deep as 1,300 feet below the surface. Information on the presence, abundance, and habitat associations of deep-water sensitive species such as corals and sponges, and their associated communities improves our ability to protect these unique and biologically diverse communities from anthropogenic disturbances. Observations suggest that corals are providing important habitat for fishes, including rockfish. Evidence of fishing disturbance was observed during this research, which highlights the potential impacts to these fragile deep-water communities. Water samples and physical measurements were collected in the vicinity of coral observations to characterize ocean chemistry and the potential impact of ocean acidification on these seafloor communities. The west coast deep sea coral research project was a cooperative effort among several NOAA offices including National Marine Sanctuaries, National Marine Fisheries Service, Pacific Marine Environmental Laboratory, National Center for Coastal and Ocean Studies and the vessel and crew of the NOAA research ship *McArthur II*.



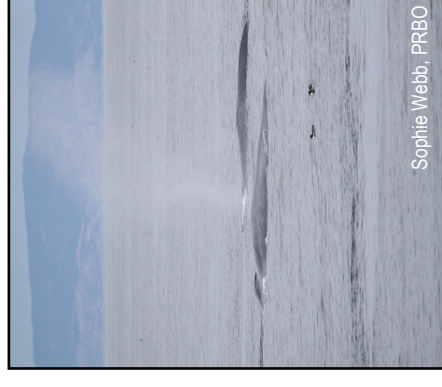
Lisa Eberhartson, CBNMMS



Sophie Webb, PRBO

Patrol Guide Aids Multi-Agencies in Safeguarding Sanctuary

In 2010, Cordell Bank National Marine Sanctuary and Gulf of the Farallones National Marine Sanctuary published a joint sanctuary patrol guide for law enforcement personnel. In addition, staff led multiple trainings on the regulations with law enforcement personnel and conducted numerous patrols with federal, state, and county law enforcement aboard a variety of air and marine craft. As a result of the newly fostered partnership, the crews of the aircraft and vessels that patrol the sanctuaries now have the knowledge and tools they need to enforce regulations, which ensure the protection of the sanctuaries.



Sophie Webb, PRBO

Monitoring Shows Increased Presence of Endangered Whales

Cordell Bank National Marine Sanctuary partners with PRBO Conservation Science and Gulf of the Farallones National Marine Sanctuary to evaluate the ocean conditions annually with Applied California Current Ecosystem Studies. In 2010, the science team saw a large increase in the presence of baleen whales like humpbacks and blues during the cruises. Coincidentally, there was an increase in large marine mammal ship strikes resulting in the death of several baleen whales in the region. The data from the applied ecosystem studies will be used to inform the U.S. Coast Guard's Port Access Route study, which evaluates the inbound and outbound vessel traffic lanes for large ships accessing San Francisco Bay. Sanctuary staff are working with other agencies, organizations and the sanctuary advisory council to address the deadly impact large ships in the region can have on species that utilize these food rich waters.

Education Collaborations Increase Ocean Literacy

Cordell Bank National Marine Sanctuary teamed up with educators at curriculum company U.S. Satellite Inc., and non-profit Oikonos Ecosystem Knowledge to train teachers on using a new science curriculum. The teachers learned how to teach science in the context of the ocean with an emphasis on tracking ocean animals, interpreting remote sensing data, and investigating marine conservation issues. The Animals in Curriculum Based Ecosystem Studies trainings were hosted at the California Academy of Sciences in San Francisco and online. Fifty teachers expressed an increased ability to teach about the ocean in their classroom after the trainings. This training opportunity was made possible by a California Coastal Commission Whale Tail Grant.



Jennifer Stock, CBNMMS

Climate Change Impacts Report Released

A report titled "Climate Change Impacts," authored by a joint working group of the Gulf of the Farallones and Cordell Bank national marine sanctuary advisory councils was completed in 2010. The report identifies and synthesizes potential climate change impacts to habitats and biological communities along the north-central California coast. Scientific observations are presented along with expectations for identifying potential issues related to changing climate. There is an emphasis on the most likely ecological impacts and the impacts that would be most severe if they did occur. Examples of key issues include impacts from increased sea level rise and coastal erosion, decreased spring runoff and changes in coastal upwelling dynamics. "Climate Change Impacts" provides a foundation of information and scientific insight that will guide development of strategies for addressing climate change within and outside of sanctuaries. The report is the outcome of a year and a half of intensive collaboration among local experts representing 16 agencies, organizations and academic institutions.

http://farallones.noaa.gov/eco/climate/pdf/climate_report.pdf

