SECOORA

STAKEHOLDER MEETING

Annual Meeting • May 20, 2026

THANK YOU SPONSORS

BRONZE

COASTAL SCIENCE & ENGINEERING

SILVER

CODAR
ocean sensors

AGENDA

1:45 – 2:00 PM	**Welcome** Patrick Barrineau, Board Chair
2:00 – 2:45 PM	**Using Surface Elevation Table (SET) Data to Guide Decision-Making** *Objective: Provide a broad overview of the role of SETs in coastal management, prioritizing investments, and local decision-making.* Moderator: Brandon Puckett, NOAA NCCOS Speakers (confirmed): •Debra Hernandez, SECOORA •Dr. Nisse Goldberg, Jacksonville University •Jenny Davis, NOAA NCCOS •Wilhelmina Bradway, City of Jacksonville, NC
2:45 – 5:00 PM	**Field Trip: North Carolina Aquarium at Pine Knoll Shores (pre-registration required)**

FIELD TRIP

NORTH CAROLINA AQUARIUM AT PINE KNOLL SHORES
1 ROOSEVELT BLVD, PINE KNOLL SHORES, NC 28512

6 min (3.0 miles)

via Salter Path Rd

Fastest route

DoubleTree by Hilton Hotel Atlantic Beach Oceanfront
2717 W Fort Macon Rd, Atlantic Beach, NC 28512

- Head toward Pelican Dr
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- Continue onto Salter Path Rd
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- Turn right onto Pine Knoll Blvd
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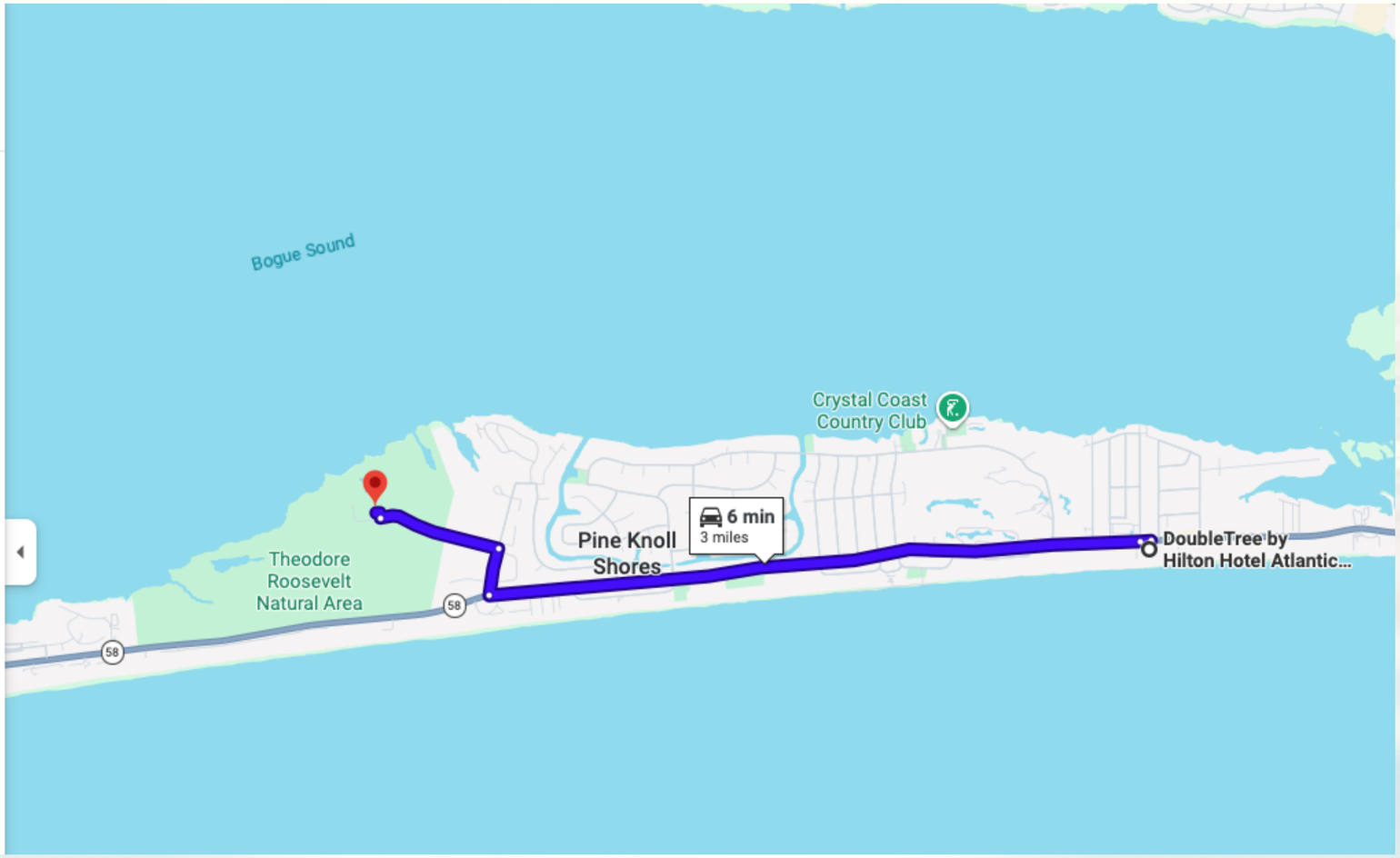
North Carolina Aquarium at Pine Knoll Shores
1 Roosevelt Blvd, Pine Knoll Shores, NC 28512



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USING SURFACE ELEVATION TABLE (SET) DATA TO GUIDE DECISION-MAKING

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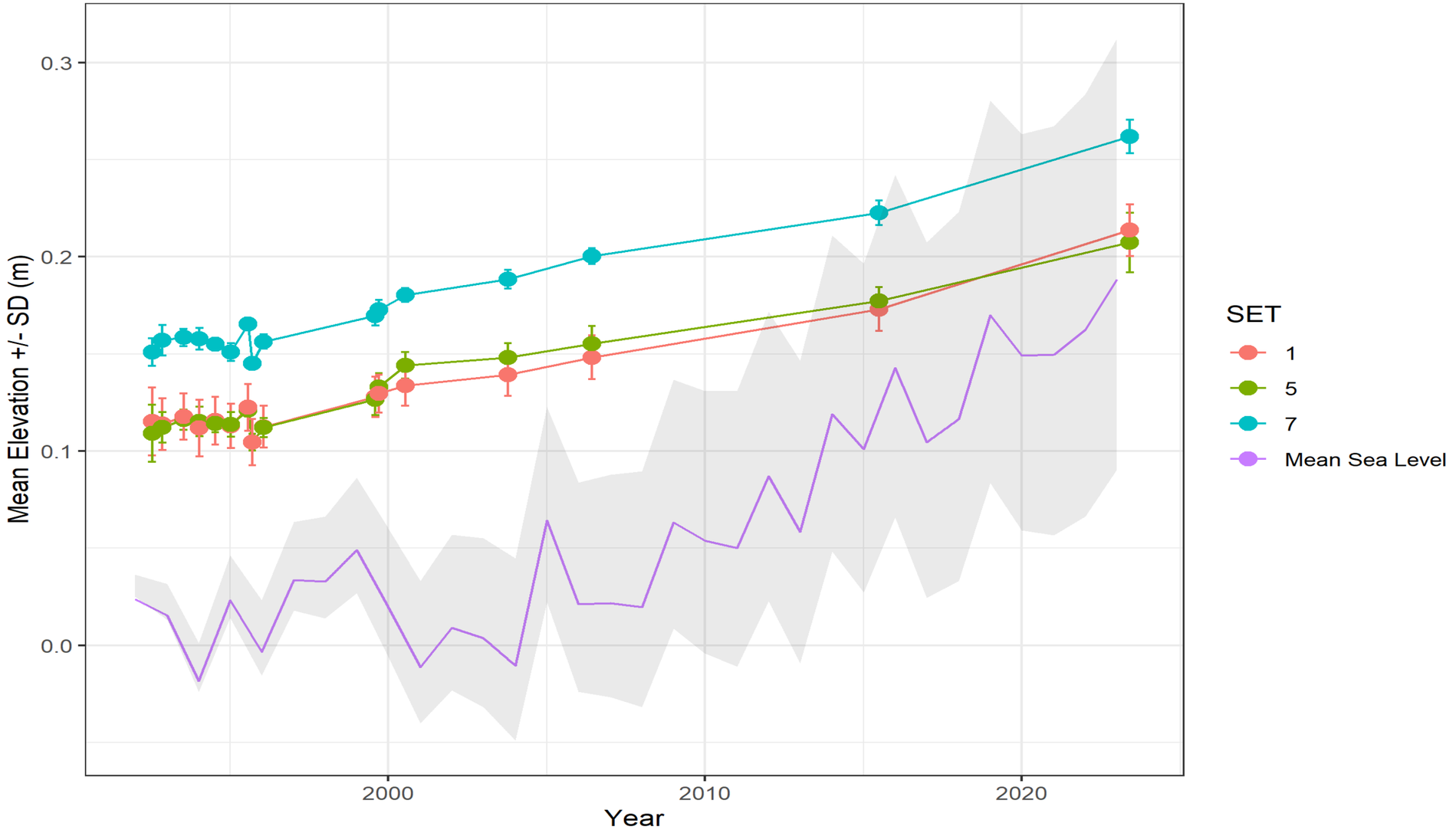
Small Plots, Big Insights: Translating SET plot data into Management-Relevant Guidance

Jenny Davis, NOAA NCCOS

Because SETs provide mm scale resolution, they allow for direct comparison with SL trends



In a perfect world SETs and Water Level sensors would be installed together at each site

SETs in North Carolina

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Installed by a variety of different organizations

to support site-specific questions

no previous effort to compare across devices

Jacksonville NC
Camp Lejeune MCAS New River
A Caring Community

USGS
science for a changing world

U.S. FISH & WILDLIFE SERVICE
DEPARTMENT OF THE INTERIOR

NCCOS

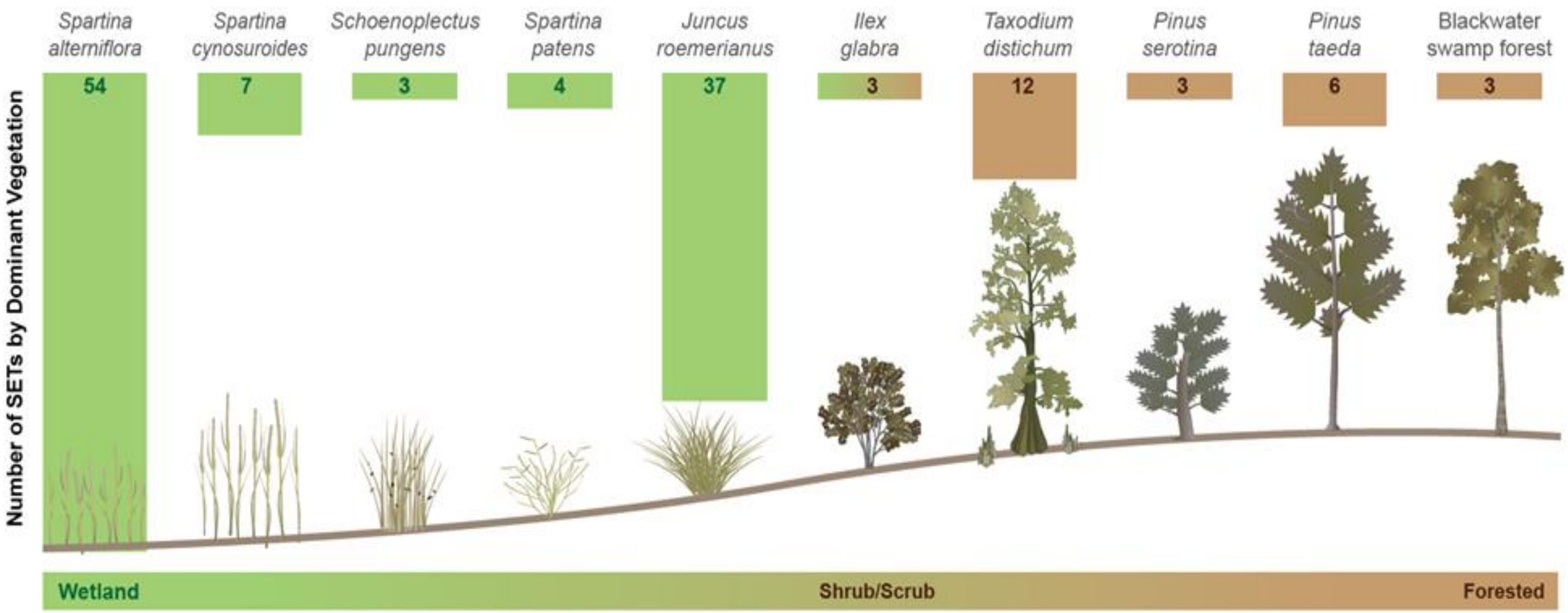
Audubon
NORTH CAROLINA

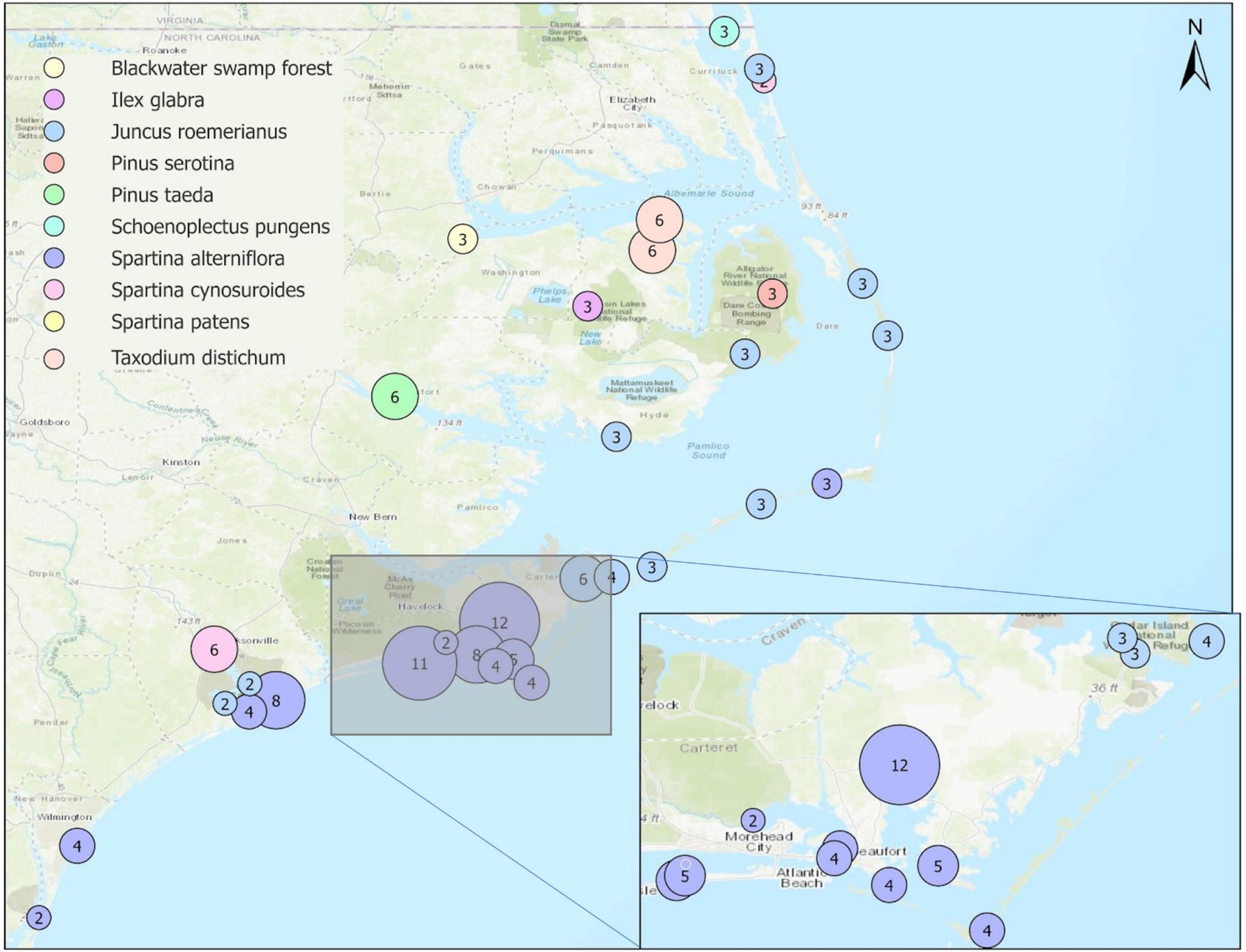
NORTH CAROLINA
COASTAL RESERVE &
NATIONAL ESTUARINE
RESEARCH RESERVE

The Nature Conservancy

NC STATE UNIVERSITY

Vegetative Community Representation





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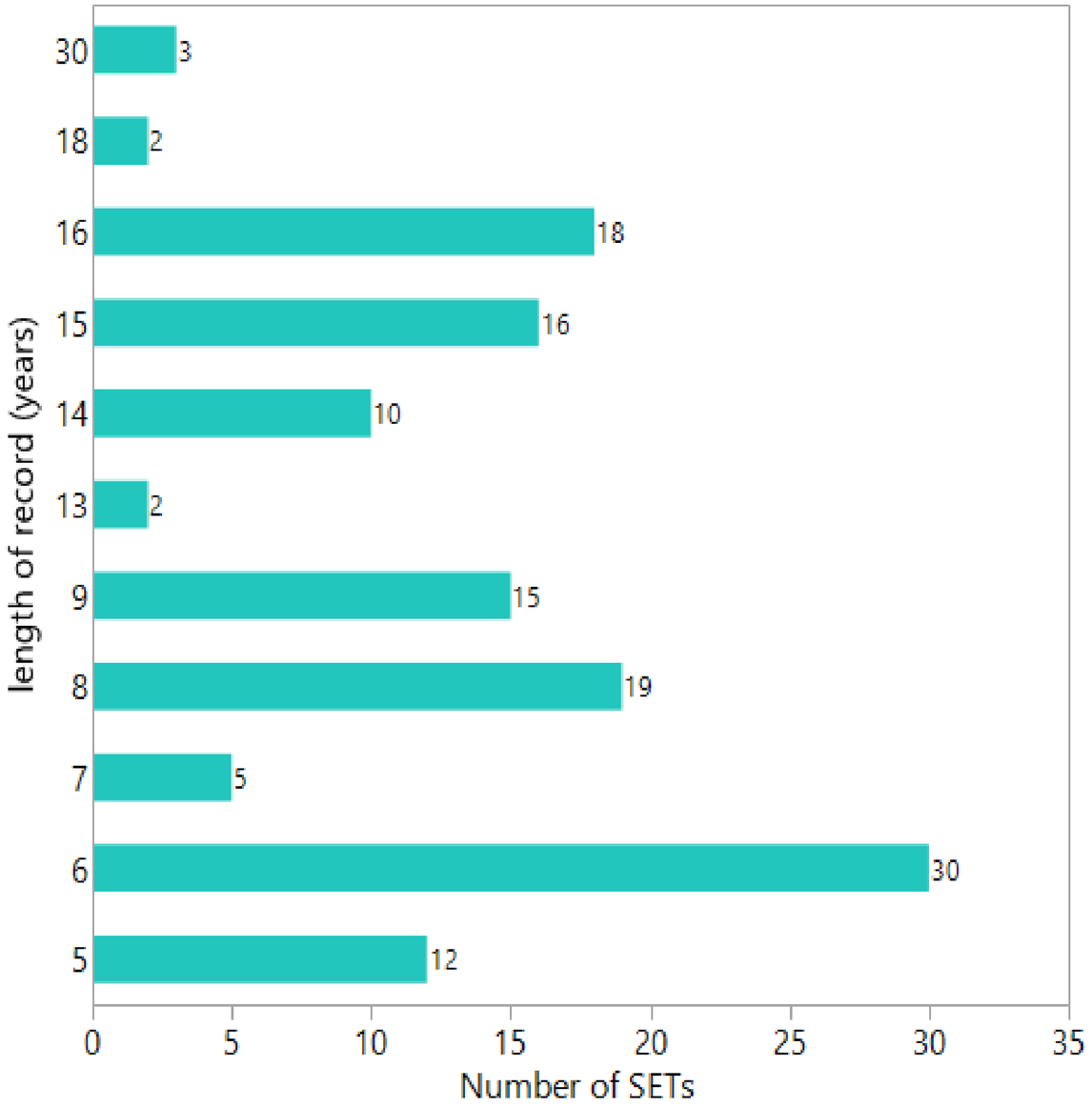
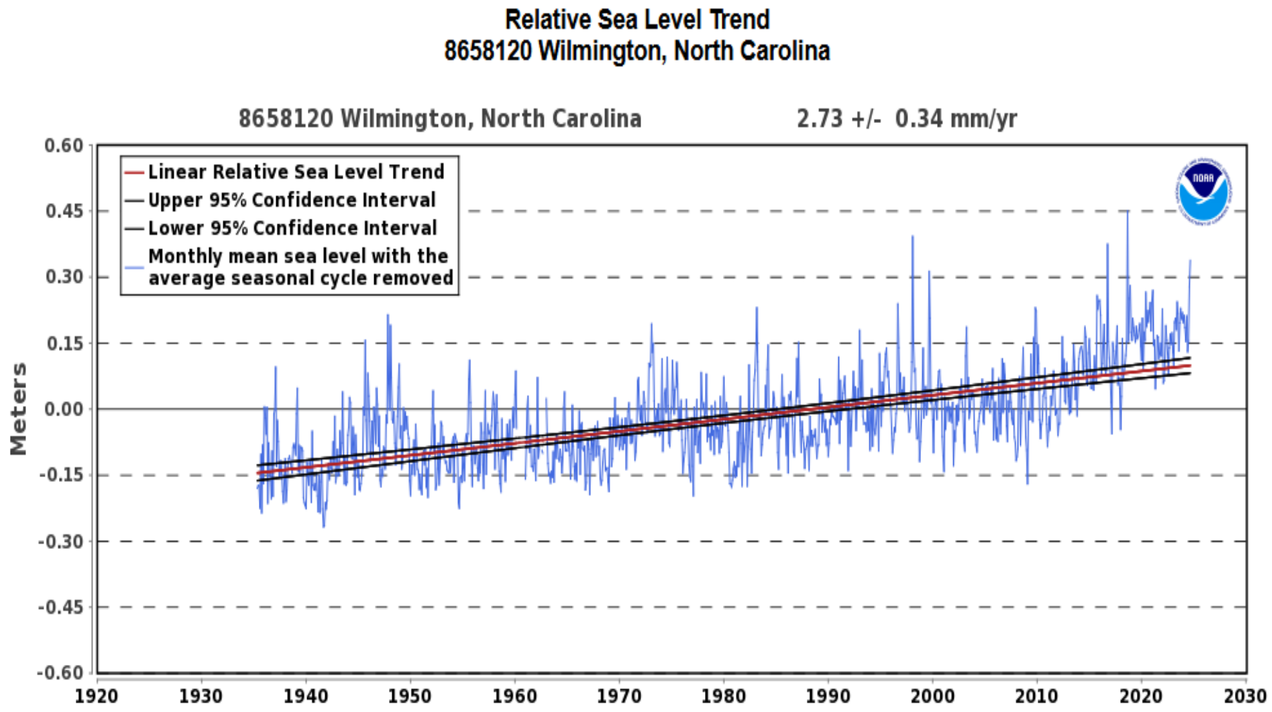
PLD010B	
Affiliation:	USFWS/Moorman
Type of Institution:	Government
Salinity:	Polyhaline 18 to <30
Geomorphic Setting:	Estuarine Brackish Marsh
Site Label:	Pea Island NWR
Marker Horizons:	YES
Data Ownership:	USFWS
Property Ownership:	USFWS
Installation Year:	2012
Intra-annual data available:	Yes
Last Date Sampled:	2020
SET Trend rate:	Positive
Hydrologic Zone:	high intertidal
Vegetation Community Type:	Black Needlerush
SET Type:	Deep Rod SET (~2m to 25m+)
Dominant Plant Community:	Juncus roemarianus
Treatment:	Natural
Contact Email:	Michelle_moorman@fws.gov
Contact Phone #:	9196053980
Link to Reports:	Reports
Site Active?	Yes

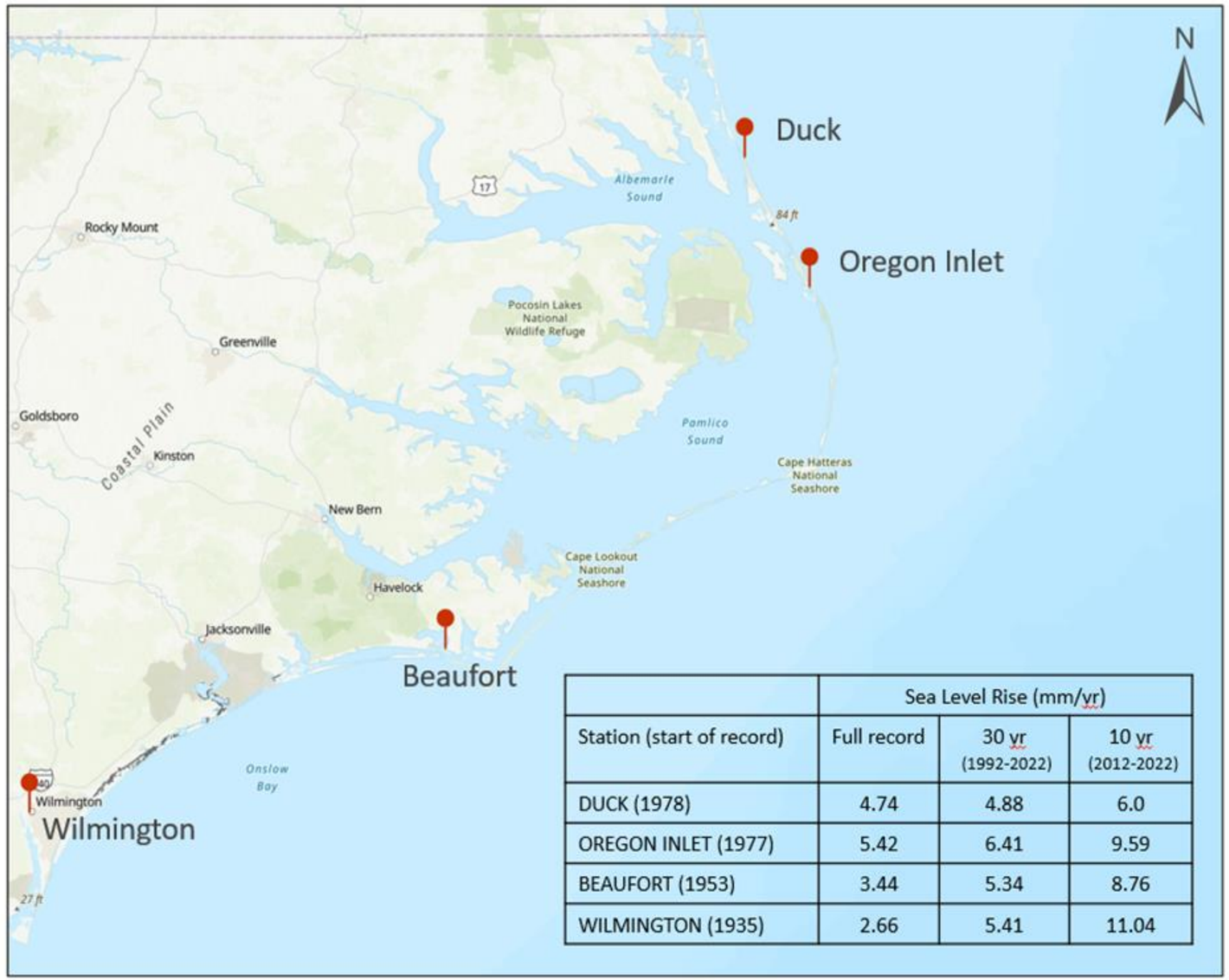
https://ncseagrant.ncsu.edu/ncSET/



NC SET data records span a variety of time frames and SL varies over time….



Our Approach



Station (start of record)	Sea Level Rise (mm/yr)		
	Full record	30 yr (1992-2022)	10 yr (2012-2022)
DUCK (1978)	4.74	4.88	6.0
OREGON INLET (1977)	5.42	6.41	9.59
BEAUFORT (1953)	3.44	5.34	8.76
WILMINGTON (1935)	2.66	5.41	11.04

Compare all SET trends (regardless of record duration) to the 10 yr and 30 yr rates of local rSLR averaged across all four gauges

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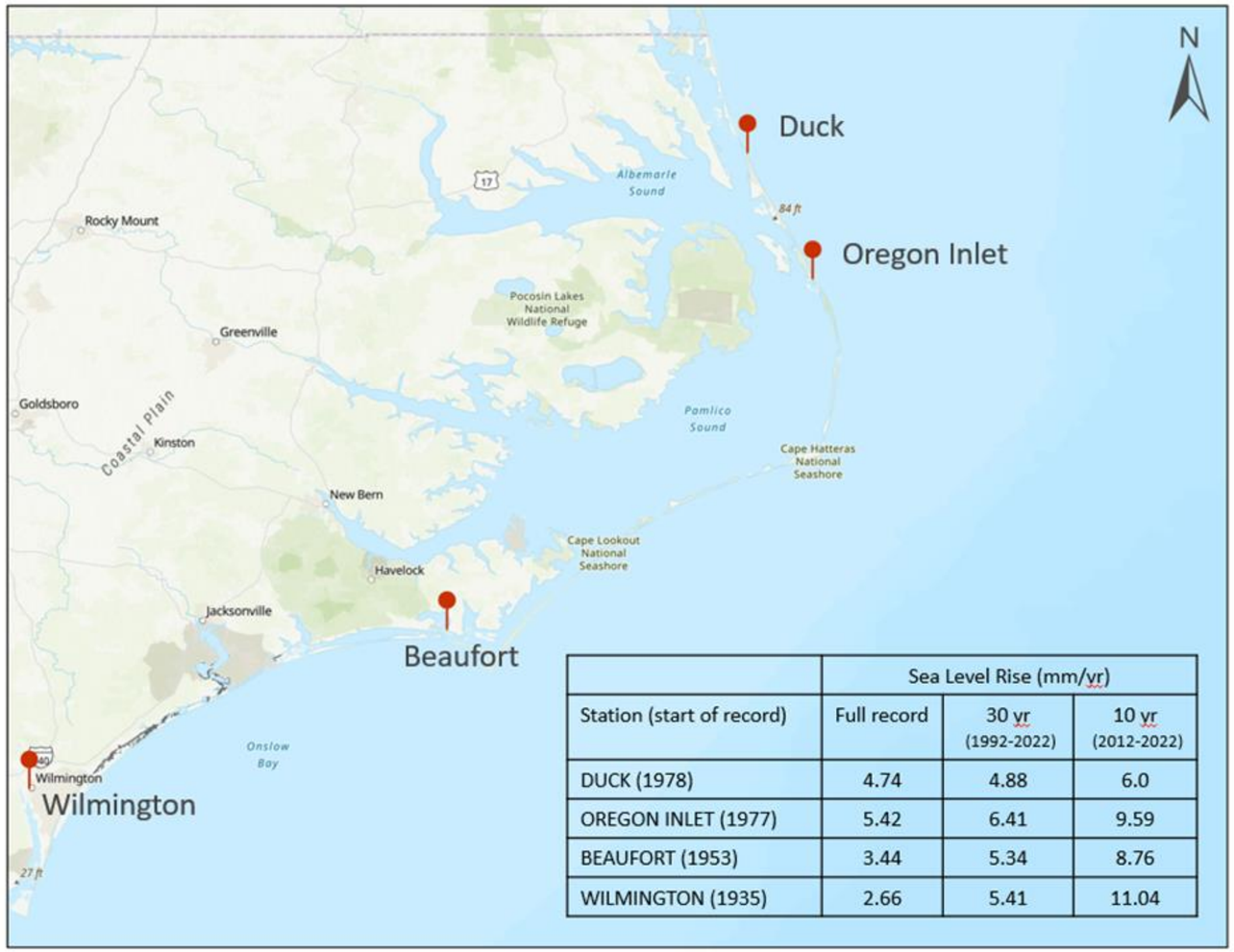

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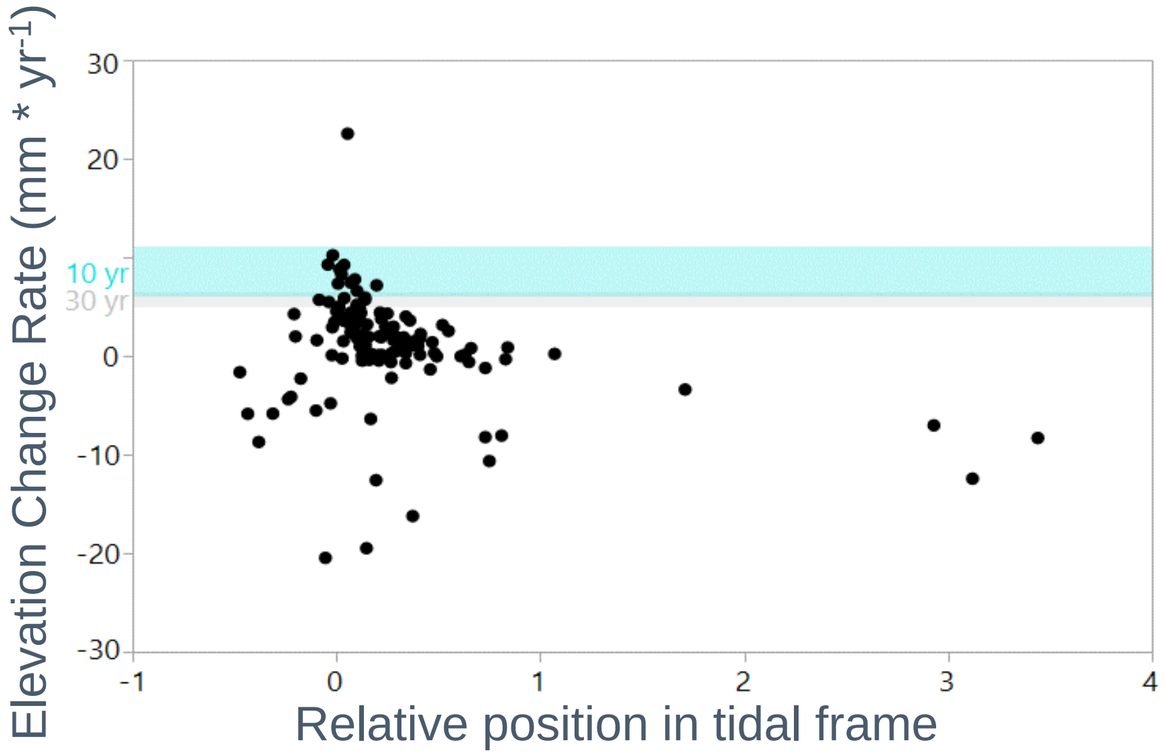
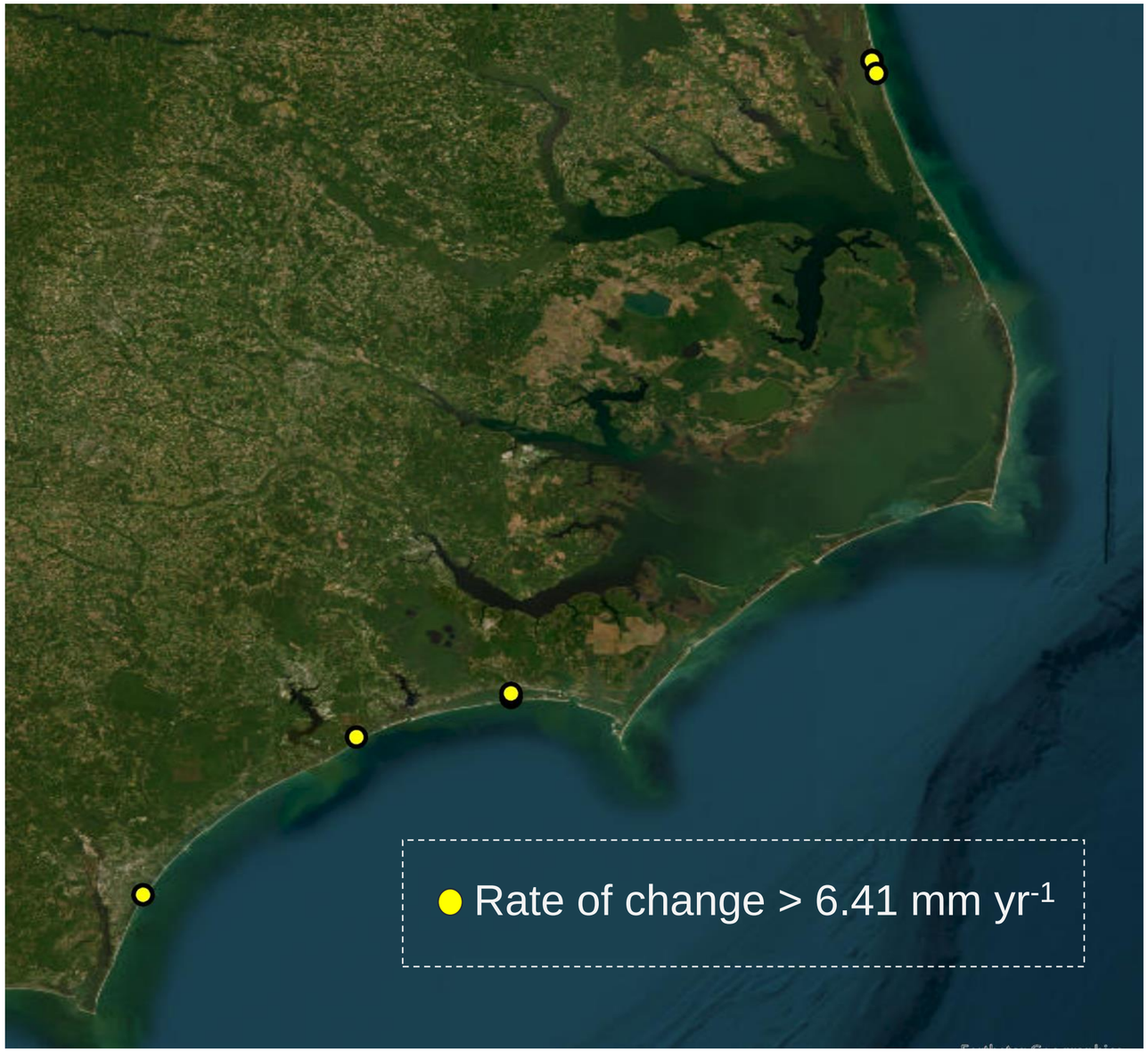


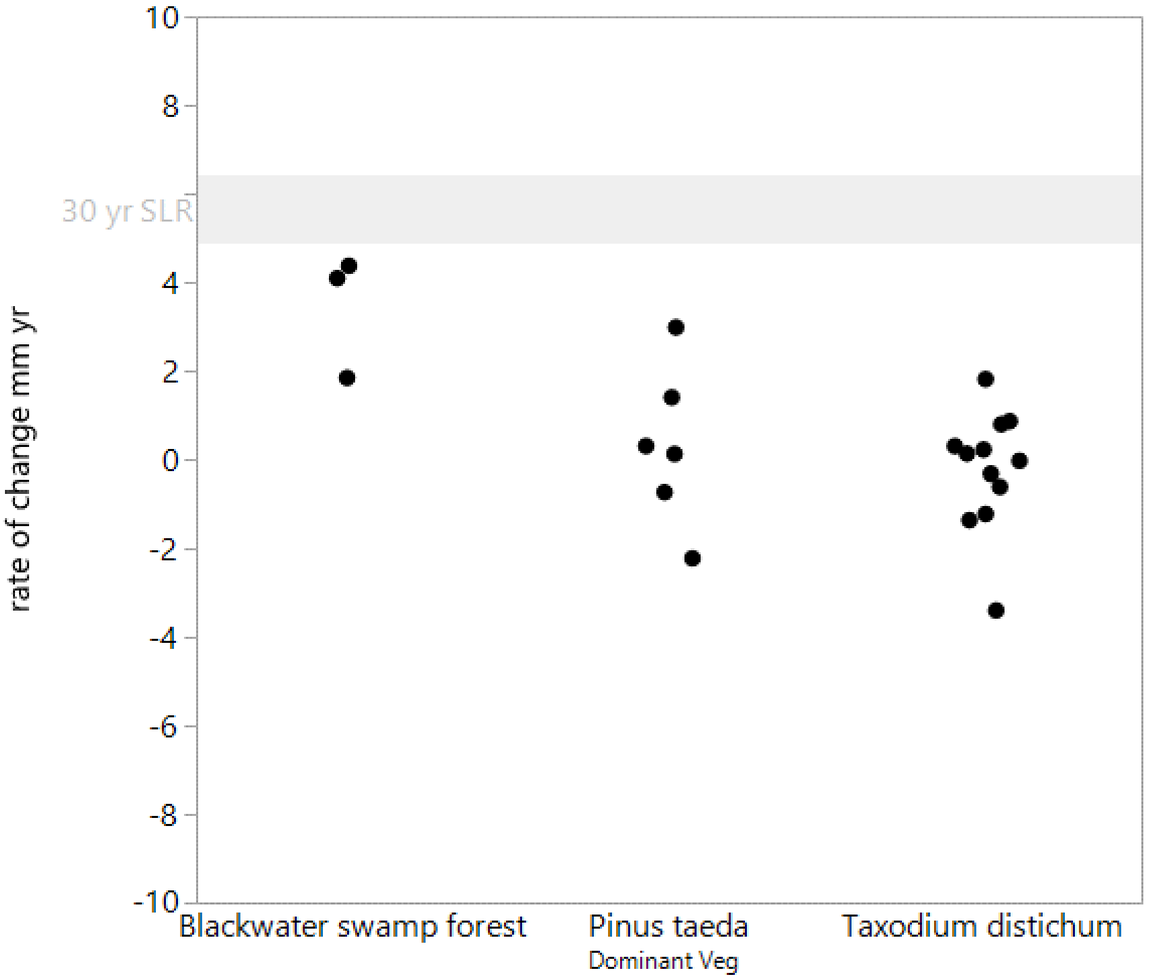
Only 10 SETs (out of 132 analyzed) gained elevation at a rate greater than the 30 yr rate of SLR – 5 were lost entirely due to submergence

Sites that are keeping Pace

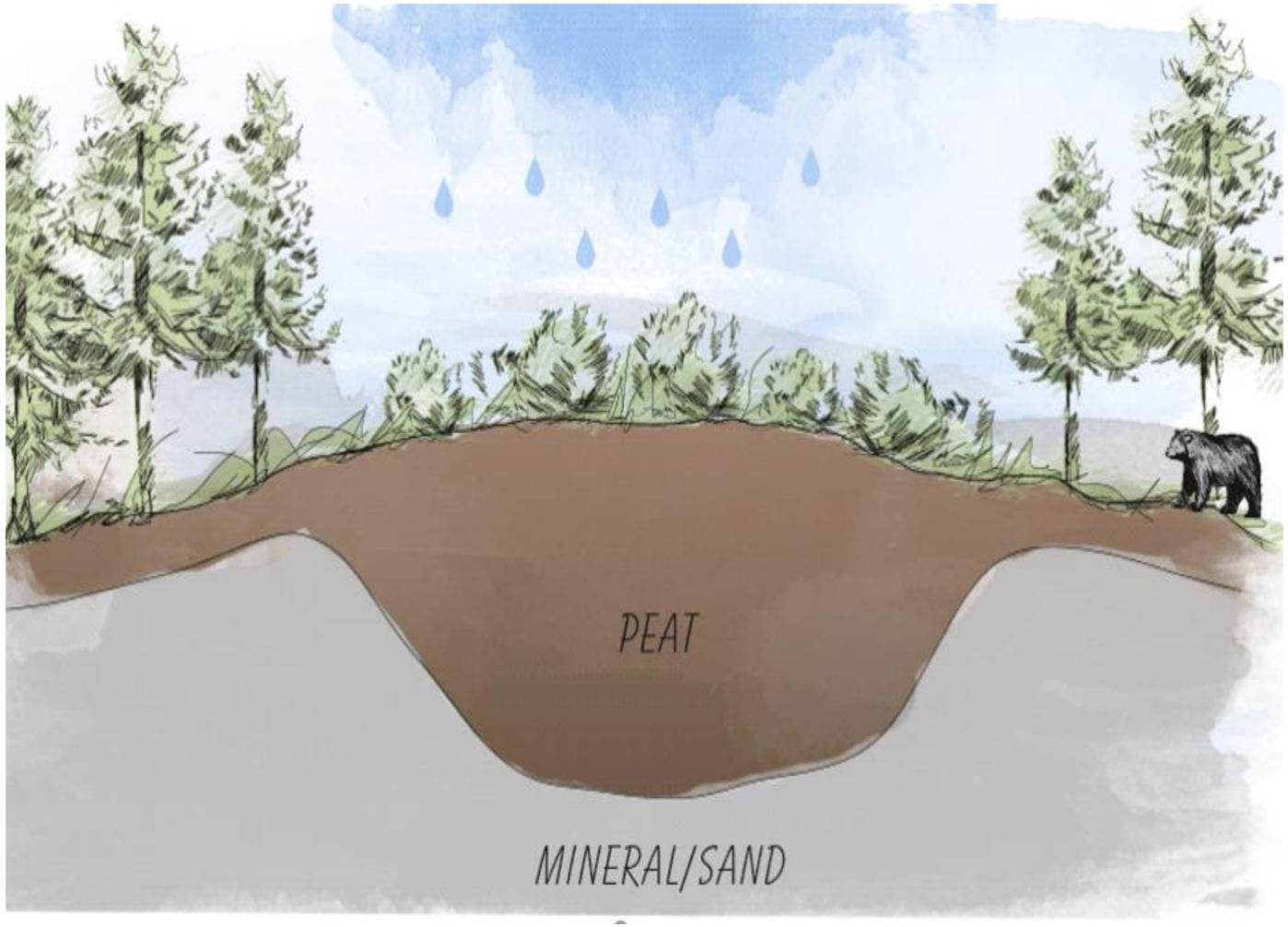


All sites that are gaining elevation at a rate greater than the 30 yr rate of SLR have a clear source of sediments to fuel elevation growth

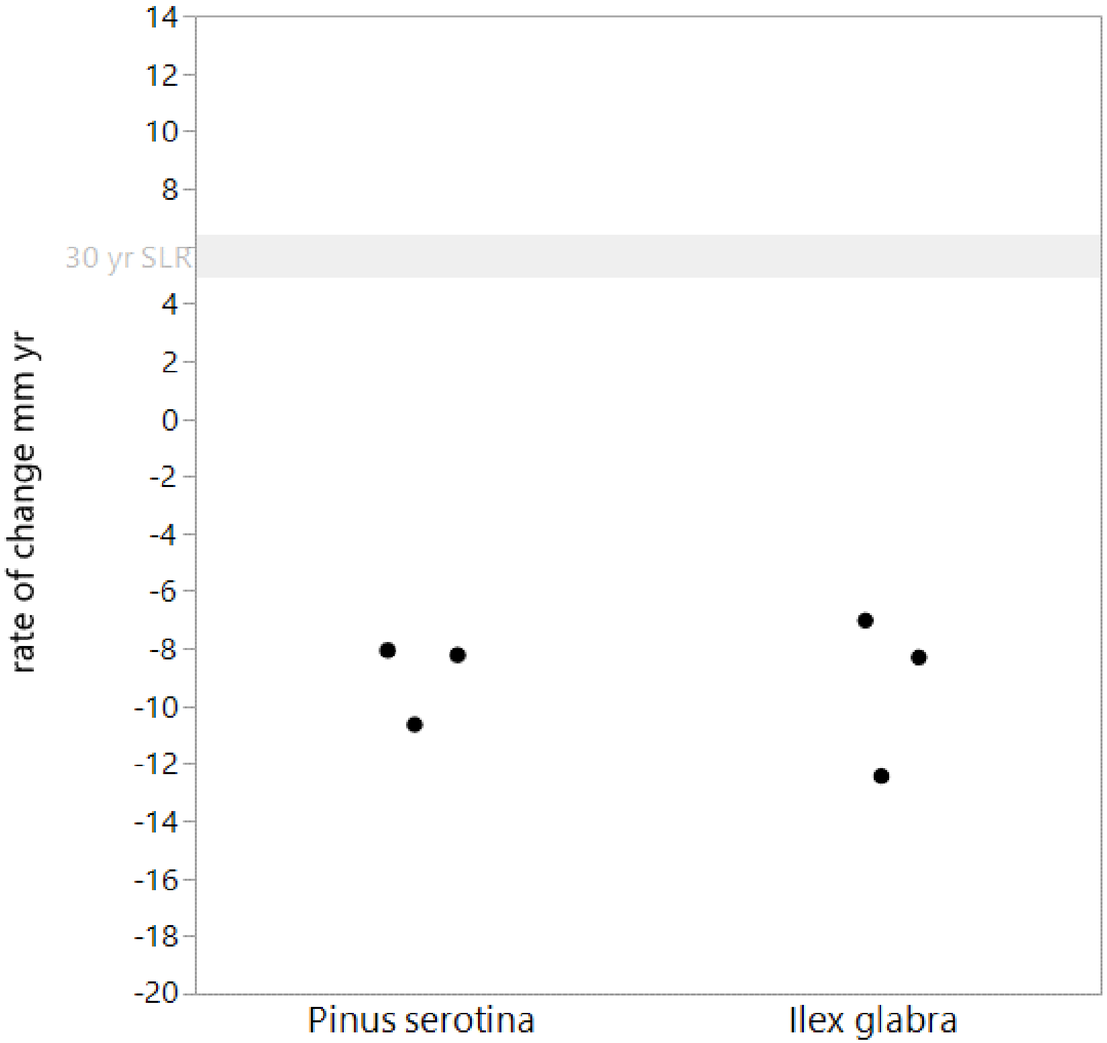
Forested/Upland Transition



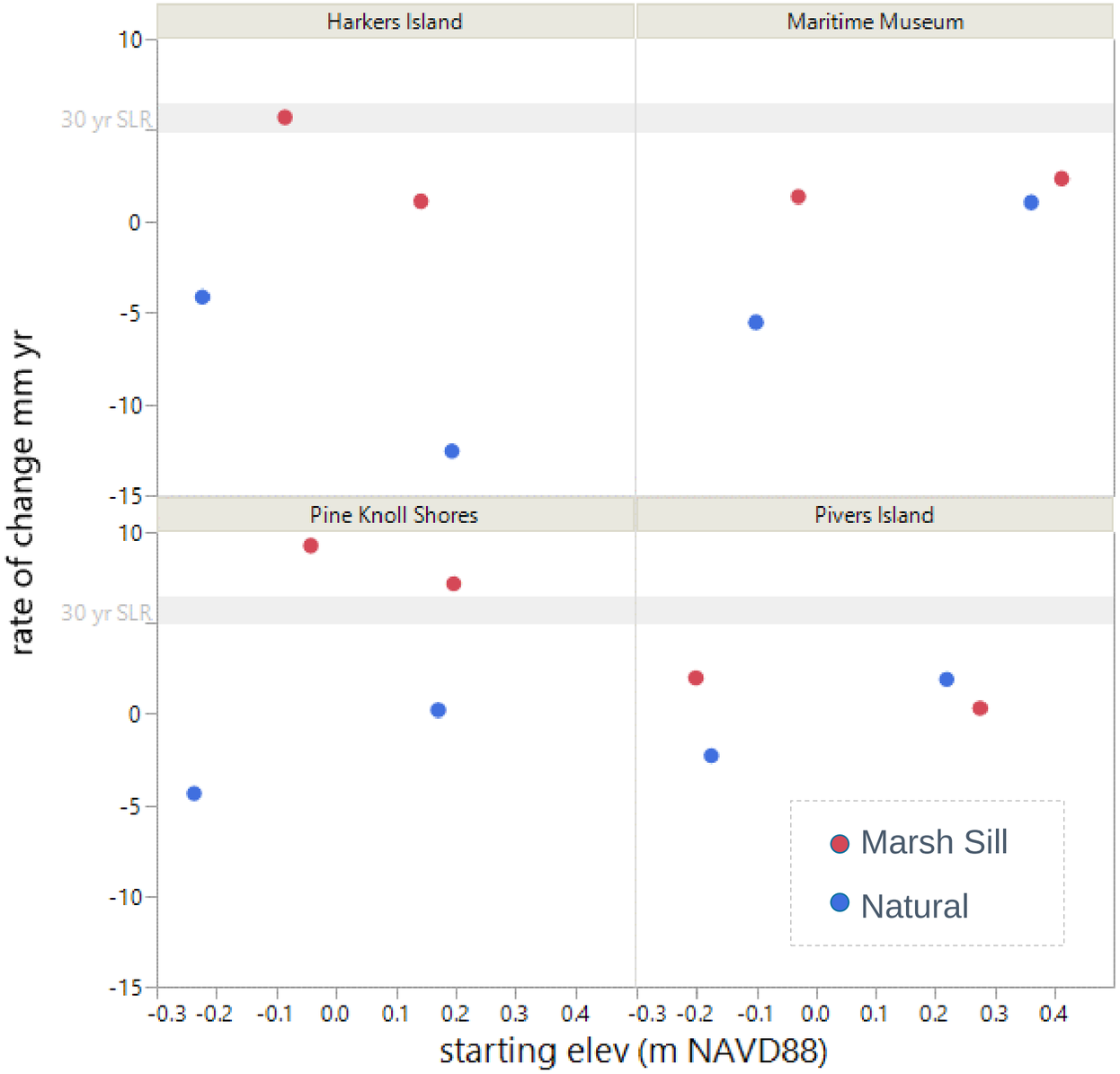
Pocosin Wetlands



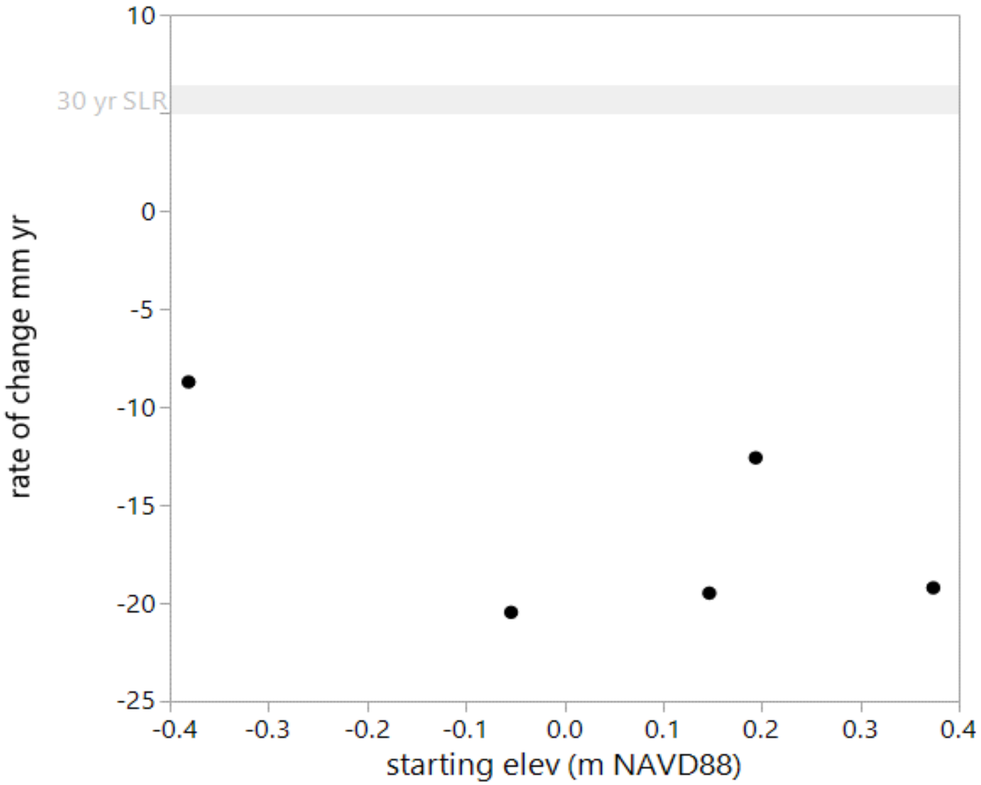
https://www.eenews.net/



Marsh Sill Living Shorelines



Drowned SETs



All were originally installed within a meter of the shoreline edge

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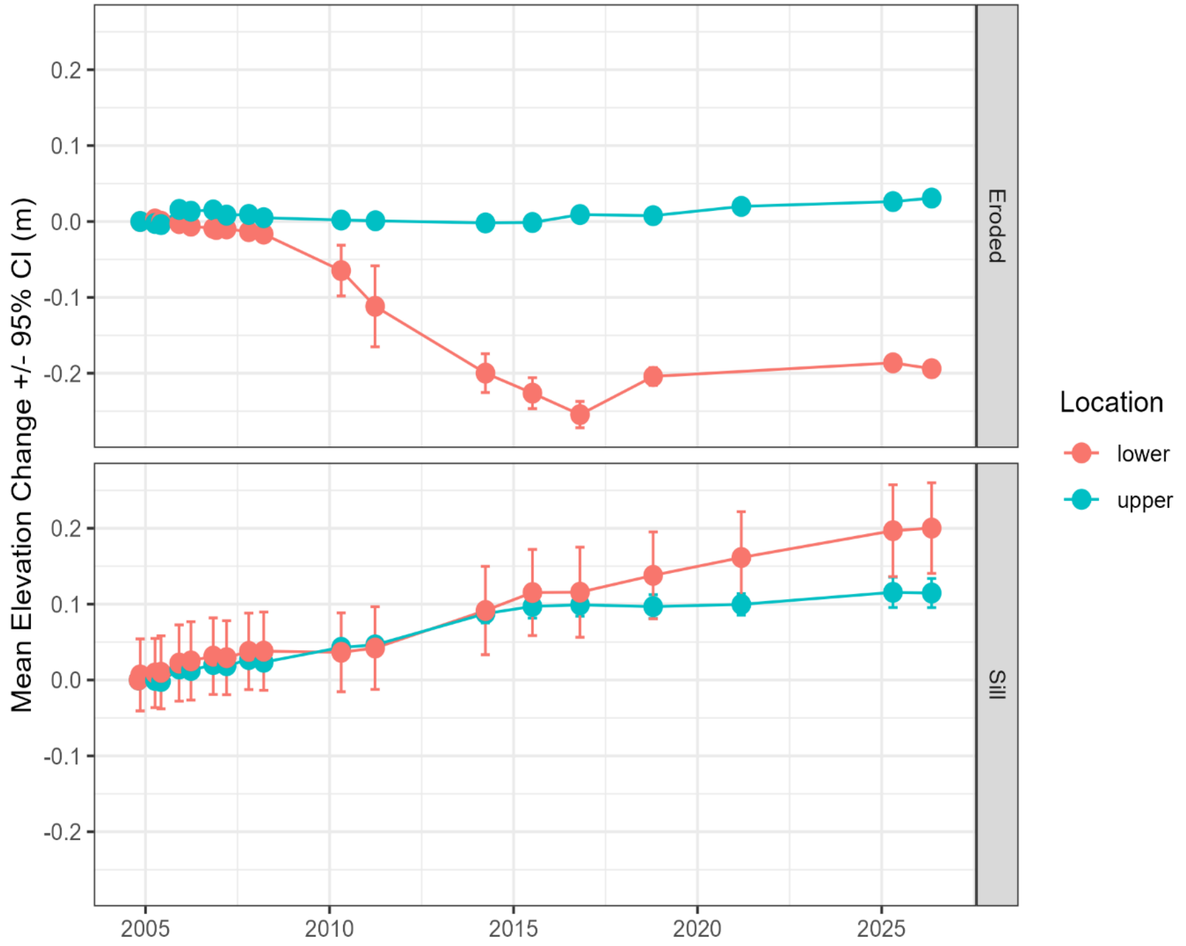
Quantifying restoration impacts



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Big Picture Takeaways

- Marshes that are on the backside of barrier islands and/or near a source of sediment appear to be the least eminently threatened

- Marshes that are in the bottom half of the tidal frame are at greatest risk

- Transitional forests are not building elevation fast enough to keep up

- Sills help shoreline marshes build elevation (but there are limits)

- Comparisons across broad geographies can uncover trends that inform coastal habitat management (cue SECOORA regional synthesis)

Jenny.Davis@noaa.gov

SECOORA

SET Community of Practice

SECOORA SET Community of Practice

The SECOORA SET Community of Practice (CoP) aims to bring together individuals and organizations dedicated to coastal resilience.

Our goal is to share knowledge, collaborate on initiatives, and enhance coastal management practices through collective effort.

- ✓ Initiated in 2023, grown > 25 members with > 200 stations
- ✓ Provided funding for maintenance of existing and installation of SET stations
- ✓ Held annual workshop with plenary speaker, series of webinars, meetings

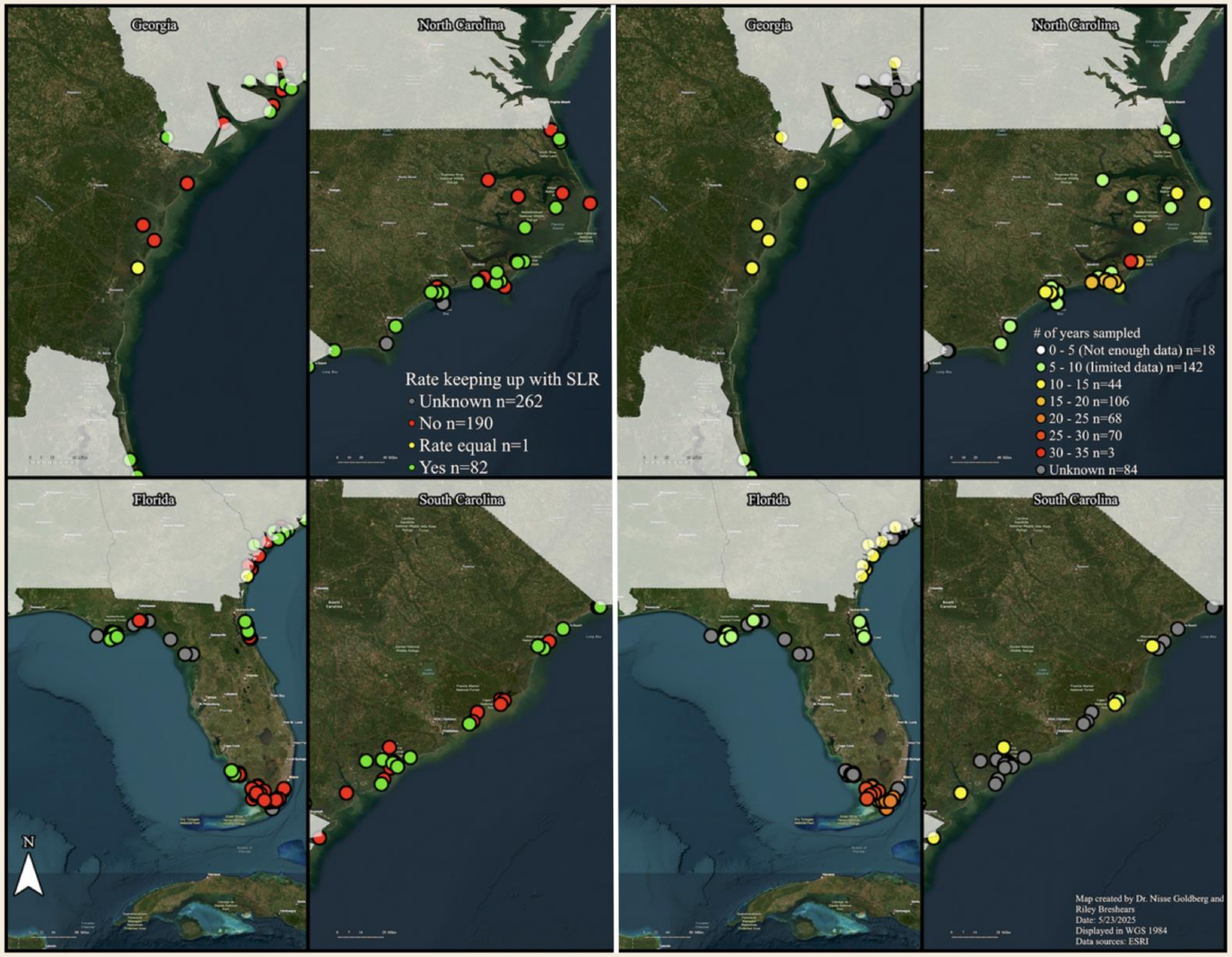
Applications of SET data

- Coastal managers and planners: inform decision on development and adaptation strategies
- Environmental NGOs and Conservation groups: guide prioritization of habitat restoration; cultivate community participation
- Scientific community: enable study of impacts on coastal landscape, facilitate development of predictive models

SET practitioners

- NOAA National Estuarine Research Reserves and Sentinel Site programs,
- U.S Geological Survey offices,
- U.S. Fish and Wildlife Service,
- Non-profit agencies: Edisto Island Open Land Trust, Bald Head Conservancy, Carolina Wetlands Association, Port Royal Sound, St. Andrew & St. Joseph Bays Estuary Program.
- University-affiliated researchers: The Citadel, North Carolina State University, University of North Carolina, University of South Carolina, and University of Georgia

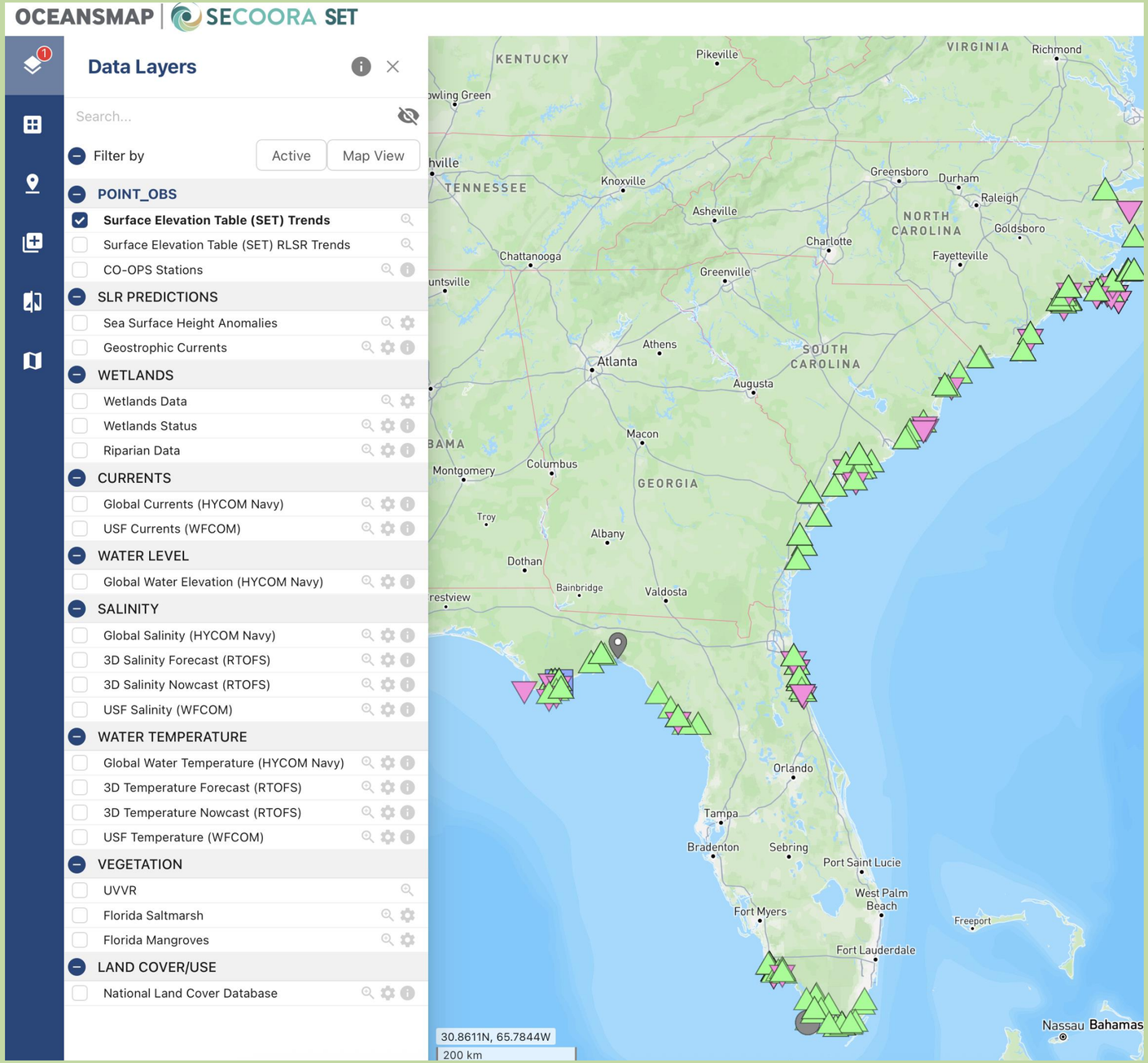
SET Elevation Monitoring in the South-East



Percentage of SET stations keeping pace with sea-level rise:

- 32%: North Carolina,
- 42%: South Carolina,
- 20%: Georgia, and
- 9%: Florida.

Majority are at risk of drowning.



Data Visualization Platform

https://oceansmap.com/secoora-set/

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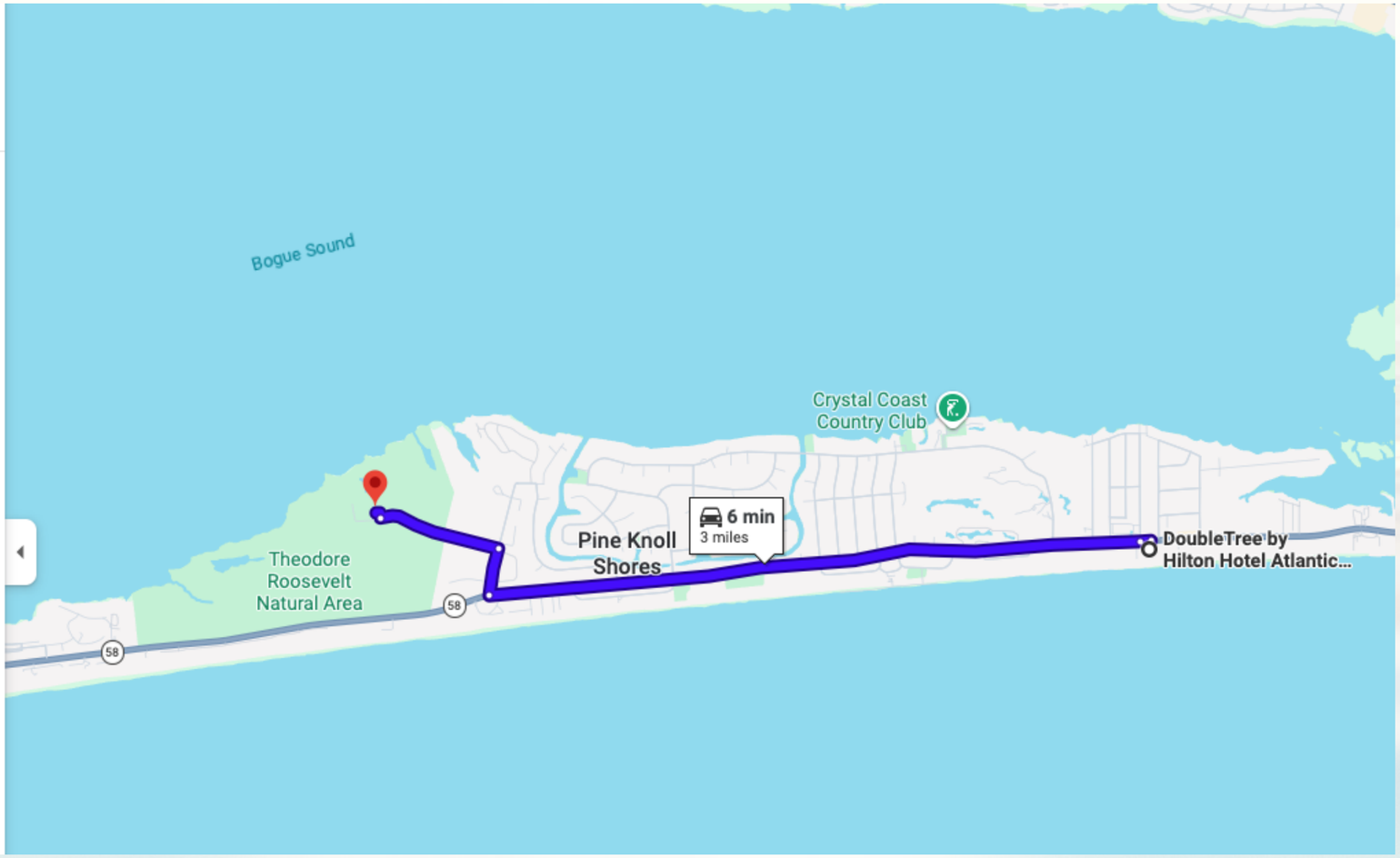

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THANK YOU

QUESTIONS?