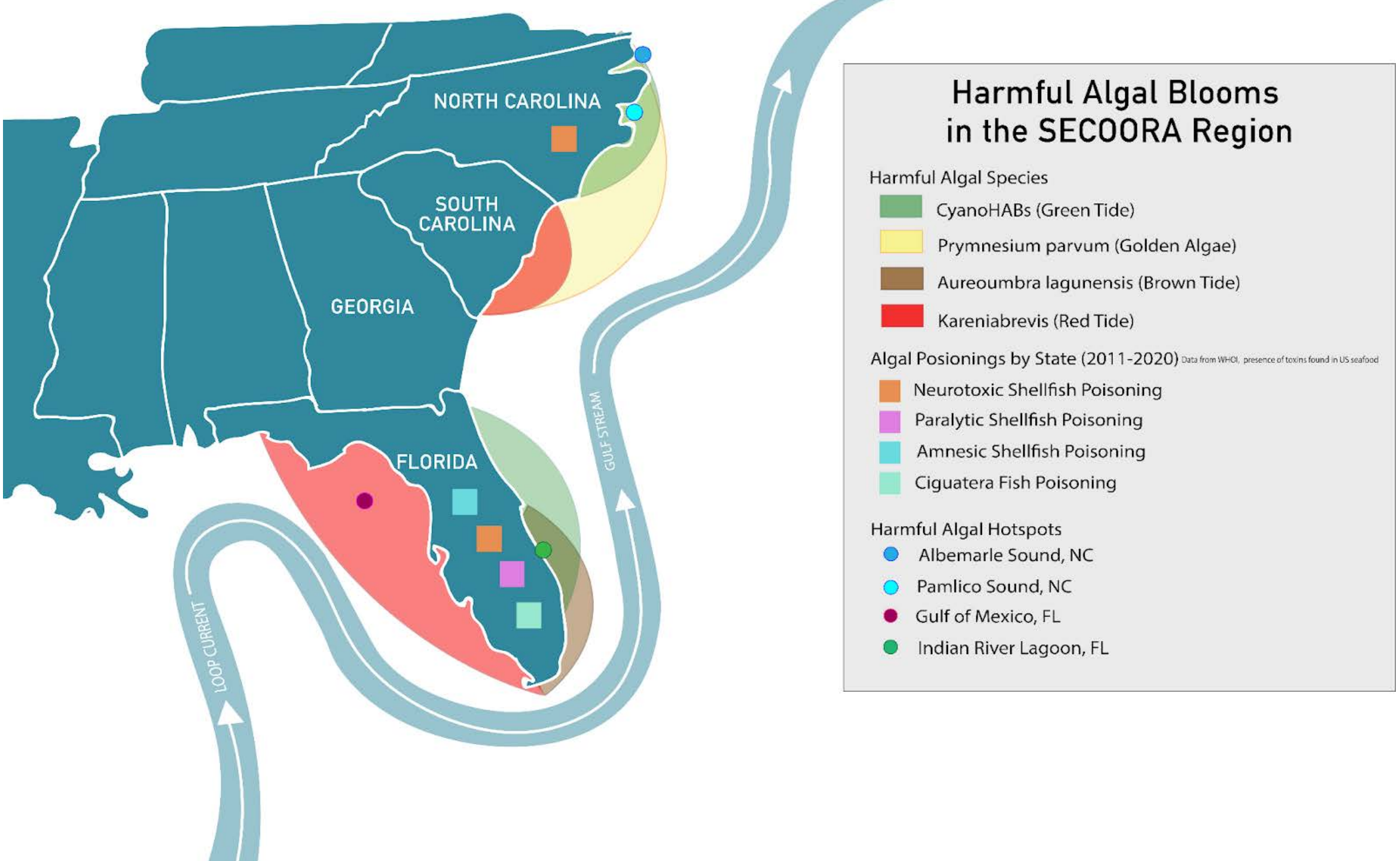
Introduction of HAB Plan

Laura Korman, SECOORA

Image: NOAA AOML


NORTH CAROLINA
SOUTH CAROLINA
GEORGIA
FLORIDA
GULF STREAM
LOOP CURRENT
Harmful Algal Blooms in the SECOORA Region
Harmful Algal Species
CyanoHABs (Green Tide)
Prymnesium parvum (Golden Algae)
Aureoumbra lagunensis (Brown Tide)
Kareniabrevis (Red Tide)
Algal Posionings by State (2011-2020) Data from WHOI, presence of toxins found in US seafood
Neurotoxic Shellfish Poisoning
Paralytic Shellfish Poisoning
Amnesic Shellfish Poisoning
Ciguatera Fish Poisoning
Harmful Algal Hotspots
Albemarle Sound, NC
Pamlico Sound, NC
Gulf of Mexico, FL
Indian River Lagoon, FL

Harmful Algal Blooms (HABs)

- Occur when algal colonies grow out of control and produce harmful toxins
- The onset of harmful algal blooms can be caused by a variety of factors including:
  - Excess nutrients
  - Climate change
  - Altered food webs
- “Coastal HABs” rather than inland freshwater HABs

Image credit: Credit: Ben Yair Raanan, Monterey Bay Aquarium Research Institute

SECOORA's HAB Monitoring and Observing

CURRENTLY

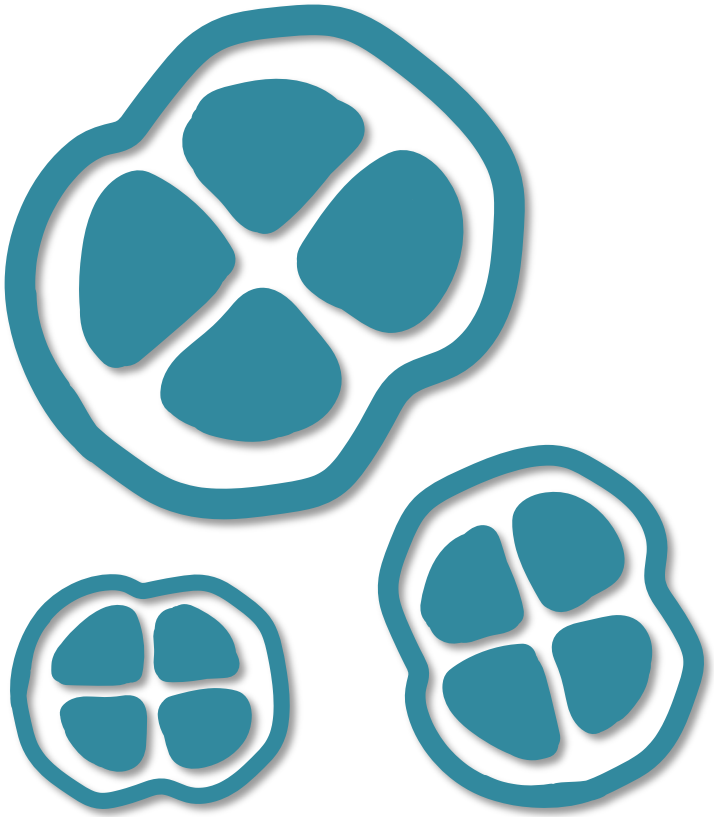
- Monitoring and Modeling Red Tide
- Sargassum modeling
- In situ monitoring (buoys gliders, ship-based field surveys)
- SECOORA's Red Tide Resources webpage
- SECOORA's support is focused on Florida


Image: NOAA AOML

SECOORA's HAB Monitoring and Observing

MOVING FORWARD

- Annual funding is uncertain
- Target monitoring/observing needs of regional hotspots
- SECOORA will host a competitive Request for Proposal (RFP) to award funds



Florida

RED TIDE – GULF OF MEXICO

- Red Tide is the most prolific bloom in the state and has the furthest reaching impacts
- Red Tide is nearly an annual event in the Gulf of Mexico
- Impacts include mass fish die-offs and marine mammal deaths
- Toxins can accumulate in shellfish and when eaten cause Neurotoxic Shellfish Poisoning in humans (WHOI 2018)

Image credit: NOAA

Florida Continued…

INDIAN RIVER LAGOON (IRL)

- Cyanobacteria (toxic) and Brown Tide (non-toxic) blooms in the IRL
- Widespread fish and plant deaths
- Ecological disaster – HABs have contributed to the death of thousands of fish, starvation of hundreds of manatees

Image credit: FL Oceanographic Society

MULTI-REGIONAL – SARGASSUM

- Sargassum (marcoalgae) non-toxic but excess growth and decomposition
- Monitor and forecast pelagic Sargassum in Florida Keys and South Atlantic Bight
- In partnership with GCOOS (Gulf of Mexico Region) and CARICOOS (Caribbean Region)


Image credit: Liz Yongue

Limited Coastal and Estuarine Monitoring/Observing

GEORGIA

- No specific coastal hotspot identified
- Coastal HABs are largely unidentified but that does not mean they are not present
- HAB educational resources available

SOUTH CAROLINA

- No specific coastal hotspot identified
- USC HAB Project – examines the role of climate change on HAB growth
- HAB mapping webpage

North Carolina

THE SOUNDS OF NORTH CAROLINA

- Pamlico Sound
- Albemarle Sound
- Cyanobacteria blooms are a continual issue
- Result in fish kills and impacts to recreation
- NOAA NCCOS – HAB monitoring using satellite imagery (right)

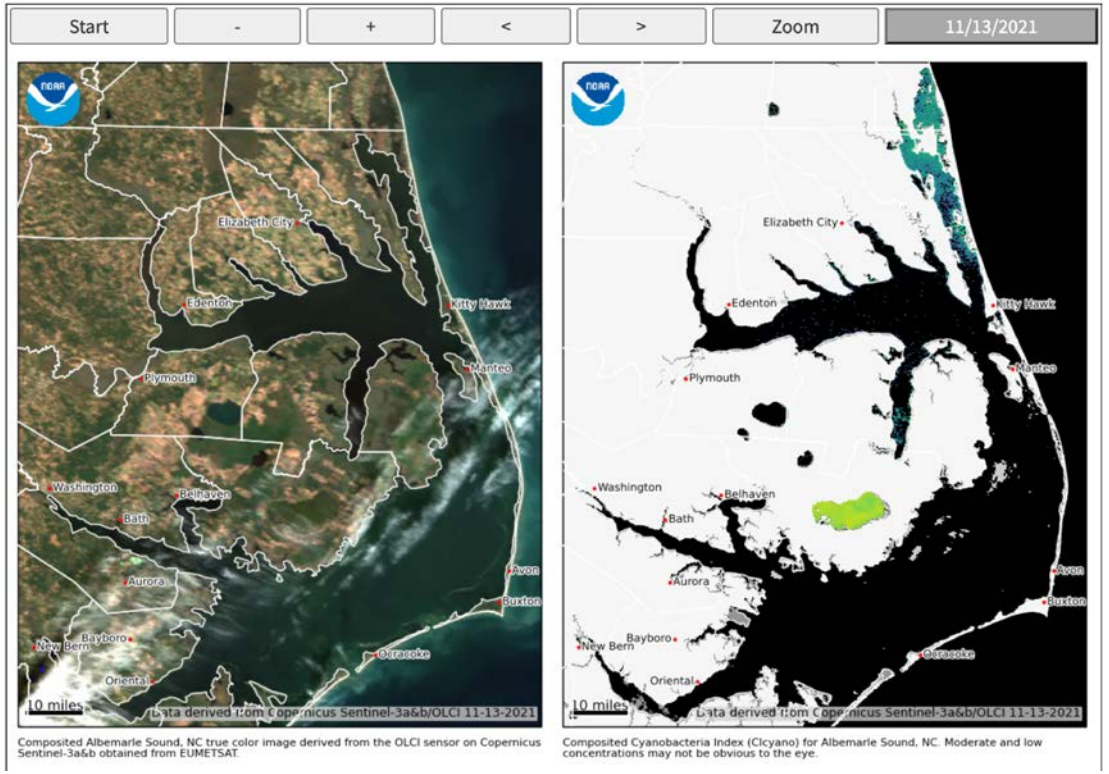


Image credit: NOAA NCCOS

Moving Forward

- Community consensus on identified hotspots
- Initiate & sustain HAB monitoring/observing in regional hotspots
- Focus on observing assets or predicative tools and data management needs
- Host a competitive RFP
- Work to increase funding

Image: NOAA AOML