



FY2010: Regional Integrated Ocean Observing System Development

NOAA continued a merit-based funding process in 2010 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.

MID-ATLANTIC REGION

The Integrated Ocean Observing System (IOOS®) Mid-Atlantic Region footprint includes the coastal ocean states from Cape Cod to Cape Hatteras, representing roughly one fourth of the U.S. population, and comprising 9 states and the District of Columbia, five major urban estuaries, including the Hudson River estuary, the Delaware River estuary, the Long Island Sound and the Chesapeake Bay. The region has 7 of the 12 largest ports in the U.S. and over 110 congressional districts. The Mid-Atlantic Bight alone is roughly 1000 km long. The Mid-Atlantic Coastal Ocean Observing Regional Association (MACOORA) coordinates, facilitates and links observations of the watershed, estuary, and ocean in this footprint as part of a national effort to improve scientific observations of our coastal oceans. It accomplishes these activities through its observing arm, the Mid-Atlantic Coastal Ocean Observing System (MARCOOS).

Funding

The FY10 RCOOS award to MARCOOS, the operational arm totals \$1,700,000. The 2010 RA Planning Grant award to this region is \$400,000.

FY 2009 - \$1,700,000 RCOOS, \$400,000 RA

FY 2008 - \$1,700,000 RCOOS, \$400,000 RA

FY 2007 - \$1,700,000 RCOOS, \$400,000 RA

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Regional Priorities and Objectives:

MACOORA/MARCOOS resources include 30 coastal high frequency radars, a fleet of ocean gliders, buoys and a trio of data assimilation models. Priority areas of focus include Coastal Inundation, Maritime Safety, Ecosystem Decision Support (such as fisheries), water quality, and offshore renewable energy. MACOORA/MARCOOS observations and modeling information streams are also relevant to and critical in the discussion of climate change, ocean acidification, and marine spatial planning. Benefitting from extensive outreach, education and user-interactivity, MACOORA/MARCOOS observations and observation products provide decision-making input for port management, search and rescue, power utility restoration, reservoir, storm and waste water management and local and state regulation of beaches and fisheries.

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In its first years of funding, MACOORA/MARCOOS focused on delivering real-time information products to improve search and rescue activities at sea and aid ecosystem-based management of fisheries. Two primary sets of observing assets were established:

- An operational array of high-frequency radars for hourly mapping of surface currents over the Mid-Atlantic region, and;
- An ensemble of ocean forecast models that assimilate data from a fleet of autonomous ocean gliders and satellite sensors.

The MACOORA/MARCOOS Surface-Current Radar data product is now an officially-recognized, operational component of the U.S. Coast Guard Search and Rescue Optimal Planning System (SAROPS) and is helping save lives at sea. Collaborating with NOAA Fisheries, MACOORA/MARCOOS has increased model forecasts that are relevant to fisheries in the region. These successes are due in part to its ability to leverage federal interagency investments and activities with the Coast Guard, Navy, National Science Foundation, Department of Homeland Security, NASA, the U.S. Geological Survey, and the Environmental Protection Agency, among others.

Based on ongoing feedback from users, MACOORA/MARCOOS has begun to enhance activities in water quality, coastal inundation and offshore renewable energy. Regionally distributed administrative, scientific, and operational expertise is being used to coordinate an extensive array of existing observation assets, data management, and modeling in these areas. MACOORA/MARCOOS will generate and disseminate real-time data, nowcasts and forecasts of the Mid-Atlantic coastal ocean. Specific goals include:

- A broader ensemble of regional weather forecasts linked to a growing regional weather network for assimilation and validation through collaborations with NOAA Weather Forecast Offices, academia, and industry;
- An ensemble of regional nowcasts and forecasts of 2-D surface currents with the operational Mid-Atlantic HF Radar Network;
- An ensemble of 3-D circulation, temperature and salinity nowcasts and forecasts for the region derived from three dynamical data-assimilative ocean models;
- An informational outreach to nearly 4000 Mid-Atlantic stakeholders;
- Workshops on water quality, fisheries, and coastal inundation;
- Continuance of strategic relationships with NGOs and other data and policy providers;
- Alliances and close interaction with governance entities, such as the Mid-Atlantic Region Council on the Ocean (MARCO);

This project will continue to leverage existing regional observation and modeling assets to support the three IOOS subsystems: observations, modeling, and data management.

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