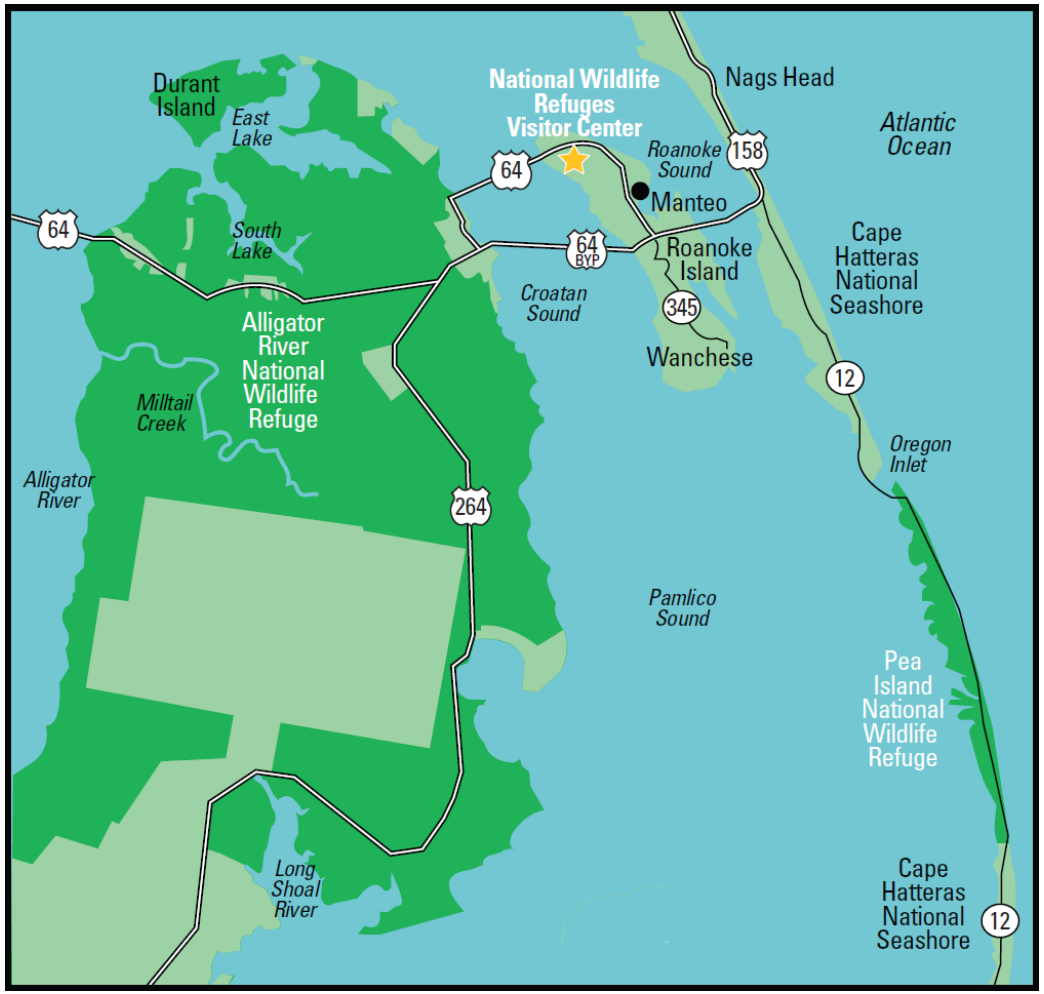


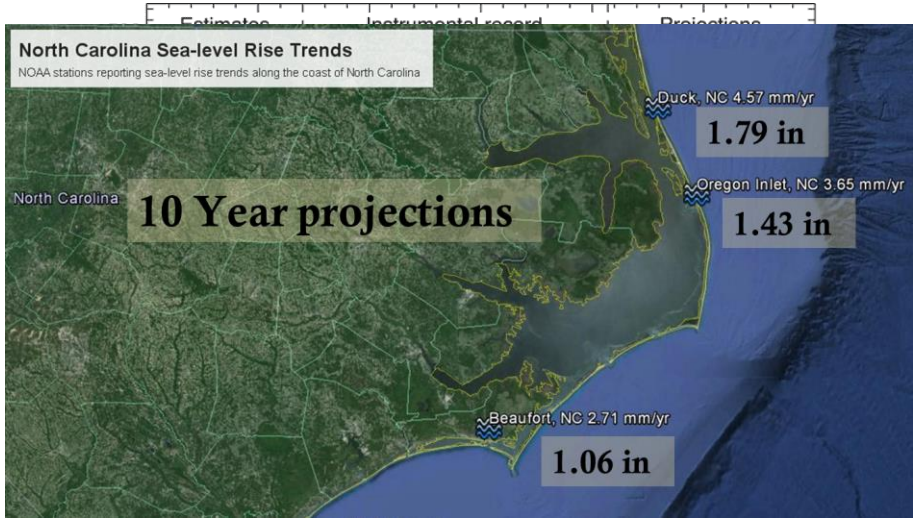
The Nature Conservancy

Adaptive Management Strategies to Address Saltwater Intrusion at Alligator River NWR

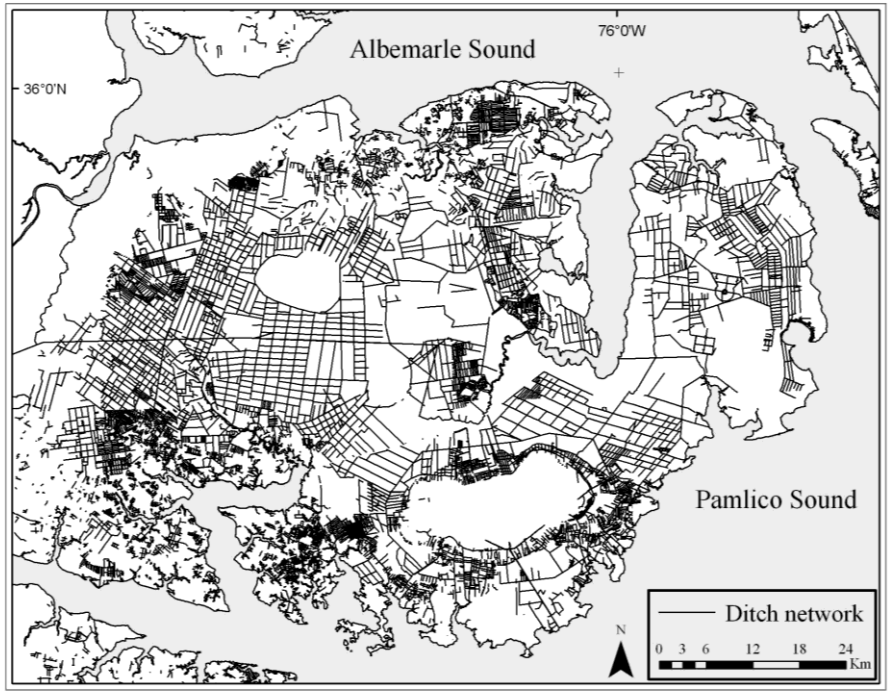
OCTOBER 2019

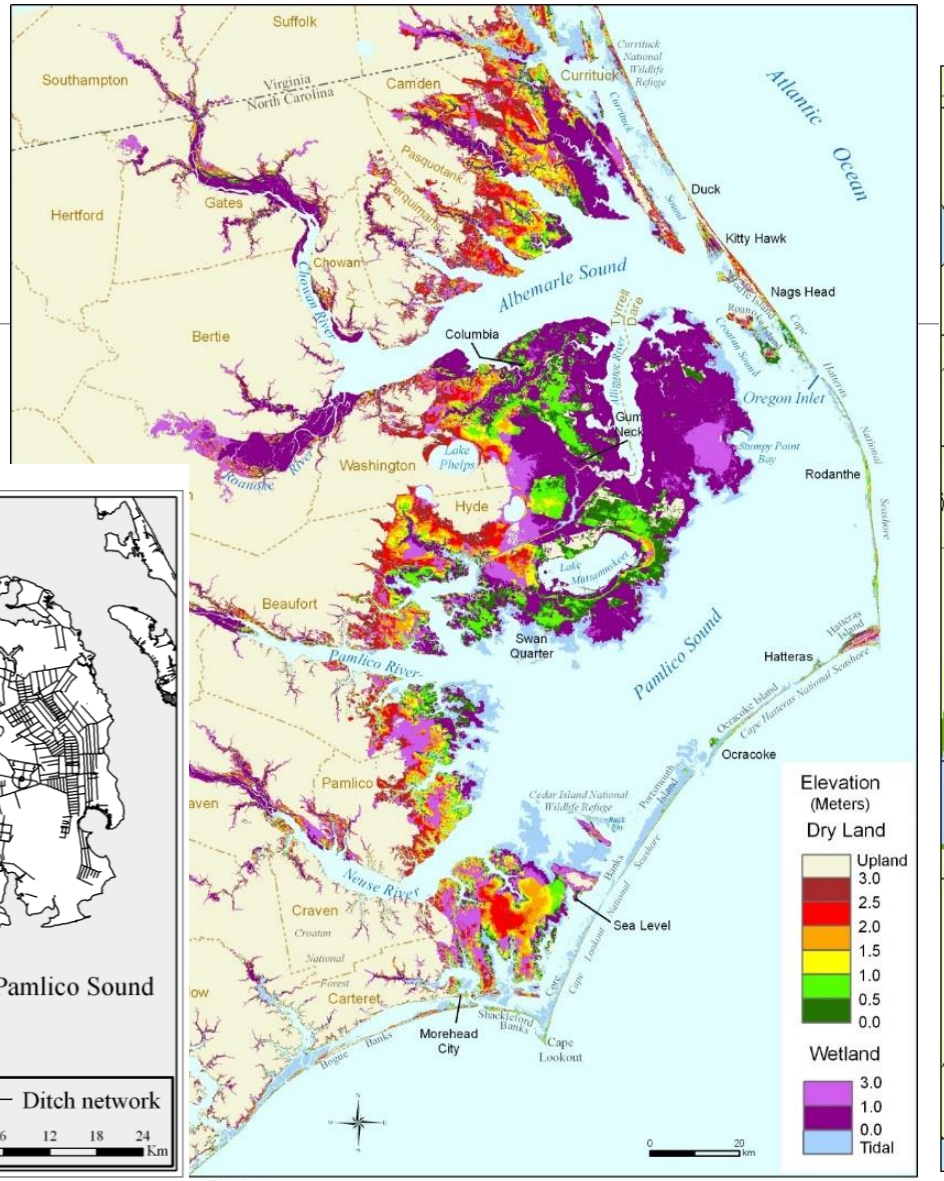
BRIAN BOUTIN AND ERIC SODERHOLM
THE NATURE CONSERVANCY
ALBEMARLE-PAMLICO SOUNDS PROGRAM

Climate Change on the Coast



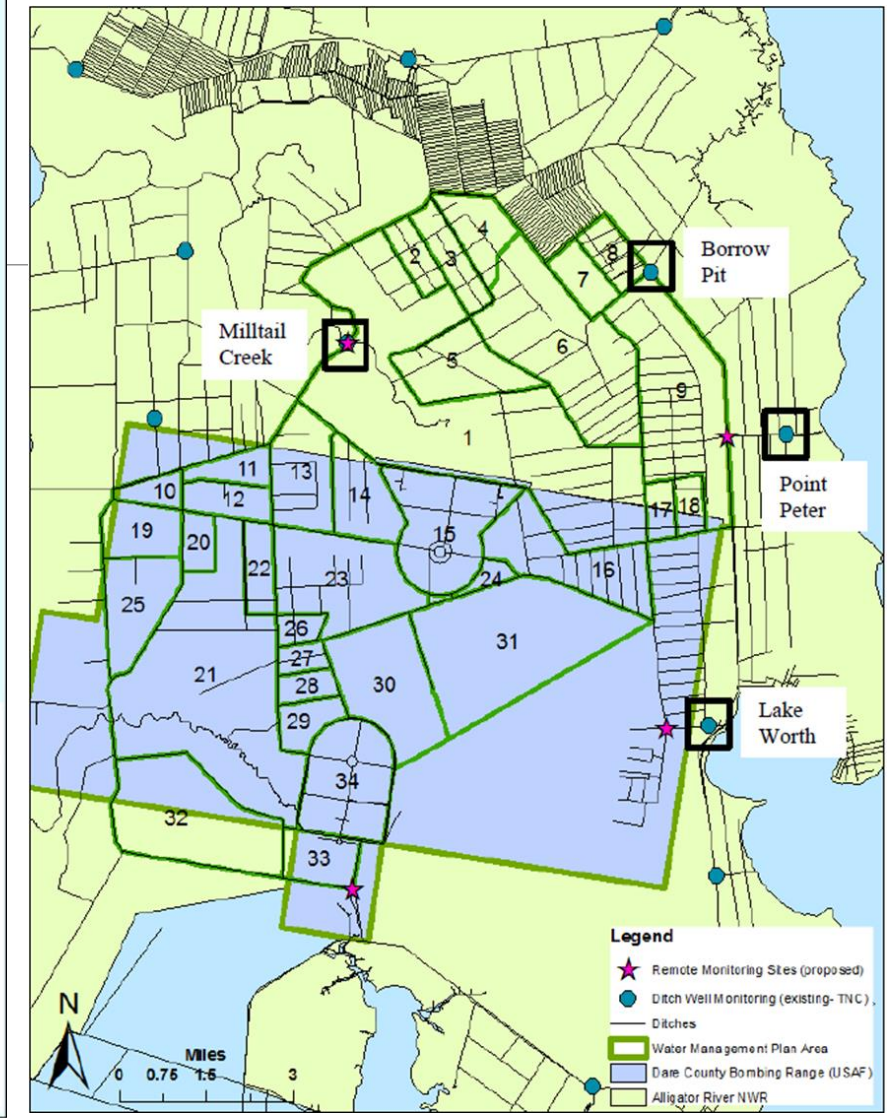
Landscape Attributes





e to Sea Level

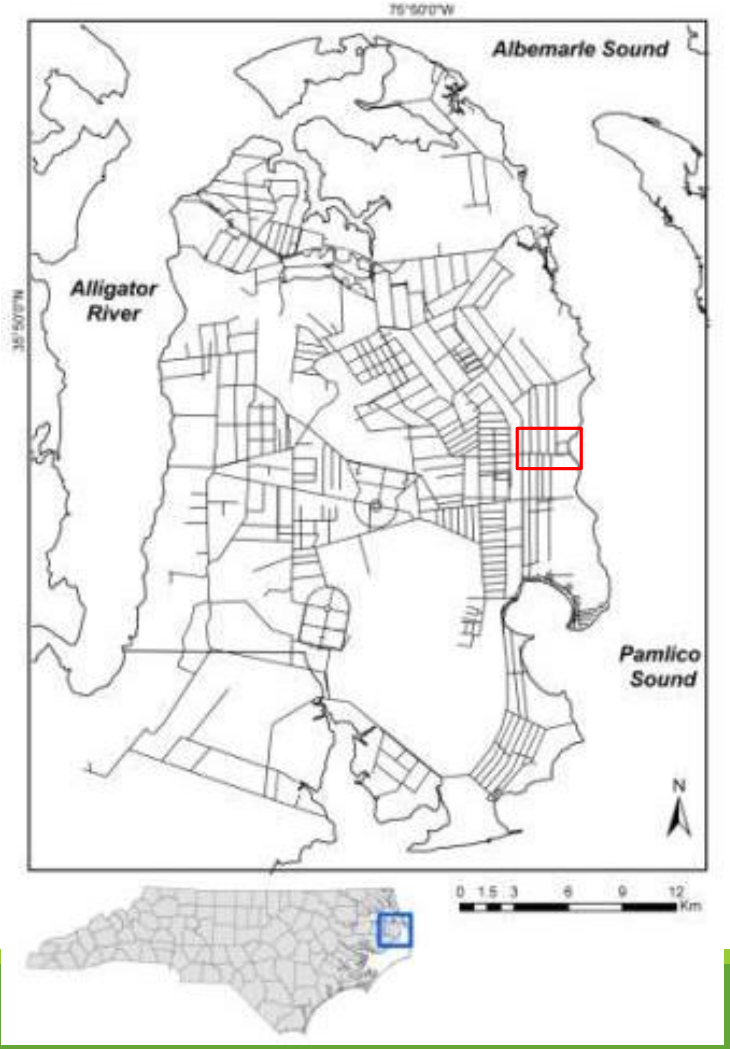
Elevations are above spring high water, which is the average high tide during new and full moons, and approximately the inland boundary of tidal wetlands. This map is a general graphical representation of elevations in the area depicted, not designed to estimate the precise elevations at specific locations. Actual elevations at specific locations may be 30 cm above or below the elevation shown.
Source: J.G. Titus and J Wang. 2008. "Maps of Lands Close to Sea Level along the Mid-Atlantic Coast".
US Environmental Protection Agency.



Climate Adaptation Strategies

- Improve water management capability
- Set the stage for change through vegetative restoration
- Reduce shoreline erosion using oyster reefs

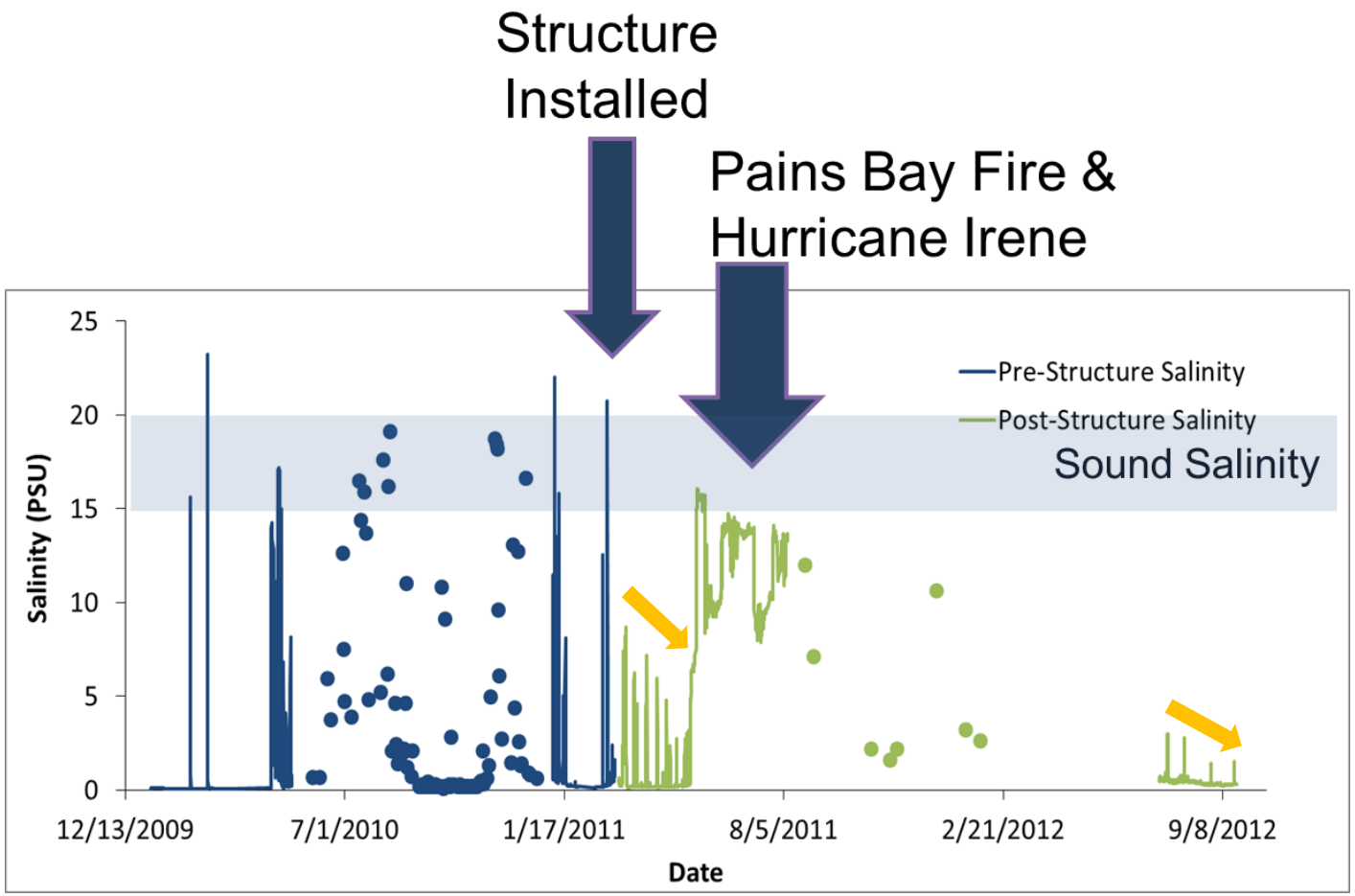
Starting on the Frontline



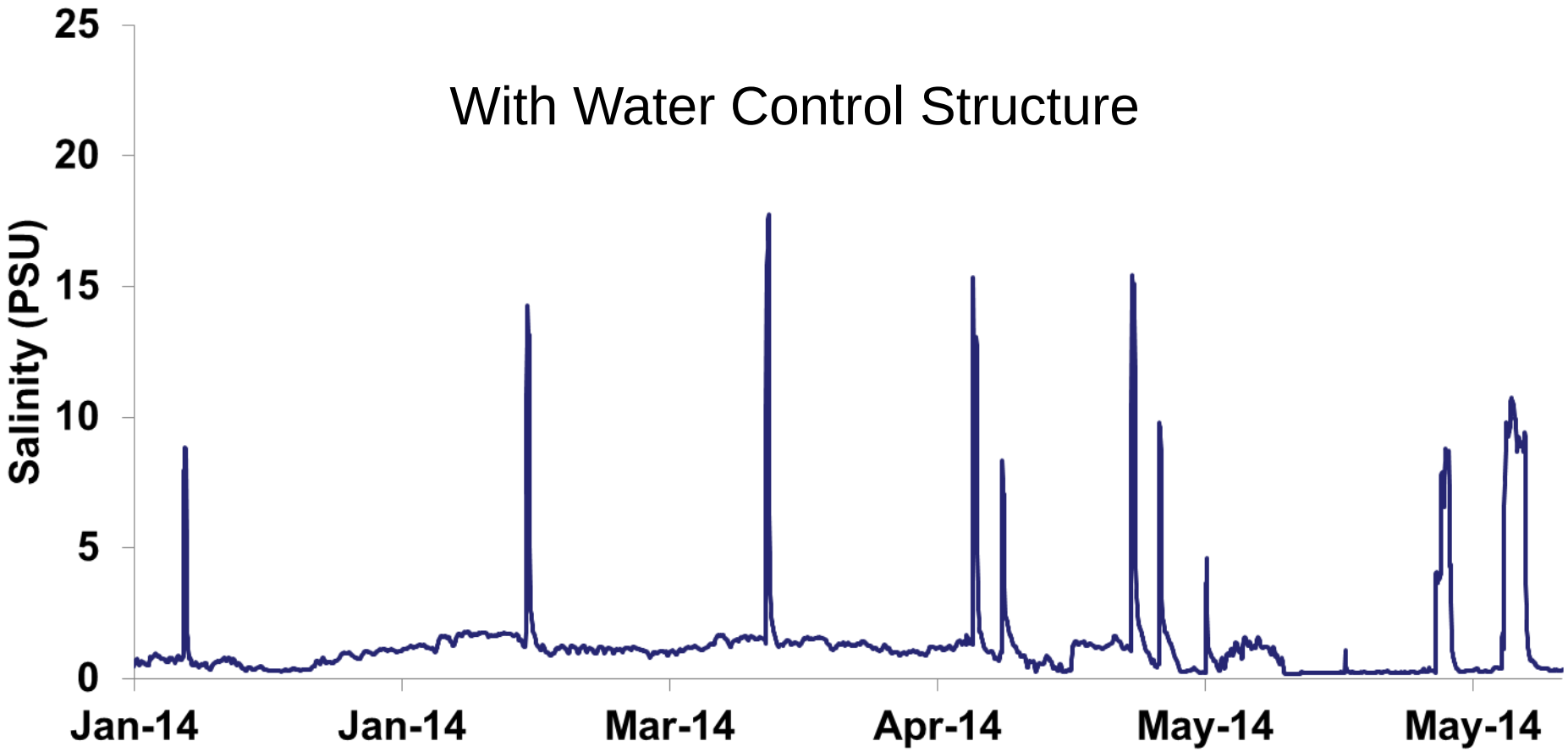
- Alligator River NWR
  - Point Peter Rd
- Visible impacts
  - Ditching
  - Vegetation die-off
  - Shoreline erosion
- Good Accessibility
  - Monitoring
  - Education

Point Peter Road: Water Management

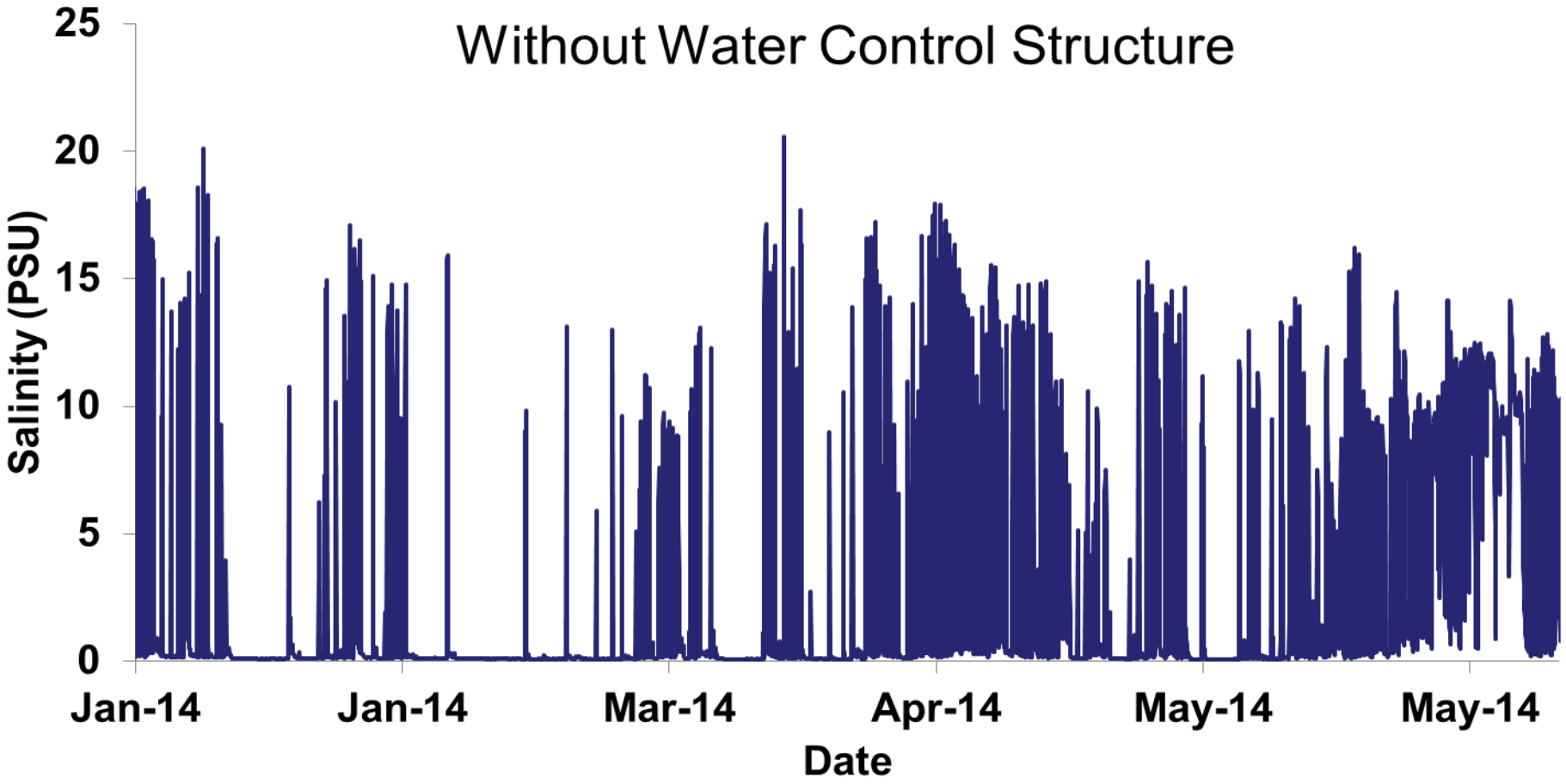
Point Peter Road: Water Management



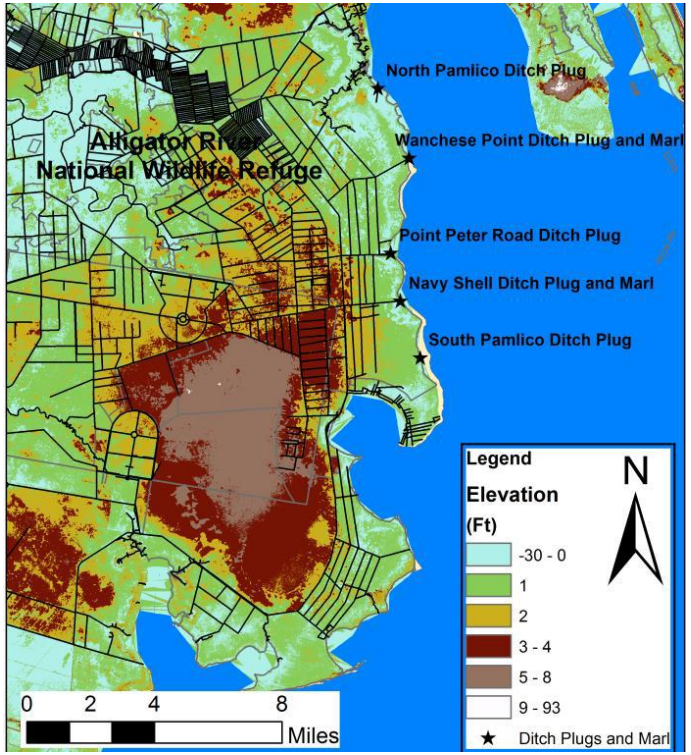
Point Peter Road Salinity 2014

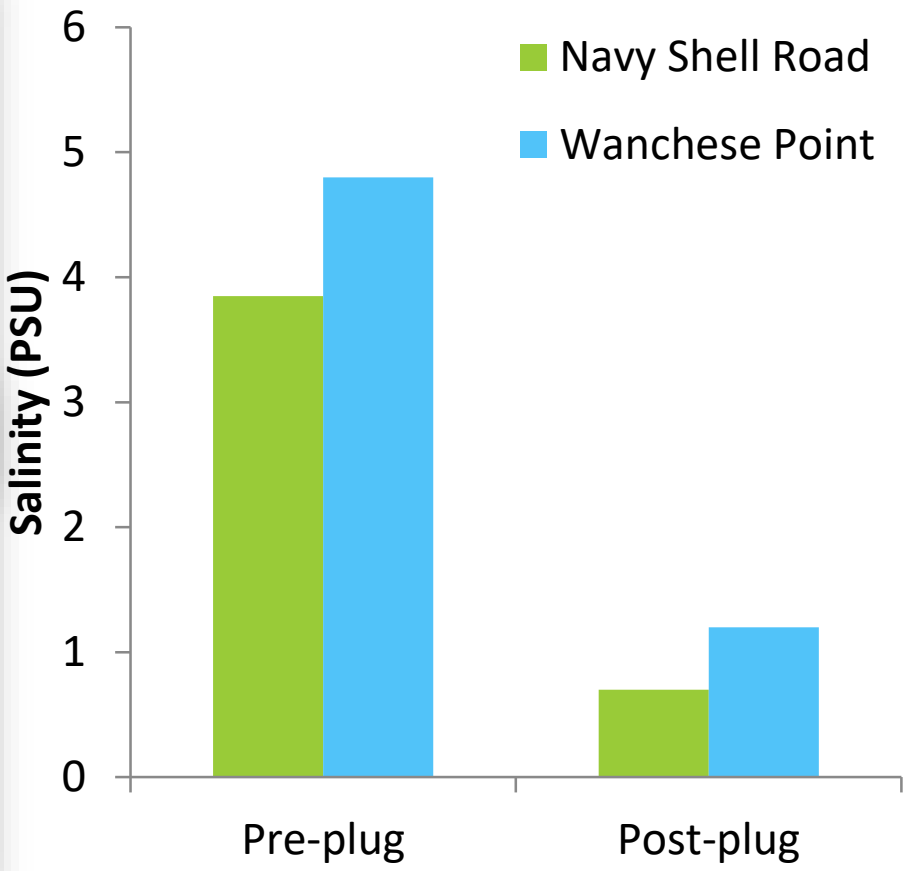


Lake Worth Road Salinity 2014



Point Peter Road: Water Management

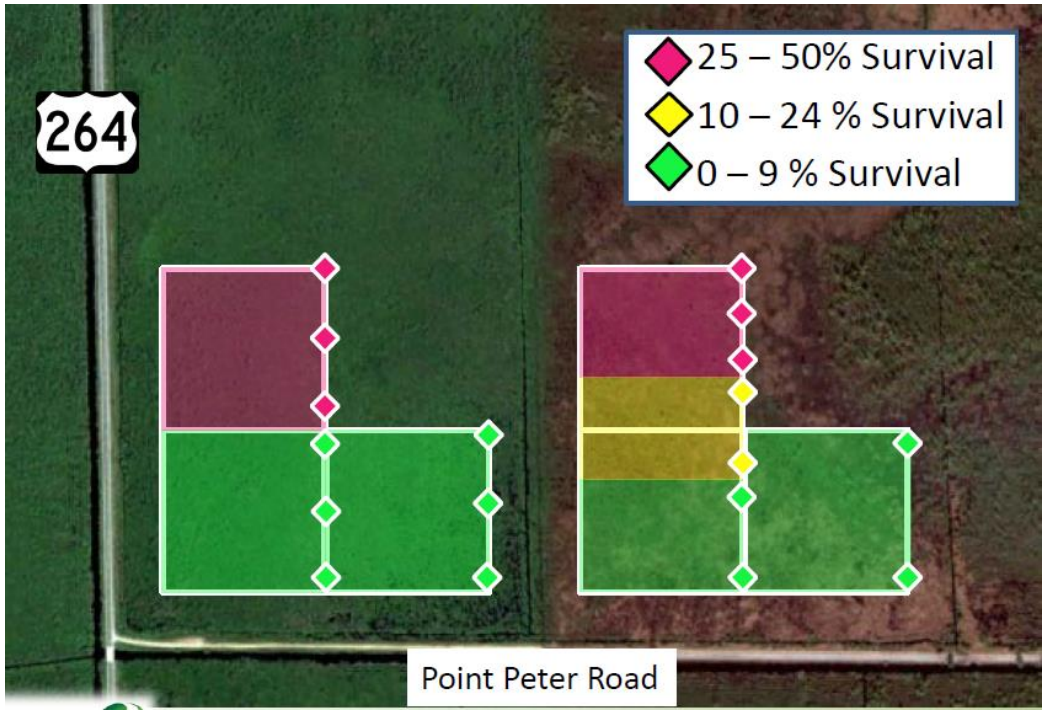




Vegetative Restoration

- 40 acre test plot
- 11,500 bald cypress
- Also tested black gum and pond pine

Vegetative Restoration



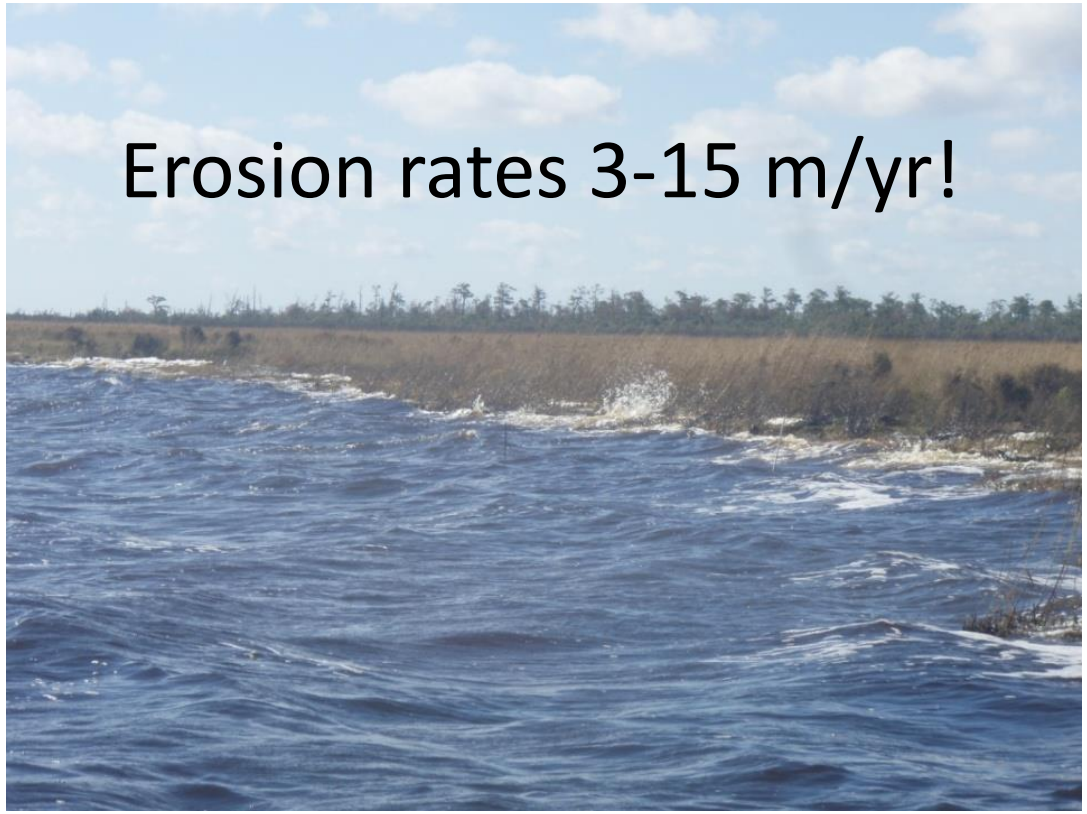
Refining Our Approach: Vegetative Restoration

FLOOD-TOLERANT TREES

SALT AND FLOOD-TOLERANT GRASSES

Vegetation Restoration

Oyster Restoration

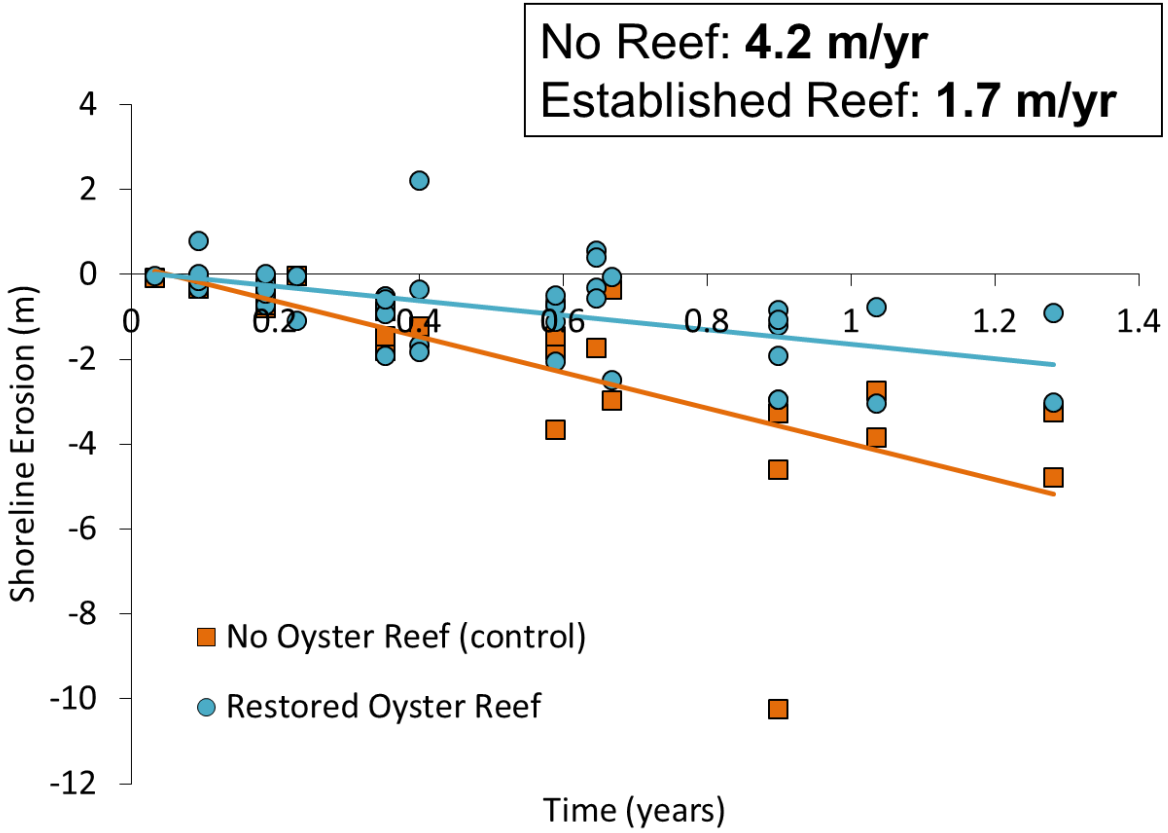


Oyster Restoration

Oyster Restoration

Oyster Restoration

Oyster Restoration



Catalyzing Partnerships

Eight federal agencies, nine state agencies, nine local communities, 13 universities, and ten non-profit organizations.

QUESTIONS?