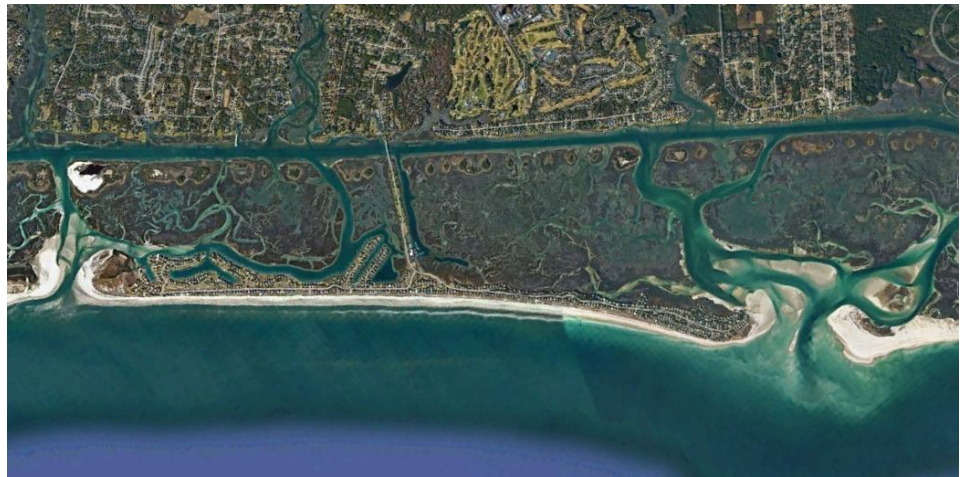
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Future Coastlines
NORTHEAST NEW HANOVER CONSERVANCY

NORTHEAST NEW HANOVER CONSERVANCY

FIGURE ISLAND



Northeast New Hanover Conservancy's Center For Future Coastlines

Caroline Lowcher, PhD

Director of Coastal Operations & Research





Dennis Wilson
Senior Hydrographic Surveyor



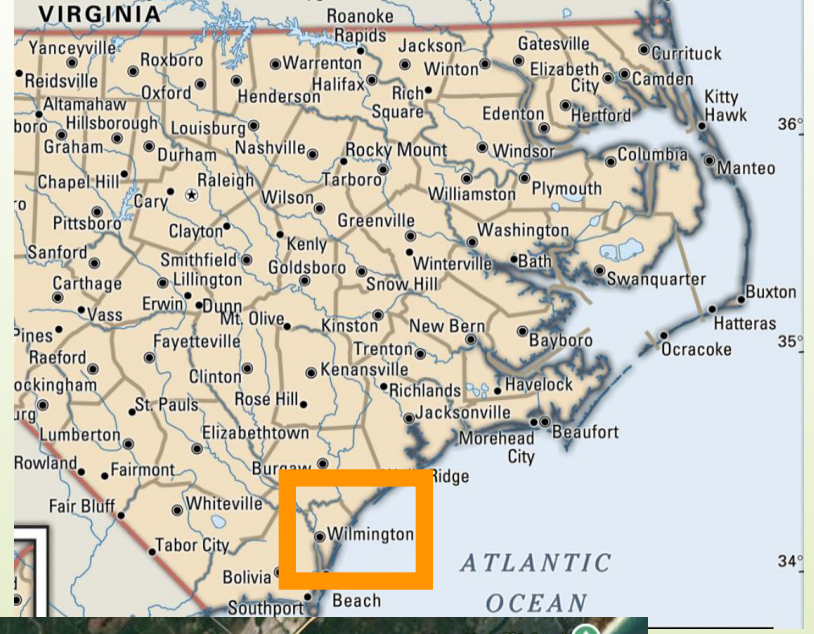
AJ Kammerer
Data Manager/Modeler

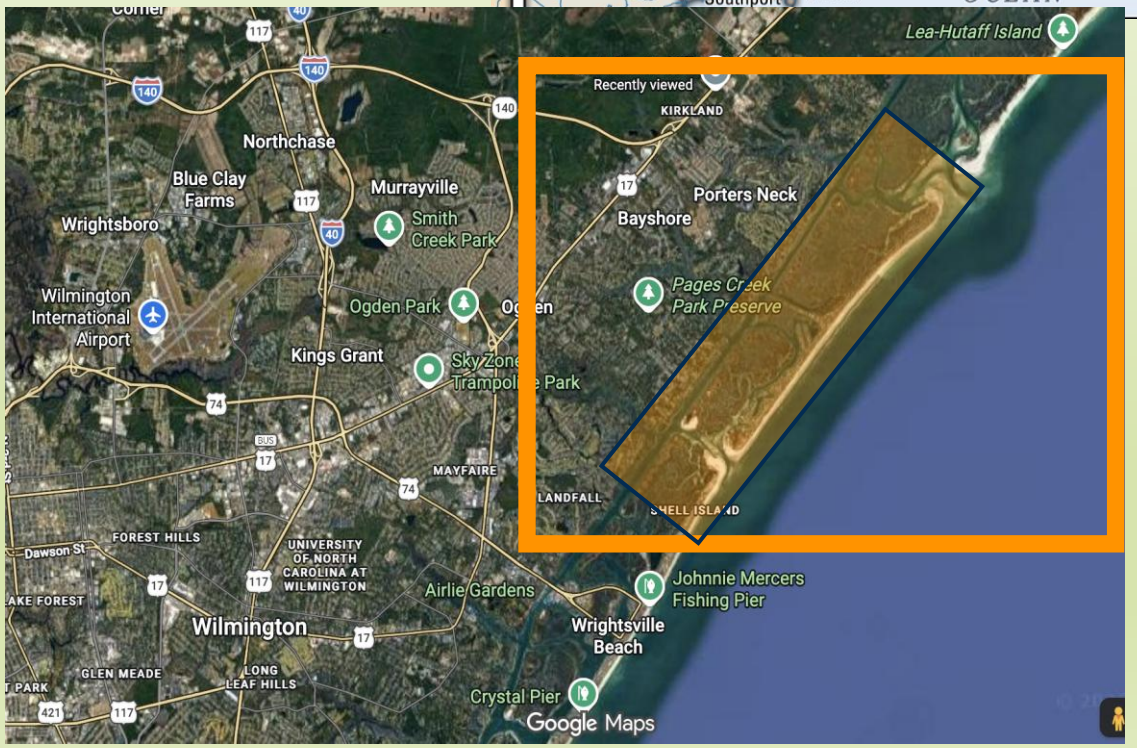


Keegan Brophy
UAS Lead

Northeast New Hanover Conservancy

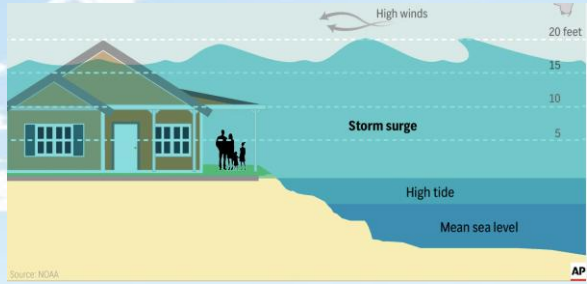
- Northeast New Hanover Conservancy established as a non-profit in 1982.
- Steward of ~1,500 acres of marshes, tidal creeks, & watersheds.
- Outstanding Resource Waters
- Natural Heritage Area
- Study & protect natural resources (e.g., flora and fauna).





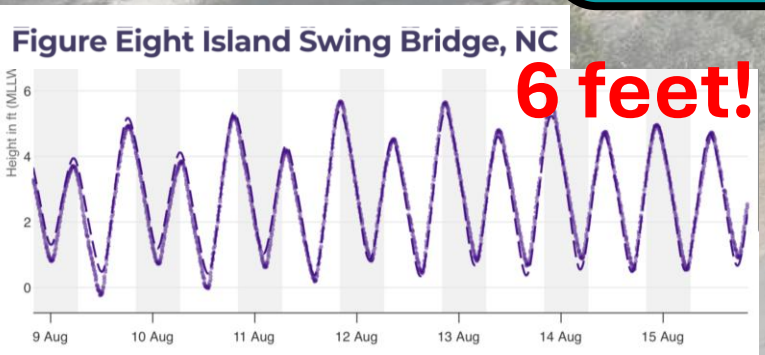
Near Future Changes





- Sea Level Rise
- Storm Surge
- Wave Runup
- King Tides
- Riverine Outflow
- More Extreme Storms
- Land Sub-sidence

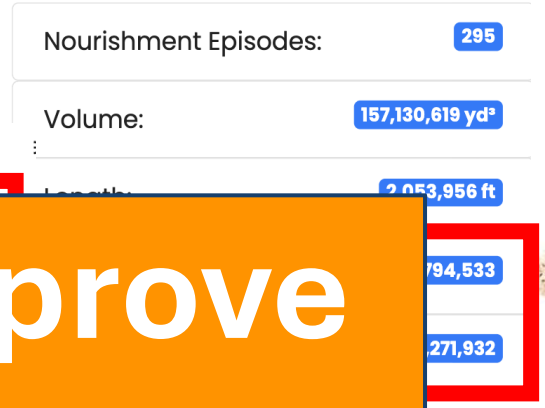






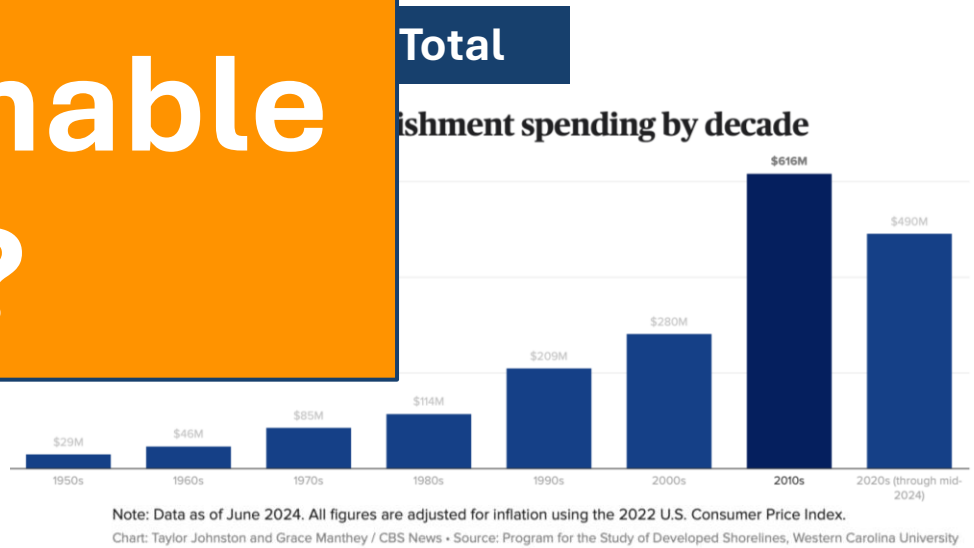
NC Beach Renourishment Stats







How can we improve coastal resilience & promote sustainable coastlines?



Western Carolina University's Program for the Study of Developed Shorelines

Center for Future Coastlines

Develop a comprehensive understanding of barrier island processes that will lead to **science-based solutions** that protect and sustain coastal ecosystems through **innovation, technology, collaboration, and responsible stewardship** for future generations.

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Framework for Addressing Coastal Resilience & Sustainable Coastlines

Coastal Monitoring → Numerical Modeling → Science-Based Solutions → Testing New Strategies → AI for Management Guidance



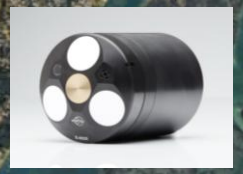
Abram Lambertson

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In-Situ









Rich Inlet

Eco8

Eco5

E1

Eco6

E5

S2

Eco7

D1

D5

Porters Neck

Bayshore

Wilmington
KOA Holiday

Pages Creek
Park Preserve

Ogden

C1

C5

Eco4

Eco3

Mason Inlet

Eco1

B1

Eco2

B5

M2

A5

A1

Velocity & wave measurements
Wave measurements
Velocity measurements
Water level measurements
Weather station

Surveying

Rich Inlet

Mason Inlet

Porters Neck

Bayshore

Wilmington
KOA Holiday

Pages Creek
Park Preserve

Ogden







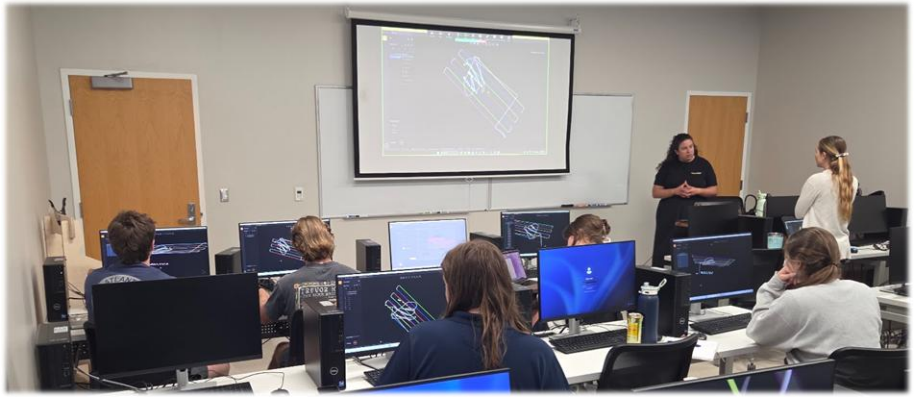
Lidar Red
Lidar Green
Single beam Echosounder
Multibeam Echosounder







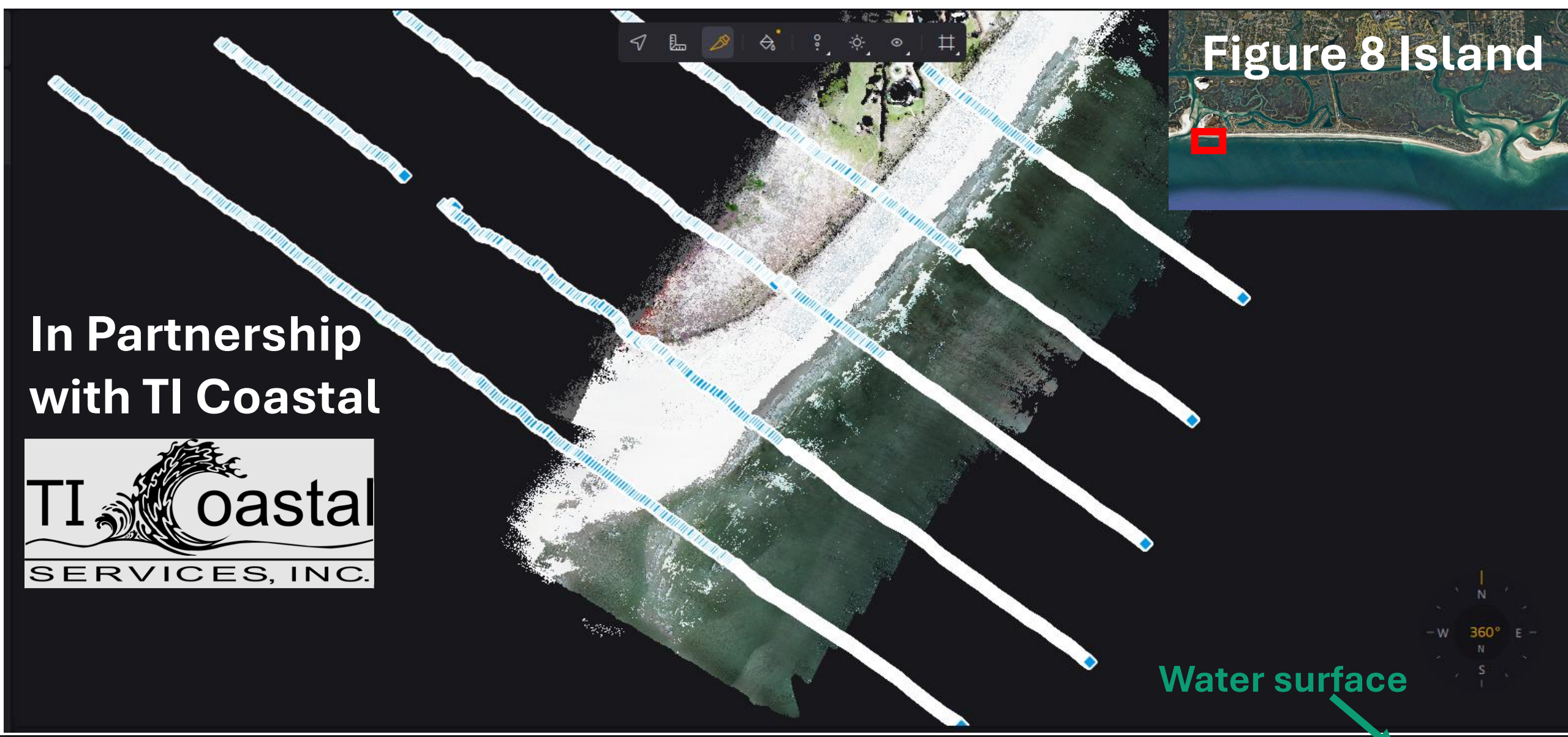


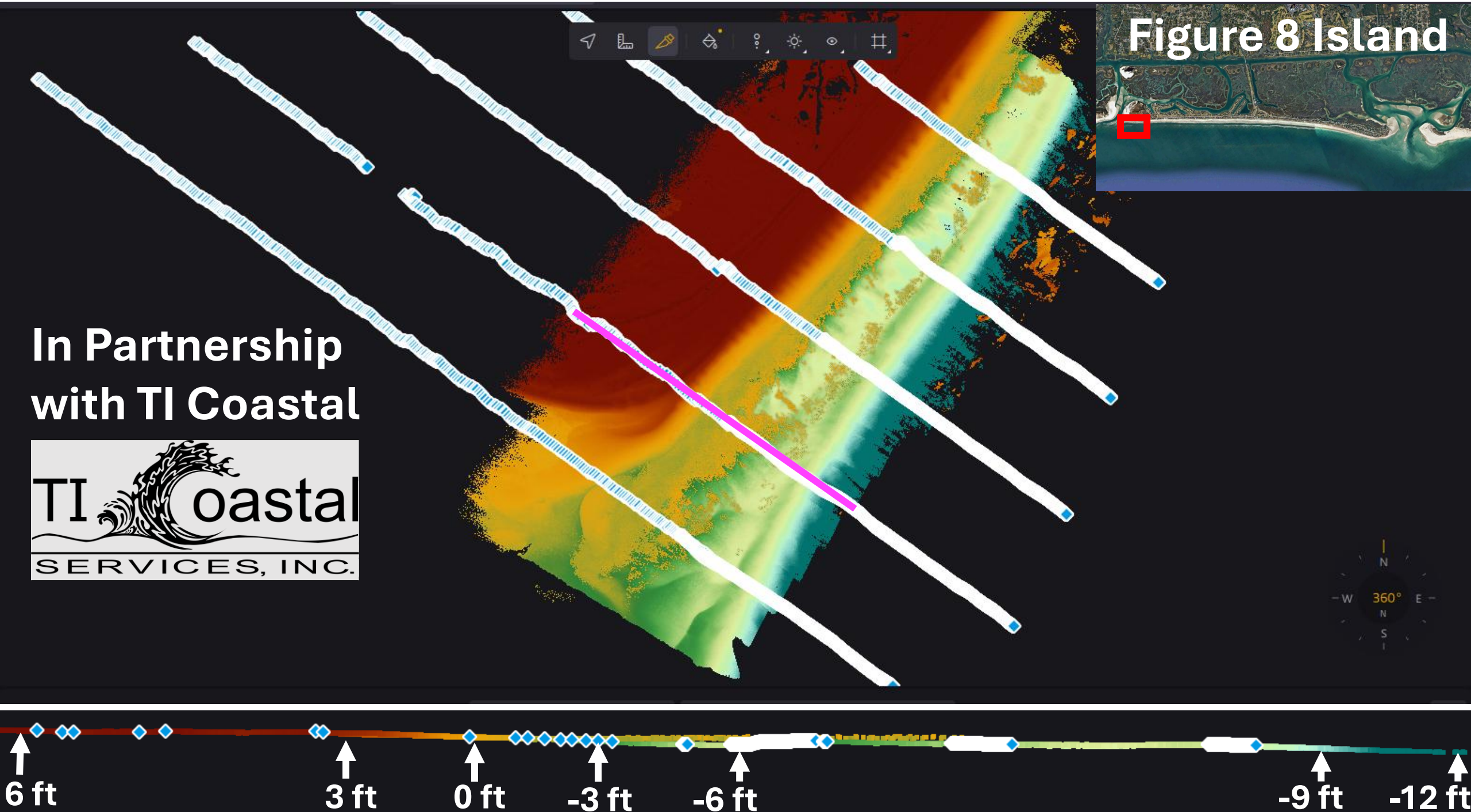




Drone Lidar Program

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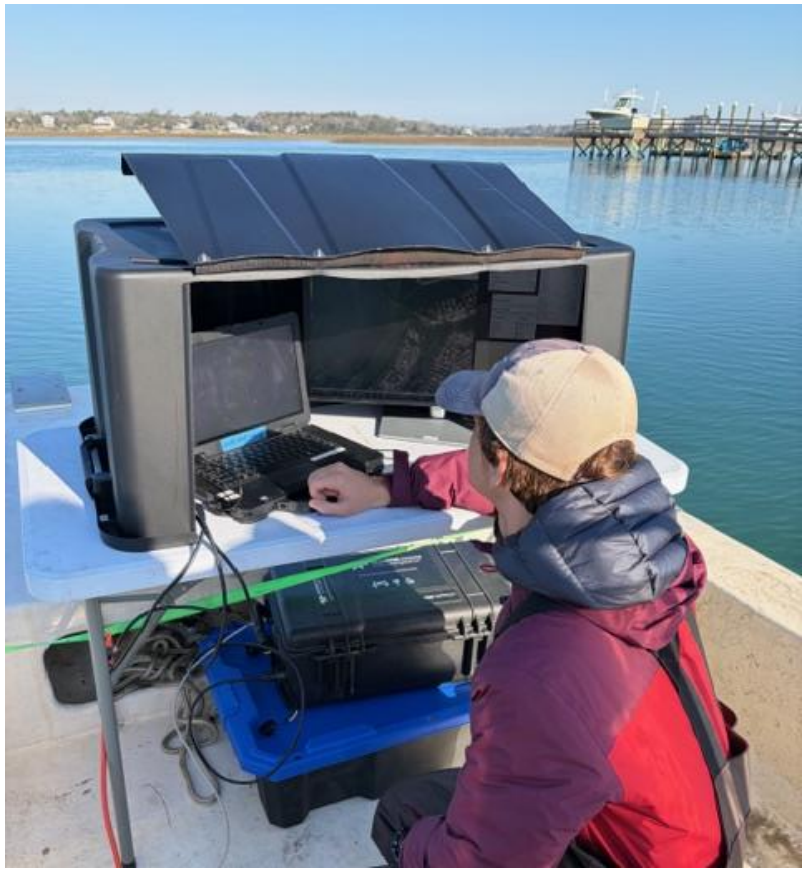

Figure 8 Island
In Partnership with TI Coastal
TI Coastal
SERVICES, INC.
N
W
360°
E
S
Water surface
Check points (RTK topo shots & singlebeam echosounder)
Bottom underwater


Figure 8 Island
In Partnership
with TI Coastal
TI Coastal
SERVICES, INC.
N
W
360°
E
S
6 ft
3 ft
0 ft
-3 ft
-6 ft
-9 ft
-12 ft









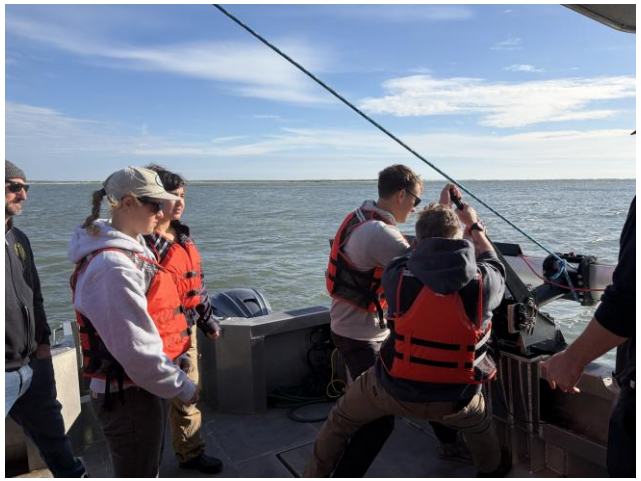


Teledyne Z-Boat Surveys

UNCW
COASTAL ENGINEERING

UNCW CENTER FOR MARINE SCIENCE













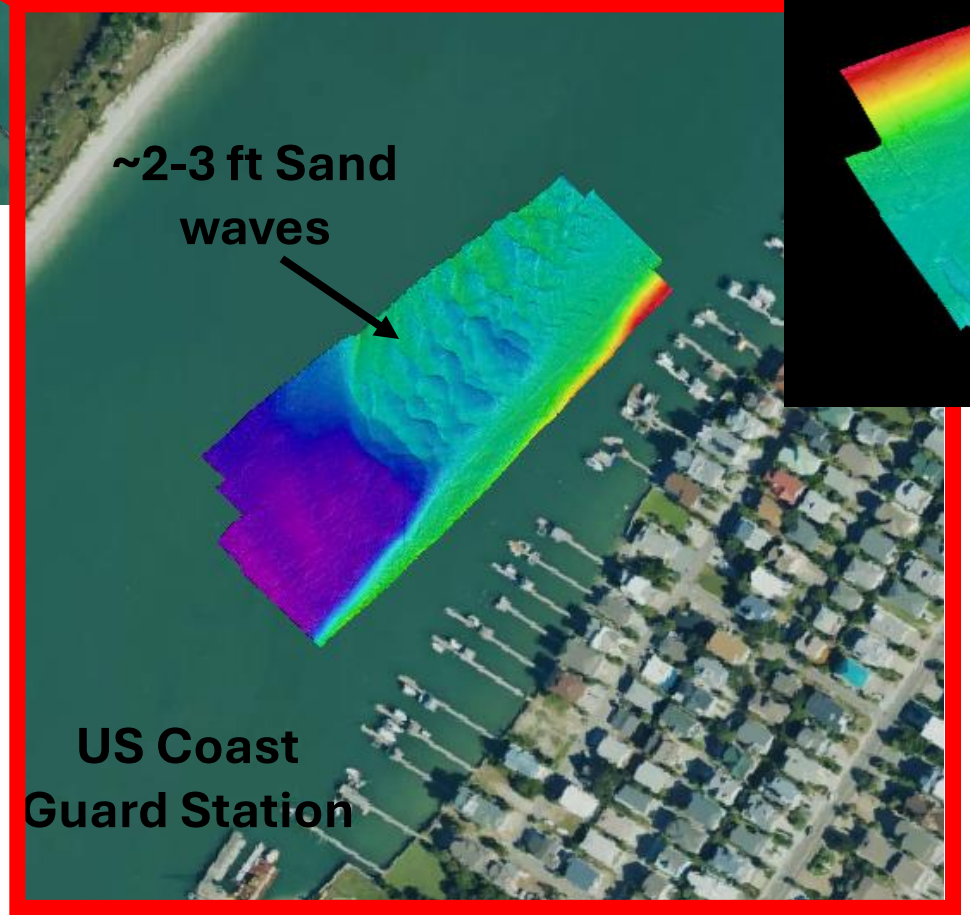
Teledyne Reson Multibeam Training

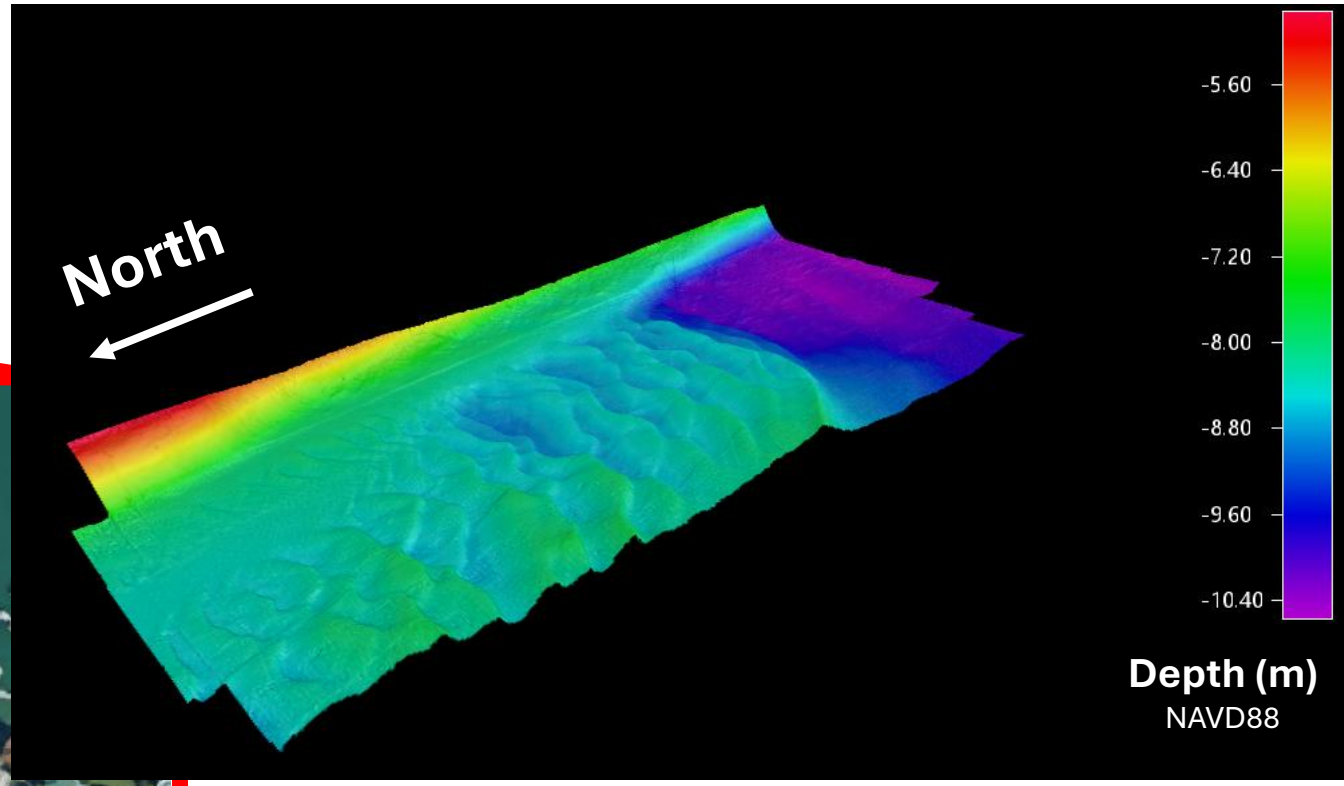
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CAPE FEAR COMMUNITY COLLEGE

Patch Testing South End of Wrightsville Beach





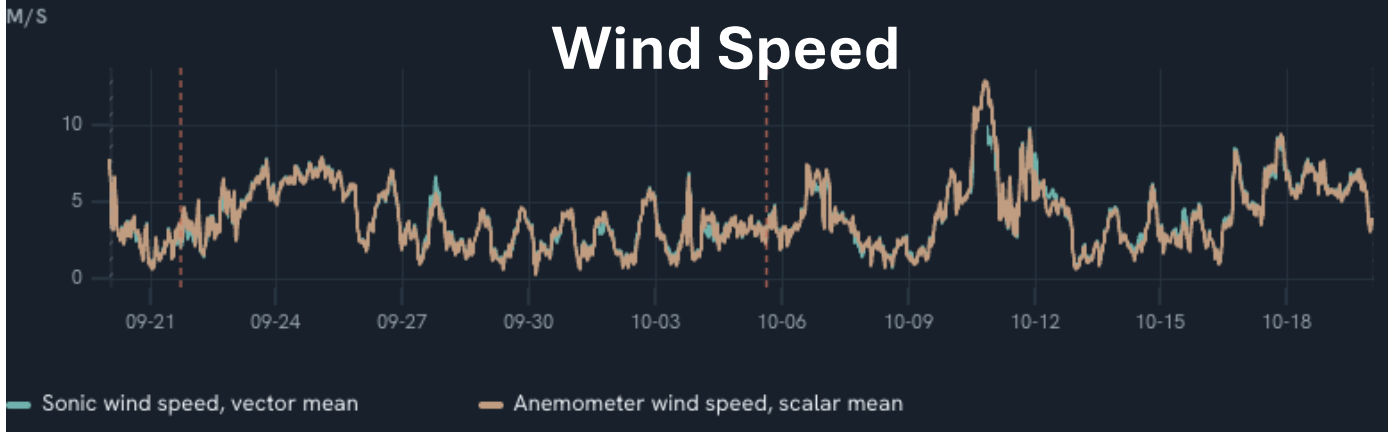


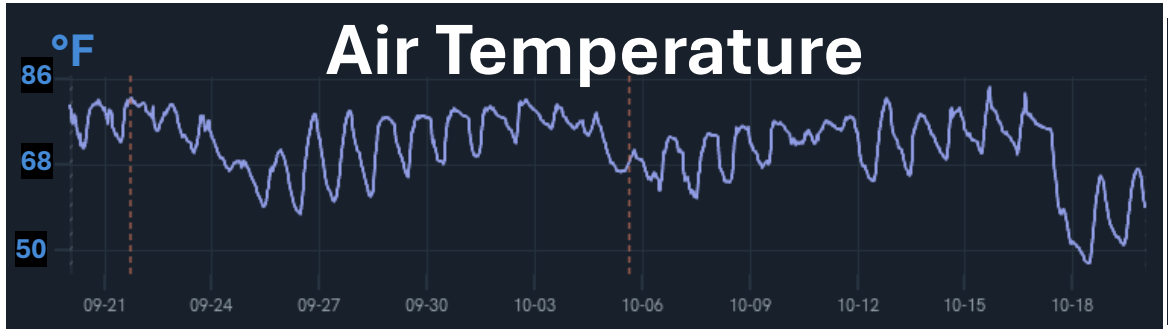


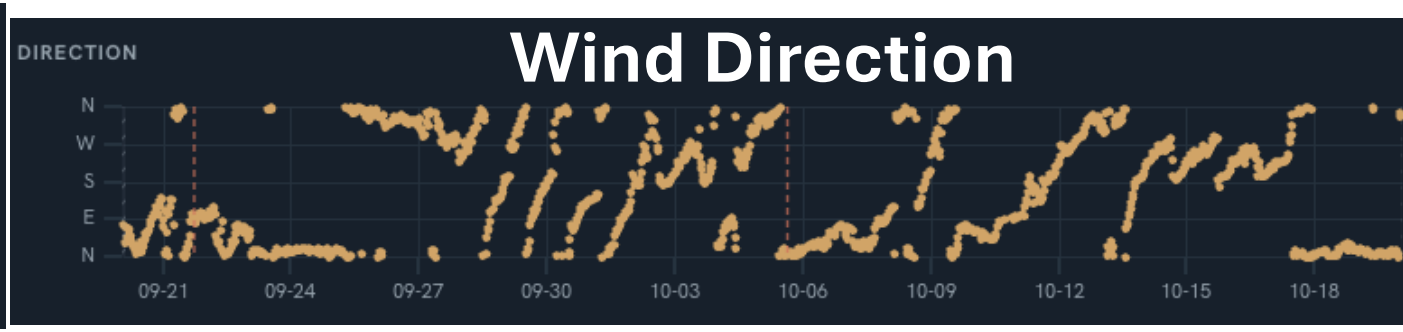


Weather Station

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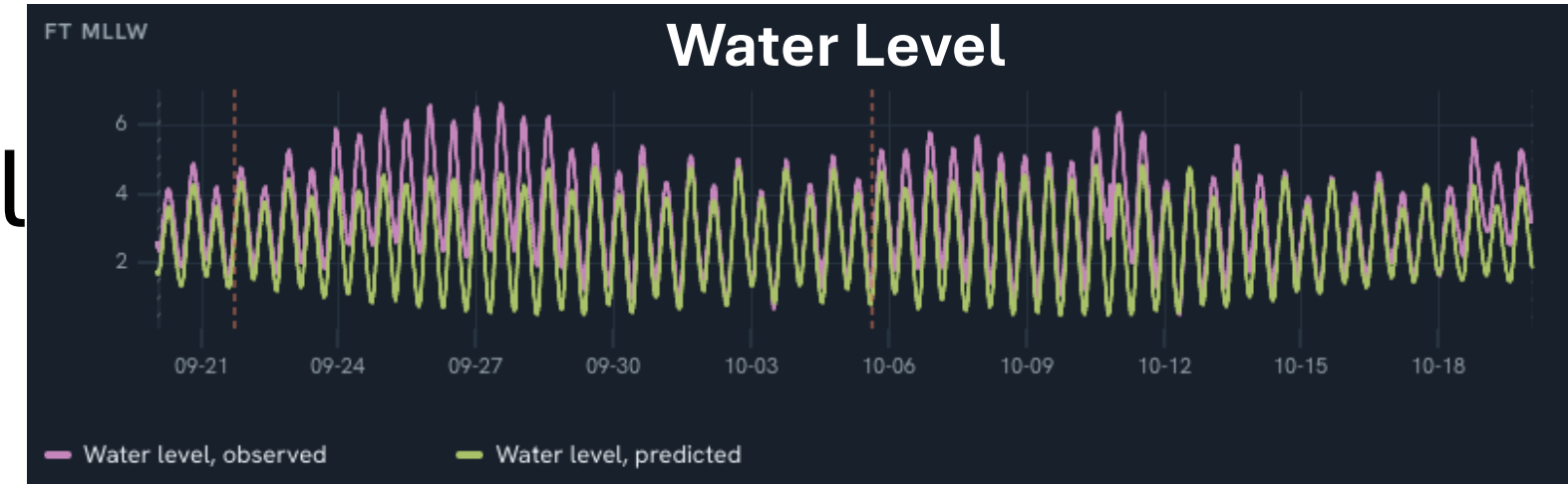




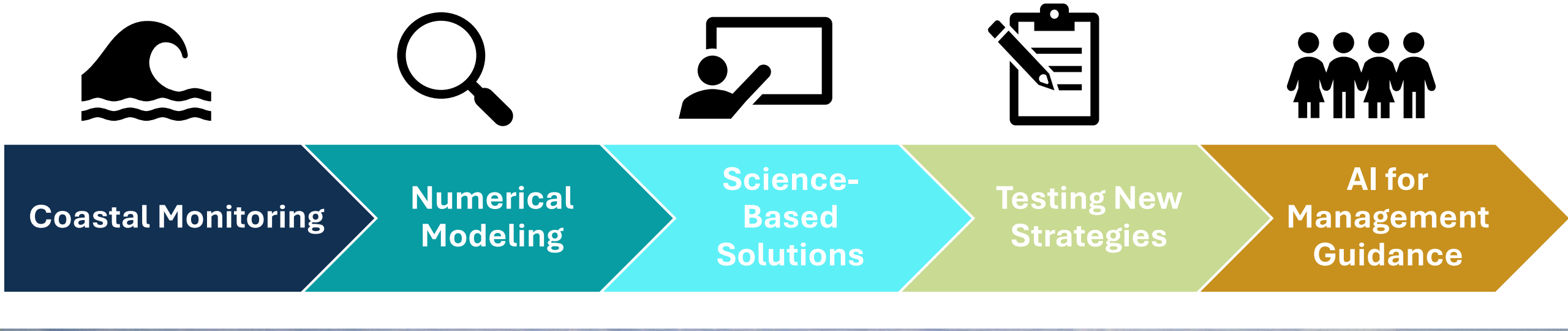




Water Level Sensor



Framework for Addressing Coastal Resilience & Sustainable Coastlines



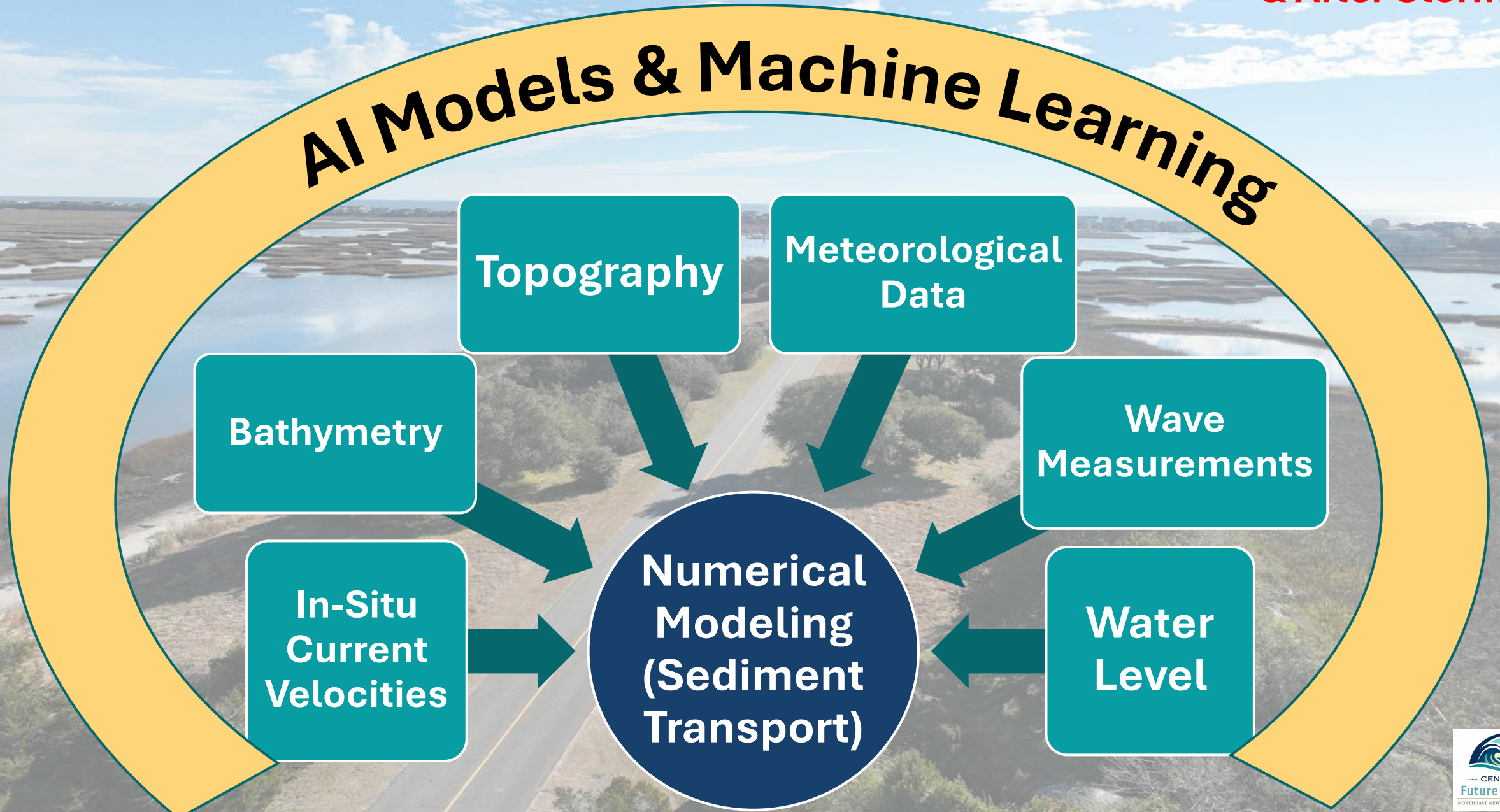


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Why Data Matters

Before, During, & After Storms



CENTER FOR Future Coastlines
NORTHEAST NEW HANOVER CONSERVANCY

Valued Partners

- University of North Carolina at Wilmington
  - Department of Coastal Engineering
  - Center for Marine Science
- TI Coastal
- Teledyne
- Duncan Parnell
- Field Research Facility
- Harris Aerials
- YellowScan
- Campbell Scientific
- Nortek
- ClearSignal Coating

Thank You!



Abram Lambertson