

SHORELINES – April 2006

As presented to the *Island Review Magazine*.

Coastal Observing Systems

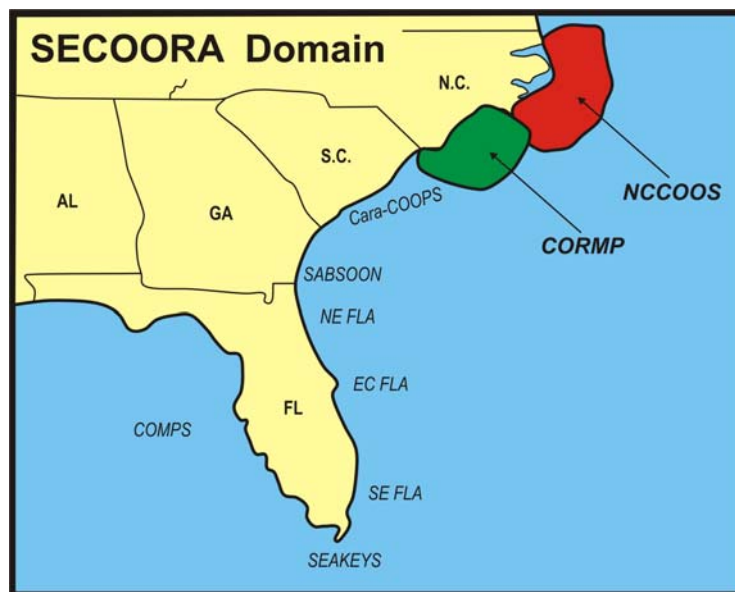
Not long ago (before the internet and cell phones) it was difficult to track sea conditions off the coast of Bogue Banks, or even North Carolina for that matter. Likewise with the exception of a couple of instrumented buoys located well offshore, the number of data points was equally as sparse. However with the advent of the internet, advances in remotely-sensed technology, and a slew of other improvements; just about anyone now can retrieve “real-time” oceanographic data right from their desk.

Actually there are so many towers, buoys, and other “platforms” operated by a multitude of agencies, universities, or other groups that the Chief of Naval Research, the Administrator of National Oceanic & Atmospheric Administration, and the President of the Consortium for Ocean Research and Education announced the formation of OCEAN.US; dedicated to developing an **I**ntegrated and sustainable **O**cean **O**bservation **S**ystem, or **IOOS**. The goal of IOOS is to form a cooperation among the various agencies operating ocean observing systems scattered across the country to “collect and disseminate data and data products to serve the critical and expanding needs of environmental protection, public health, industry, education, research, and recreation”.

Conceptually, IOOS is an organizational umbrella where regions can be developed that best divides the observation platforms into logical groupings. **SECOORA**, or the **S**outh**E**ast **A**tlan**t**ic **C**oastal **O**cean **O**bserving **R**egional **A**ssociation is the region extending south of Virginia to the Florida/Alabama shoreline boundary, and obviously includes Carteret County.

But wait...there is a third tier of more local regions that help compile data emitted from the various buoys, towers, tide gauges, etc. along the southeast, or SECOORA region.

North Carolina is subdivided into more acronyms under this third tier - **NCCOOS** and **CORMP**. NCCOOS extends roughly from the Virginia/North Carolina State line to Cape Lookout. CORMP on the other hand extends from Cape Lookout to the North Carolina/South Carolina State line. The boundary near Cape Lookout between CORMP and NCCOOS is actually a shared boundary (see accompanying figure).



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What does NCCOOS stand for? The **N**orth **C**arolina **C**oastal **O**cean **O**bservation **S**ystem. CORMP is the acronym for **C**oastal **O**cean **R**esearch & **M**onitoring **P**rogram, and perhaps the best method to access these regional resources is to visit <http://seacoos.org/Data Access and Mapping>.

Besides the sheer number of data observation platforms contained in these regional alliances, there is an equally impressive amount of partners that are contributing to the program including; the University of South Carolina Baruch Institute for Marine and Coastal Sciences, National Undersea Research Center, N.C. Sea Grant, NOAA, U.S. Marine Corp Base - Camp Lejeune, U.S. Army Corp of Engineers, U.S. Navy, North Carolina Division of Marine Fisheries, N.C. State University, and the National Data Buoy Center (NDBC) just to name a few. The clearinghouse centers for NCCOOS and CORMP are the University of North Carolina (Institute of Marine Sciences) located in non other than Carteret County and the University of North Carolina – Wilmington, respectively.

With the (1) IOOS, (2) SECOORA, and (3) NCCOOS and CORMP sequential hierarchy in check, we can transition into a brief description of the types of data these various platforms provide. Sea surface temperatures, wind speeds and direction, wave height (crest to trough), wavelength (distance from crest to crest), wave direction, tide levels, water salinity, and even more types of data can be retrieved from the various platforms. Archived data can also be customized into tables and charts that capture an event such as a hurricane or a good run of fishing, which are great for the public's use. Some of the more broader and conceptual applications also include,

- Natural hazard mitigation (e.g. storm forecasting, surge prediction, tsunami warning)
- Public health (e.g. unsafe biological activity, rip currents, harmful algal blooms)
- Climate change and its effects (e.g. water temperature variability, salinity, storminess)
- Marine operations (e.g. shipping, offshore operations like drilling and mining)
- National security (e.g. toxin trajectories, detection of covert operations)
- Assessing ecosystem health (e.g. changes in food web structure)

Besides serving a clearinghouse function to organize and disseminate data, the creation of IOOS and its regions continues to help identify gaps in the data network and concurrently helps avoid unnecessary duplication of data points and observation systems. From a fiscal standpoint, this also helps fine tune spending priorities and identifies funding needs while also consolidating network advocates to speak with a common goal and voice.

The coastal observations system network, albeit heavy on acronyms, is a great assembly of public resources – take advantage of it when you can.