



# FY2011: Regional Integrated Ocean Observing System Development

U.S. IOOS® is an operational system and a network of regional partners responsible for regional observations, data management, modeling and analysis, education and outreach, and research and development. The overarching purpose of U.S. IOOS is to address regional and national needs for ocean data and information. NOAA continued a merit-based funding process in 2012 to further development of the IOOS regional network. IOOS regional partners provide coordination with regional stakeholders while contributing data and other outputs to the national system – supporting regional priorities while advancing national objectives.

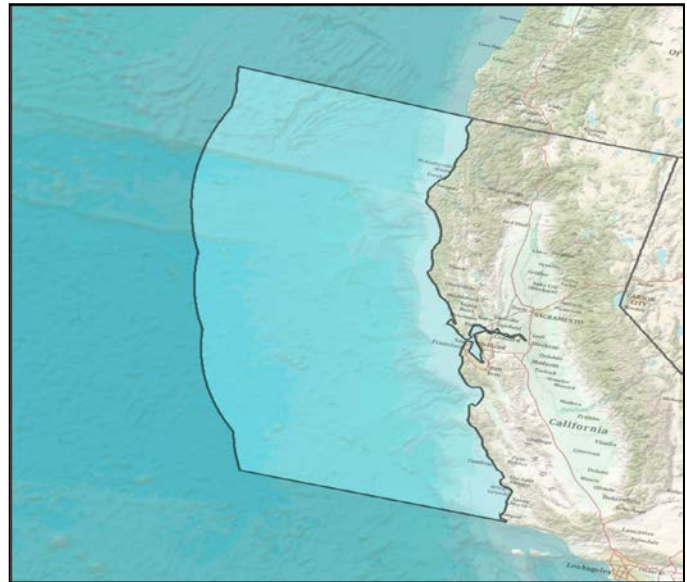
## CENTRAL & NORTHERN CALIFORNIA REGION

The Central and Northern California Ocean Observing System (CeNCOOS) spans the coastal ocean from the California/Oregon border south to Point Conception, CA. The CeNCOOS approach is to develop long-term monitoring of environmental conditions such as water quality, biological productivity, and larval transport pathways in support of marine protected area management and climate change planning in central and northern California, and to provide a suite of products based on measurements and models to support marine operations, coastal hazard mitigation and response, and ecosystem-based management.

### NOAA Funding:

Prior to FY 2011, IOOS regional partners received two awards – one for development of the Regional Coastal Ocean Observing System (RCOOS), and one for planning and stakeholder engagement by a Regional Association (RA). Starting in FY 2011, IOOS made a single multi-year award to each region for management of these activities. Funds awarded by NOAA since establishment of the U.S. IOOS Program Office are as follows:

FY 2012 - \$2,089,916  
FY 2011 - \$1,739,000  
FY 2010 - \$1,402,000 RCOOS, \$399,619 RA  
FY 2009 - \$1,281,529 RCOOS, \$397,308 RA  
FY 2008 - \$1,000,000 RCOOS, \$395,763 RA



### Regional Priorities:

For the period 2011-2016, CeNCOOS has established a multi-purpose observational scheme that collectively addresses user needs in the general categories of climate and ecosystem health, water quality, marine operations, and coastal hazards. A sampling of CeNCOOS products to address these issues includes:

- Long time series of temperature and coastal sea level data to address global warming and sea level rise
- Sustained observations of carbon variables (e.g. pH) to monitor ocean acidification
- Observations to monitor and help predict the occurrence of harmful algal blooms (HABs)

- Real-time measurements, and model forecasts, of currents for search and rescue and tracking of spills
- Long time series of currents to estimate larval connectivity
- Water quality data to support mariculture operations
- Real-time measured and modeled winds for marine recreation and other uses

The core observation suite used to address these issues includes automated shore stations, coastal buoys, the HF radar surface current mapping network, and autonomous profiling gliders. The data from these systems are moved in near real time to the CeNCOOS Data Management and Communications (DMAC) system and assimilated into numerical models for nowcasts and forecasts of ocean conditions. High resolution bottom maps derived from vessel-mounted sonar also make a valuable contribution.

The CeNCOOS work plan for 2012 will focus on the following activities:

- Maintain automated coastal shore stations and one near shore mooring for: water quality, long term trends in temperature, salinity, sea level, chlorophyll fluorescence, ocean acidification and HABs monitoring, forecasting, and mitigation.
- Operate a cross-shore glider transect on a 24/7 basis to monitor temperature, salinity, chlorophyll fluorescence, dissolved oxygen, currents, and acoustic properties. These data will be used to track El Niño events and climate change, and to feed data into ocean circulation models.
- Maintain and operate the HF radar surface current mapping network used to support search and rescue, marine operations, oil spill response, and ecosystem forecasting.
- Operate state-wide atmospheric and oceanic circulation models to forecast currents, oceanographic variables, and eventually ecosystem variables.
- Enhance the data management and communications (DMAC) system to facilitate easy data access and use by researchers, modelers, product developers, managers, and the general public. Integrate high-resolution bathymetric data from California's Seafloor Mapping Project with CeNCOOS' products and website.
- Interface with educators and engage with stakeholders, and continue to develop products and work with users to address their ocean information needs.

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