



# FY2009: Regional Integrated Ocean Observing System Development

NOAA continued a merit-based funding process in 2009 to enhance regional coastal ocean observing systems (RCOOS) and achieve three long-term outcomes: establishing coordinated regional observing and data management infrastructures, developing applications and products for regional stakeholders, and crafting regional and national data management and communications protocols. In addition, regional associations received planning grant awards designed to assist them in stakeholder engagement, education and outreach, and long-range planning activities.

## CENTRAL AND NORTHERN CALIFORNIA REGION

The Central and Northern California Region runs from the California/Oregon border south to Point Conception. The 2009 RCOOS award to this region is \$1,281,529, of which \$281,529 is specifically directed to support the operation and maintenance of the region's High-Frequency radar surface current mapping network. The 2009 Regional Association Planning Grant award to this region is \$397,308.

### Project Title:

CeNCOOS: Long-term monitoring of environmental conditions in support of protected marine area management in central and northern California

### Recipient/ Lead Principal Investigator:

Monterey Bay Aquarium Research Institute/Steven R. Ramp ([sramp@mbari.org](mailto:sramp@mbari.org))

### Cost:

Funded: FY 2008 (Year 1) - \$1,000,000  
FY 2009 (Year 2) - \$1,281,529  
Proposed (subject to available funds): Year 3 - \$3,498,007

### Performance:

The project builds upon the Central and Northern Coastal Ocean Observing System (CeNCOOS) in open and semi-enclosed bays, including San Francisco Bay, Monterey Bay, Bodega Bay, Humboldt Bay, and Morro Bay. The focus is on observing temperature, salinity, sea level, currents, and waves, and relating changing conditions to ecosystem and human health. Top priorities include maintaining the pan-regional backbone and developing a Data Management and Communications (DMAC) system to move data seamlessly from the sensor to the product developer, and allow easy access to data and products for all CeNCOOS partners and end users.

### Schedule:

1. Year 1
  - Implement CeNCOOS wind product running in real-time 24/7
  - Hire CeNCOOS Chief Product Developer
  - Develop Upwelling Response Index (URI) and Primary Productivity Index (PPI)
  - Hold workshops to design HAB-related products from a combination of remote sensing, pier stations, and in-water assets

## 2. Years 1-3

- Improve the CeNCOOS wind product, including seamless integration into the new CeNCOOS website and provide more detail with 'zoom boxes'
- Operate and maintain water quality stations, including biological sampling along the north coast
- Operate existing autonomous underwater vehicles
- Operate wharf sampling
- Maintain glider and mooring time series
- Continue building the CeNCOOS DMAC, to include web services and overall system engineering; begin developing the CeNCOOS portal
- Produce user-driven data products for CeNCOOS customers as requested

## 3. Year 2:

- Refurbish and recalibrate instruments and mooring equipment
- Hire full-time system programmer to assist with data portal implementation and improvements
- Develop educational products using CeNCOOS real-time data streams

## 2. Years 2-3:

- Add one glider per year to the system to sense subsurface temperature, salinity, chlorophyll fluorescence, and ocean currents
- Conduct monthly boat-based surveys
- Run ocean forecast models in real time including the Regional Ocean Modeling System (ROMS) and the Navy Coastal Ocean Model (NCOM)

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