



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 2011 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.

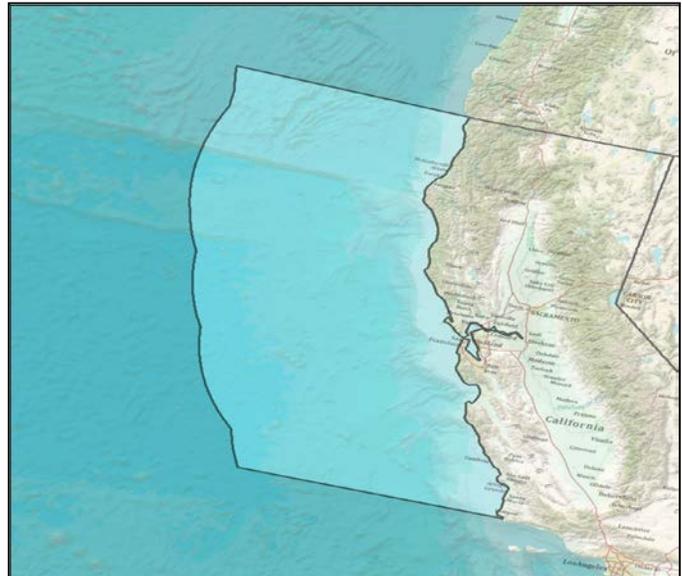
CENTRAL AND NORTHERN CALIFORNIA REGION

The Central and Northern California Ocean Observing System (CeNCOOS) spans the coastal ocean from the California/Oregon border south to Point Conception. The CeNCOOS approach is to develop long-term monitoring of environmental conditions such as water quality, productivity, and connectivity 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). In FY 2011, IOOS made a single 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 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 temperature and coastal sea level data to address global warming and sea level rise
- Sustained observations of carbon variables to assess ocean acidification
- Observations to predict and mitigate the impacts of harmful algal blooms (HABs)
- Harbor information pages for marine operators



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- Inundation warnings for coastal communities
- Real-time current data for search and rescue
- Movement and fate of harmful spills of all kinds
- Ocean data products for coastal and marine spatial planning

The core observation suite used to address these issues includes automated pier stations, coastal buoys, the HF radar surface current mapping network, and the use of autonomous vehicles. High resolution bottom maps from towed and autonomous vehicles also make a valuable contribution. The data are moved in real time to the CeNCOOS Data Management and Communications (DMAC) system and assimilated into numerical models for now-casts and forecasts of ocean conditions.

The CeNCOOS work plan for 2011 will focus on the following activities:

- Maintain automated coastal shore stations for water quality; long term trends in temperature, salinity, sea level, chlorophyll fluorescence, and ocean acidification; and HAB monitoring, forecasting, and mitigation.
- Continuously operate cross-shore glider transects to monitor temperature, salinity, chlorophyll fluorescence, dissolved oxygen, currents and acoustic backscatter. These will be used to track El Niño events and climate change, and to feed data-assimilating ocean circulation models.
- Maintain the HF radar surface current data for search and rescue, marine operations, and ecosystem forecasting.
- Run state-wide data assimilating atmospheric and oceanic circulation models to forecast currents, state variables, and eventually ecosystem parameters.
- Implement a data management and communications (DMAC) system to facilitate easy data access and use by researchers, modelers, product developers, managers, and the general public. An interoperable data system, both within the regional association and across RAs, is an integral and important part of the national IOOS process.

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