The SECOORA Story:

Linking scientists, policy-makers and coastal communities to understand our ever-changing ocean

SECOORA
Southeast Coastal Ocean Observing Regional Association

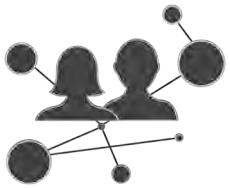
IOOS
Integrated Ocean Observing System

Debra Hernandez | debra@secoora.org | www.secoora.org

Three Things to Know About SECOORA

1

Who We Are:
Ocean scientists and stakeholders



2

What We Do: Collect coastal ocean data to understand change

3

Why We Do It:
To improve decision-making

- What are the current conditions?
- Where will it flood?
- What are the trends in … temperature, sea level or wave patterns?

Who We Are: Part of a National Program

11
Regional
coastal
observing
systems

NOAA led
U.S. IOOS®

Who We Are: A Coastal Ocean Science Non-Profit

MISSION SECOORA's mission is to observe, understand, and increase awareness of our coastal ocean; promoting knowledge, economic and environmental health through strong regional partnerships.

5 YEAR VISION SECOORA is the recognized leader, valued partner, and go to source for coastal ocean information in the southeast.

CORE VALUES

We believe in...

- **Inclusive and collaborative partnerships**
- **Accessible useful information** for addressing societal needs
- **Science based** discovery and decision-making
- **Scientific integrity,** technical excellence, and innovation
- **Active stewardship** of coastal ocean ecosystems
- **Leadership** in coastal ocean science
- **Positive and supportive** SECOORA working environments

STRATEGIC GOALS

1. **Increase exposure and broaden usage of SECOORA's information and products**
   - Improve web-based information system and web presence.
   - Provide state of the art tools, including phone apps, data analysis tools and decision support tools, and information on how to use the tools
   - Implement an effective outreach strategy to reach priority user groups, such as mariners, fisheries managers, marine planners, etc.
2. **Utilize a prioritized science-justified ocean observing system plan to guide and inform decision making and implementation**
   - Regularly review status of Coastal Ocean Observing System technologies and advancements
   - Develop agreement on the Regional Coastal Ocean Observing System Plan utilizing existing proposal, plans and documents
   - Utilize the RCOOS plan for funding opportunities
3. **Expand partnerships – including membership and stakeh**
4. **Engage and inform students and the public in ocean observing**
   - Support citizen-science opportunities
   - Engage students in problem solving using ocean observing data
   - Establish our researchers and program managers as resources for students and the general public
   - Identify and pursue cooperative educational funding opportunities
5. **Improve SE**

secoora.org/about

SECOORA Southeast Coastal Ocean Observing Regional Association

IOOS Integrated Ocean Observing System

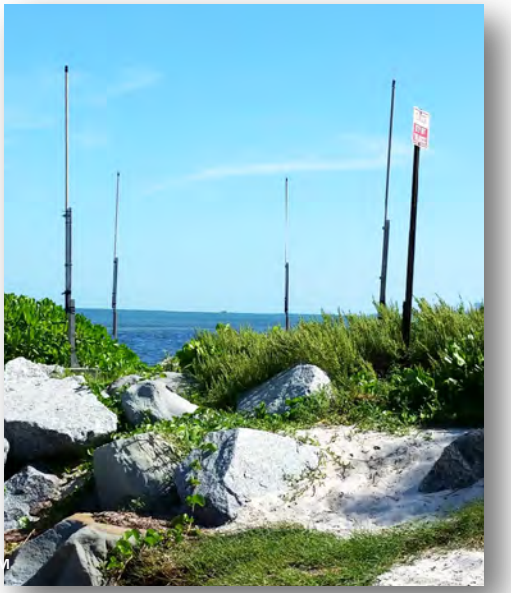
Who We are: SECOORA Members

What We Do: Sustain Long Term Observations

"Old School"

Moorings

Coastal Stations



High Frequency Radar

What We Do: Sustain Long Term Observations

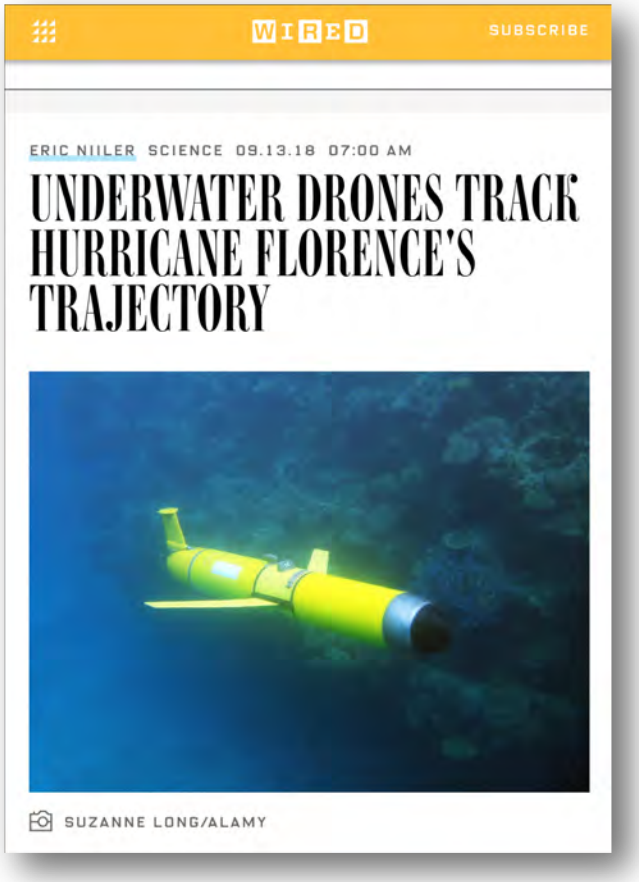
Newer Technology

Gliders

Acoustic Receivers

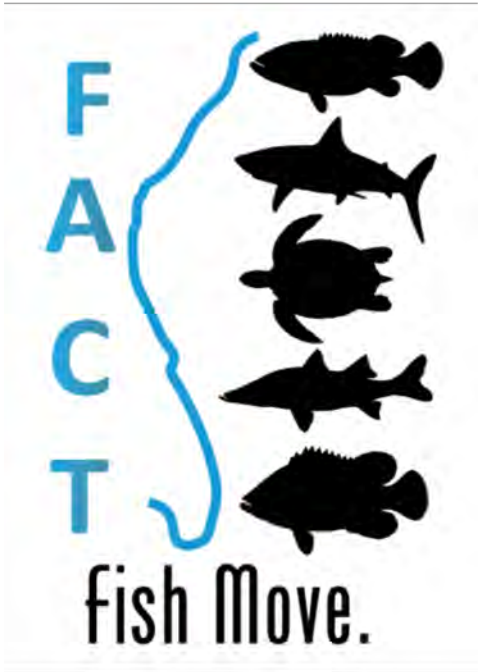
What We Do: Sustain Long Term Observations

Newer Technology: Gliders



What We Do: Sustain Long Term Observations

Newer Technology: Acoustic Receivers



What We Do: Test New Technologies for Operational Observing Use

"Experimental" Technology

Web Cameras

Image Credit: Surfline

Drones

Image Credit: NOAA Fisheries

Wave Gliders

Image Credit: Eric Reyier NASA

Low Cost Sensors

Image Credit: Mary Landers, SavannahNow

Webinar: Smart Sea Level Sensors for Emergency Planning and Response

Tuesday Feb 26: 11:30 AM – 12:30 PM

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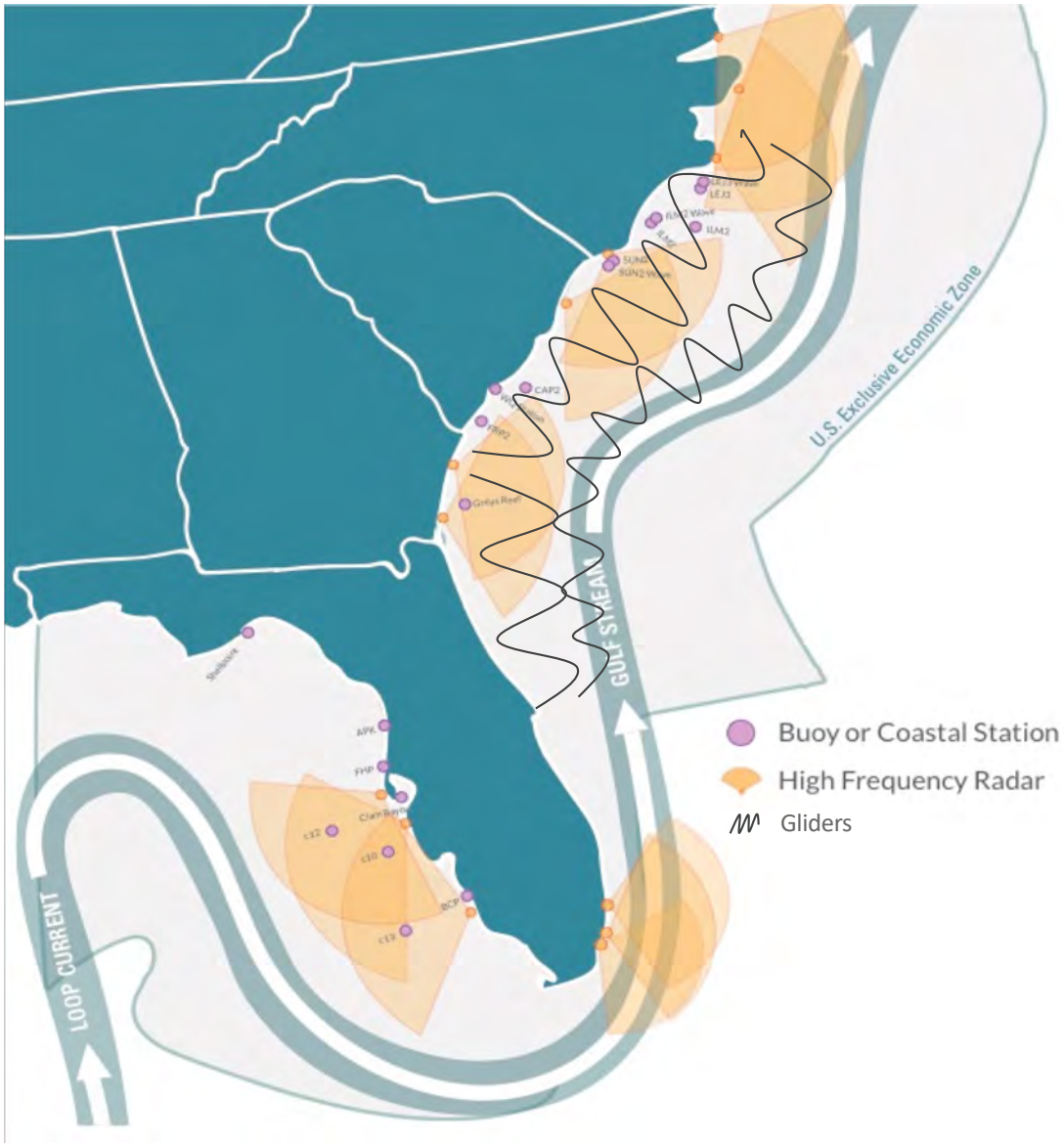
www.secoora.org



Spotlight on SECOORA Operations

What We Do: By the Numbers

13 HF Radars

13 Buoys

4 Models and Applications

6 Coastal Stations

6 Glider Deployments Annually

42 Students Supported

12.4 MILLION Page views and data requests for SECOORA supported assets on SECOORA.org and partner websites

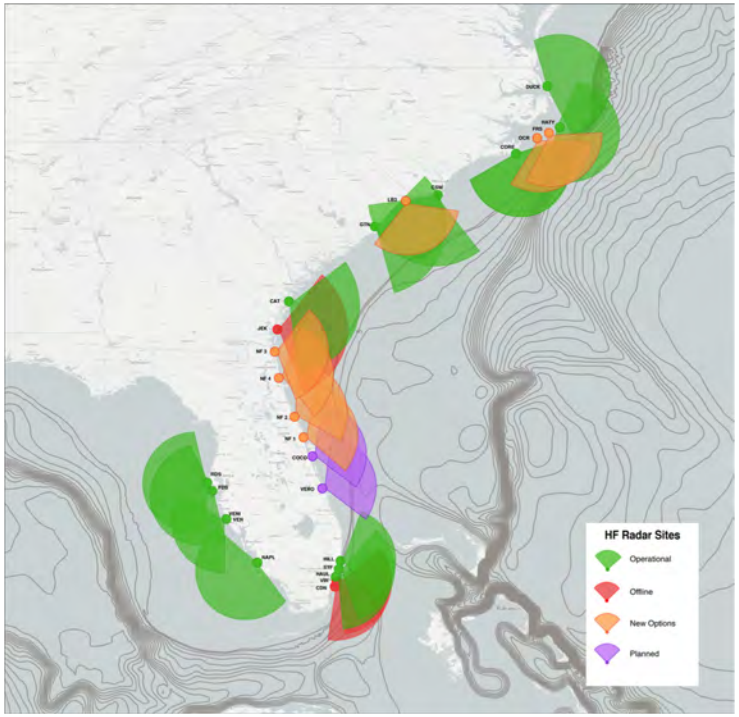
40 SECOORA Members

SECOORA
Southeast Coastal Ocean Observing Regional Association

What We Do: Advocate and Fill Observing Gaps

2018:

High Frequency Radar

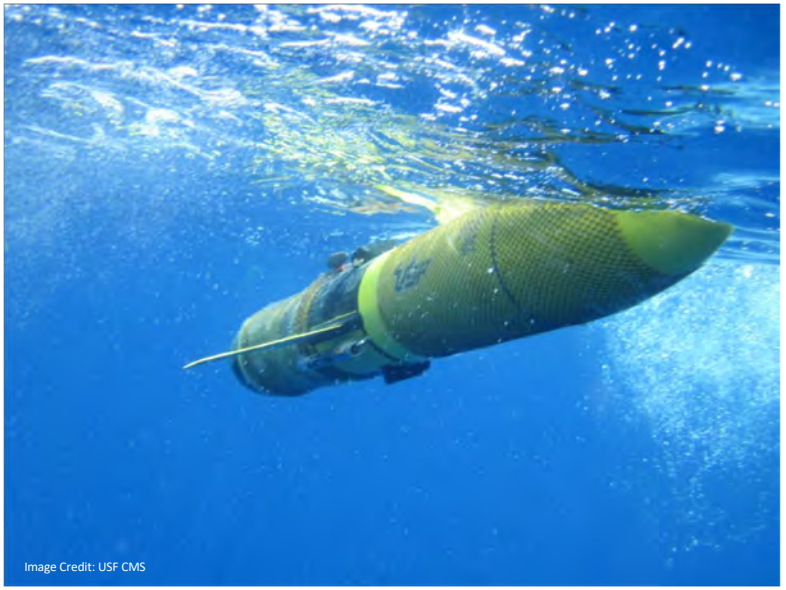


6 New Radars Coming Soon

Orange = potential locations for the four used HFR that SECOORA and Skidaway Institute of Oceanography are purchasing

Purple = Planned HFR on Cape Canaveral

Gliders



1 New Glider Joining the SECOORA Glider Fleet

What We Do: Certification & Data Management

SECOORA meets federal standards for:

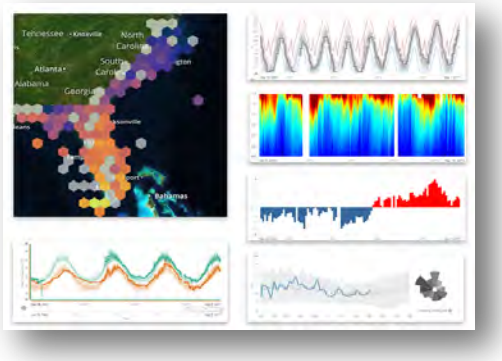
- Data gathering
- Data management
- Long-term archiving

Operate:

- inclusively
- transparently
- solicit input

Axiom Data Science maintains SECOORA's data management system, data catalog, and data portal.

Axiom assures that all data management systems are highly redundant to assure data are always available.



Members have access to our data management tools and expertise.

7 Benefits of Becoming a Member and Contributing Data to SECOORA

1. Meet your open data sharing needs through Integrated Ocean Observing System (IOOS®) - a Global Earth Observing System of Systems approved data system.
2. Assimilate, visualize and publish your data to both regional and national data portals for integration and exploration.
3. Access collaborative tools to securely store and share provisional and curated data.
4. Receive technical assistance for packaging information and data in useful ways to meet end users needs.
5. Store and archive data with DataONE and National Centers for Environmental Information in standard formats and with standards-compliant metadata - receive a DOI for dataset citation.
6. Ability to perform cloud-based reproducible analytical workflows accessing data available through SECOORA data holdings.
7. Efficiently access and analyze high-volume data products, including model results and satellite imagery.

Thank you for being a member!

South Atlantic Fishery Management Council
"To Conserve and Manage"

What We Do: Student Opportunities

Clam Bayou Outreach and Education

200+ Undergraduate Students

14 Lab visits 2014-2018

YSI a xylem brand

COMPS Coastal Ocean Monitoring and Prediction System

USF University of South Florida College of Marine Science

Vembu Subramanian Scholarship

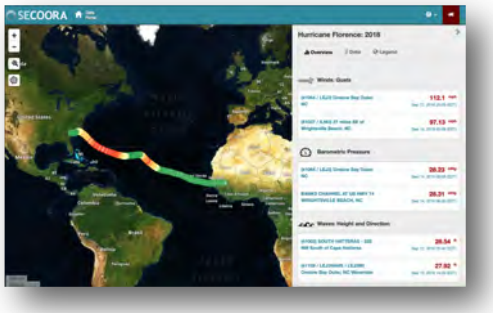
SECOORA is continuing Vembu's mentoring legacy and helping the next generation of ocean experts by **sponsoring an annual award of up to $2500.**

NOAA Education Partnership Program and Hollings Undergrad Scholarships

Each year SECOORA has coordinates with the IOOS Summer Internship Program to host a NOAA Hollings Undergraduate Scholar or Educational Partnership Program (EPP) Intern at our member institutions.

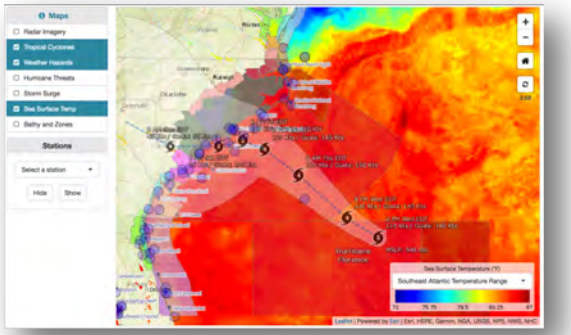
Why We Do It: Improve Decision Making

SECOORA Models and Products

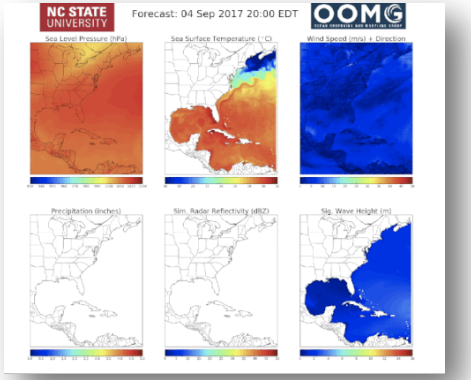


Hurricane Data Discovery Tool
http://hurricane.portal.secoora.org/

How's the Beach
http://howsthebeach.org/

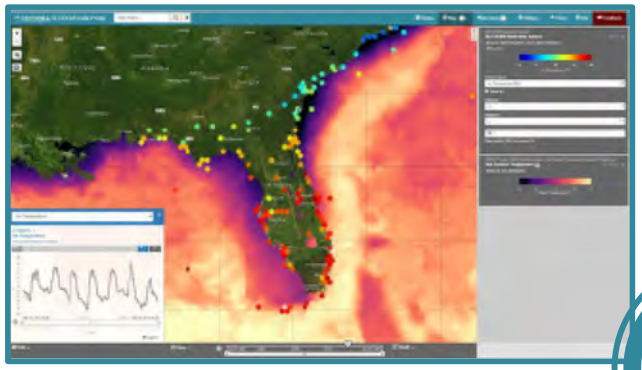


Marine Weather Portal
http://mwp.secoora.org/



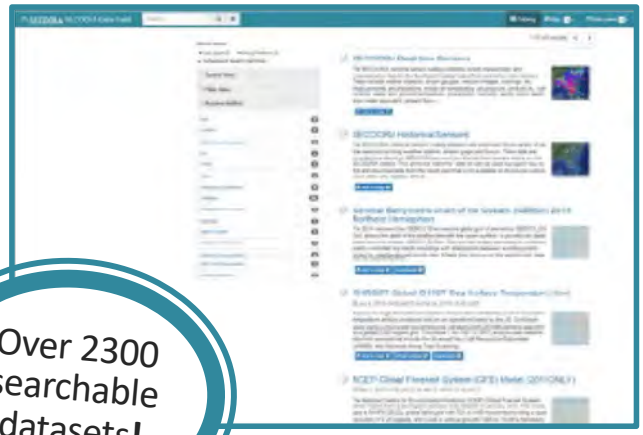
Coupled Northwest Atlantic Prediction System Model
http://omgsrv1.meas.ncsu.edu:8080/CNAPS/

Why We Do It: Provide an Integrated Look at Data



Map

Visualize data from many sources, download data



Over 2300 searchable datasets!

Catalog

Search data, metadata & download data

Data Views

Rapidly assimilate & compare different data streams

Visit the SECOORA Data Portal: *https://portal.secoora.org/*

Why We Do It: Search and Rescue, oil spills, …

Real-time surface current maps from high frequency radar

- US Coast Guard "Reduces our search area"
- Oil Spill response
- Other pollution, i.e. harmful algae blooms
- Larval transport

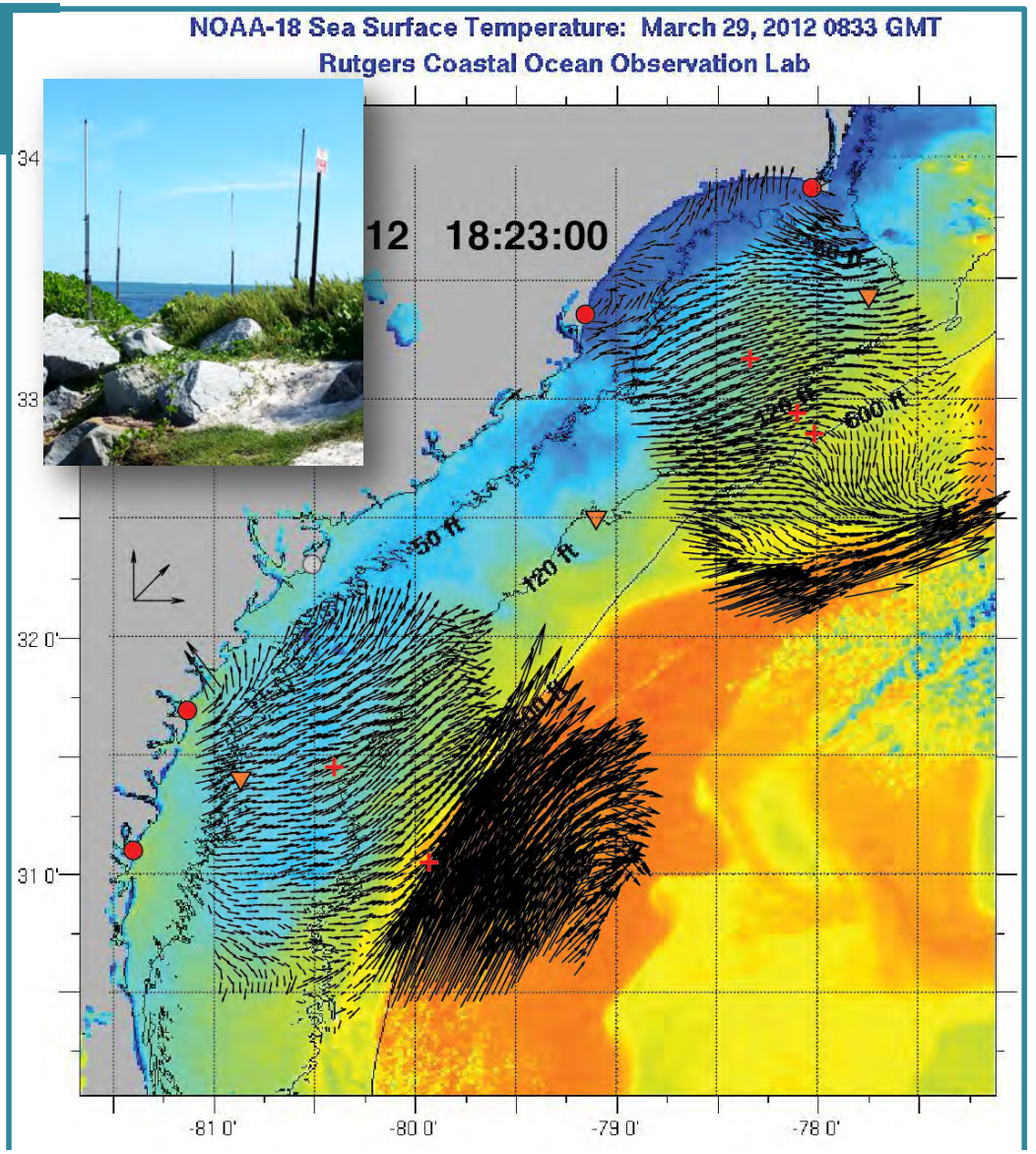
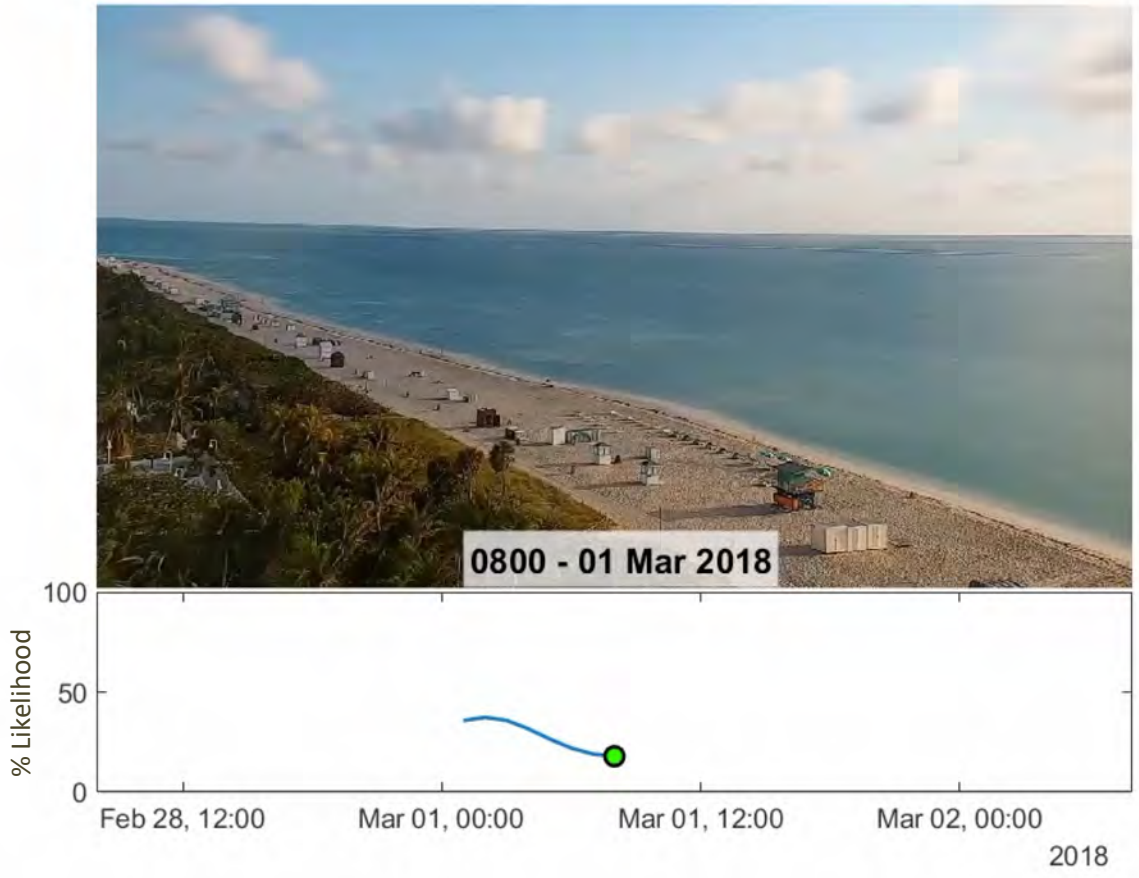
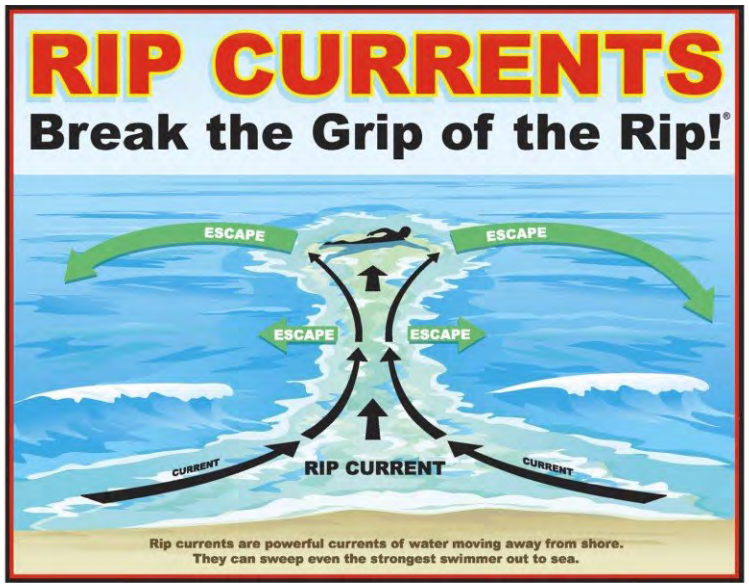


Image courtesy of D. Savidge, UGA Skidaway Institute of Oceanography

Why We Do It: Validate Rip Current Models



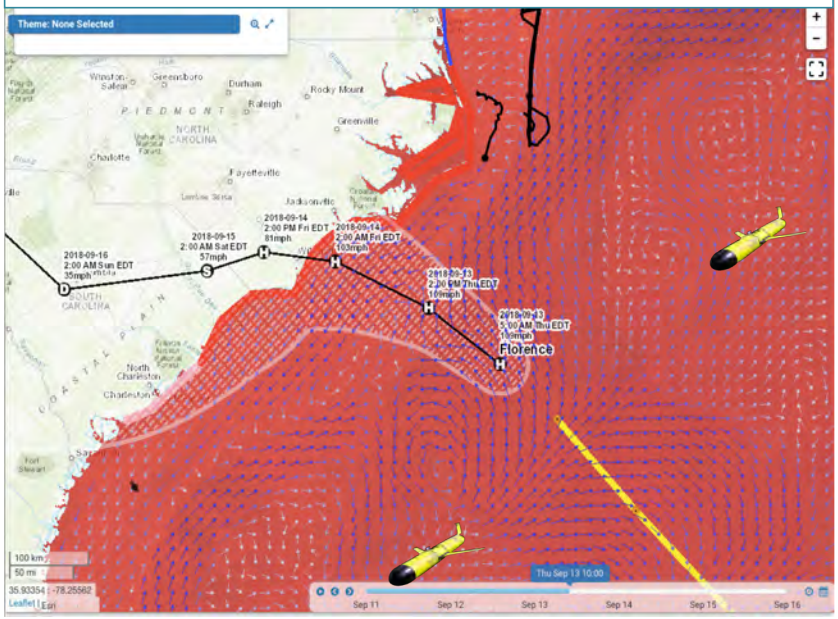


Video courtesy of
Greg Dusek, NOAA

Why We Do It: Improve Hurricane Forecasts

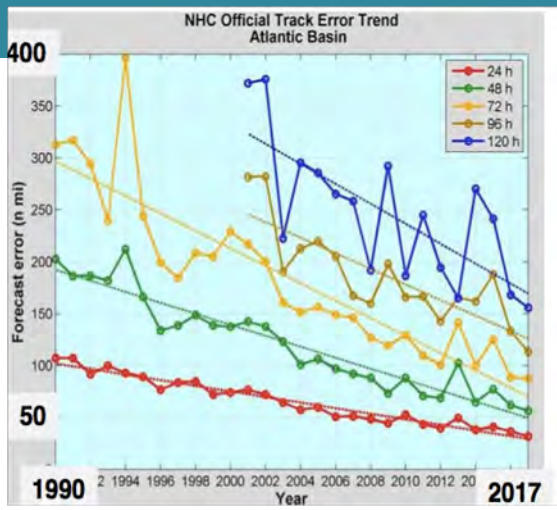
Improving hurricane intensity forecasts with glider (T, S) data

Hurricane Florence, T-24 hr

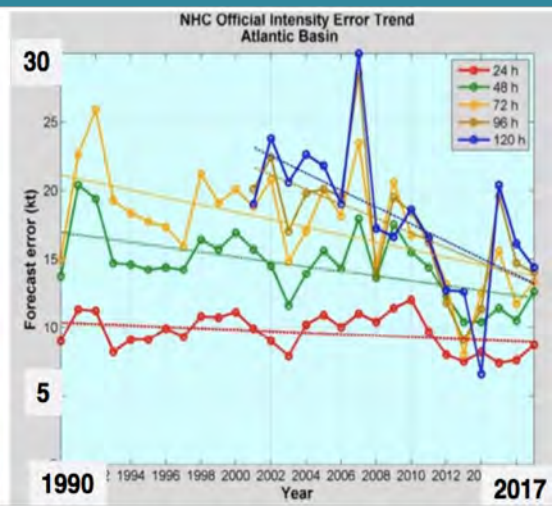


Slide images courtesy of C. Edwards, UGA Skidaway

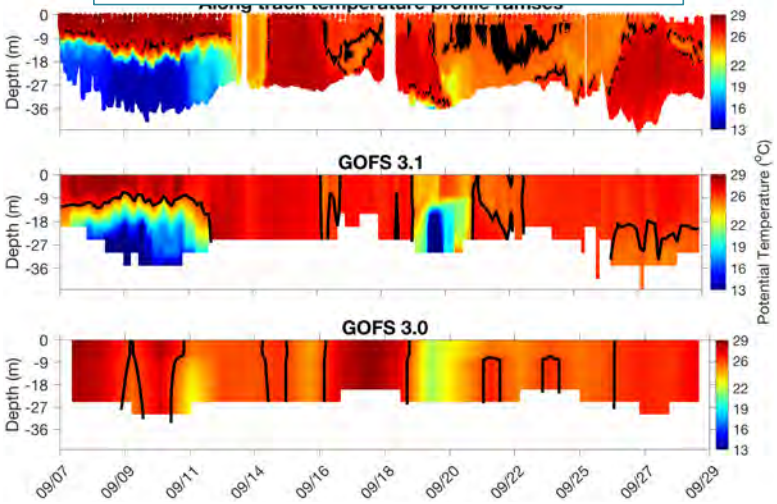
NHC track error



NHC intensity error



Along track temperature, deg C

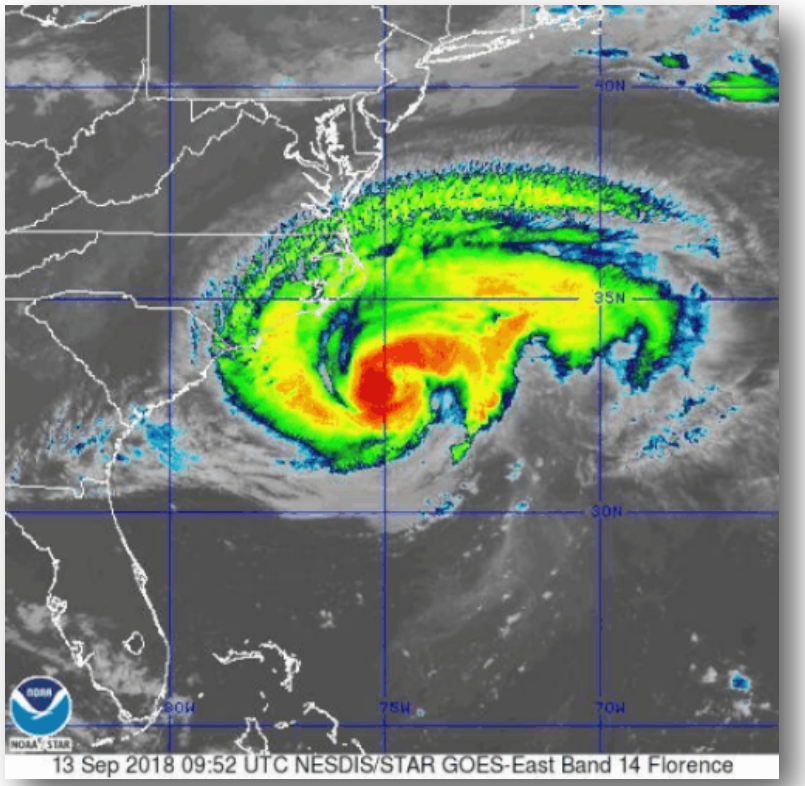


glider observations

with gliders

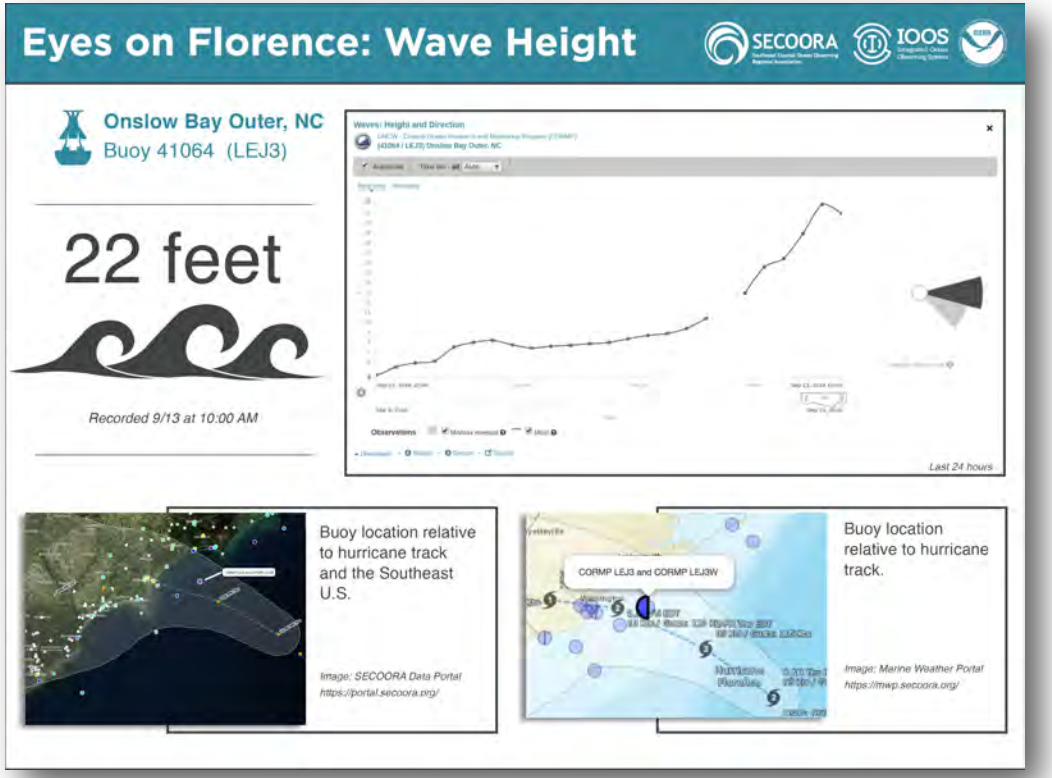
without gliders

Why We Do It: Share Resources



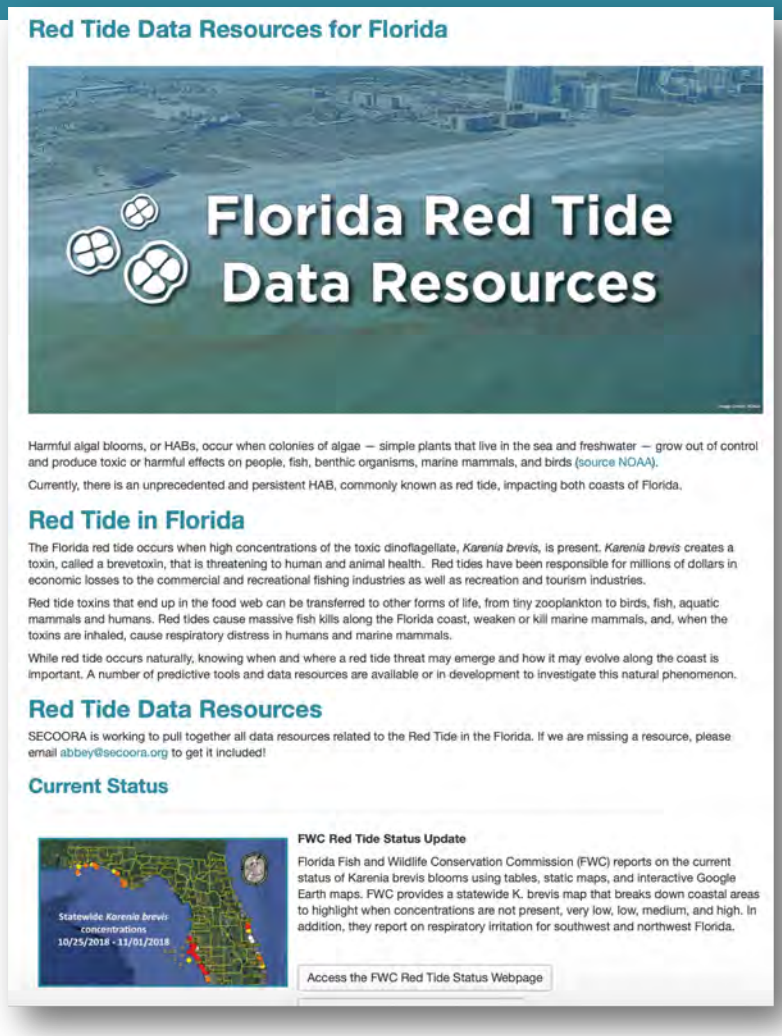
Hurricane Resource Webpage

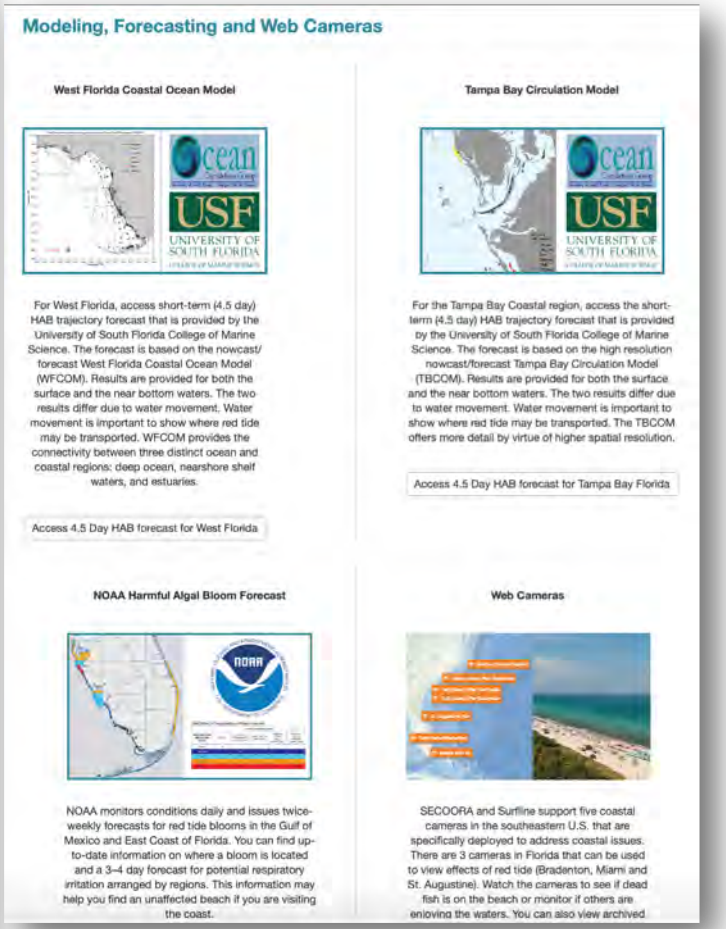
secoora.org/hurricane-resources



Hurricane Social Media Outreach

Why We Do It: Share Resources





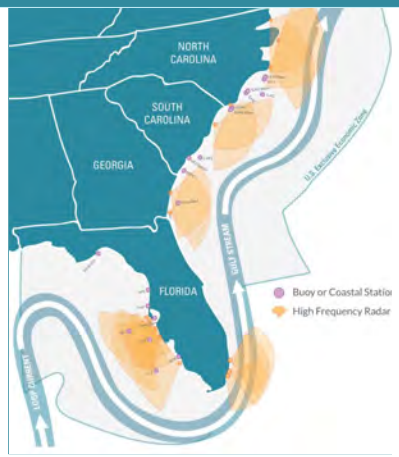
Red Tide Resource Webpage

secoora.org/red-tide-data-resources-for-florida/

Regional Coastal Ocean Observing Plan

Strategic Priorities for the Southeast Coastal Ocean Observing Regional Association

2021-2016



SECOORA
Southeast Coastal Ocean Observing

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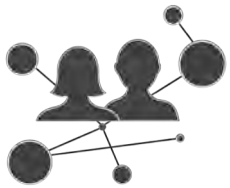
In Summary…

1. We are coastal and ocean scientists, businesses and stakeholders **working together**



2. We **monitor and observe the ocean** to understand change

3. We enable **better decision-making**

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Questions?

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