Southeast Coastal Ocean Observing Regional Association

SECOORA and Observing In Action: North Carolina

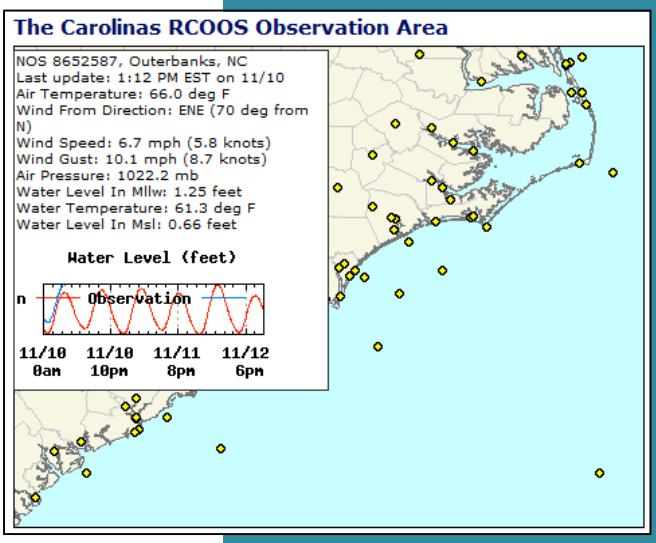
Monitoring the Southeast's Coasts

Shore birds and sea oats at Cape Hatteras National Seashore. Photo: Captain Albert E. Theberge, NOAA Corps (ret.)

The ocean and coastal waters of the southeast U.S. help drive local weather and regional climate conditions, support ecologically and economically significant ecosystems (which include important fisheries), and provide tourism, boating, and other recreational opportunities. The oceans and coasts annually provide over $675 billion dollars worth of economic impact in the southeast U.S.*

There are no state boundaries for ocean currents, marine wildlife, and weather patterns, so it is critical for states to work together to develop, implement and maintain a robust coastal and ocean observing system. SECOORA, the Southeast Coastal Ocean Observing Regional Association, is assisting NC, SC, GA and FL to integrate extensive and widely scattered information and data acquired in the RA footprint. SECOORA provides opportunities to leverage resources across the region and to pool expertise in addressing national and regional needs and response (e.g. Deep Water Horizon Oil Spill). Because SECOORA is one of 11 Regional Associations established through the Integrated Ocean Observing System (IOOS), it also brings national ideas and resources to the table.

If you are a commercial shipping vessel, a recreational fisherman, a kayaker, or a beachcomber, you need information on tides, winds, and other ocean conditions. SECOORA is funding North Carolina institutions to collect this information, which includes high frequency radar used for measuring surface currents, South Atlantic Bight and Gulf of Mexico Circulation nowcast and forecast models, and coastal and offshore buoy systems. This map is an example of how users can access coastal and ocean observations along the North Carolina coast. Each station provides information, such as the latest observed air temperature, wind speed, sea temperature, and water level.



Map from Carolina RCOOS (*www.carolinasrcoos.org*)

SECOORA Members in North Carolina

- DownEast Instrumentation
- Duke University
- East Carolina University
- North Carolina Sea Grant
- North Carolina State University
- University North Carolina - Chapel Hill (UNC-C)
- University North Carolina - Coastal Studies Institute
- University North Carolina - Wilmington

*National Ocean Economics Program. J. Kildow, C. Colgan, J. Scorse, *State of the U.S. Ocean and Coastal Economies,* June 2009.

Applications of Coastal and Ocean Observing Data in North Carolina

Coastal ocean observing in the Carolinas includes oceanographic and land based observing systems, data management and analyses, model development, and outreach and partnership activities. These partnerships, which include state and federal agencies, such as the US Army Corps of Engineers and the National Estuarine Research Reserves, provide a cost effective way to increase observational capabilities and data for application development, coastal model validation and benchmarking. SECOORA members use coastal and ocean observations to address a variety of management issues. The following examples highlight how North Carolina is applying these resources to real world issues.

Marine Spatial Planning For Offshore Wind Energy

The UNC-C completed a study that confirms that, because of a promising wind resource, large areas offshore of the North Carolina coastline are potentially well-suited for wind energy development and worthy of further investigation. This 9-month study was requested by the North Carolina General Assembly to assess the feasibility of installing wind turbines in the sounds and off the coast of North Carolina. To view the full report, brochures, or maps, visit the UNC Energy Services Web site: http://www.climate.unc.edu/coastal-wind.

Providing Easy Access to Weather and Wave Forecasts via the Marine Weather Portal

The National Weather Service's (NWS) Marine Weather Portal began in North Carolina and has been expanded to cover the coastal region from North Carolina to Texas. This web portal provides marine observations, forecasts, and warnings for coastal and offshore waters. Since coastal ocean observing system audiences already rely on the NWS Weather Forecast Offices for marine observations and forecast needs, this partnership provides an efficient way to disseminate coastal and ocean observing information to the public. http://forecast.weather.gov/mwp/

Modeling Waves Improves Swimmer and Mariner Safety

Since the nearshore coastal ocean (0-5 miles) is the most heavily used part of the vast ocean, accurate wave forecasting can greatly increase safety in this area for boaters, fishers, and recreational users. The UNC and the U.S. Army Corps of Engineers recently set up the SWAN (Simulating Waves Nearshore) wave model at three east coast NWS Weather Forecast Offices, providing direct access to model results through their forecasting tools. Improving NWS wave forecasts will undoubtedly lead to better safety and planning. http://www.frf.usace.army.mil/eve/modeling/modelMainPageFrame.pl?type=doc&chapter=quickStart