



CENTER *for* MARINE SCIENCE

“The Coastal University”



Dr. Ken Halanych
Executive Director
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Center for Marine Science

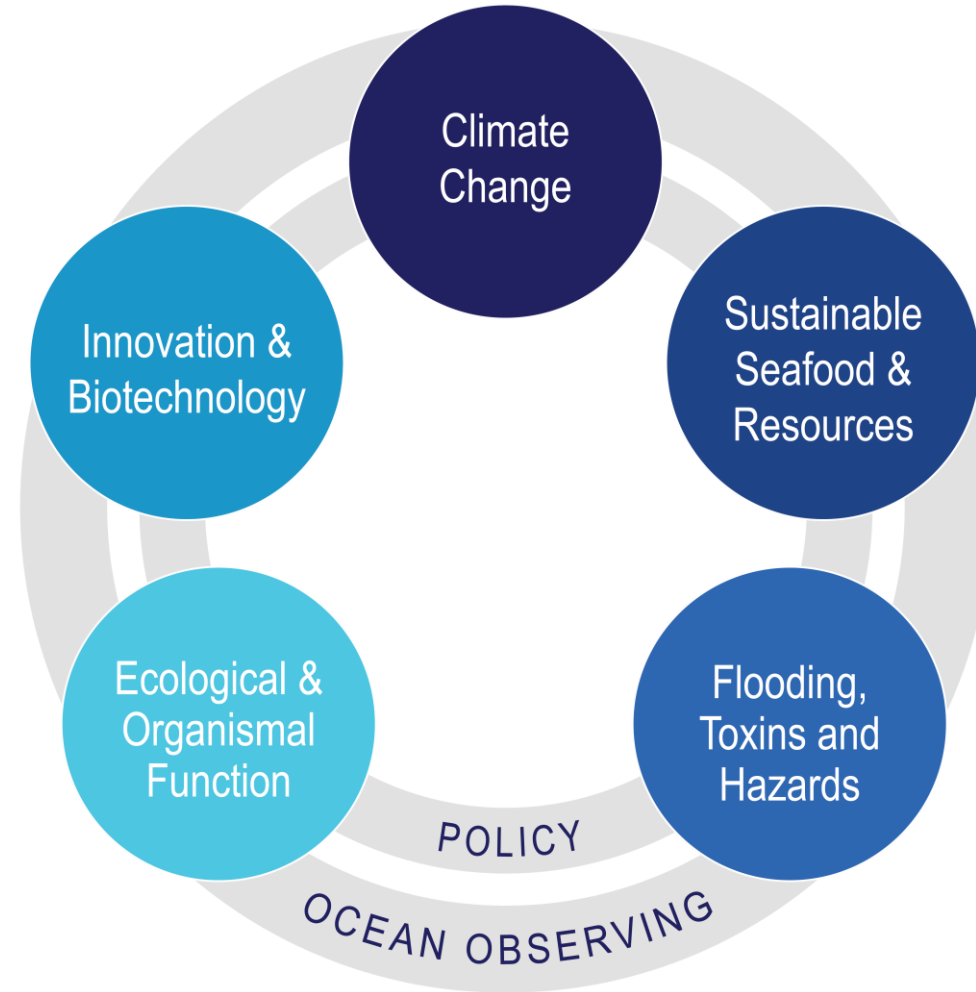
- 50 years
- Campus – 40 research labs, shellfish, and finfish hatcheries
- Affiliated with 108 UNCW faculty & 15 academic programs

Ensuring safe and healthy coasts



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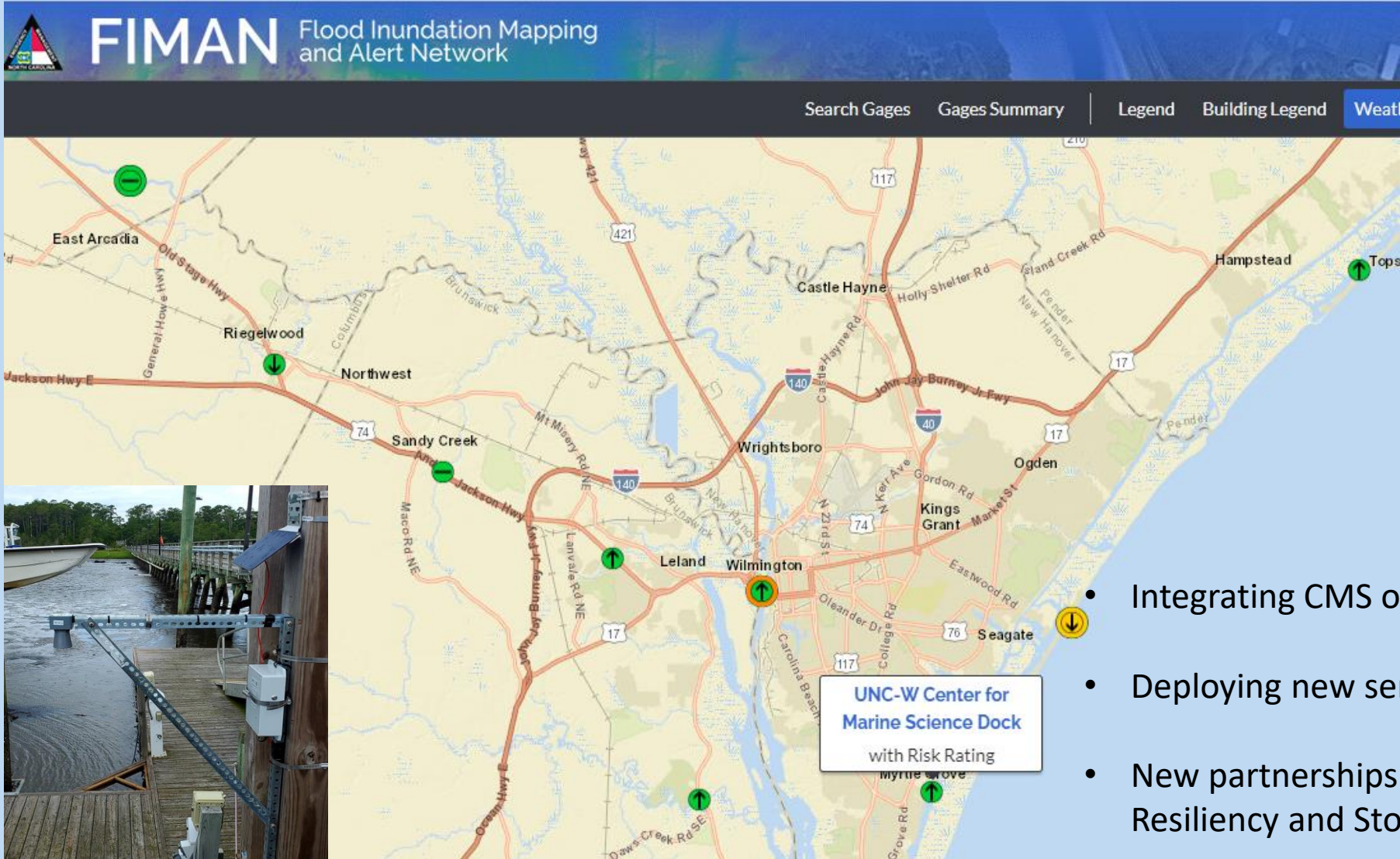


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Ensuring safe and healthy coasts

Flooding and Inundation

Increasing availability and access to real-time water level observations in SE North Carolina



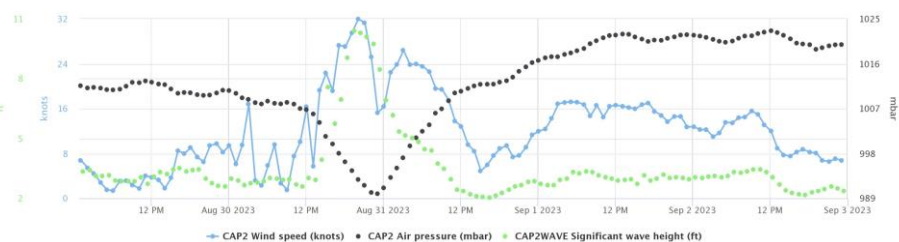
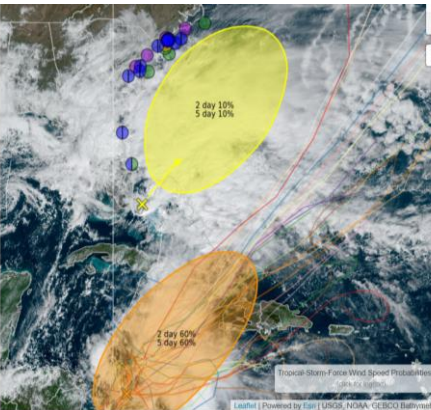
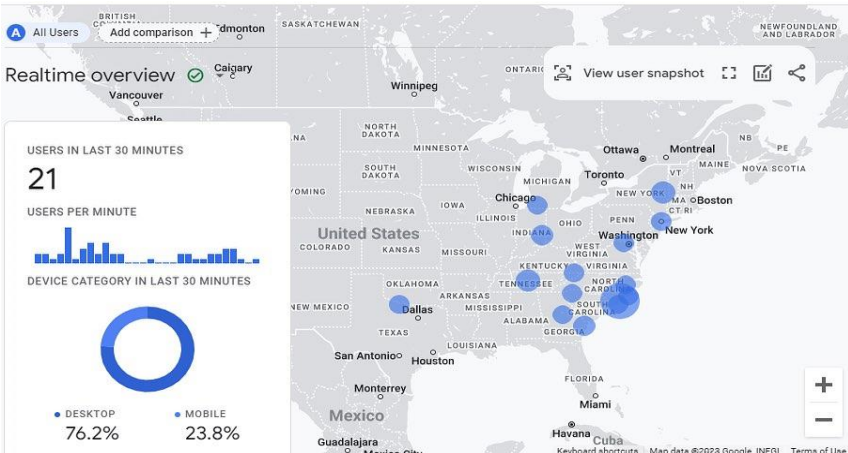
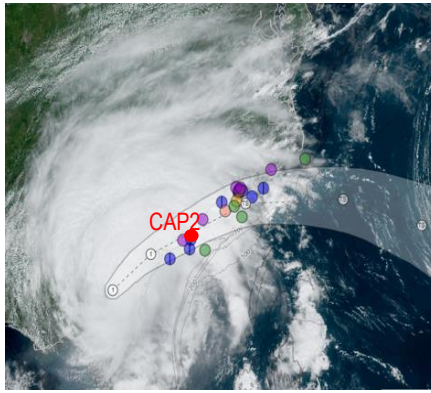
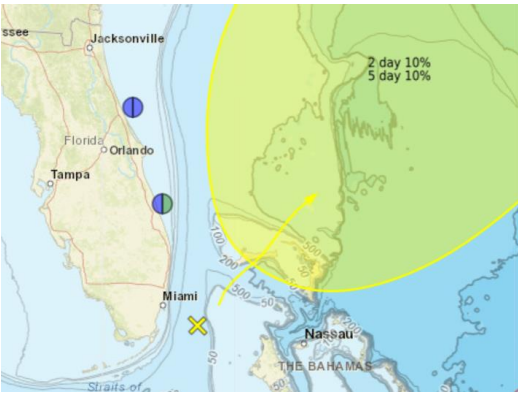
- Integrating CMS observations into FIMAN network
- Deploying new sensors (e.g., Smith Creek, Love Grove)
- New partnerships (e.g., City of Wilmington Offices of Resiliency and Stormwater)

Flooding and Inundation

Research initiatives to understand risks and impacts associated with Climate Change



- Impacts of sea level rise on tidal swamps & coastal forests (Hawkes, Rother, Bresnahan)
- Green infrastructure solutions to support flood mitigation & adaptation in coastal low-lying disadvantaged communities (Pricope, Halls, Mayo)
- Coupled precipitation/inundation models, Web-based visualization products (Gamble, Halls, Leonard, City of Wilmington)

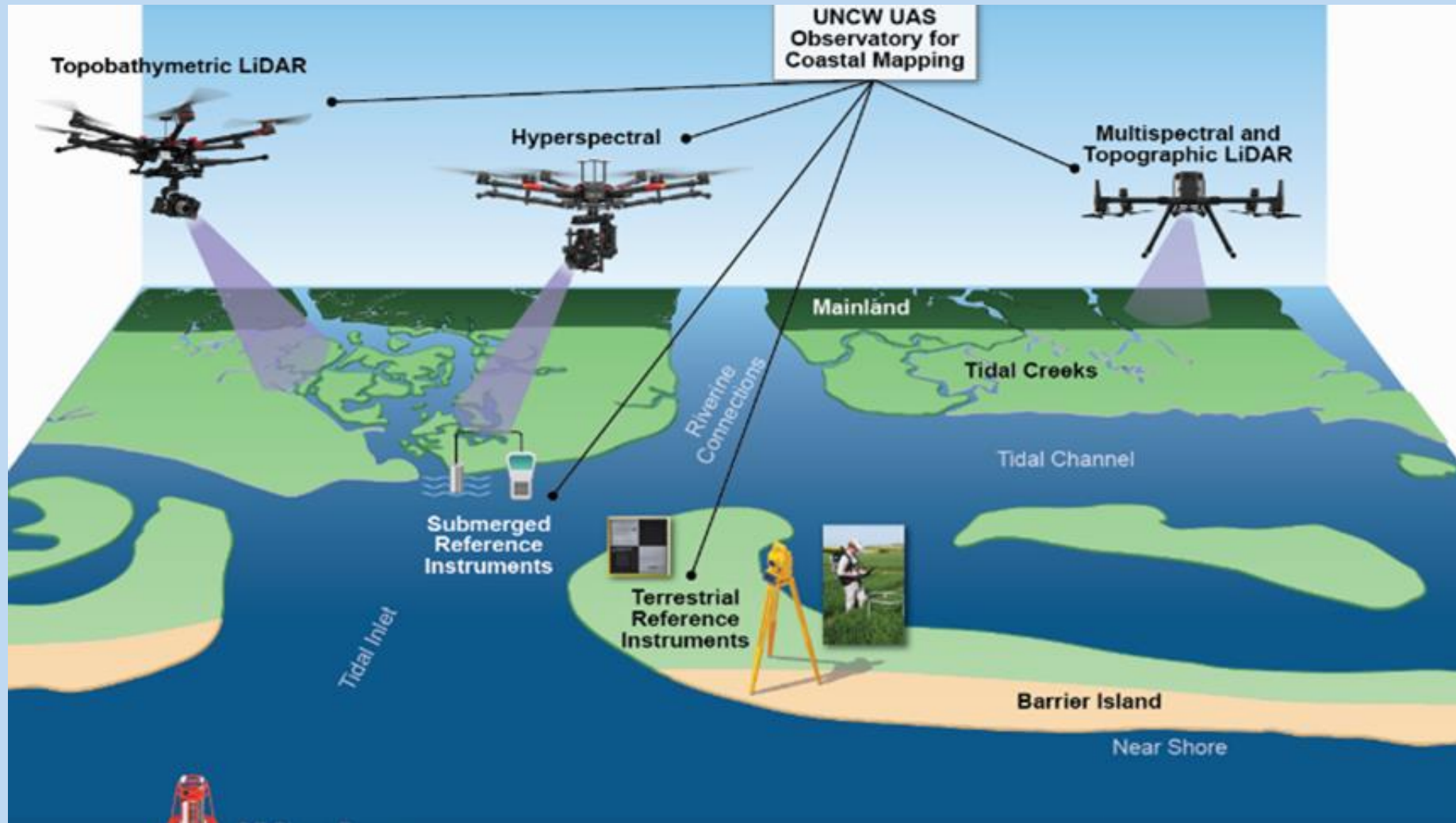


- Two new CORMP buoys on the Florida East Coast (10 nautical miles NE of Ft. Pierce, and 16 nautical miles NE of Ponce Inlet)
- Real-time wave and water level observations during Tropical Storm Ian and other events.
- Support for external initiatives to inform tropical storm modeling and emergency management solutions (e.g. National Oceanic Partnership Program and Sofar Ocean Technologies partnership)
- Enhancements of web-based products (e.g. wave forecasts, spaghetti models, etc.) on cormp.org

Academic Programs



UNCW COASTAL UAS OBSERVATORY



Building drone and sensor savvy workforce



Chaos
Price
Emotion



PFAS Data Analysis Tool

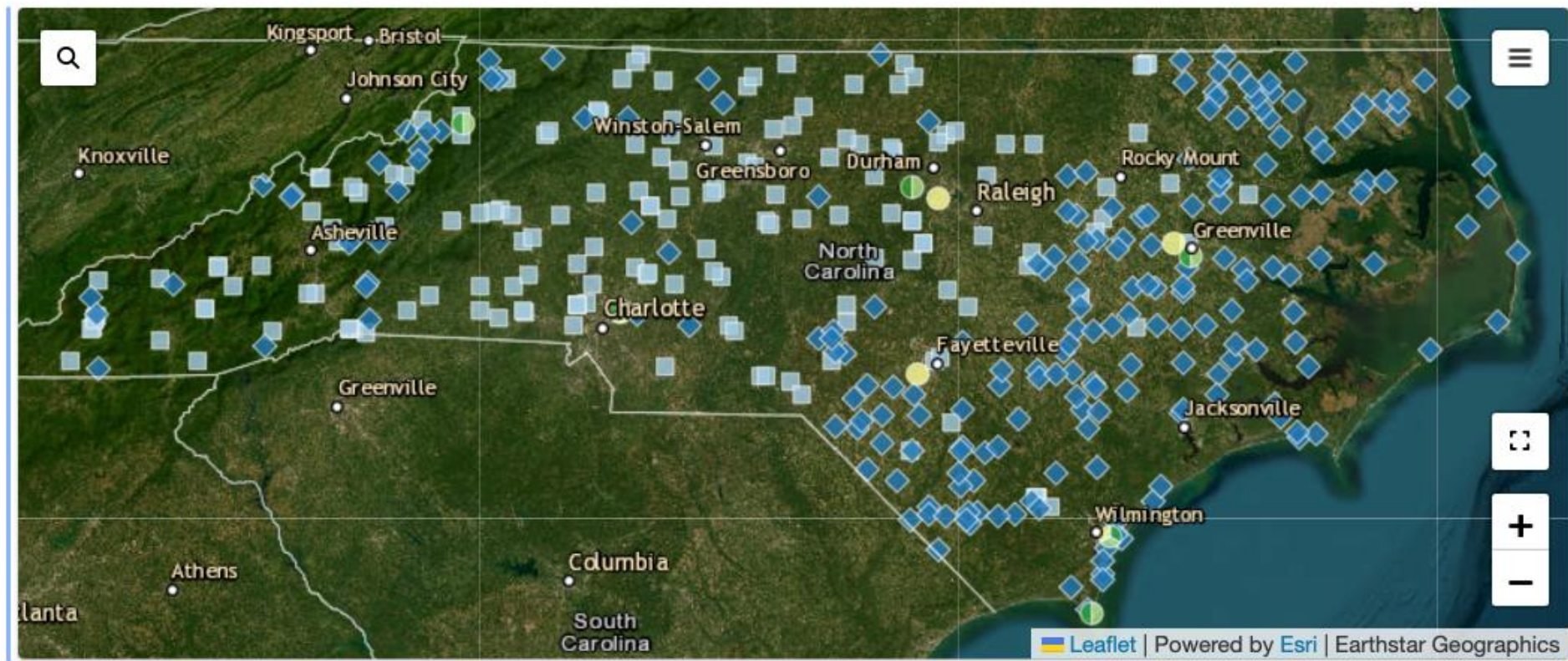
Filter by site type
Show all sites ▼

Sites in View

■ Surface Water: 166 ◆ Well: 210

● Gas: 5 ● Wet: 6 ● Dry: 6

Jump to a site ... ▼



<https://ncpfastnetwork.com/data/>

PFAS Data Analysis Tool

Not just a coastal issue!
But it is impacting our inlets and waterways

Filter by site type
Show all sites

Sites in View

Surface Water: 166

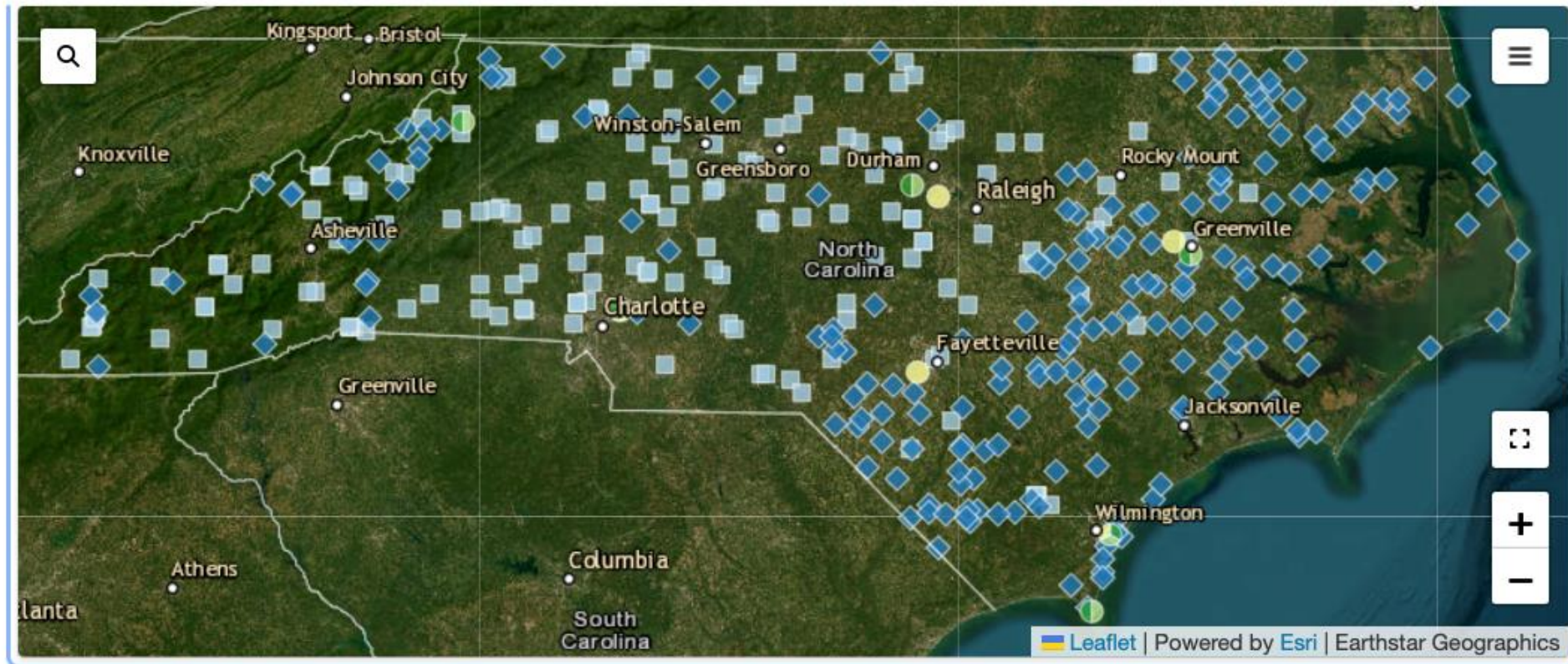
Well: 210

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<https://ncpfastnetwork.com/data/>



NCDHHS

Middle and Lower Cape Fear River

Freshwater Fish Species	Advisory for Women of Childbearing Age (15 to 44 years), Pregnant Women, Nursing Mothers and Children
American Shad, Blue Catfish, Channel Catfish	No more than 1 meal per year, combined across all species.
Bluegill, Flathead Catfish, Largemouth Bass, Striped Bass, Redear	Do Not Eat
Freshwater Fish Species	Advisory for All Other Individuals
American Shad, Blue Catfish, Channel Catfish	No more than 7 meals per year, combined across all species.
Bluegill, Flathead Catfish, Largemouth Bass, Striped Bass, Redear	No more than 1 meal per year, combined across all species.



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL



NORTH CAROLINA
AGRICULTURAL AND TECHNICAL
STATE UNIVERSITY

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Center *for* Marine Science



New Mass Spectrometry Facility for testing PFAS

Ensuring safe and healthy coasts

Funding focus in USA shifting

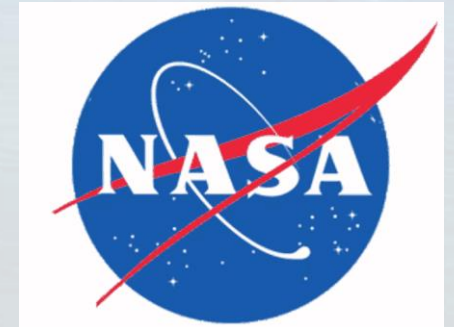
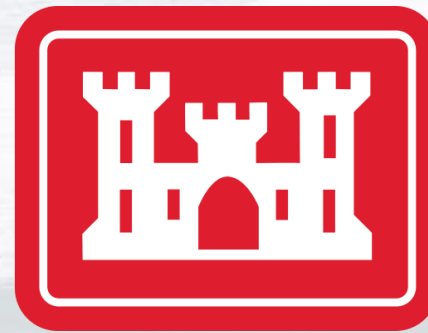
Major grants

Workforce

Community engagement

Use-inspired Innovation

Social Equity & Inclusion



CENTER for MARINE SCIENCE

Advancing Climate Technologies in Eastern NC



NSF ENGINES
DEVELOPMENT AWARD

DEVELOPMENT AWARD



Building Economic Engines

Use-inspired innovation

Regionally relevant focus

Workforce development

NCET is a Type-1 two-year planning grant

Will compete for ten-year \$160 million for Type-2 grant



NORTH CAROLINA
AGRICULTURAL AND TECHNICAL
STATE UNIVERSITY



Ecosystem Technologies - EcoTech



Focal sectors:

Coastal infrastructure

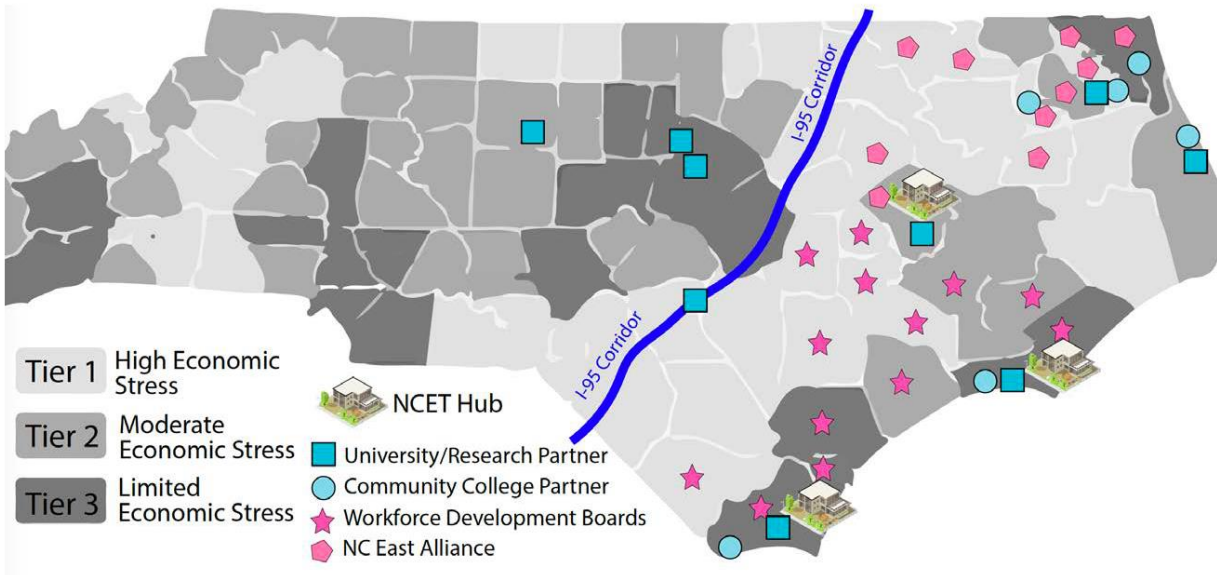
Aquaculture

Renewable energy ancillary services

Five targeted subfields:

- 1) Engineering with Nature
- 2) Environmental Sensing & Signaling
- 3) Ecosystem-Inspired Materials
- 4) Ecosystem Genetic Engineering
- 5) Ecosystem Service Measuring & Modeling

NCET – Anticipated outcome



- NCET will establish:
 - 1) Regional transdisciplinary use-inspired research network
 - 2) Strategies that promote novel R&D opportunities
 - 3) Cross-university network of research translation expertise and capital
 - 4) Community engagement strategies that build participation
- Through these activities we will develop a network to foster growth of EcoTech as a means for promoting community climate resilience while establishing a robust and inclusive regional economy.

We have partners.....

- University of North Carolina Wilmington (UNCW)
- UNCW-Center for Innovation and Entrepreneurship (CIE)
- Duke University Nicholas School of the Environment
- Duke University Pratt School of Engineering
- East Carolina University (ECU)
- North Carolina Agricultural & Technical State University
- Carteret Community College
- Cape Fear Community College
- Research Triangle Institute
- Prospera
- NC IDEA
- North Carolina Renewable Ocean Energy Program
- Cape Fear Council of Governments
- Natrx, Inc.
- Restoration Systems
- Sea and Shoreline, LLC
- Eastern Carolina Workforce Development Board
- Wilmington Chamber of Commerce
- NC A&T STEPs4GROWTH
- NC East Alliance
- PreMiEr-Precision Microbiome Engineering- NSF Engineering Research Center
- North Carolina Biotechnology Center
- ECU-Office of Community Engagement & Research
- Fayetteville State University
- The Coalition-Wilmington Business Resources
- NC Department of Commerce
- ECU-CoPE Water Resources Center
- Duke University DOE/BOEM Wildlife and Offshore Wind
- Duke External Partnerships
- Elizabeth City State University
- Native Shorelines
- Small Business and Technology Development Center (SBTDC)
- UNCW-Center for Marine Science-Chemistry & Biochemistry
- Launch University of North Carolina Greensboro
- College of Albemarle

We have partners.....

but we need more.....

Paige O'Neill
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