

Governors' South Atlantic Alliance

Coastal Wetlands Monitoring

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This project is funded by EPA Region 4 Wetland Program Development Grant to the Governors' South Atlantic Alliance.

Project Objectives

1. Improve coordination of fragmented coastal wetlands monitoring programs across NC, SC, GA, and FL
2. Identify opportunities to enhance comparability of wetland monitoring programs
3. Build awareness of available data and improve information sharing



Approach

1. Establish a Regional Monitoring Workgroup reflecting the expertise in the region on coastal wetlands monitoring
2. Generate a catalog of coastal wetlands monitoring data
3. Assess the comparability of state monitoring efforts



1. Formation of the Workgroup

Workgroup Membership

- Includes collectors and users of monitoring data
- Representation from state and federal governments, universities, non-profits, and others
- 3-5 members per state

Active Participation Process

- Monthly webinars and three in-person meetings

Feedback Loop

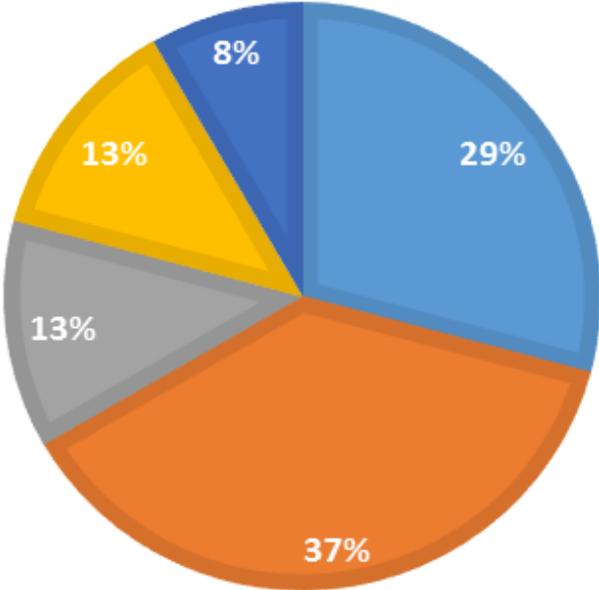
- Re-evaluation decisions made at previous meetings

Ownership of Process

- Key decision discussed and determined by majority

Workgroup Members

■ State ■ University ■ NERRs ■ Other ■ Federal



Target Population: Coastal Wetlands

- **Saltwater wetlands** that occur along the coastal shorelines and **freshwater wetlands** that extend inland within the coastal drainages.



Target Population (more than just wetlands)

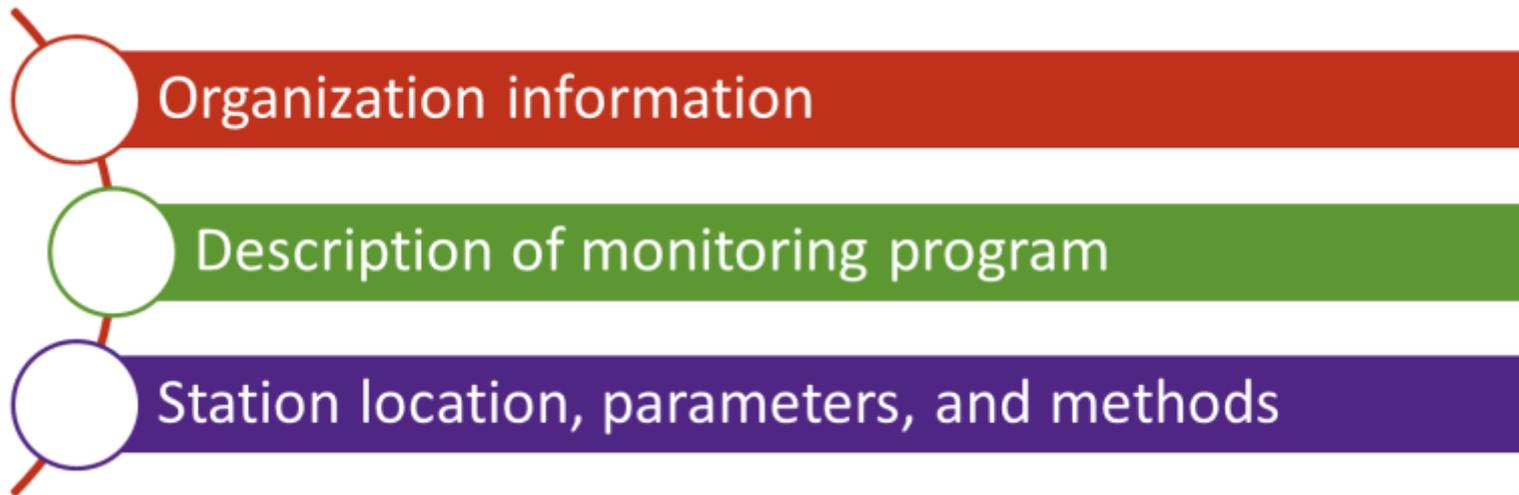


Examples of coastal wetland types. Forested wetland (top left); oyster reef bed (top right); estuarine marshes (bottom left); and planted marsh (bottom right).



2. Coastal Wetlands Monitoring Metadata Portal

- Catalog of stations and available monitoring data for coastal wetlands in South Atlantic states
- Created using MS Access
- Easy-to-use interface to query data
- Accessible through GSAA Web site



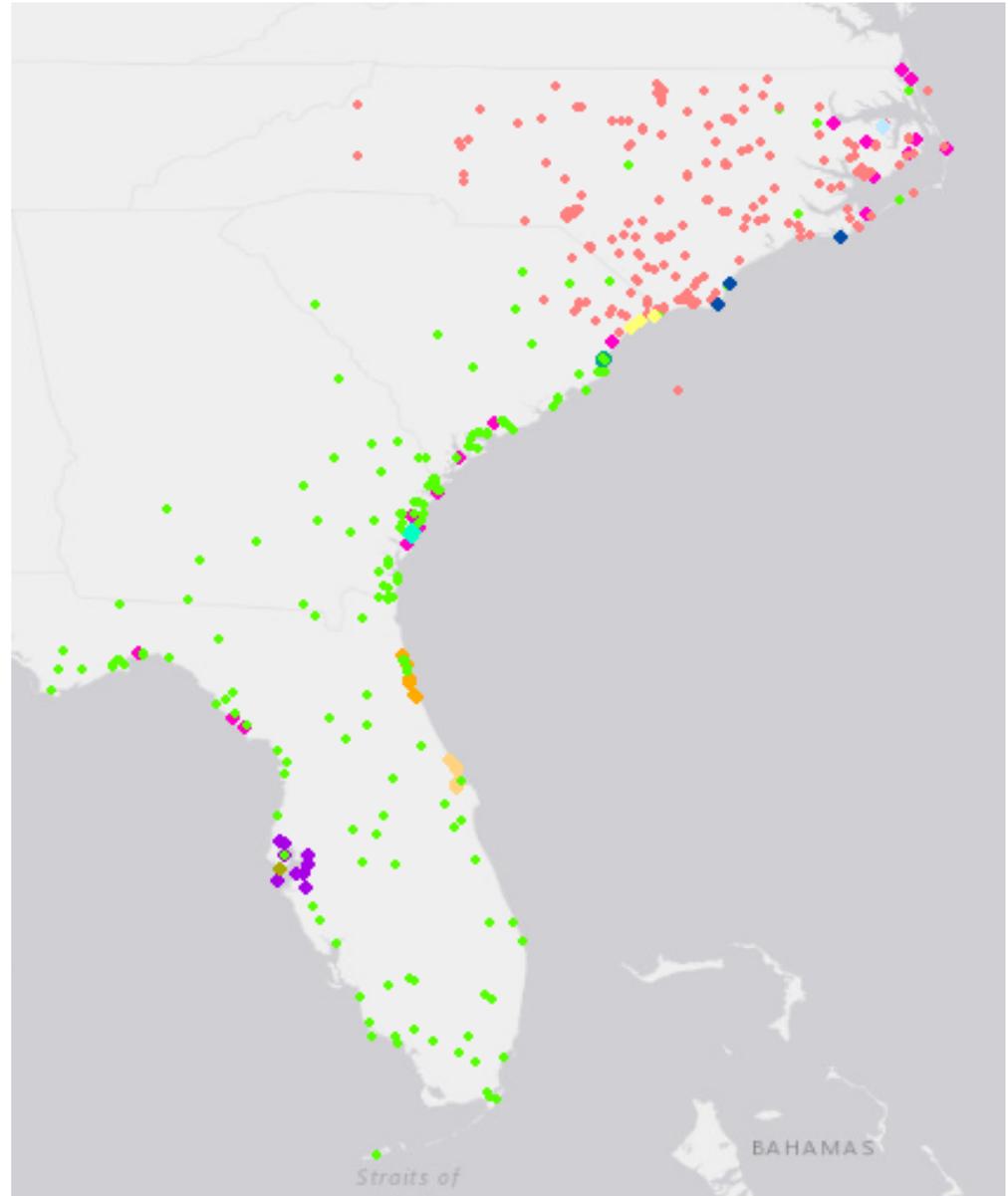
Coastal Wetlands Monitoring Metadata Portal

- 12+ Organizations
- 18+ Monitoring Programs
- Over 600 stations

Legend

Organizations

- ◆ University of South Carolina
- ◆ Coastal Carolina University
- ◆ EPA NWCA
- ◆ FL FWCC FWRI
- ◆ GTM NERR
- ◆ NC NERR
- ◆ NC DWR
- ◆ NCSU
- ◆ Sapelo NERR
- ◆ SJRWMD
- ◆ TBWP
- ◆ USFWS SRIM



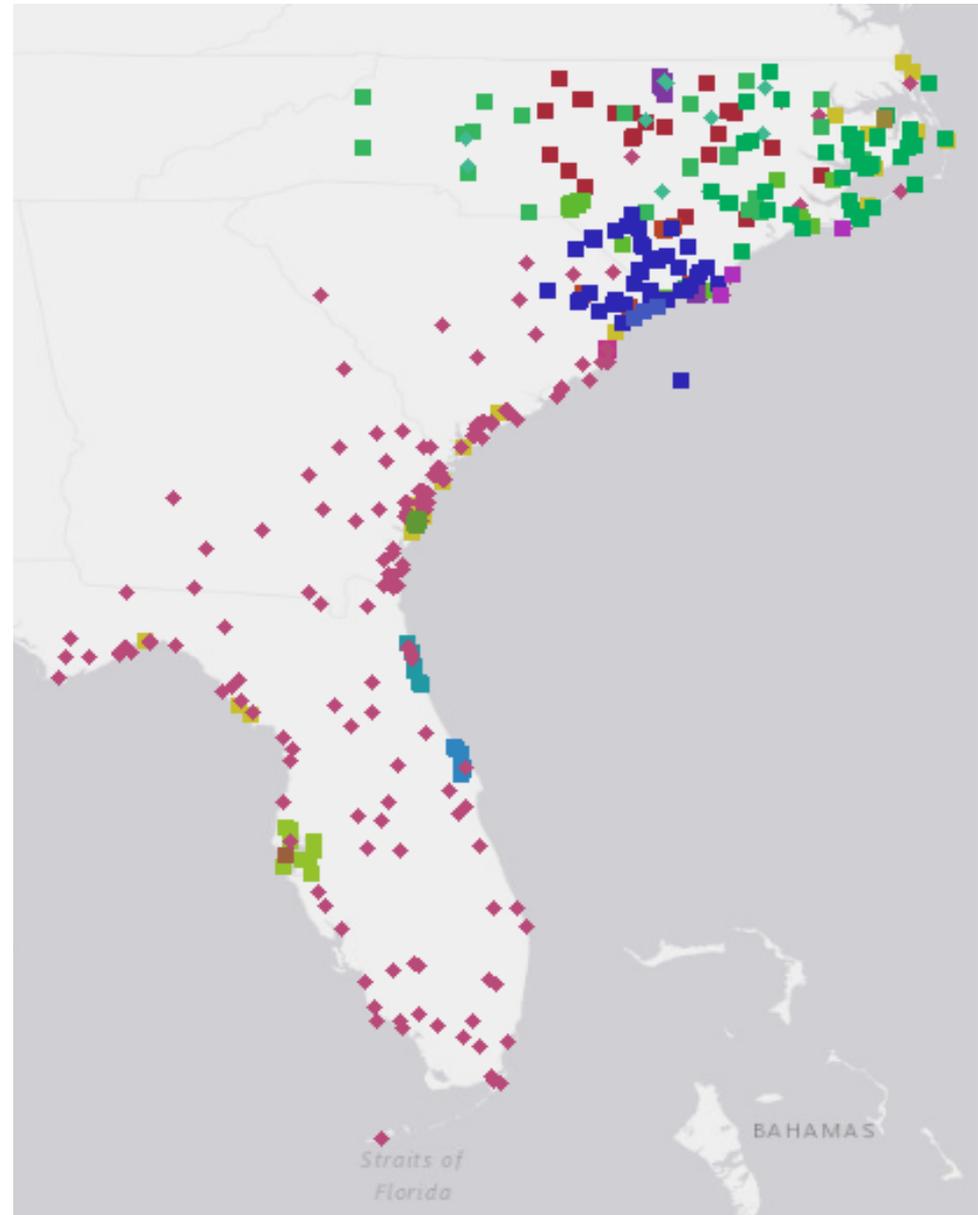
Coastal Wetlands Monitoring Metadata Portal

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Legend

Monitoring Program

- SEIWA (NC/SC)
- CHIMP (FL)
- CWEM (FWS)
- CWRE (FL)
- Headwater Wetlands (NC)
- NC Mitigation Success
- NCWAM Verification
- GTM NERR SWMP
- GIW Connectivity (NC)
- LoBOS (SC)
- North Inlet (SC)
- ◆ NWCA
- ◆ NWCA Intensification
- NC NERR SWMP
- Mitigation Evaluation (NC)
- Sapelo NERR SWMP
- Tampa Bay
- TOWeR



Coastal Wetlands Monitoring Metadata Portal

Station Information

- Site Name and Description
- Coordinates
- State, County, HUC, Waterbody Name
- Wetland Category
- Wetland Type (USFWS, HGM, Other)
- Monitoring start and end dates
- Sample Design
- Parameters and Methods
- Link to Station and Data



Coastal Wetlands Monitoring Metadata Portal

Category	Parameters
Atmospheric Conditions	Air temperature, relative humidity, barometric pressure, wind direction, wind speed, precipitation, total PAR
Soils and Elevation	Chemistry, bulk density, soil enzymes, stable isotopes, surface elevation, feldspar horizons, vertical accretion
Porewater	Salinity, chloride, iron, nitrogen, phosphorus, sulfide, temperature
Physical/ Chemical Water Properties	Water temperature, pH, dissolved oxygen, salinity, chlorophyll-a, nutrients, metals
Hydrology	Water level, elevation, hydrology description, hydrologic indicators
Biology	Vegetation (plant height, canopy cover, species composition), benthic macroinvertebrates, amphibians, fish, algae
Rapid Assessment Methods	USA RAM, Ohio RAM, NC WAM, LDI
GIS	NWI Plus, NC CREWS, Shoreline Characterization, SAV coverage

Coastal Wetlands Monitoring Metadata Portal

Search GSAACoastal Wetlands Monitoring Metadata Portal

Organization Search *No criteria selected returns all

Organization Name: ?

OR Organization name containing:

Organization Type: ? [View/Find Organizations](#)

Monitoring Program Search

Program Name: ?

OR Program name containing:

Program Scale: ? [View/Find Programs](#)

Station Search (includes search criteria above)

State: ?

County: ?

HUC8: ?

HUC12: ?

Waterbody Name: ?

OR Waterbody name containing:

Station Type: ?

Parameter Category: ?

[View/Find Stations](#)

[Tabular Format](#)

[Individual Format](#)

[Export Stations \(Excel\)](#)

[Exit Database](#)

[Clear Criteria](#)

Add or edit data in this database -- [Add New Data](#) [Edit Data](#) Version 1.1 September 12, 2016

1

- Query by:
- Organization
 - Program
 - Station location
 - Station type
 - Parameters

2

- View as:
- Table
 - Record
 - Export to Excel

3

- Edit/Add data

Coastal Wetlands Monitoring Metadata Portal

Search_Stations - Access

Matthews, Kimberly

Program Name	Site Code	Site Name	State	County	Waterbody Name	Is it a Wetland	Cowardin	Station Parameters	Status
National Wetland Condition Assessment	3732	NWCA11-1326	FL	St. Johns	Tolomato River	yes	E2EM	algae species, algae toxin, ammonium, chlorophyll, conductivity, hydrology (description), nitrate+nitrite, pH, soil bulk density, soil chemistry, soil enzymes, soil stable isotopes, total nitrogen, total phosphorus, USA Rapid Assessment Method, vegetation native/alien species, vegetation species composition and abundance, vegetation structure	http pa.f l-aq resc
National Wetland Condition Assessment	4916	NWCA11-1292	FL	St. Johns	Tolomato River-Moses Creek Frontal	yes	E2EM	algae species, algae toxin, ammonium, chlorophyll, conductivity, hydrology (description), nitrate+nitrite, pH, soil bulk density, soil chemistry, soil enzymes, soil stable isotopes, total nitrogen, total phosphorus, USA Rapid Assessment Method, vegetation native/alien species, vegetation species composition and abundance, vegetation structure	http pa.f l-aq resc
National Wetland Condition Assessment	5383	NWCA11-1248	FL	St. Johns	Tolomato River	yes	E2EM	algae species, algae toxin, ammonium, chlorophyll, conductivity, hydrology (description), nitrate+nitrite, pH, soil bulk density, soil chemistry, soil enzymes, soil stable isotopes, total nitrogen, total phosphorus, USA Rapid Assessment Method, vegetation native/alien species, vegetation species composition and abundance, vegetation structure	http pa.f l-aq resc
National Wetland Condition Assessment	5808	NWCA11-3069	FL	St. Johns	Tolomato River	yes	E2EM	algae species, algae toxin, ammonium, chlorophyll, conductivity, hydrology (description), nitrate+nitrite, pH, soil bulk density, soil chemistry, soil enzymes, soil stable isotopes, total nitrogen, total phosphorus, USA Rapid Assessment Method, vegetation native/alien species, vegetation species composition and abundance, vegetation structure	http pa.f l-aq resc

Record: 1 of 4

NUM LOCK

Coastal Wetlands Monitoring Metadata Portal

Station Information

* Use the navigation buttons at the bottom of this form to page through each station and view the station detail

Organization Name: Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute Close Form

Program Name: Coastal Habitat Integrated Mapping and Monitoring Program

Site Code: Mangrove 1

Site Name: Clam Bayou Mangrove 1

Description: SWFWMD restoration site. Hydrologic restoration for adjacent mangroves

State: FL County: Pinellas

Latitude (DD): 27.739233 Longitude (DD): -82.692233

Station Details **Station Parameter List**

Property Ownership: Southwest Florida Water Management District (SWFWMD)

HUC8: 03100207 HUC12: 031002070500

Waterbody Name: Clam Bayou

Waterbody Classification: Is it a wetland? unknown

Wetland Category: Wetland Type: Mangrove

Cowardin Type: estuarine intertidal scrub-shrub wetland broad-leaved evergreen

HGM Type: Tidal fringe

Other Information: SWFWMD restoration site. Hydrologic restoration for mangroves

Date Start: 12/8/14 Date End: ongoing

Sample Design:

Station URL:

Data URL:

Record: 1 of 6 Filtered Search

Coastal Wetlands Monitoring Metadata Portal

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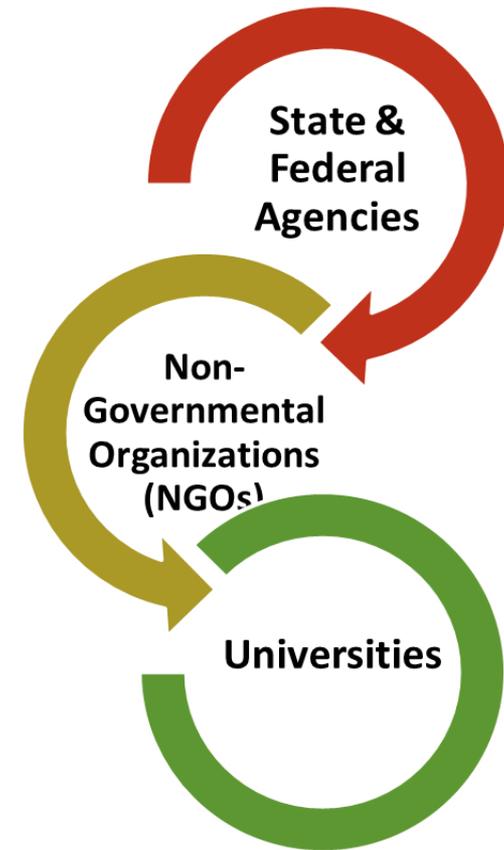
Station Details | Station Parameter List

Parameter Name	Parameter Category
adjacent surface water DO	Physical/Chemical Water Properties
canopy cover	Biology
PCQ sampling	Biology
pH	Physical/Chemical Water Properties
porewater salinity	Porewater
salinity	Physical/Chemical Water Properties
soil pH	Soils and Elevation
temperature	Physical/Chemical Water Properties
tree height	Biology
vegetation cover	Biology

Record: 1 of 6 Filtered Search

3. Assess the comparability of state monitoring efforts

- Program Goals and Objectives
- Available Resources
 - Staffing
 - Expertise
- Data Collection Methods
- Assessment Methods
- Future Needs



Next Steps

- Finalize Coastal Wetlands Monitoring Metadata Portal
 - Complete User's Guide
 - Available on GSAA website
- Compile information on monitoring methods across region
- Identify opportunities for collaboration
 - Conduct survey of workgroup members to determine current gaps and future needs
 - December meeting – identify potential collaborations to enhance wetland monitoring

Thank you to Workgroup members

North Carolina	
Cyndi Karoly & Kristie Gianopulos	NC Division of Water Resources
Marcelo Ardon-Sayao	East Carolina University
Mike Burchell	North Carolina State University
Dean Carpenter	Albemarle-Pamlico National Estuary Partnership
Brandon Puckett	NC National Estuarine Research Reserve (NERR)
Tancred Miller	NC DEQ Division of Coastal Management
Christine Pickens	The Nature Conservancy
Curt Richardson	Duke University
Georgia	
Jan Mackinnon & Dominic Guadagnoli	GA Department of Natural Resources
Merryl Alber & Jessica O'Connell	University of Georgia
Nicole Rankin	US Fish and Wildlife Service
Doug Sampson	Sapelo Island National Estuarine Research Reserve
Katy Smith	University of Georgia
Florida	
J. Cho	Bethune-Cookman University
Nikki Dix	Guana Tolomato Matanzas NERR
Laura Geselbracht	The Nature Conservancy
Paul Haydt & Chuck Jacoby	St. Johns River Water Management District
Ryan Moyer & Kara Radabaugh	Florida Fish and Wildlife Research Institute
Kelly Reiss	University of Florida
South Carolina	
David Graves & Rusty Wenerick	SC Dept. of Health & Environmental Control
Jim Morris	University of South Carolina
Denise Sanger	SC Department of Natural Resources
Richard Viso	Coastal Carolina University
EPA	
Rhonda Evans	EPA Region 4
Pete Kalla	EPA Region 4