

Cordell Bank National Marine Sanctuary

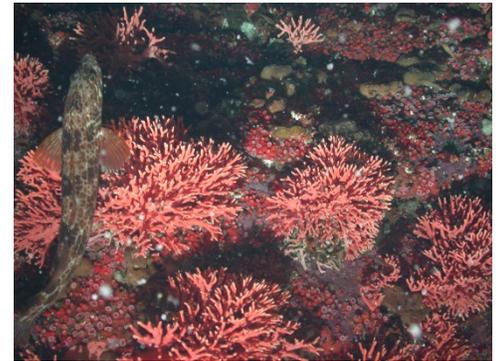
2014 Sanctuary Science

Accomplishments – A Year in Conservation Science

2014 was a year of change and productivity at Cordell Bank National Marine Sanctuary (CBNMS). The year began with a planned ROV cruise cancelled on October 1, 2013 because of the federal government shutdown. This cruise was postponed until September 2014, when it was joined with two other ROV missions to create a multi-leg and multi-objective cruise. Danielle Lipski, CBNMS Research Coordinator, arrived from Channel Islands at the beginning of FY14 and joined Kaitlin Graiff, Research Specialist, on the research staff. The 2014 field season was incredibly busy and productive with over 40 days at sea conducting research, monitoring and characterization within CBNMS and the proposed expansion area. All of these projects led by CBNMS staff directly addressed sanctuary management issues such as the threat of ship strikes to whales, changing oceanographic conditions, and characterization of sensitive benthic habitats in the existing sanctuary and in the proposed expansion area.

Major Activities

- CBNMS partnered with Point Blue Conservation Science and Gulf of the Farallones National Marine Sanctuary for the 11th year of the Applied California Current Ecosystem Studies (ACCESS) pelagic monitoring program. The collaborative team completed three cruises on the R/V Fulmar in FY14. Visit accessoceans.org for more info.



Cordell Bank reef crest with *Styaster* hydrocoral and Lingcod taken from ROV survey camera

Photo: CBNMS



Scientists deploy a CTD and niskin bottle during the June 2014 ACCESS cruise.

Photo: Jason Thompson/ONMS/ACCESS/

Connecting Science and Education at Cordell Bank National Marine Sanctuary

Staff connected research to education and outreach by: providing updated content for the CBNMS and SIMoN webpages; providing informational presentations at SAC meetings; conducting a radio interview for the CBNMS radio show, Ocean Currents; providing an

opportunity for field seminar participants to view the ROV in action; providing outreach about the ROV and sanctuary science at the CBNMS 25th anniversary event; providing information to media for ACCESS, ROV, and hypoxia mooring field activities; hosted a NOAA

Teacher-at-Sea on the July 2014 ACCESS cruise; and volunteered to develop an outreach opportunity with the local community to share Cordell Bank and research highlights.



Photo: CBNMS

Feeding aggregations of whales and seabirds were abundant at Cordell Bank in July, as observed on the ACCESS cruise.



Photo: Jason Thompson/CBNMS

CBNMS ROV Team Kaitlin Graiff, Dan Howard, Danielle Lipski, Michael Carver.



Photo: CBNMS

Moorings were deployed at Cordell Bank to monitor temperature and dissolved oxygen.

Major Activities Continued

- Successful remotely operated vehicle (ROV) cruise to Cordell Bank to conduct fine scale characterization of the reef crest invertebrate community. CBNMS staff demonstrated their capacity for effective ROV operations and completed quantitative surveys at all planned dive sites. Still and video imagery will be analyzed by CBNMS staff in early FY15.
- Successful ROV survey in the proposed expansion areas of CBNMS and GFNMS in partnership with NCCOS. Transects were completed to characterize benthic habitats and validate models for groundfish and corals.
- A pilot research project was developed to respond to reports of hypoxic conditions in nearshore waters of the region. With funding from the Cordell Marine Sanctuary Foundation and in partnership with the Bodega Marine Lab, CBNMS deployed two moorings with temperature and dissolved oxygen sensors to monitor oceanographic conditions on the Bank.
- Technical divers from the Bay Area Underwater Explorers (BAUE) partnered with CBNMS to collect high definition video and still images from their first dive mission to Cordell Bank that will be used for analyses to assess temporal change of the Bank's invertebrate communities.

Significant Challenges

- If the proposed expansion area is implemented, planning and executing research and monitoring in this larger, offshore, and remote area will be challenging.

- The offshore location of CBNMS poses operational challenges for conducting research from small boats. The west coast research vessel *Fulmar* is based in Monterey, about 150 miles to the south.
- Continued commitment to funding research is needed to characterize habitats and monitor for change. The remote location of Cordell Bank means there is very limited research conducted by other entities.

Productive Partnerships

- NCCOS
- Point Blue Conservation Science
- UC Davis, Bodega Marine Lab
- Bay Area Underwater Explorers

Highlights for 2015

- Work with the Bay Area Underwater Explorers to establish a citizen diver sampling protocol for Cordell Bank.
- Data analysis of ROV surveys, oceanographic moorings, and ACCESS data
- Continued development of a ROV survey program to characterize the sanctuary and monitor for change.
- Continue to build partnerships and continue planning and implementation of long term monitoring and research

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