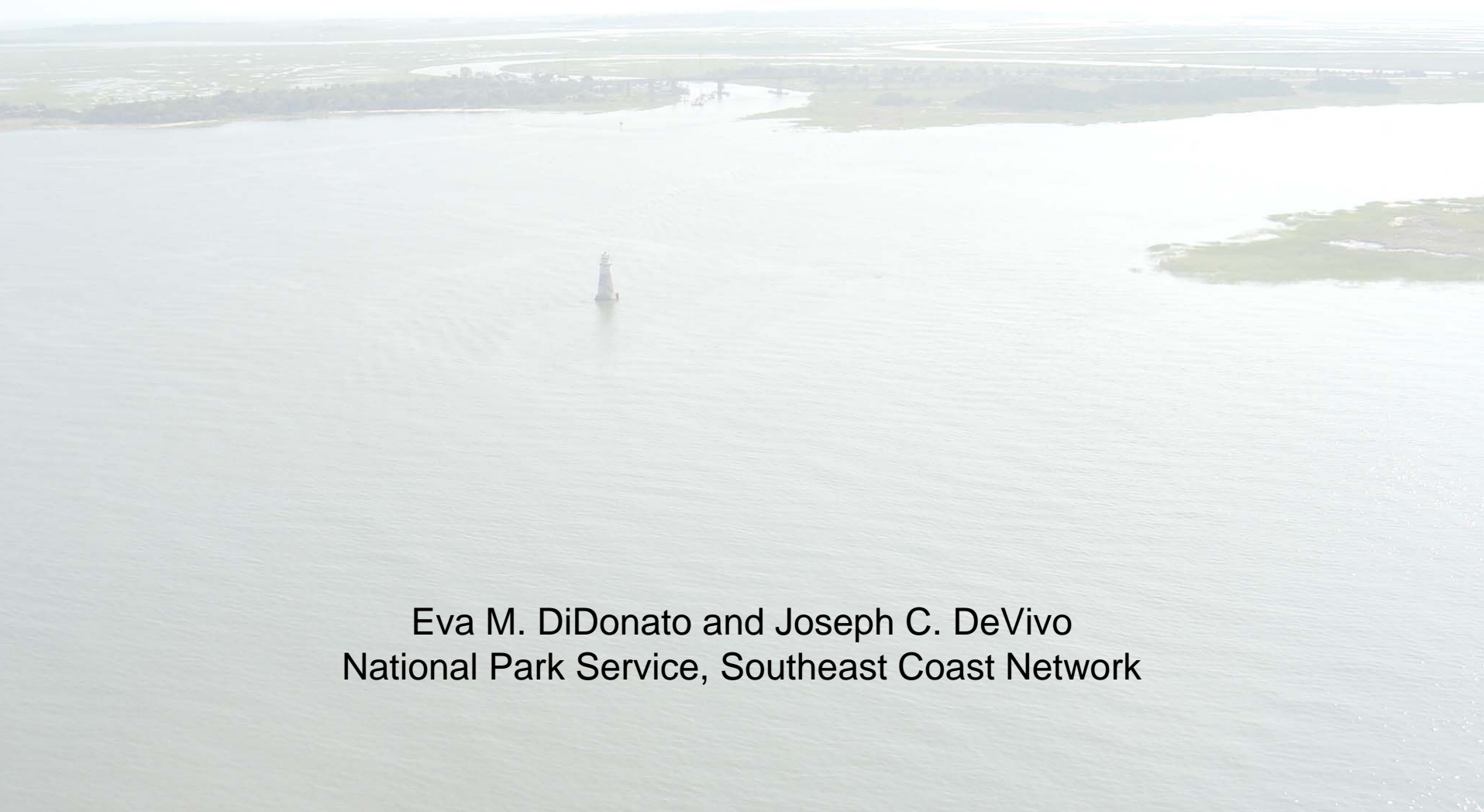


Long-Term Monitoring of National Park Service Southeast Coastal Waters Using Established Protocols



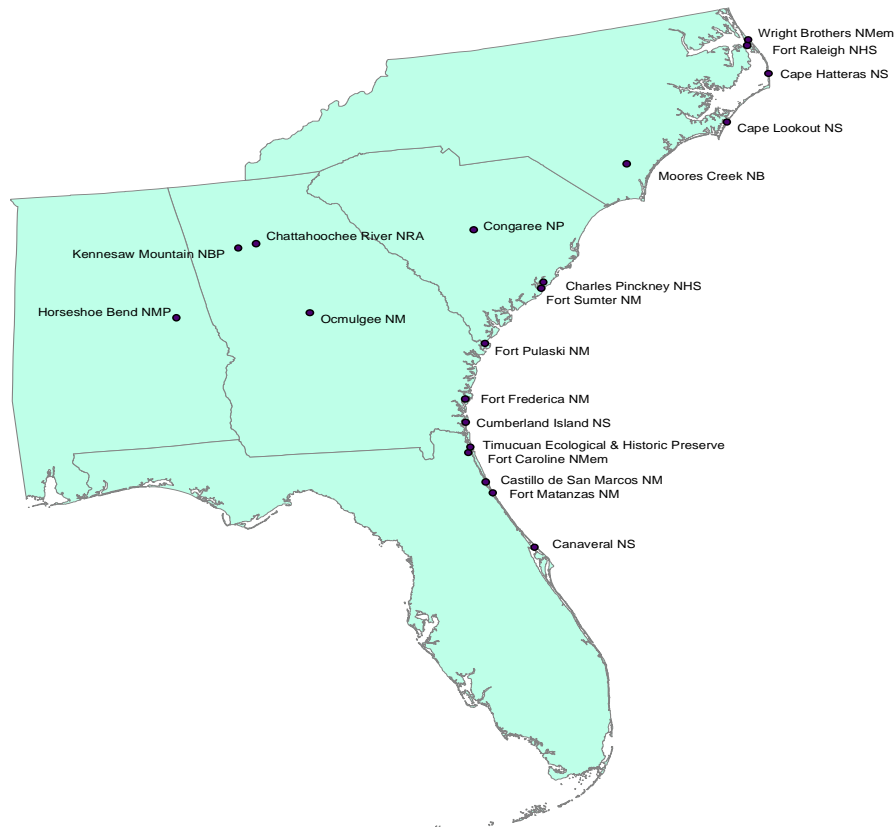
Eva M. DiDonato and Joseph C. DeVivo
National Park Service, Southeast Coast Network

National Park Service



Southeast Coast Network

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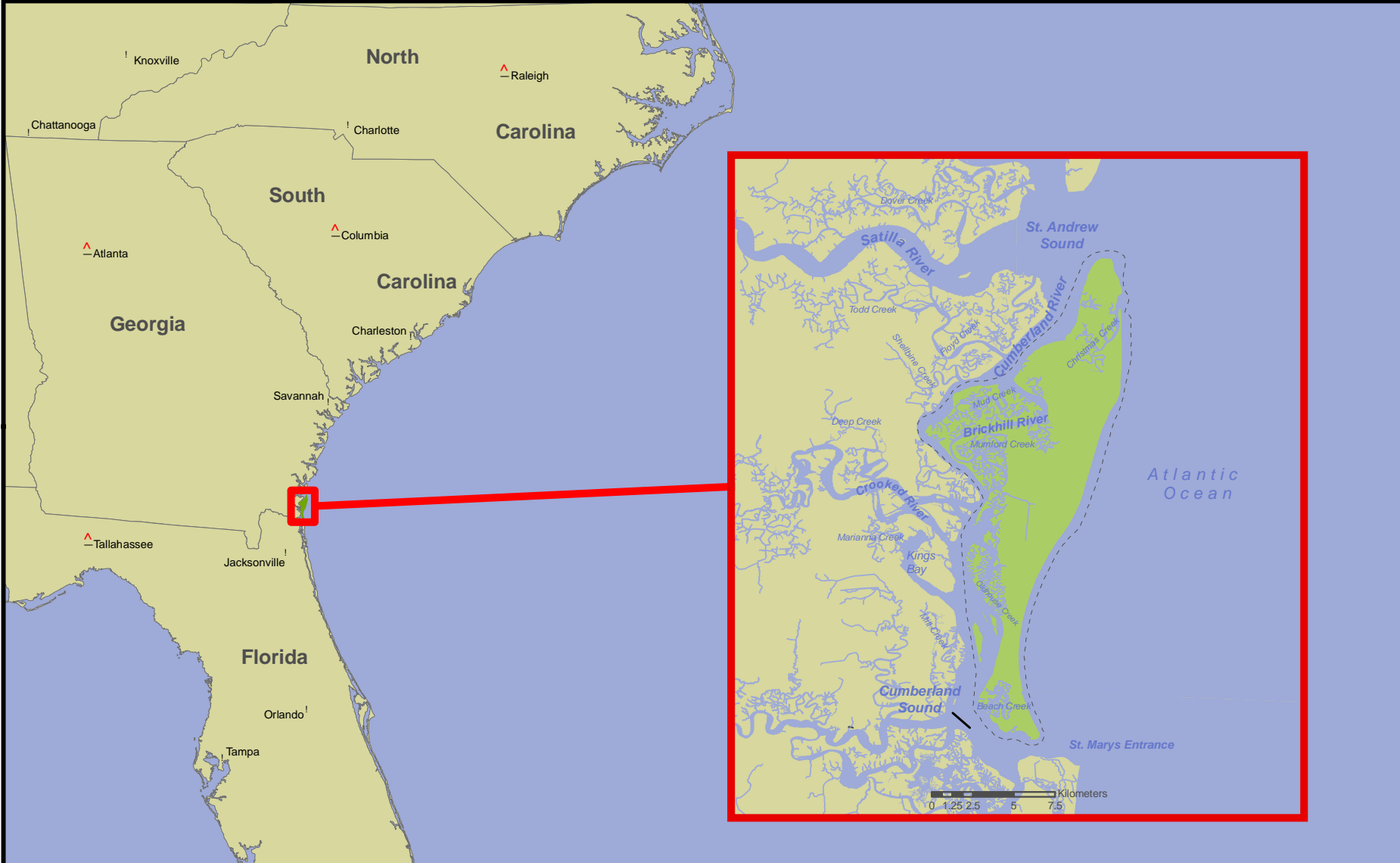


Water Quality Monitoring Objectives

- Determine the status, trends and spatial variability of selected parameters and overall water quality in park estuaries.
- Determine the extent to which water quality changes over time.
- Identify problem areas and areas needing protection.
- Determine the extent to which clean water projects and programs are effective in meeting stated goals.

Southeast Coast I&M Network Cumberland Island National Seashore

Southeast Coast Network
National Park Service
U.S. Department of the Interior



National Park Service



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Protocol:

Fixed Site – Following Protocols Developed by the National Estuarine Research Reserve Program.

Datalogger (every ½ hour)

- pH
- Dissolved Oxygen
- Temperature
- Salinity
- Turbidity
- Depth



Monthly

- Total Dissolved Nitrogen
- Total Dissolved Phosphorus
- Chlorophyll a
- Secchi Depth



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Cumberland Island National Seashore

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Site 1 established:

August 2005

Site 2 established:

January 2007

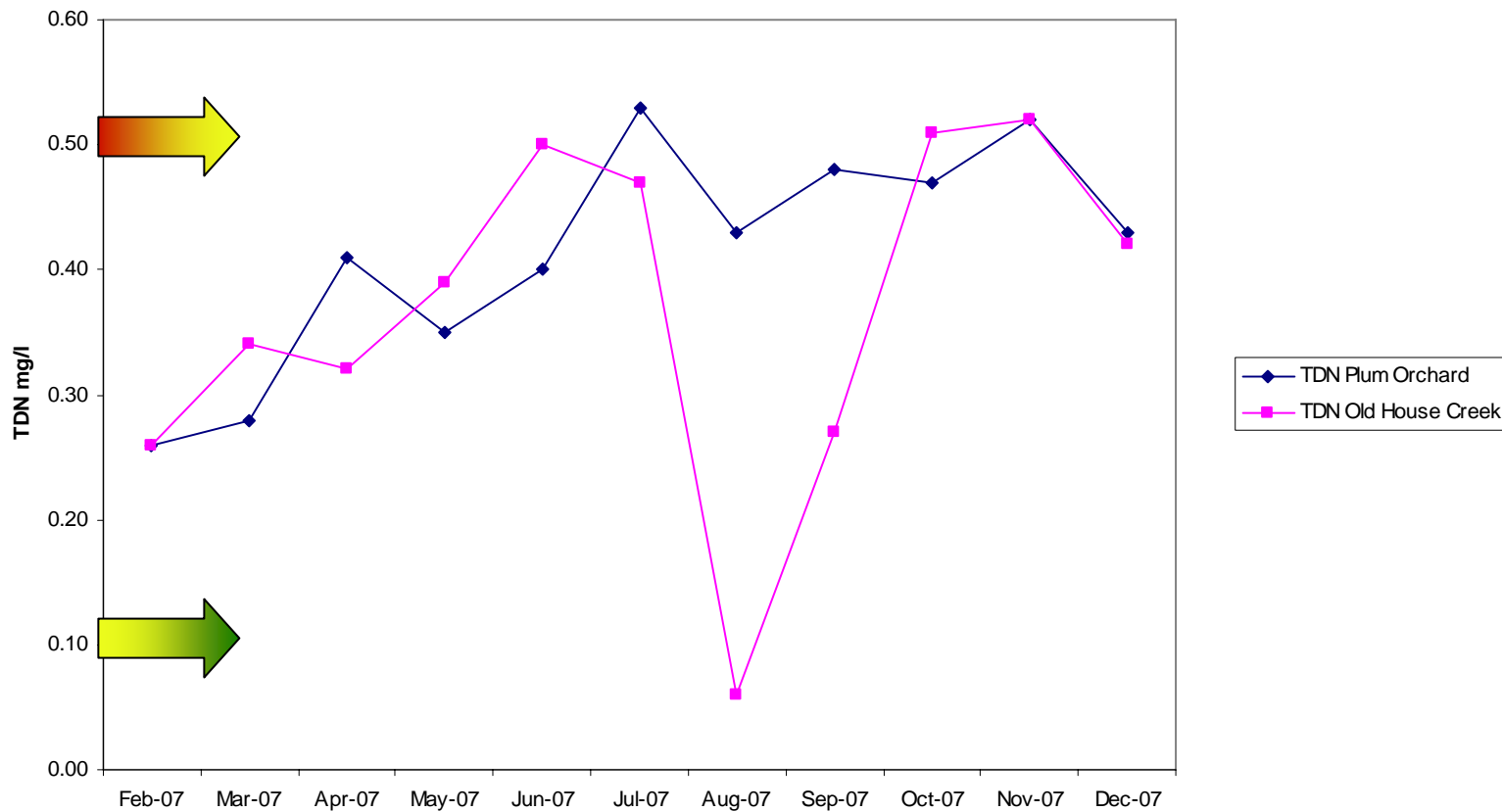
Nutrient and Chlorophyll
started February 2007

- Park staff maintaining these sites.
- SECN provides field supplies, data management, sample analysis, data analysis and interpretation.





Total Dissolved Nitrogen



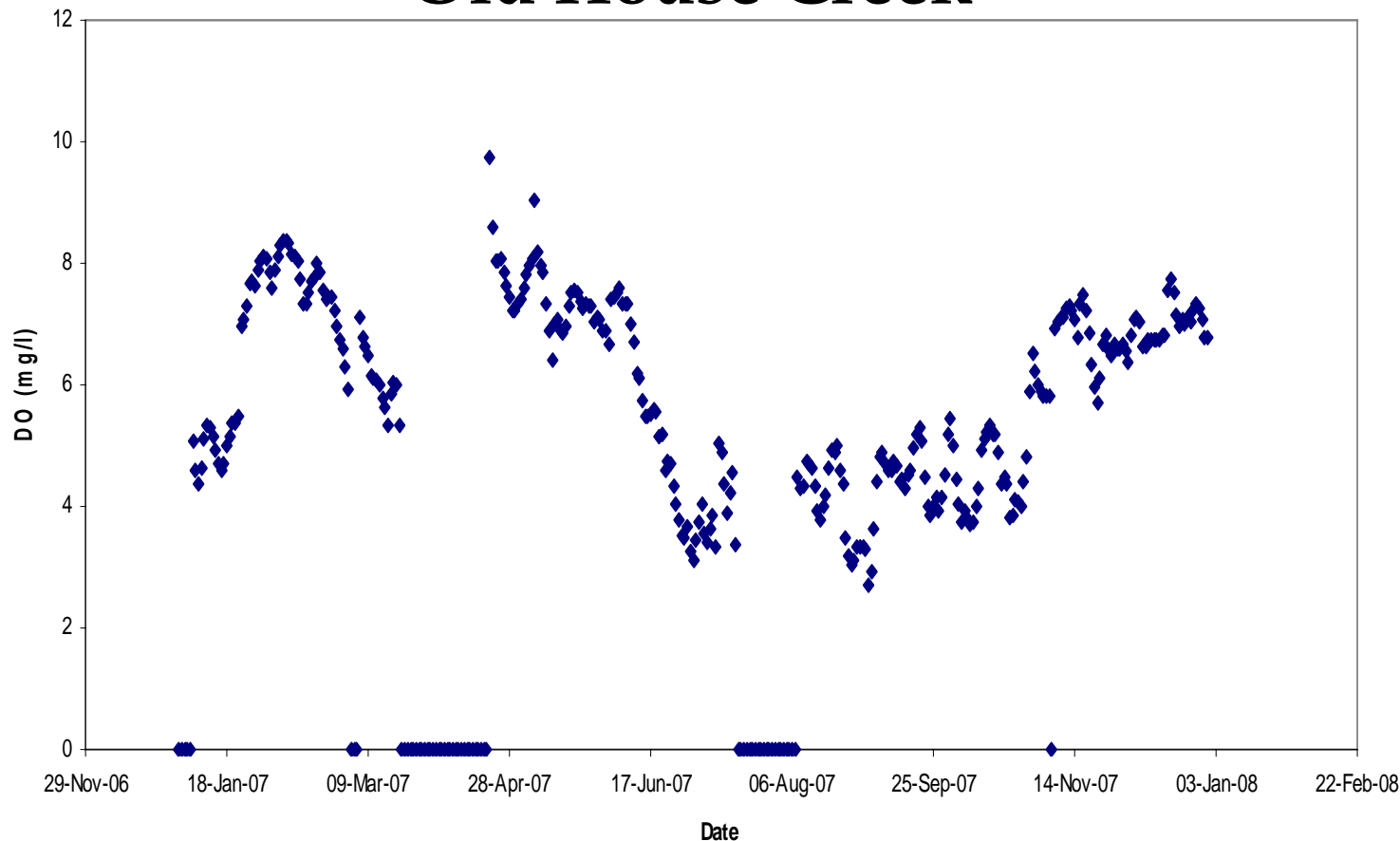


Total Dissolved Phosphorus





Dissolved Oxygen Mean Daily Values Old House Creek



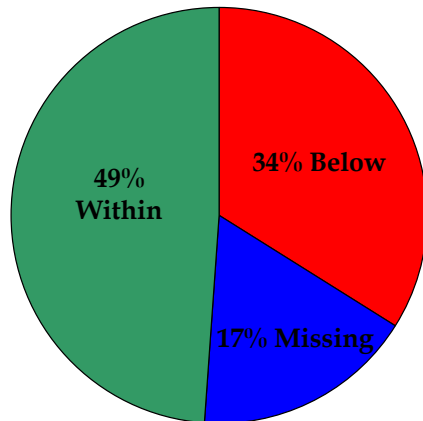
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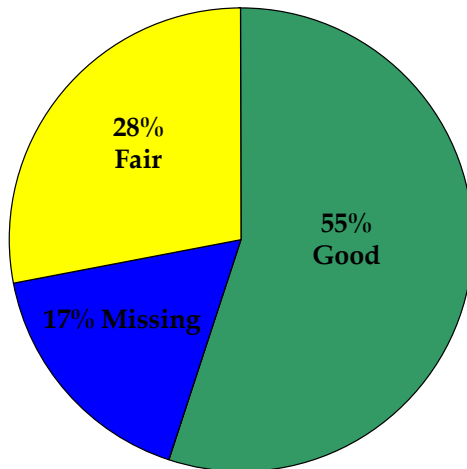
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Assessed using:

State DO Standard



EPA's National Coastal
Assessment Criteria





Protocol:

Probabilistic Surveys – Following Protocols Developed by the US Environmental Protection Agency.

30 Randomly selected stations (5-year rotating basis)

- Hydrographic Profile (pH, DO, Temperature, Salinity)
- Secchi Depth
- Total Dissolved Nitrogen
- Total Dissolved Phosphorus
- Chlorophyll a
- *Sediment Chemistry, Total Organic Carbon & Grain Size

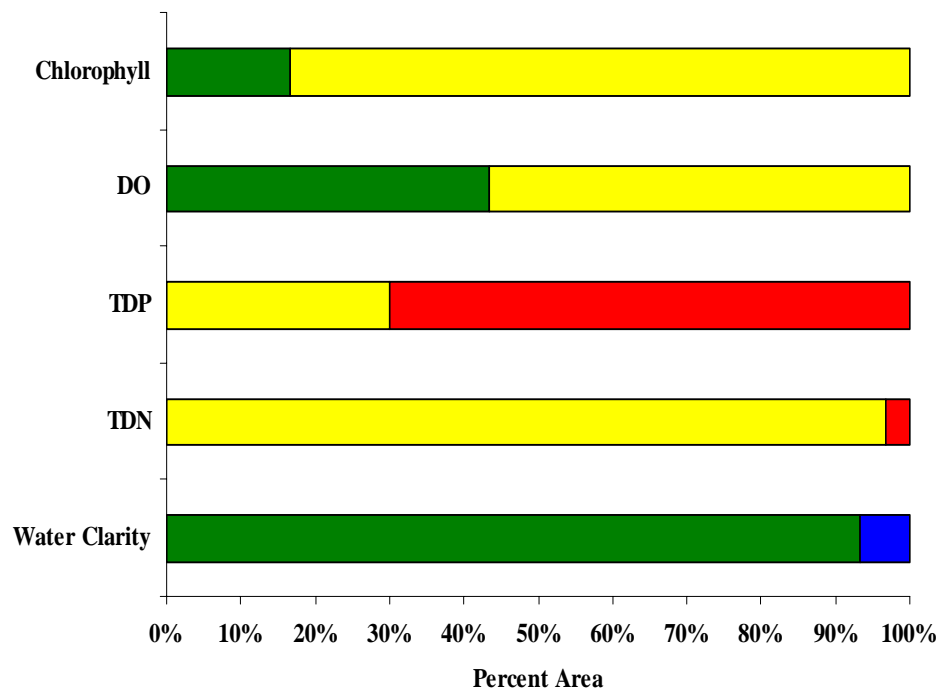
* Sediments sampled every 10 years

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Cumberland Island National Seashore



Issues of Concern:

- Coastal Development
- Animal Waste
- Fertilizer
- Failing Septic Systems
- Atmospheric Deposition

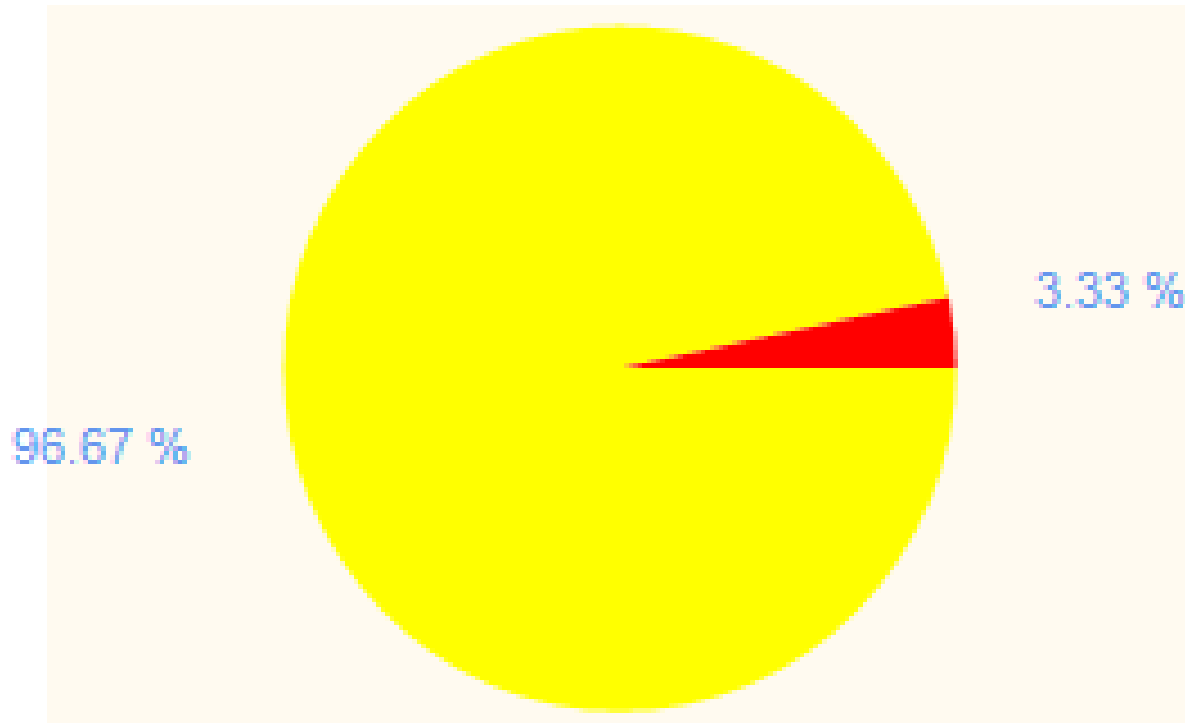
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Water Quality Index

OVERALL = FAIR





Why 'FAIR'???

Is that good enough???

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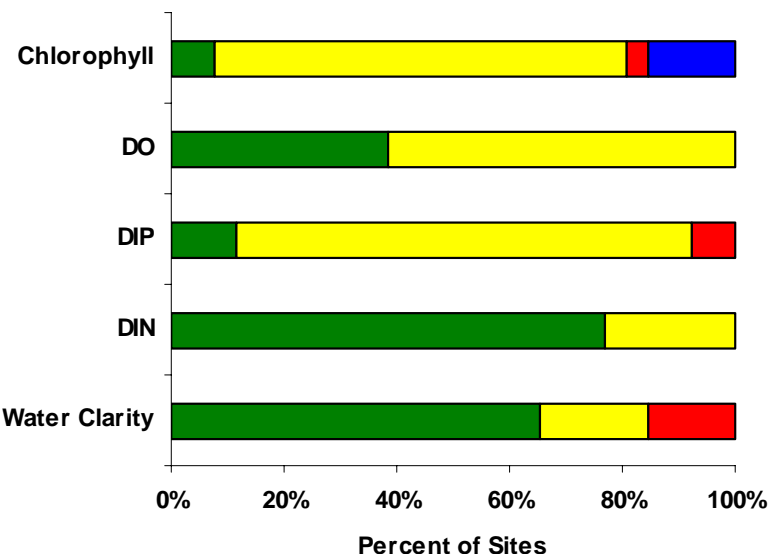


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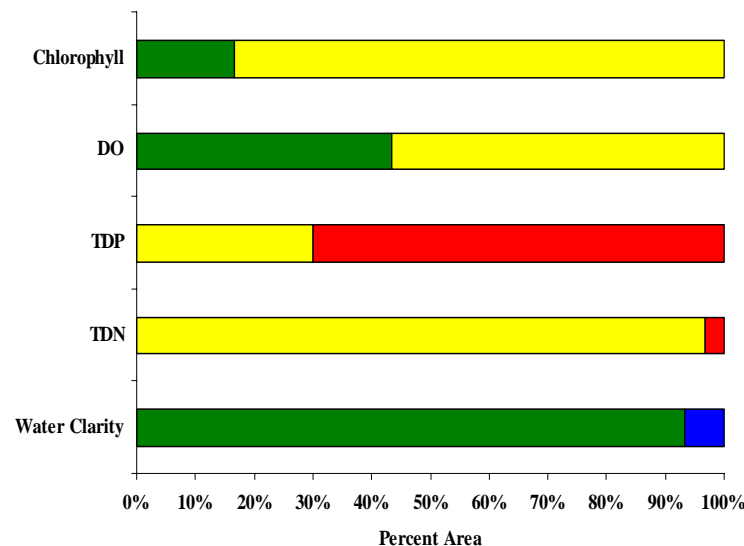
NCA Survey Results

2000 – 2004 (19 Stations)

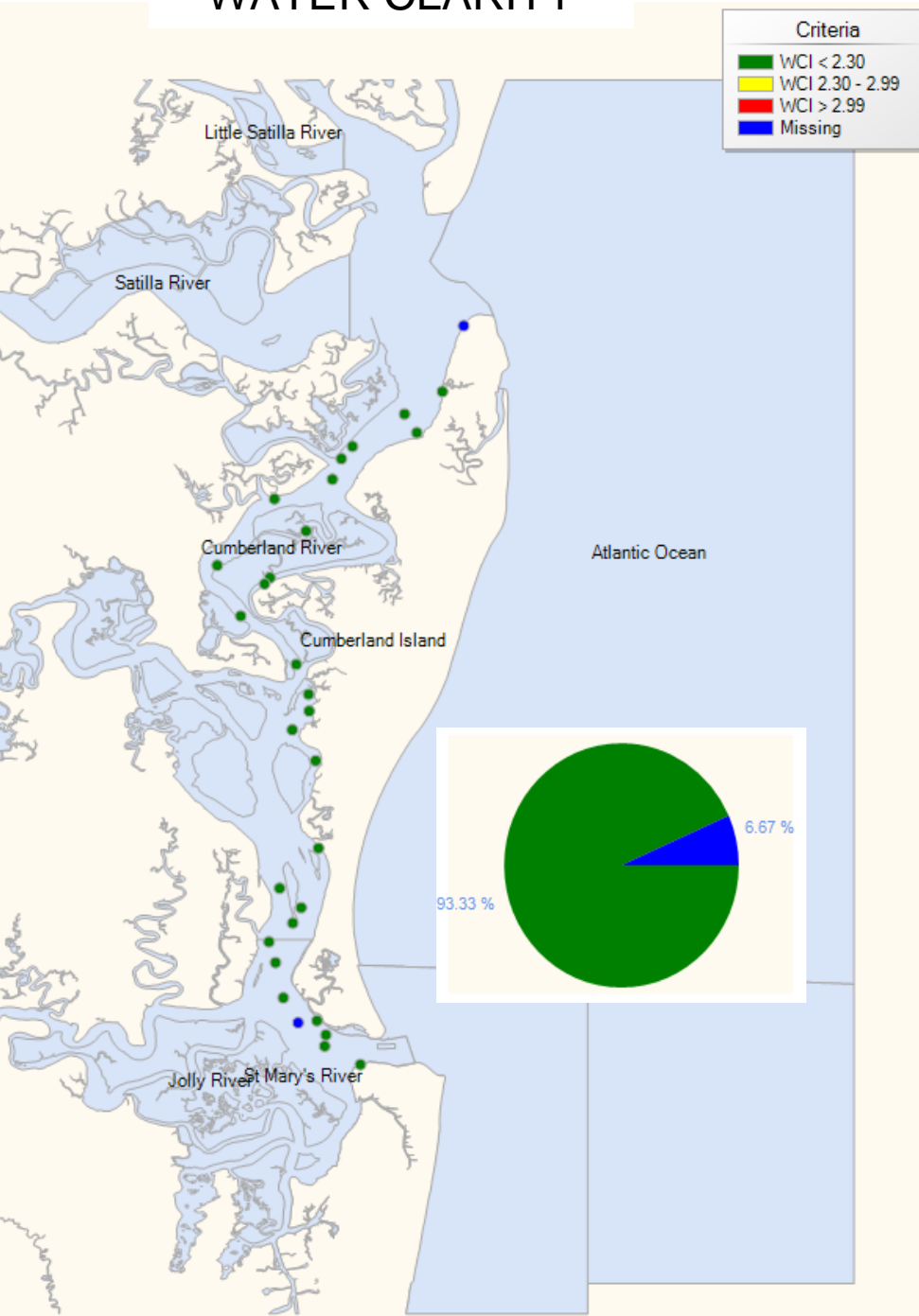


SECN Survey Results

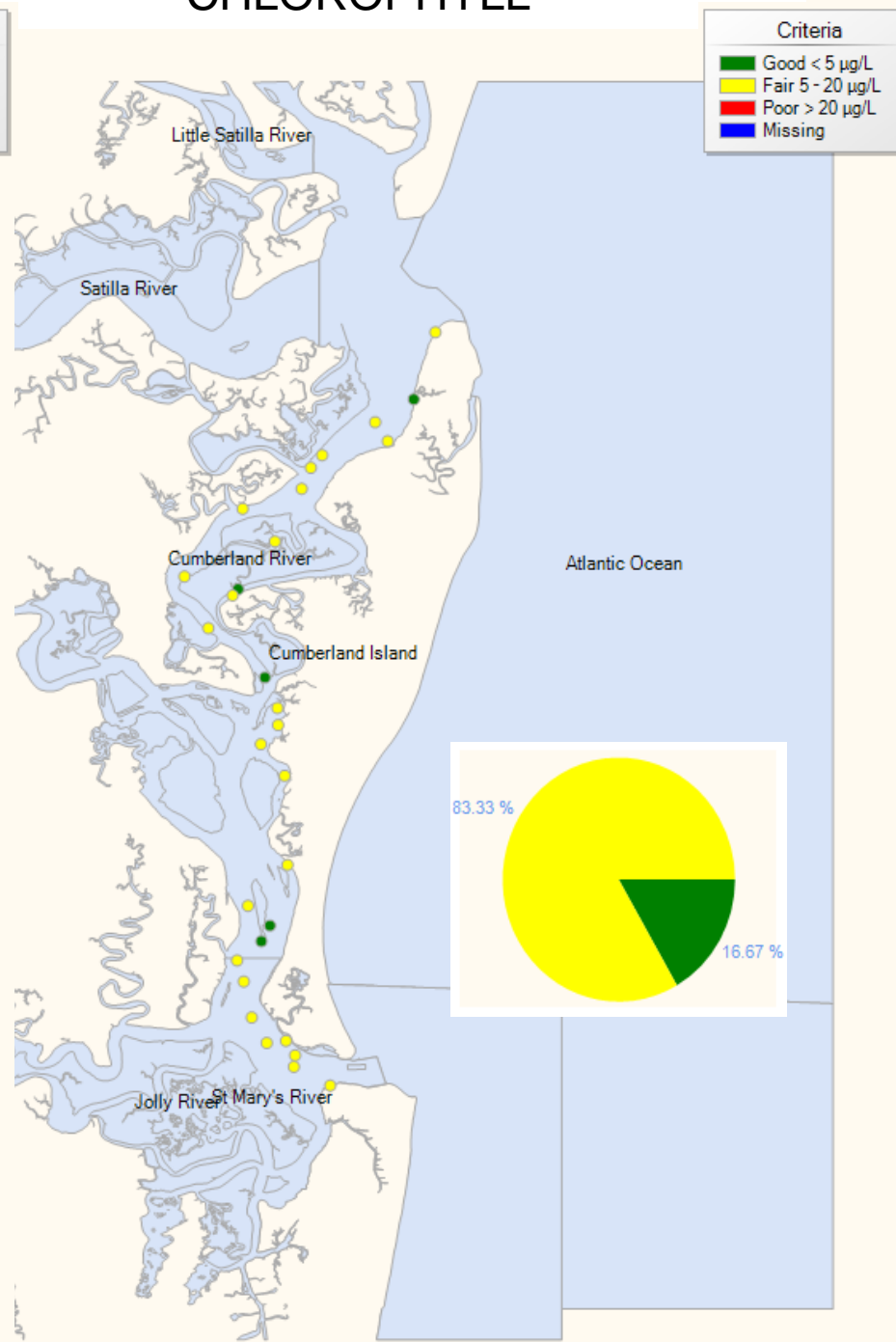
2007 (30 stations)



WATER CLARITY



CHLOROPHYLL





Questions???

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