SECOORA

Southeast Coastal Ocean Observing Regional Association

SECOORA ANNUAL REPORT 2013
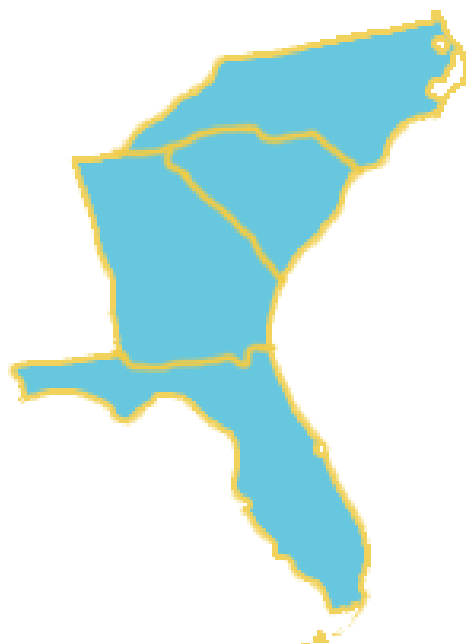
IOOS®

INTEGRATED OCEAN OBSERVING SYSTEM

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WHO IS SECOORA

The Southeast Coastal Ocean Observing Regional Association, (SECOORA) collects and delivers critical data and information necessary to increase our understanding of our coast and oceans along the shorelines of North Carolina, South Carolina, Georgia, and Florida. Users, such as recreational beach goers, local, state and federal emergency responders, coastal zone planners and more, depend on us on a daily basis to provide necessary near-real time marine weather and related ocean data. SECOORA is one of the eleven regions that comprise the Integrated Ocean Observing System, U.S. IOOS®. IOOS is a federal, regional and private-sector partnership committed to enhancing our ability to collect, deliver and use information.

Image Credit: Jamie Moncrief/UNCW

This report marks our first Annual Report in which we highlight how our collective efforts are impacting our region. As you read this document, please note the information you find valuable and send us your feedback. In future years, we'll be able to measure our advances from previous year accomplishments to better target our resources and more effectively tell the SECOORA story.

Two-thousand and thirteen (2013) marked another successful year for SECOORA. With the support of our members, community advocates, and U.S. IOOS, SECOORA continues to make measurable strides in ocean observing in the Southeast region. We are leading continuous dialogue among data providers, data users, private industries, public agencies, and other stakeholders. We continue to provide data and information that supports the health, safety, culture and economy of our region.

In 2013 for the first time, SECOORA coordinated with NOAA's Ocean Acidification (OA) program, the University of Georgia (UGA) and U. S. IOOS to join international efforts to quantify the effects of ocean acidification. During this first year of what we anticipate will be an ongoing collaboration, SECOORA was granted $104,661 by NOAA to fund the UGA for maintenance of the Gray's Reef National Marine Sanctuary buoy.

In partnership with the Governor's South Atlantic Alliance (GSAA), we coordinated the launch of a new Coast and Ocean Portal (gsaaportal.org). Partners in the project included the University of South Carolina, Duke, the Nature Conservancy, Georgia Tech, Point 97, Florida Fish and Wildlife Conservation Commission, and representatives of the coastal management programs from NC, SC, GA and FL. This project represents a successful partnership of the SECOORA academic community, NGO partners, and one of our key stakeholder groups, state resource managers.

As we look ahead, SECOORA is grateful for the continued support of our members and stakeholders to our mission of broadcasting coastal and ocean information to the interested public. SECOORA's accomplishments to date confirm society's critical need for a regional network dedicated to coastal and ocean observing. In 2014, we hope all those interested in growing our regional observing enterprise will join SECOORA while we focus on expanding membership, bolstering congressional support, diversifying our funding sources, and growing regional ocean observing in the Southeast.

DEBRA HERNANDEZ
EXECUTIVE DIRECTOR
http://secoora.org

SECOORA 2013 PRINCIPAL INVESTIGATORS

SECOORA provides critical coast and ocean data and information through the development of unique partnerships, funding opportunities and products that bridge the gap among local, state, federal and private interests.

1 University of Miami
High Frequency Radars

2 University of South Florida
Coastal Stations; Offshore Buoys; High Frequency Radars

3 ROFFS™
Fisheries Habitat Modeling

4 University of Florida
Storm Surge Modeling

5 University of Georgia's Skidaway Institute of Oceanography
High Frequency Radars

6 University of Georgia
NOAA's Ocean Acidification Program NDBC Gray's Reef National Marine Sanctuary Buoy

7 University of South Carolina
High Frequency Radars; Beach Water Quality modeling; Data Management Infrastructure

8 University of North Carolina at Wilmington
Coastal Stations; Offshore Buoys

9 North Carolina State University
Storm Surge and Ocean Circulation Modeling

10 University of North Carolina at Chapel Hill
High Frequency Radars; U.S. IOOS DMAC Vocabulary Efforts

INCREASING COASTAL OCEAN ENVIRONMENTAL INTELLIGENCE

STRENGTHENING OCEAN ACIDIFICATION DATA

Off of Georgia's coast is Gray's Reef National Marine Sanctuary (GRNMS). GRNMS is approximately 17 nautical miles offshore and encompasses 22 square miles of marine protected area that is home to many large invertebrates such as sponges, corals and sea squirts.

In 2013, as part of NOAA's Ocean Acidification (OA) Program, SECOORA received funds to provide support to the GRNMS buoy. The buoy is maintained by the University of Georgia and is part of international efforts to quantify the effects of OA on the world's ocean. OA is a global change in ocean chemistry resulting from the ocean's uptake of carbon dioxide (CO_2), which is increasing in the atmosphere due to the burning of fossil fuels, land use change and more. It is important to measure OA because the increase in CO_2 levels can decrease the oceans pH, adversely affecting a variety of organisms, particularly those with calcium carbonate shells or skeletons.

NDBC Station 41008 Data Buoy located 40 NM Southeast of Savannah, GA within Gray's Reef National Marine Sanctuary. Image Credit: Greg McFall

To date, the GRNMS buoy has been recording high resolution monitoring data for seven years. The sensors on the buoy record pCO2, pH, dissolved oxygen, salinity, and water temperature. According to Scott Noakes, SECOORA PI, an overall upward trend has been detected for both seawater and atmospheric pCO2. Seawater pCO2 is increasing on average 2.4% per year and atmospheric pCO2 is increasing on average 0.789% per year.[1] The near real time data from the buoy is available on SECOORA's data portal.

CONTRIBUTING TO OCEAN ECONOMIC HEALTH
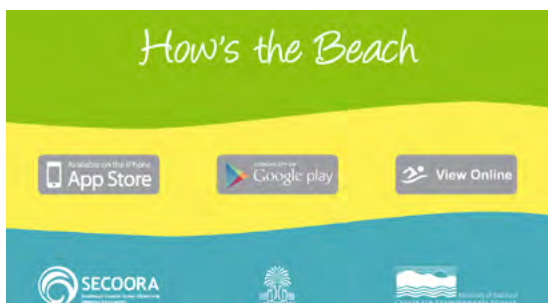
"This model has reduced the sampling burden for our Regional staff; but the major benefit has been the Department's quicker response time for posting beach advisories and subsequent enhancement of our agency's primary mission of protecting the public health."

- David E. Wilson, PE Chief, Bureau of Water, SCDHEC
VISIT: *http://howsthebeach.org/*

SECOORA supports a partnership of the South Carolina Department of Health and Environmental Control (SC-DHEC), the University of South Carolina and the University of Maryland, which developed a beach water quality app to estimate the bacteria levels for swimming beaches in South Carolina. The web and mobile app, How's the Beach, predicts bacteria levels and posts swimming advisories for the day based on the relationship between bacteria level and rainfall, salinity, wind conditions and water temperature.

With accurate forecasting and swimming advisory postings, SECOORA and partners are contributing to South Carolina's strong ocean economy. According to National Ocean Economics Program, tourism and recreation contributed $2.5 million to South Carolina's ocean Gross Domestic Product. The web and mobile app enables visitors to the Myrtle Beach area to decide whether it is a good day to go to the beach or if it would be better to visit other area attractions instead, which protects human health while also supporting the local economy. While the specific geographic focus of this current effort is on swimming beaches in South Carolina, the techniques implemented and tools developed are transferrable to other swimming beaches in the Southeast. It is necessary to predict and monitor the level of bacteria on our swimming beaches to protect not only public health, but also the ocean economy.

SECOORA 2013 HIGHLIGHTS

22% COASTAL OCEAN SURFACE

71% COASTAL OCEAN SUBSURFACE

Percentage of all publicly available real-time continuous ocean measurements in the Southeast region.

253 REAL-TIME STATIONS*

*Includes federal and non-federal

9 MILLION
Web page views of SECOORA data and information on http://ndbc.noaa.gov/

125,288 PEOPLE VISITED OUR WEBSITE

⬆ **27% FROM 2012**

3,000 OBSERVATIONS AN HOUR

1.7 MILLION
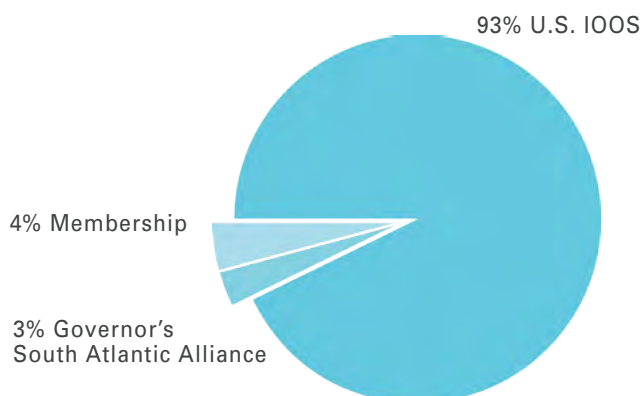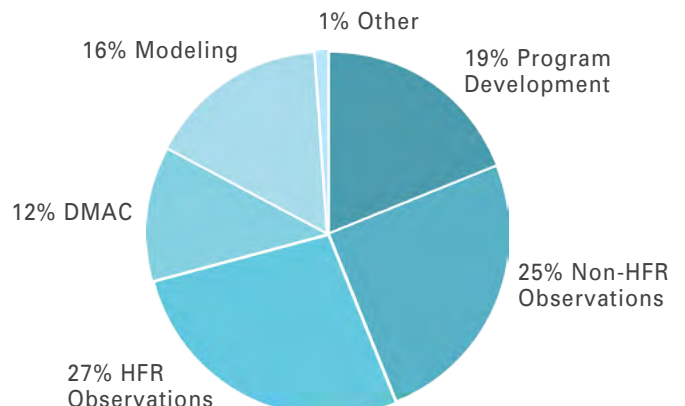Non - federal coastal ocean observations aggregated and shared

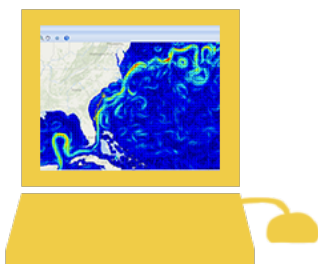**62** OUTREACH EVENTS

⬆ **58% FROM 2012**

FINANCES

INCOME

93% U.S. IOOS

4% Membership

3% Governor's South Atlantic Alliance

EXPENSES

1% Other

16% Modeling

19% Program Development

12% DMAC

25% Non-HFR Observations

27% HFR Observations

STAY CONNECTED
http://secoora.org

Image Credit: USF CMS

EXPLORE SECOORA DATA PORTAL

http://secoora.org/data

"Without SECOORA, our region would be unable to adequately observe and understand the changes affecting the coasts and ocean so critical to our region's future."

Dr. Harvey Seim
Professor and Department Chairman
UNC Chapel Hill College of Arts and Sciences

39% of the Southeast's population lives in a shore-adjacent county

STAFF

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SECOORA Membership

SECOORA is a reliable resource for tracking, predicting, managing, and adapting to changes in the southeastern U.S. marine environment. With over 45 members, SECOORA members are invaluable contributors to our enterprise. Members are critical factors in determining our product development priorities, increasing our understanding of coastal waters, ensuring longevity of our regional efforts and more.

Become a Member Today:

SECOORA is composed of a diverse integration of those interested in the supporting and using the Southeast's regional ocean observing system. Member benefits include:

- Providing input into SECOORA data and information products
- Leveraging your organization's monitoring / observation activities
- Helping set our regional priorities

If you are interested in becoming a SECOORA member, please contact Debra Hernandez, Executive Director, at 843.906.8686 or debra@secoora.org.

BOARD (JULY 1, 2013- JUNE 30, 2014)
Chairman: George Maul, Florida Institute of Technology *
Vice-Chairman: Rick DeVoe, South Carolina Sea Grant Consortium *
Secretary: Conrad C. Lautenbacher, GeoOptics *
Treasurer: John Proni, Florida International University-International Hurricane Research Center *
Past Chair: Richard Dodge, Nova Southeastern University *
Mitch Roffer, Roffer's Ocean Fishing Forecasting Service, Inc *
Peter Hamilton, Leidos Corporation *
Steve Woll, WeatherFlow *
Lynn Leonard, University of North Carolina-Wilmington *
Peter Sheng, University of Florida *
Roger Pugliese, South Atlantic Fishery Management Council *
Bob Weisberg, University of South Florida College of Marine Science *
George Voulgaris, University of South Carolina College of Arts and Sciences *
Lisa Adams, Kennesaw State University *
Ruoying He, North Carolina State University *
Nick Shay, University of Miami Rosenstiel School of Marine and Atmospheric Science **

MEMBERS (JULY 1, 2013- JUNE 30, 2014)
Paul Gayes, Coastal Carolina University *
Pat Halpin, Duke University Marine Laboratory *
J.P. Walsh, East Carolina University *
Manhar Dhanak, Florida Atlantic University *
Kathleen O'Keife, Florida Fish and Wildlife Research Institute *
William Hogarth, Florida Institute of Oceanography *
Jim Fourqurean, Florida International University School of Environment, Arts and Society *
Markus Huettel, Florida State University *
Greg Bossart, Georgia Aquarium *
Dennis Hanisak, Harbor Branch Oceanographic Institute *
Edwin Massey, Indian River State College *
Quinton White, Jacksonville University Marine Science Research Institute *
Barbara Slayton, Lockheed Martin *
Bob VanDolah, South Carolina Department of Natural Resources *
Jim Nelson, University of Georgia's Skidaway Institute of Oceanography *
Harvey Seim, University of North Carolina at Chapel Hill *
Dwayne Porter, University of South Carolina Arnold School of Public Health *
Graham Worthy, University of Central Florida *
Tim Short, SRI International *
Felix Jose, Florida Gulf Coast University *
Jamie Griffith, Liquid Robotics *
Patrick Bradley, Teledyne Instruments •
Rick Cole, RDSea International •
Freda Zifteh, NortekUSA •
Jennifer Zimmerman, HACH Hydromet •
Geno Olmi, NOAA Southeast and Caribbean Regional Team +
Alan Leonardi, NOAA Atlantic Oceanographic and Meteorological Laboratory +
George Sedberry, Southeast, Gulf of Mexico, and Caribbean Region of the Office of the National Marine Sanctuaries +
Eric Strom, U.S.G.S. +
Jennifer Bennett, NOAA Ocean Acidification Program +

* Institutional Members | ** Sustaining Members | • Individual Members | + Federal Affiliate Members