

OCEAN ACIDIFICATION AND CALIFORNIA OCEAN OBSERVING SYSTEMS

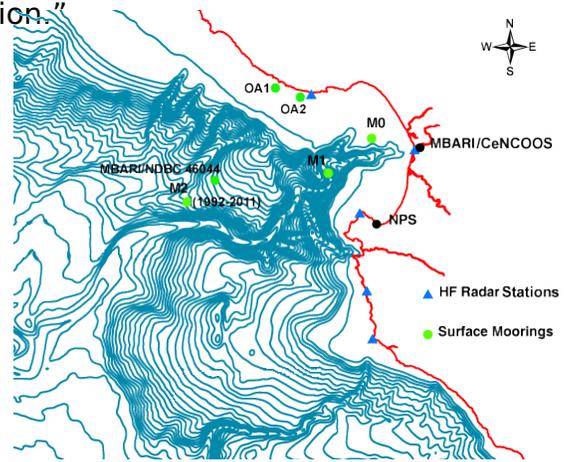
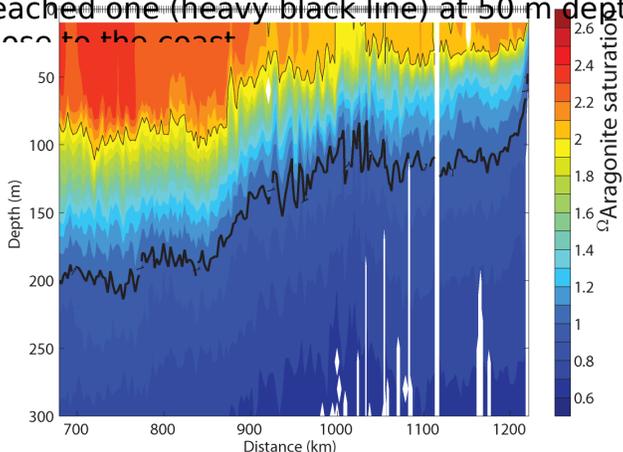
Central and Northern California Ocean Observing System (CeNCOOS)

The California ocean observing systems are committed to sustaining and expanding a network of ocean acidification observations to inform the decisions of coastal ocean managers and users. In coordination with the State Water Resources Control Board, CeNCOOS and SCCOOS partners are working to add additional monitoring sites and provide high-quality data analyses.

What is ocean acidification? As the ocean absorbs increasing levels of carbon dioxide (CO_2) from the atmosphere, it causes changes in ocean chemistry. When carbon dioxide reacts with water, it creates carbonic acid, decreasing pH and carbonate ion concentration. Lower levels of pH in the ocean result in higher levels of acidity, causing “ocean acidification.”

The ocean observing systems maintain a **network of underwater gliders** in the waters off California to monitor climate and ecosystem change. This glider network has been in operation continuously for over 5 years, with data updates online in near real time. The integration of dissolved oxygen sensors on the gliders is proceeding for the purpose of monitoring hypoxia in coastal waters. The dissolved oxygen data also allow an estimate of pH and aragonite saturation. Aragonite is important to organisms that form shells, as saturation levels below one may lead to dissolution of the shells.

The section below was occupied by a Spray glider during February 2011. Aragonite saturation is contoured from profiles every 3 km as a function of depth and distance along the glider’s path. The shore is to the right of the sections and the open Pacific is to the left. Near the coast the level of aragonite saturation reached one (heavy black line) at 50 m depth close to the coast.



The map above is of Monterey Bay, with the coastline in red, and surface monitoring stations and High Frequency Radar Stations marked in blue and green. The MBARI **ocean acidification moorings** are located in the Northern part of Monterey Bay, and are labeled OA1 and OA2.



A spray glider, which is the platform used to collect the data visualized in the image to the left.

For more information:

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