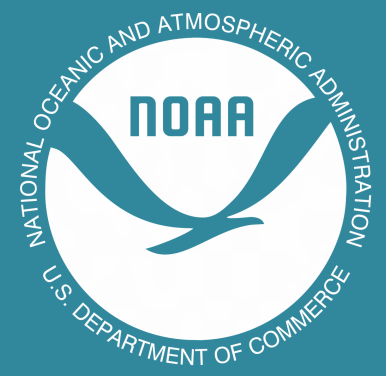


The Coastal Observing System for the Southeast US

Debra Hernandez
Southeast Coastal Ocean
Observing Regional
Association (SECOORA)



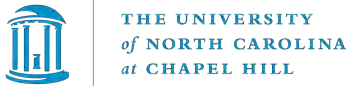
US Integrated Ocean Observing System



SECOORA Members



Wilmington, NC



www.secoora.org



Image: GOOS

SECOORA

Southeast Coastal Ocean Observing Regional Association


SECOORA's mission is to sustain observations that help keep you safe. SECOORA observes, understands, and increases awareness of our coastal ocean.

20 
HF Radars

13 
Buoys

6 
Coastal Stations

 **143**
Glider Days at Sea

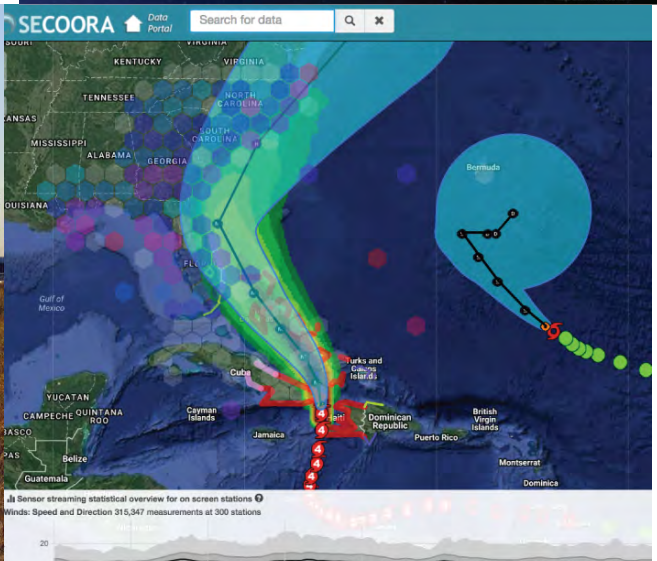
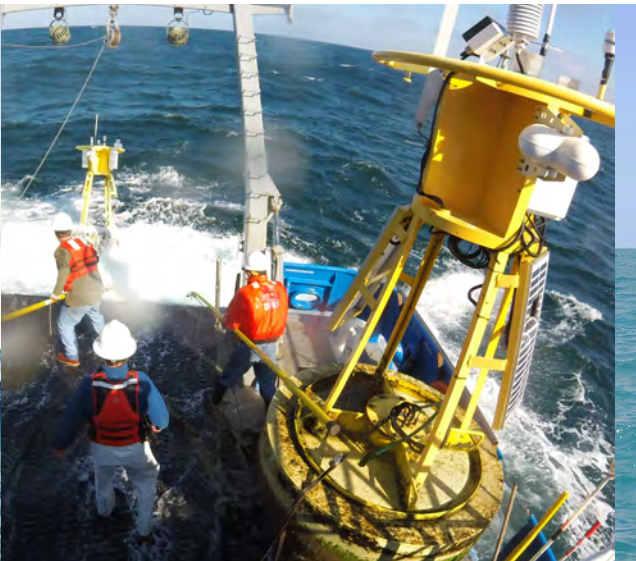
6 Models and Applications 

 **Water Level Stations**
coming to all four states in the next 5 years

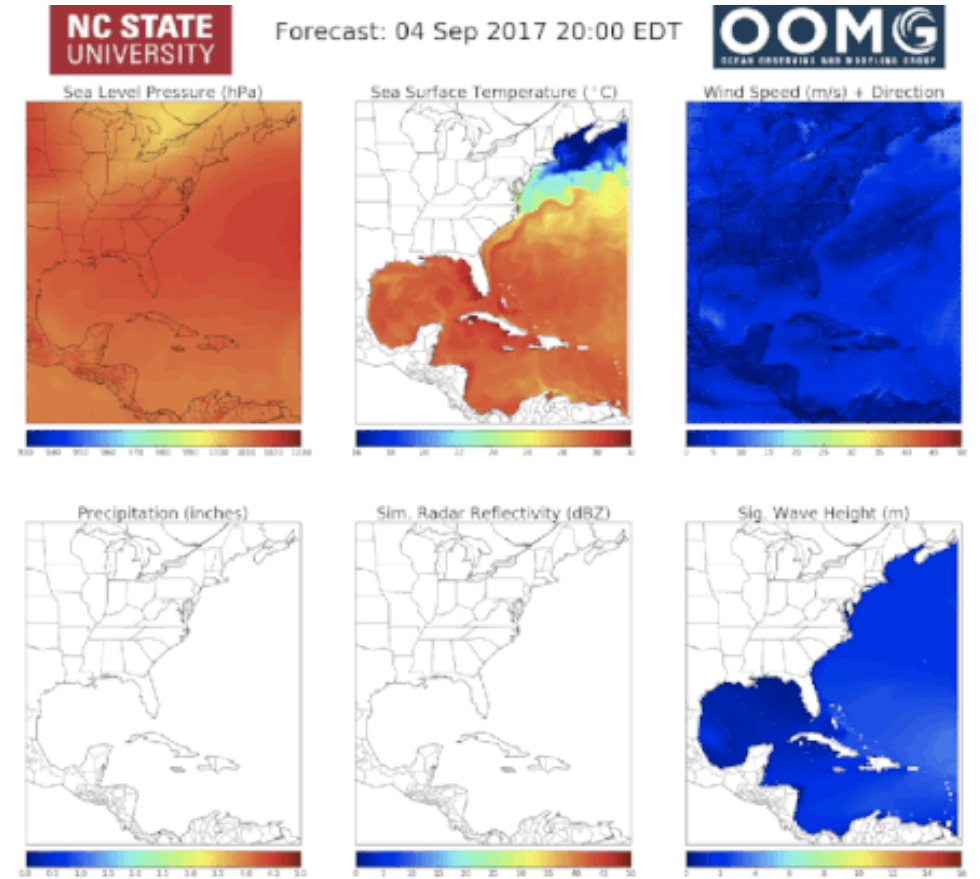
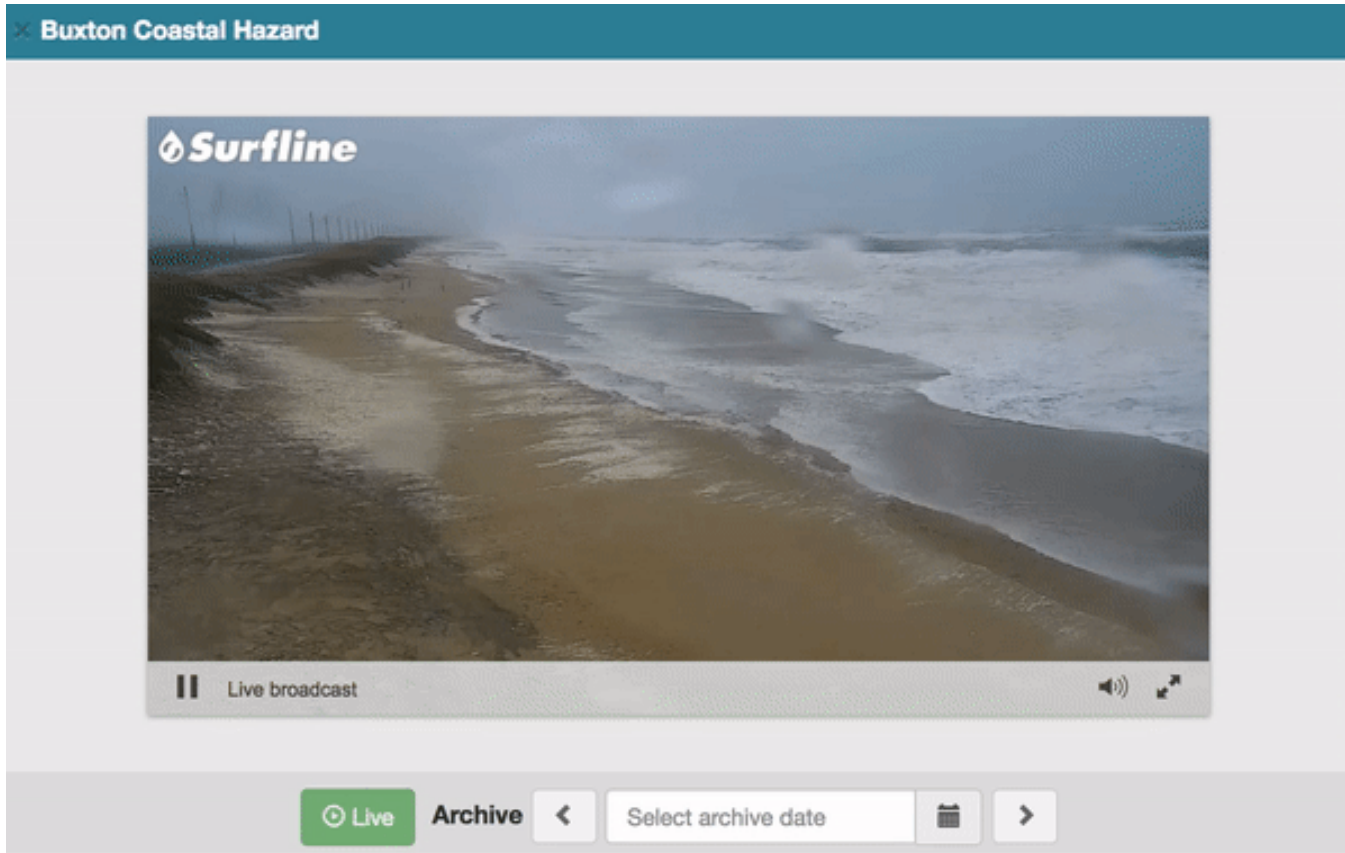
Access ocean data:
www.secoora.org



Coastal Ocean Observing Systems (COOS) Technology



Coastal Ocean Observing Systems (COOS) Technology



Actionable Information for Decision Support



Storm Forecasting & Preparedness

Ship Safety & Cost Savings

Fisheries & Protected Species



Harmful Algal Bloom Detection

Fishing

Safety & National Security



Aquaculture & Ocean Acidification

Tourism

Sea Level Rise

Affiliated Programs

Southeast Ocean and Coastal Acidification Network (SOCAN)



SOCAN is an interdisciplinary network of scientists, resource managers, and industry, non-profit, and government representatives dedicated to supporting and encouraging discussions on ocean and coastal acidification in the Southeast.

Regional Ocean Data Sharing Initiative

Partnership w/ NOAA OCM to fill data gaps. Current efforts include:

1. ID-ing needs for additional sand info
2. Normalizing & making available state shellfish data
3. Visualizing fish tag & environmental data



Southeast and Caribbean Disaster Resilience Partnership



SCDRP strengthens the ability of the region's coastal communities, economies, and environment to recover from coastal storms. The Partnership connects disaster recovery practitioners from public, private, and non-profit backgrounds and provides a platform for training, resources, and relationships that coastal communities need to bounce back.

FACT Network



The FACT Network is a grassroots collaboration of marine scientists using acoustic telemetry and other technologies to better understand and conserve our region's important fish and sea turtle species. The FACT Network includes partners from the Bahamas to the Carolinas (and is growing everyday).



Observations in North Carolina



Image: UNCW CORMP

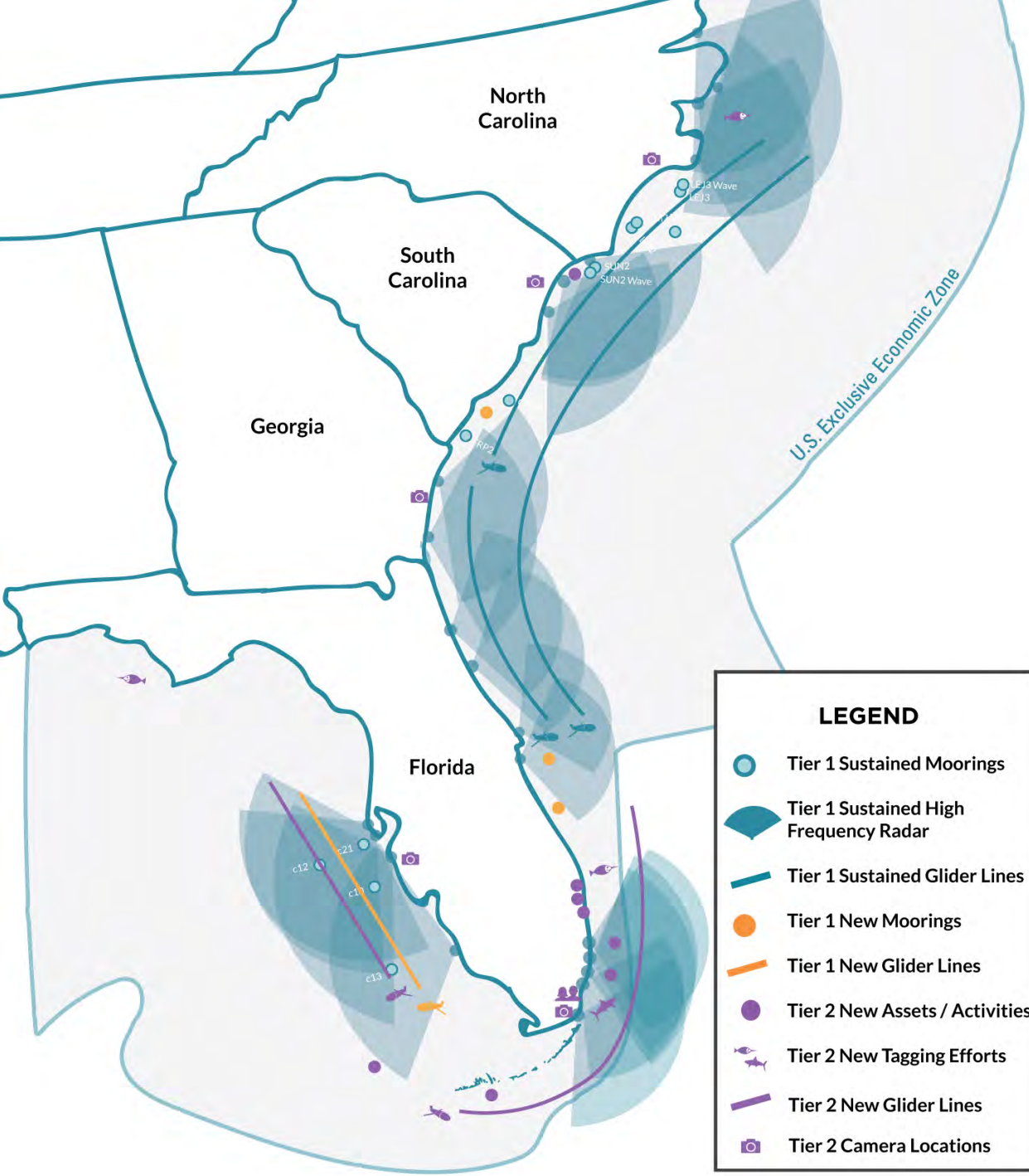
Sustaining

- 4 meteorological and 3 wave buoys (ILM2, ILM2 wave, ILM3, LEJ3, LEJ3 wave, SUN2, and SUN2 wave)
- High Frequency Radar to measure surface currents
- Glider missions off the coast
- Marine Weather Portal - <https://mwp.secoora.org/>
- Ocean Circulation Models - <http://omgsrv1.meas.ncsu.edu:8080/CNAPS/>
- Water quality modeling off Outer Banks - <http://howsthebeach.org/killdevilhills/map>

Planned

- Water level stations
- Installing web cameras to monitor the coast*

*If funding is available



Planning for the Next 5 Years

Core Funding Proposal Submitted to US IOOS



SECOORA Operations

SECOORA Governance and Management

STAKEHOLDER ENGAGEMENT THEMES

Resilient Ecosystems • Resilient Communities • Resilient Economies

Ecosystems: Water Quality and Living Marine Resources

Coastal Hazards and Climate Change

Marine Operations

INTEGRATED PRODUCTS AND FORECASTS

- Harmful Algal Bloom Forecasting for West Florida Shelf
- Monitoring and Forecasting Pelagic Sargassum
- SEAMAP- SA Data Analysis Tool
- Water Quality Swimming Advisory
- Shellfish Advisory
- Marine Weather Portal and Text a Buoy
- Water Level, Real-Time and Historical Data Portals
- Coastal Flooding and Process Analysis

REGIONAL NETWORKS

- Southeast & Caribbean Disaster Resilience Partnership
- FACT Network
- Water Level Network
- Southeast Ocean and Coastal Acidification Network

MODELS

- Swimming Beach and Shellfish Water Quality
- West Florida Shelf Coastal Ocean Model
- Coupled Marine Environmental Assessment and Prediction
- Genetic Species Distribution Model

OBSERVATIONS

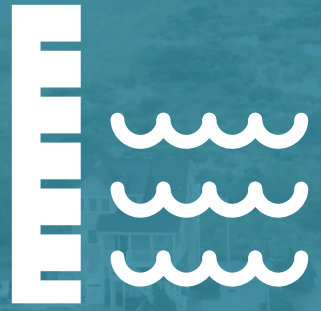
- RT and non-RT *In situ* Stations
- Water Level Sensors
- Citizen Scientists
- HF Radars
- Acoustic Receivers
- Web Cameras
- Southeast Glider Observatory
- Satellite Tags
- UAS Drone Surveys
- Satellite Observations
- Soundscape Observatory Data

Adaptive Sampling

Data Assimilation

Data Management and Cyberinfrastructure

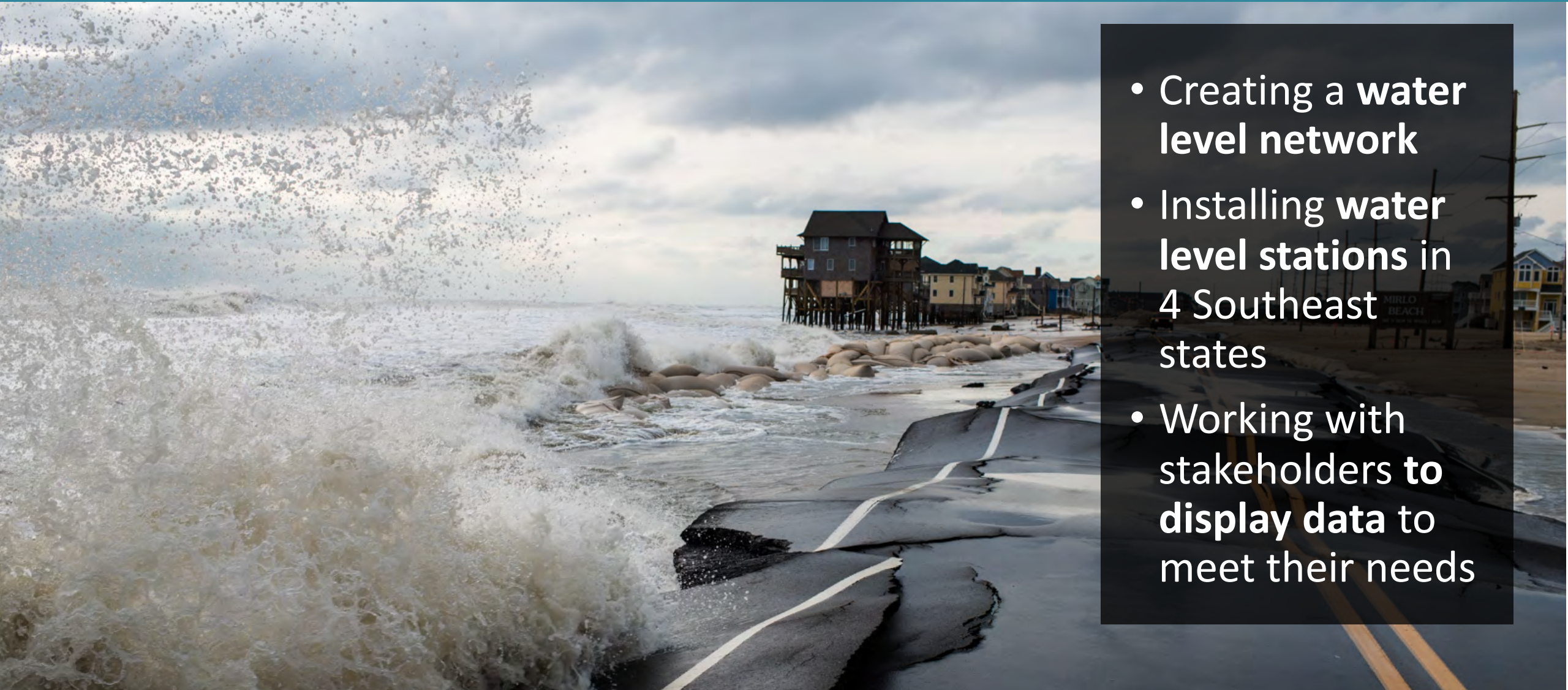
Data Management and Cyberinfrastructure



Water Level Initiative

Water Level Initiative

- Creating a **water level network**
- Installing **water level stations** in 4 Southeast states
- Working with stakeholders to **display data** to meet their needs



A Team Effort

asbpa

American Shore & Beach Preservation Association

Advocating for healthy coastlines

Nicole Elko

**Georgia
Tech**



Emanuele Di Lorenzo

FIU | FLORIDA
INTERNATIONAL
UNIVERSITY

Tiffany Troxler



FAU
I-SENSE

Division of Research
Florida Atlantic University

Paul Gayes

Key to Success is Community Partnership





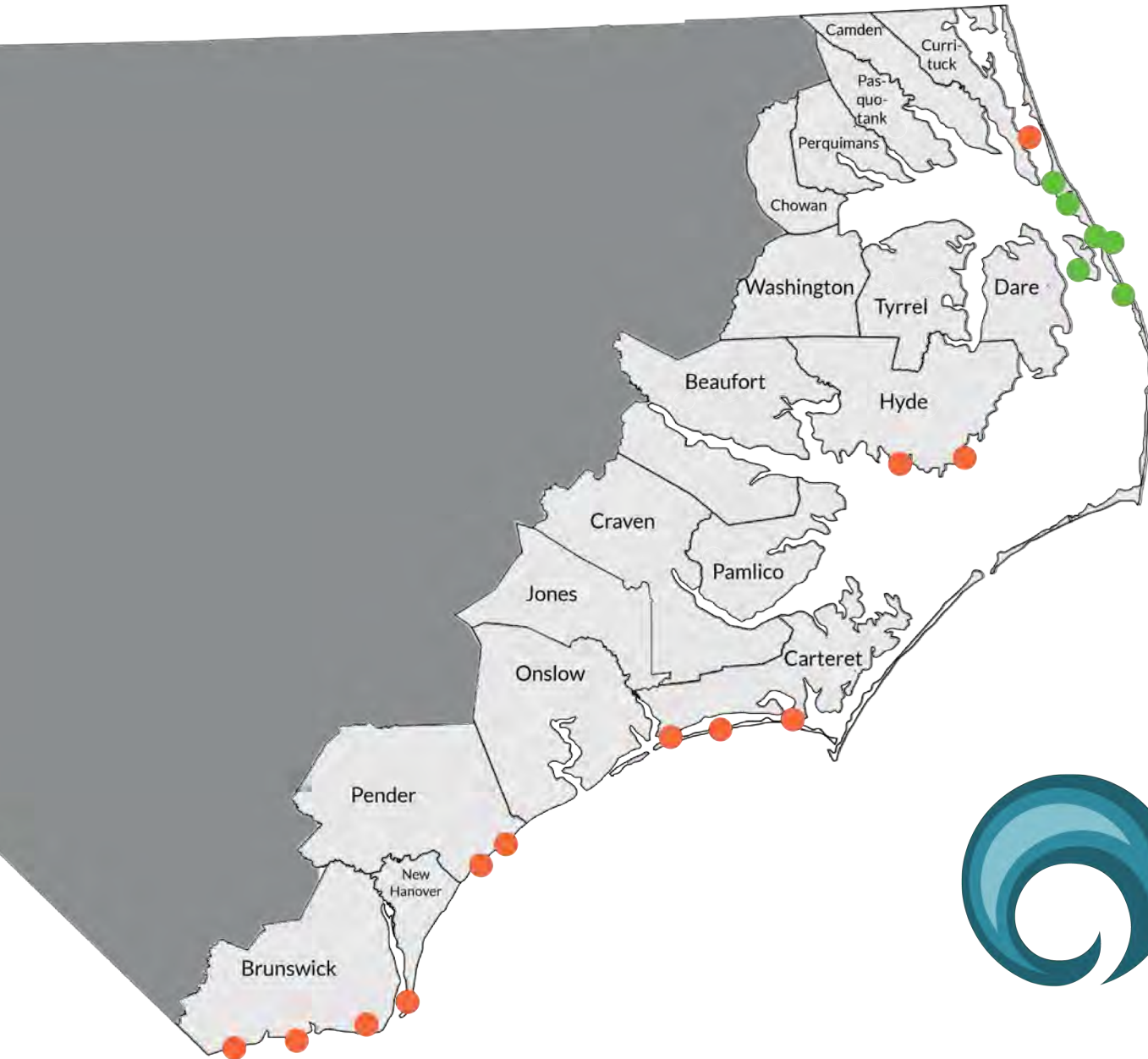
“

This project will provide much needed real-time water level data and improved tidal predictions to our member communities. Increased coverage of water level along the North Carolina coast will allow for more proactive planning and management nuisance flooding.

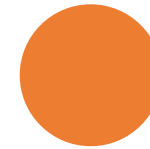
”

Kathleen Riely, Executive Director
North Carolina Beach Inlet and Waterway Association

Water Level Stations in NC



Installed (6)



Planned Locations (12)



SECOORA

Southeast Coastal Ocean Observing
Regional Association

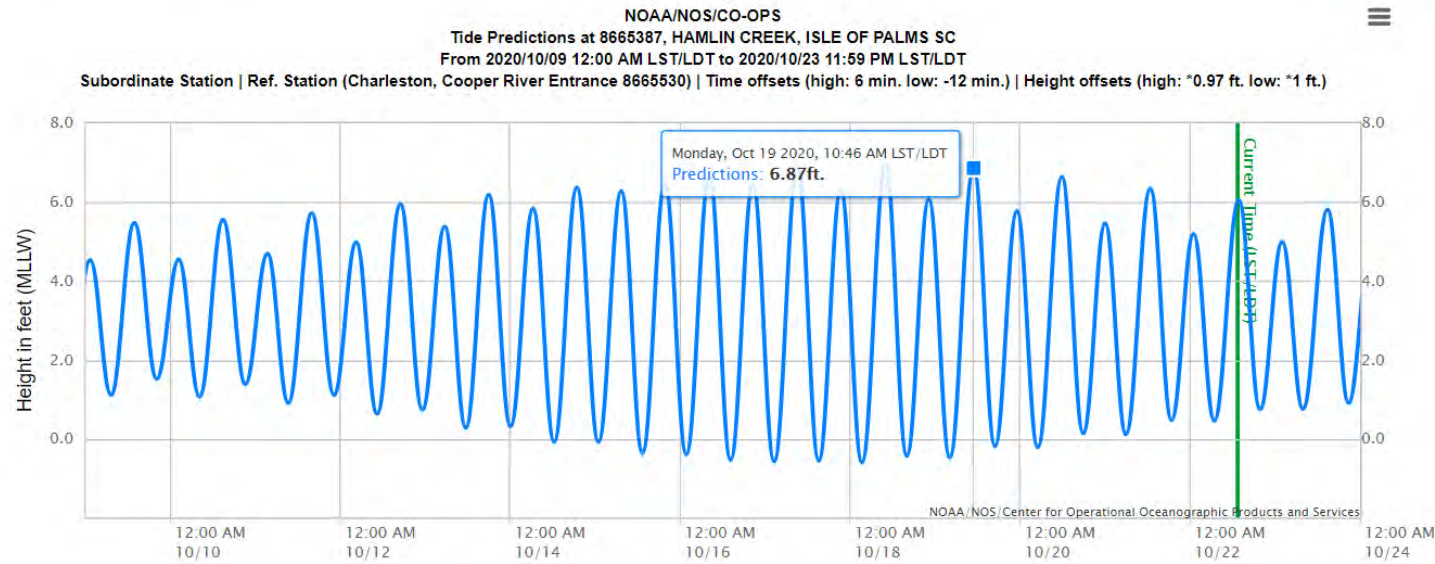
asbpa

American Shore & Beach Preservation Association

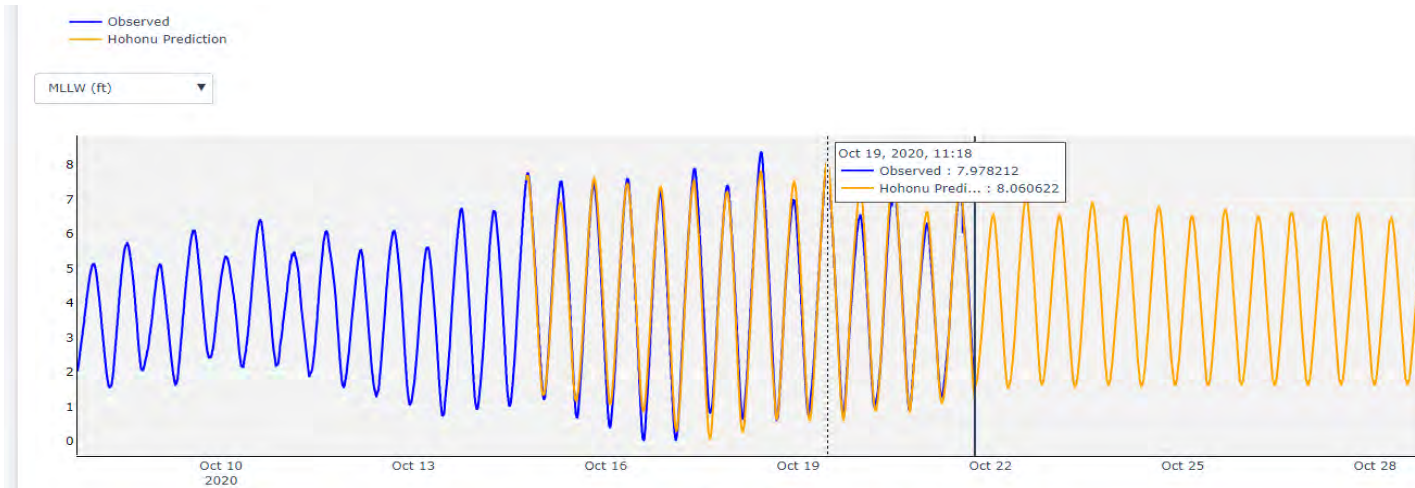
Advocating for healthy coastlines

Data Delivery

NOAA



Hohonu



<https://www.hohonu.io/>

Questions for you!



How do you want to access the data?

- a) Phone via an app (or phone friendly website)
- b) Computer data dashboard
- c) Emailed PDF when water level reaches an alert threshold
- d) Combination of above options



How do you want to visualize the data?

- a) Simple graph showing water level height
- b) Graph overlaying current conditions on historic trends
- c) Other

Questions?

Debra Hernandez
Southeast Coastal Ocean
Observing Regional
Association (SECOORA)

debra@secoora.org

Backup slides



Station Location	PI Institution	# Water level sensors Tier 1	# Water level sensors Tier 2	Partner Affiliations
Georgetown County, SC	ASBPA	3	3	Town of Pawleys Island; Georgetown County
Beaufort County, SC	ASBPA	3	3	Town of Hilton Head, City of Beaufort, SC Sea Grant Consortium
Horry County, SC	ASBPA	3	3	City of Myrtle Beach; City of North Myrtle Beach; Horry County
Currituck County, NC	ASBPA	1	2	
Dare County, NC	ASBPA	2	2	Town of Duck, Town of Nags Head, Dare County
Hyde County, NC	ASBPA	2	2	Hyde County
Carteret County, NC	ASBPA	3	3	Town of Beaufort, Indian Beach, Carteret County
Brunswick County, NC	ASBPA	4	6	Town of Holden Beach, Town of St. James, Town of Sunset Beach, Ocean Isle Beach, Village of Bald Head, NC
Pender County, NC	ASBPA	2	2	Surf City and Topsail Beach
Nassau County, FL	ASBPA	2	2	TBD
Palm Beach County, FL	ASBPA	1	2	Town of Palm Beach
Lee County, FL	ASBPA	2	2	Captiva Island
Chatham County, GA	ASBPA	0	2	City of Tybee Island
Glynn County, GA	ASBPA	0	2	TBD
Charleston County, SC	ASBPA/FIU	4	4	City of Folly Beach, Town of Sullivan's Island, City of Charleston, NOAA, UNCW
Charleston County, SC	CCU-FAU	3	4	The Nature Conservancy, SC Floodwaters Commission, SC State Guard, SC DHEC
Dorchester County, SC	CCU-FAU	3	5	Dorchester County, SC Floodwaters Commission, SC State Guard, SC DHEC

Station Location	PI Institution	# Water level sensors Tier 1	# Water level sensors Tier 2	Partner Affiliations
Florence County, SC	CCU-FAU	4	5	Florence County, SC Floodwaters Commission, SC State Guard, Francis Marion University, SC DHEC
Georgetown County, SC	CCU-FAU	5	6	Georgetown County, The Nature Conservancy, SC Floodwaters Commission, SC State Guard, SC DHEC
Horry County, SC	CCU-FAU	15	15	Horry County, City of Conway, SC Floodwaters Commission, SC State Guard, SC DHEC
Marion County, SC	CCU-FAU	5	6	Marion County, SC Floodwaters Commission, SC State Guard, SC DHEC
Richland County, SC	CCU-FAU	3	6	Richland County, SC Floodwaters Commission, SC State Guard, SC DHEC
Palm Beach County, FL	CCU-FAU	24	24	Palm Beach County, City of Jupiter, Palm Beach County Business Development Board, City of West Palm Beach, City of Boca Raton
St Lucie County, FL	CCU-FAU	8	10	City of Fort Pierce, FL
Miami-Dade County, FL	FIU	5	5	Miami-Dade County, City of Coral Gables, Catalyst Miami, UNCW, NOAA
Broward County, FL	FIU	1	1	City of Ft. Lauderdale, Catalyst Miami, UNCW, NOAA
Monroe County, FL	FIU	1	1	Monroe County, Catalyst Miami, UNCW, NOAA
Brevard County, FL	FIU	1	1	Indian River Lagoon National Estuary Program, Catalyst Miami, UNCW, NOAA
Camden County, GA	GA Tech	30	30	Camden County, King's Bay Naval Base
Chatham County, GA	GA Tech	18	30	CEMA, City of Savannah
Glynn County, GA	GA Tech	30	30	TBD
TOTAL SENSORS		188	219	