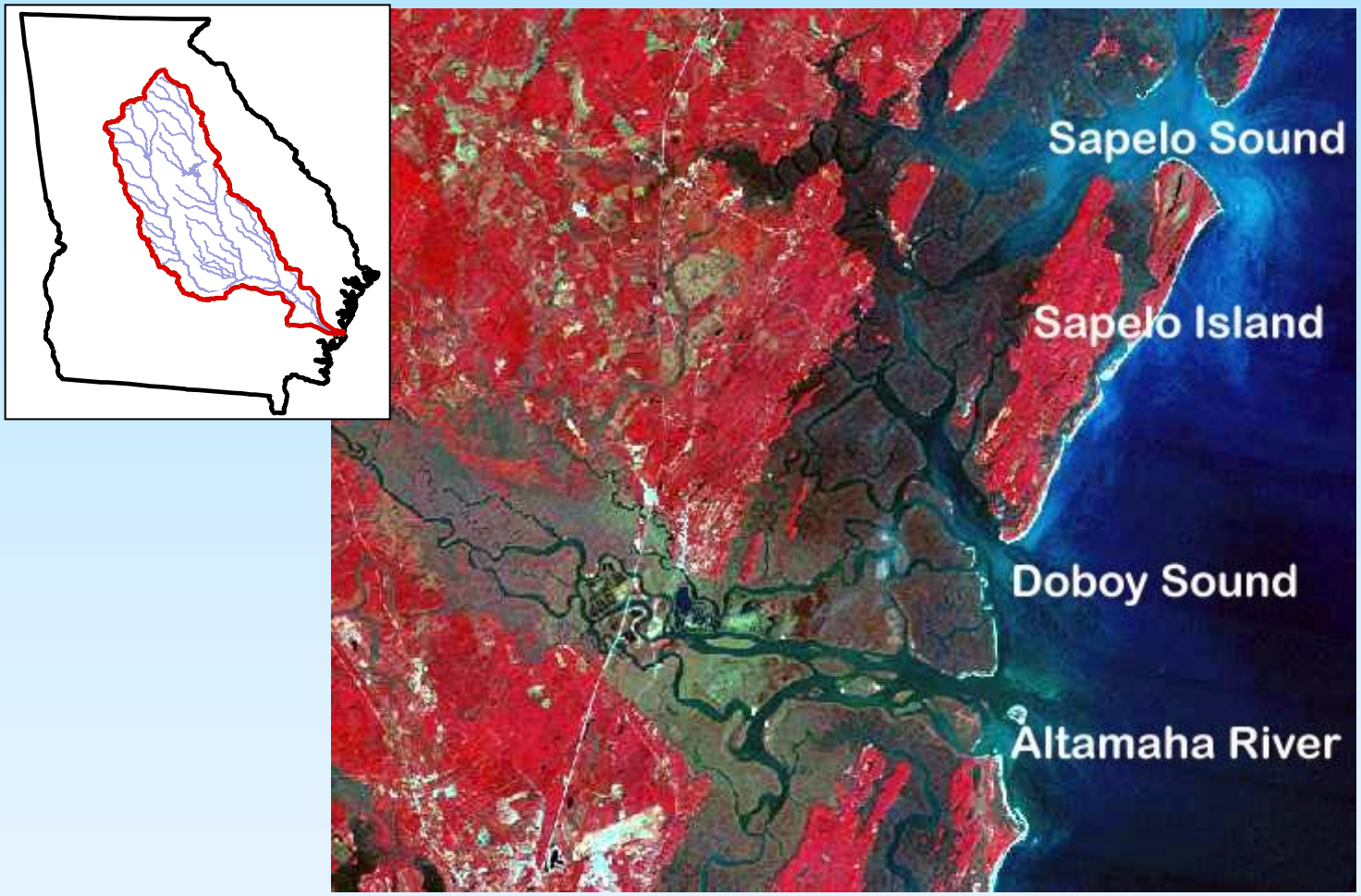
The Georgia Coastal Ecosystems (GCE) Long Term Ecological Research (LTER) Program

Georgia Coastal Ecosystems (GCE)



http://gce-lter.marsci.uga.edu/

GCE Investigators

- UGA: Merryl Alber, Adrian Burd, Daniela Di Iorio, Tim Hollibaugh, Mandy Joye, Christof Meile, John Wares, Dale Bishop, Wade Sheldon
- SkIO: Jack Blanton, Clark Alexander
- UH: Steve Pennings
- IU: Chris Craft
- UF: Brian Silliman
- USC: Billy Moore

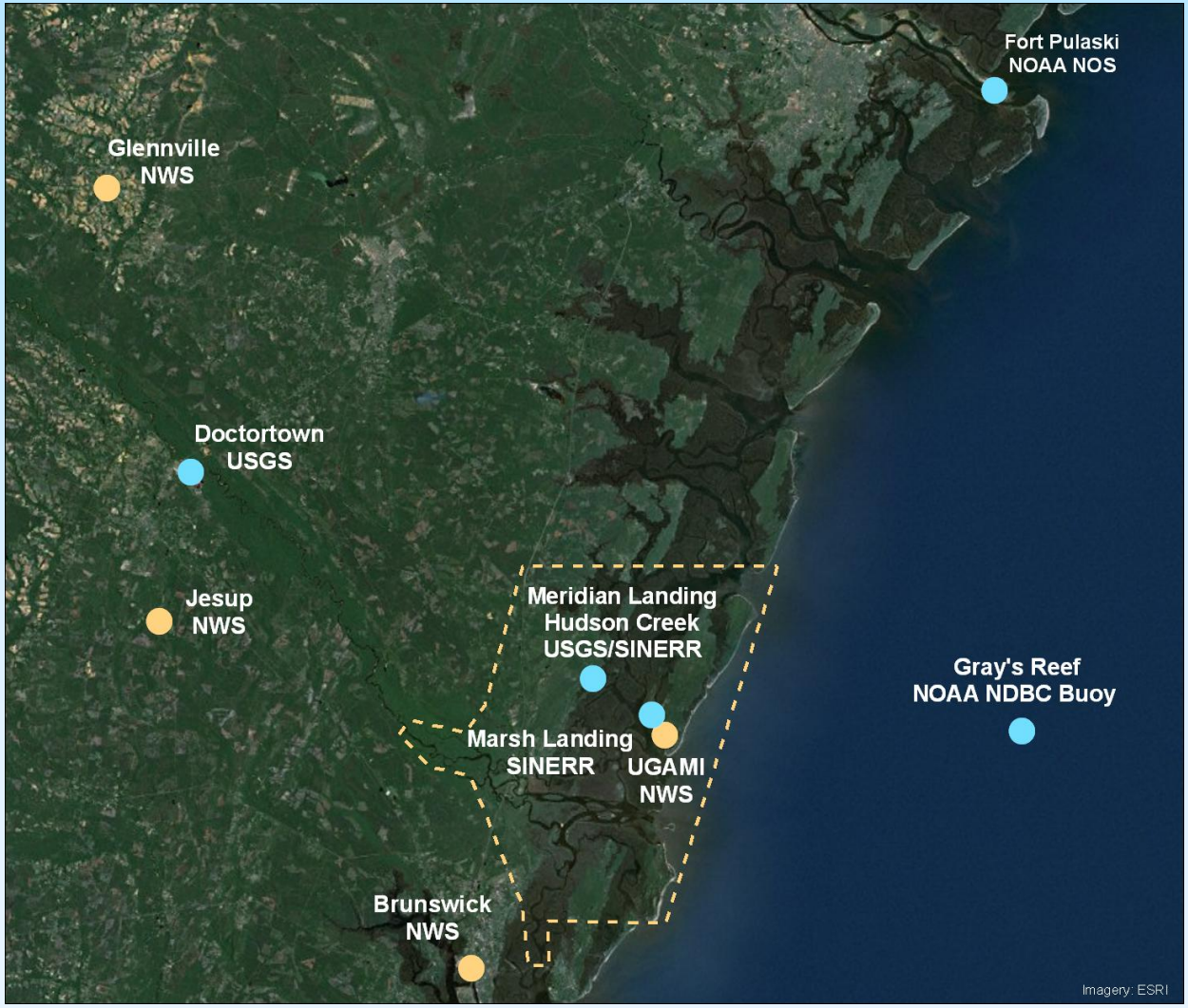
GCE Goal

To understand the mechanisms by which variation in fresh and salt water create temporal and spatial variability in estuarine habitats and processes, in order to predict directional changes that will occur in response to long-term shifts.

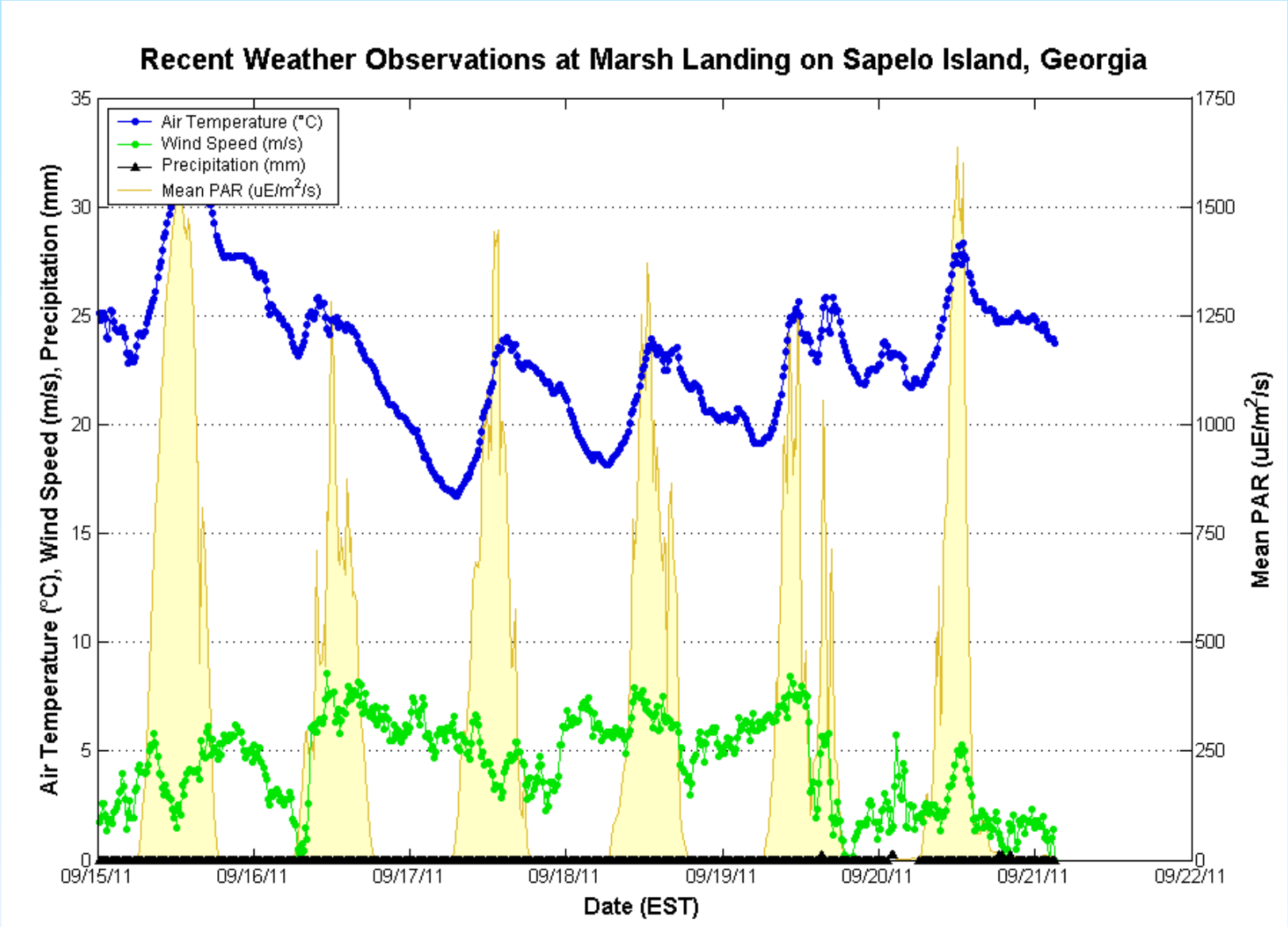
Drivers:

- Climate Change:
  Precipitation, Temperature, Sea Level
- Human Activities:
  Population increase, Changes in runoff

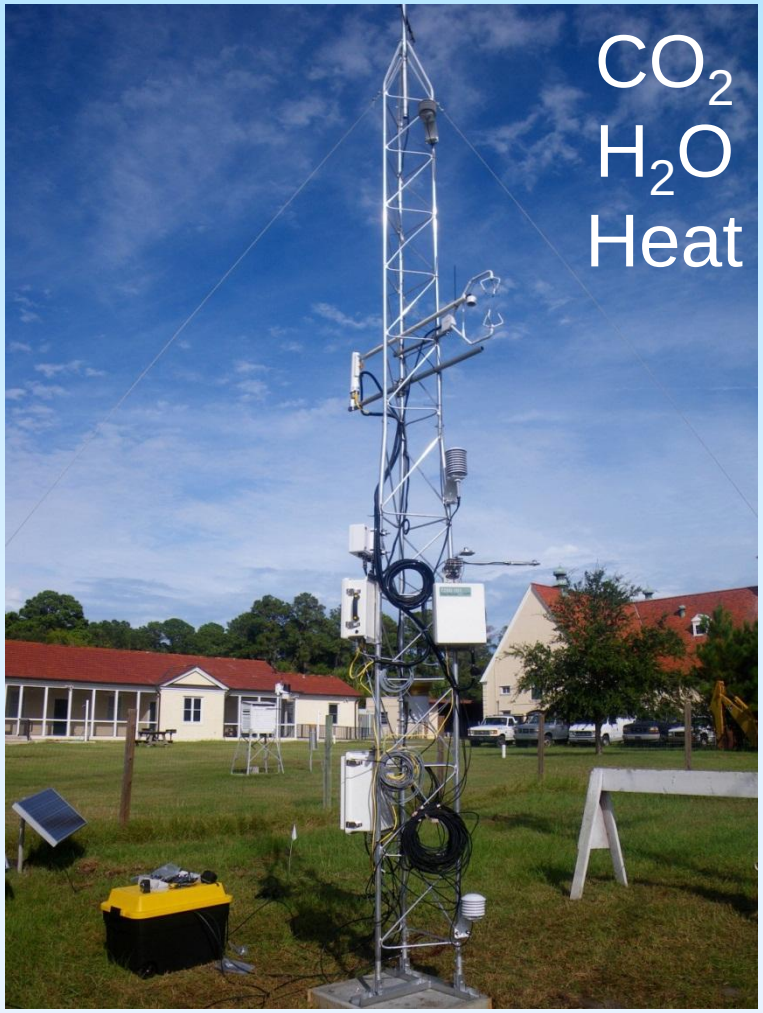
Q 1. What are the long-term patterns of environmental forcing to the coastal zone?



Near real-time weather



Flux Tower

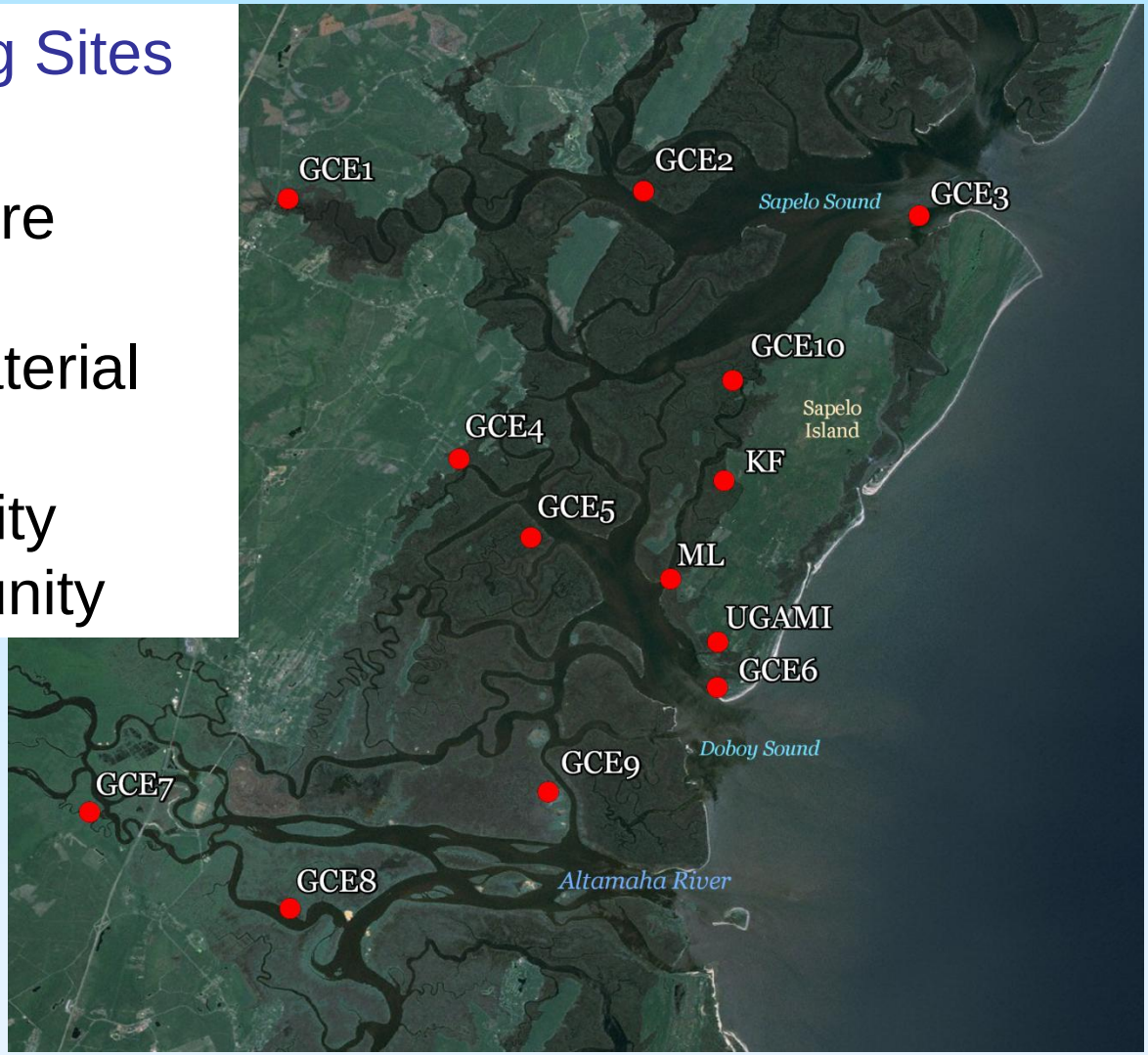


Q2: Internal Patterns

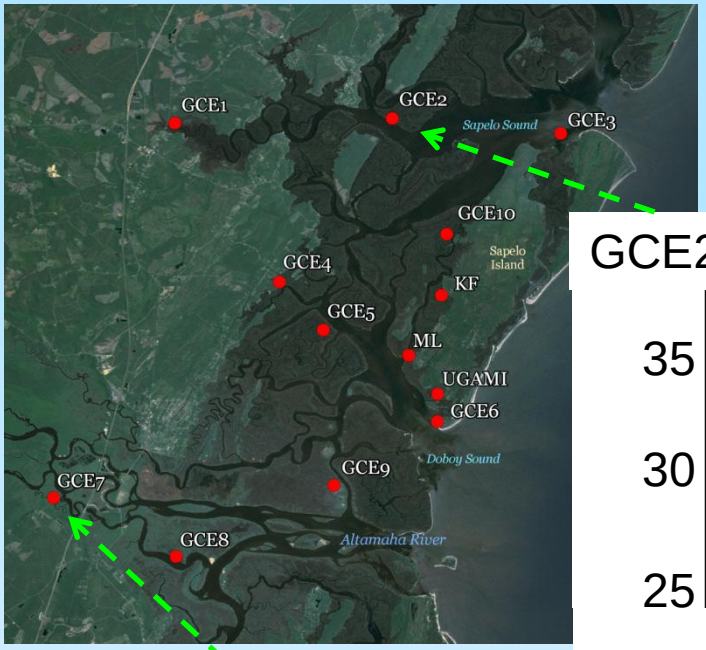
GCE Monitoring Sites

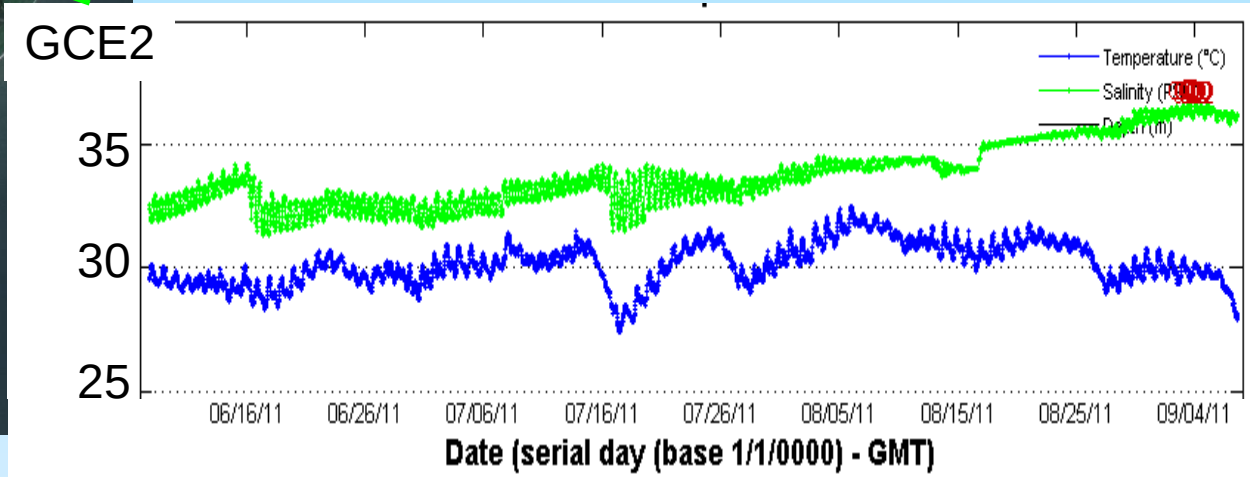
Core Monitoring

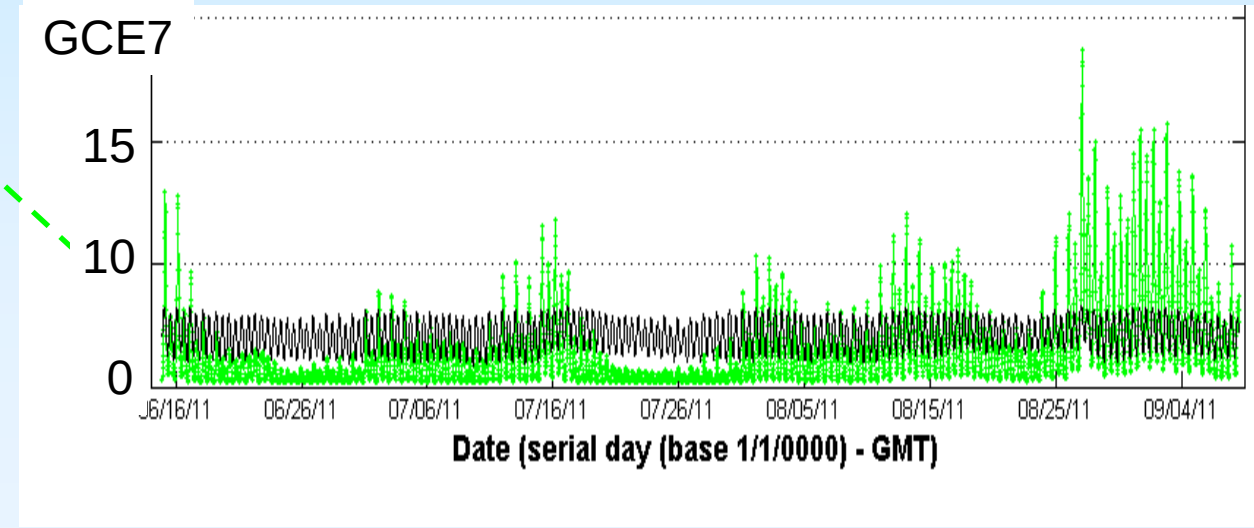
- Salinity structure
- Dissolved and suspended material
- Soil processes
- Plant community
- Animal community



Salinity Structure



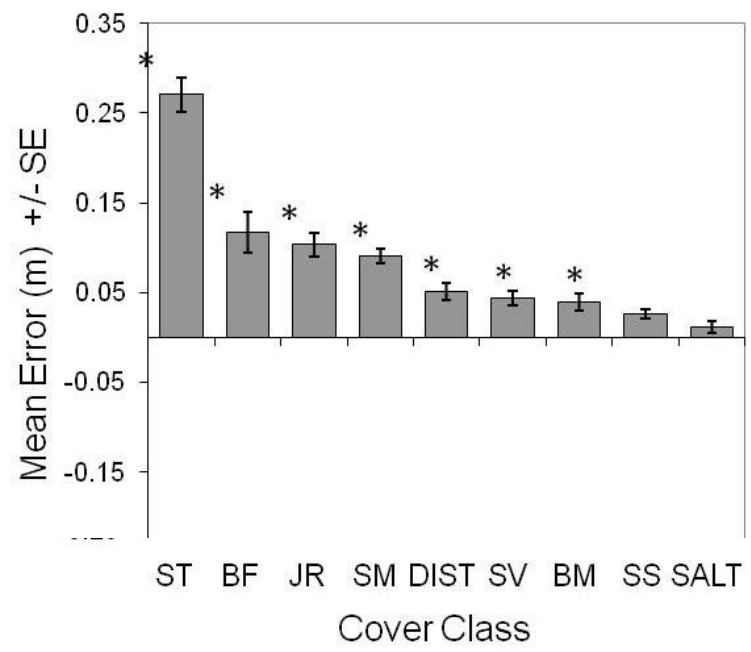


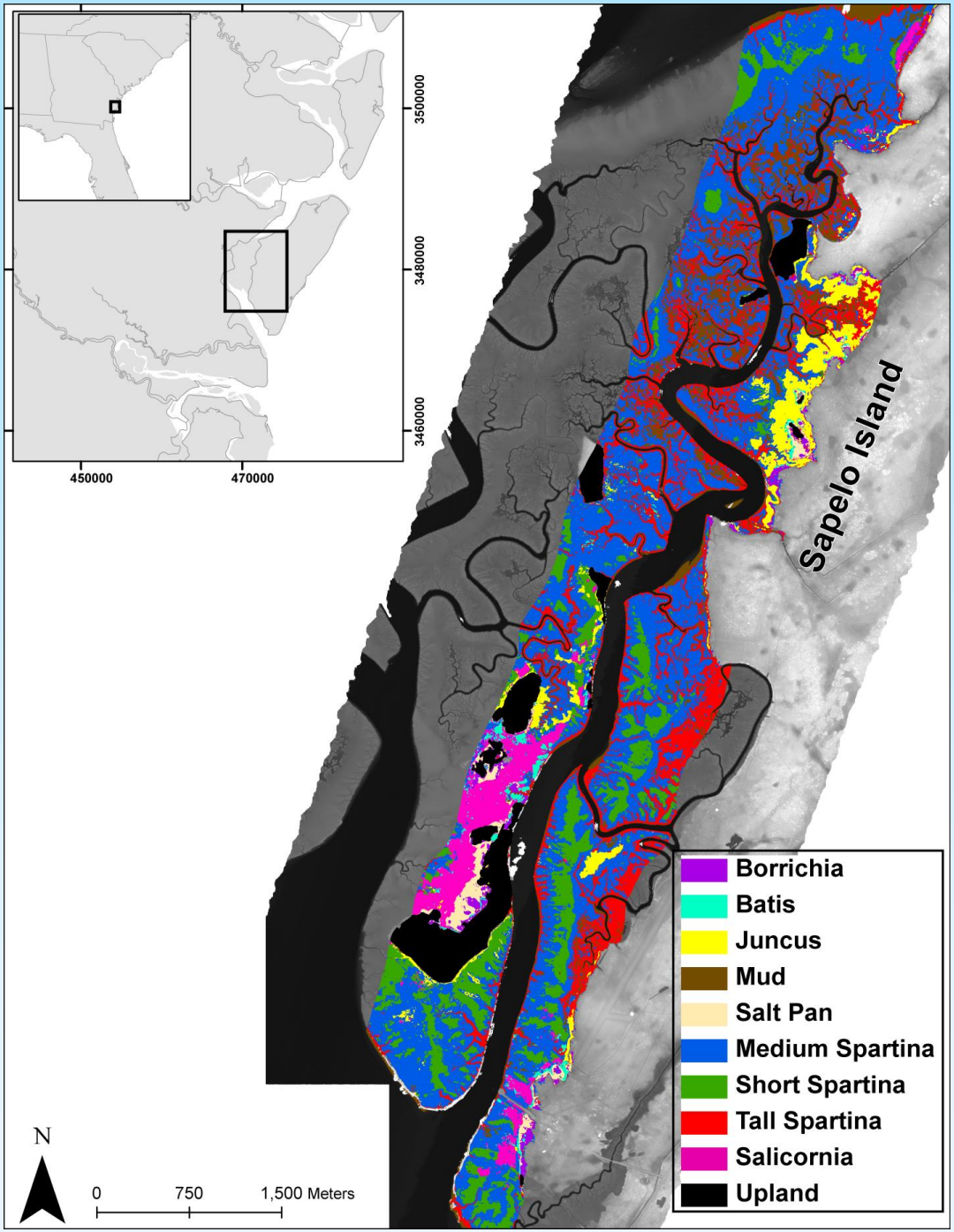


Duplin River Focus

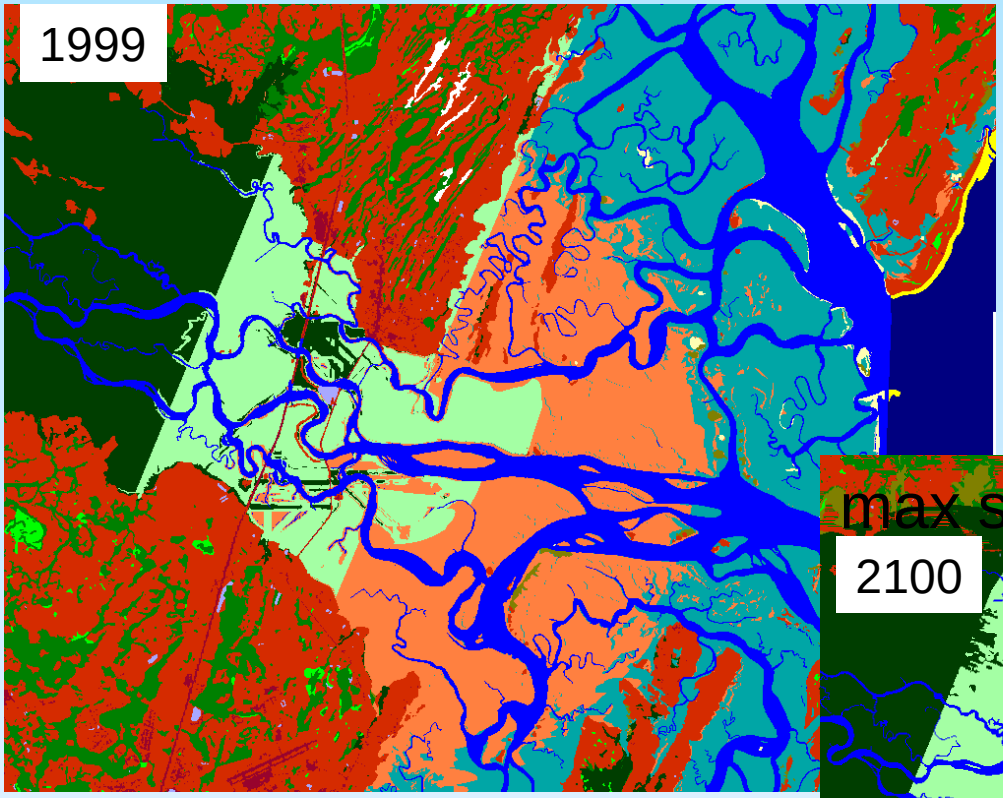
LIDAR

- NCALM
- Horizontal Accuracy: 10-20 cm
- Vertical Accuracy: 5-10 cm
- 1 m DEM

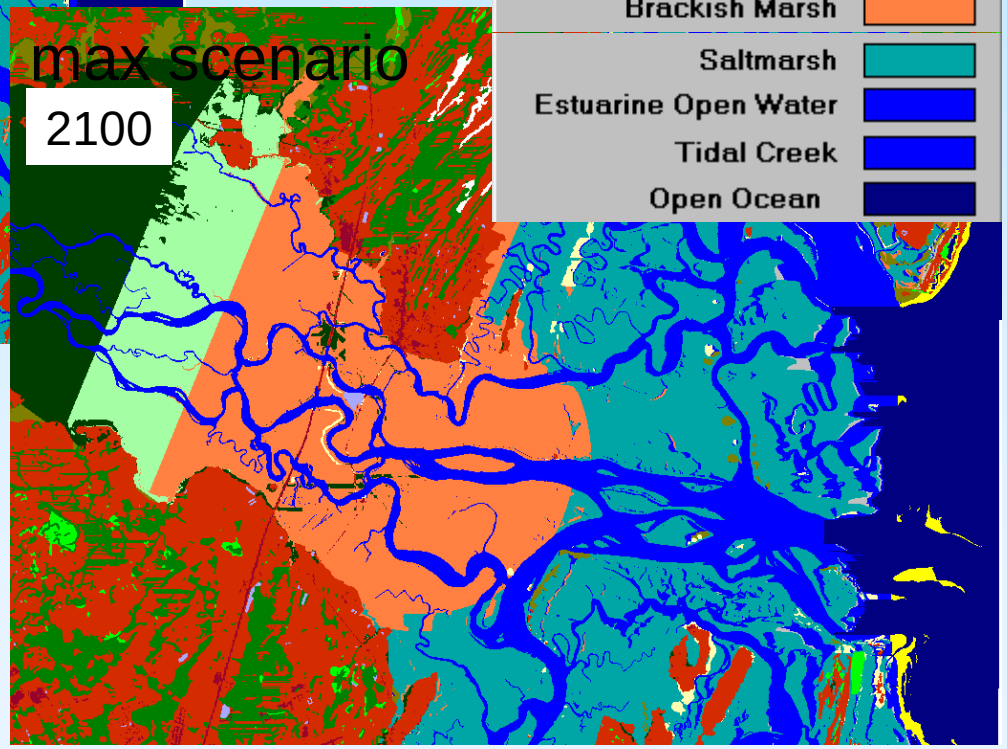




Q3: Longitudinal Gradients



SLAMM
(Sea level affects marshes model)



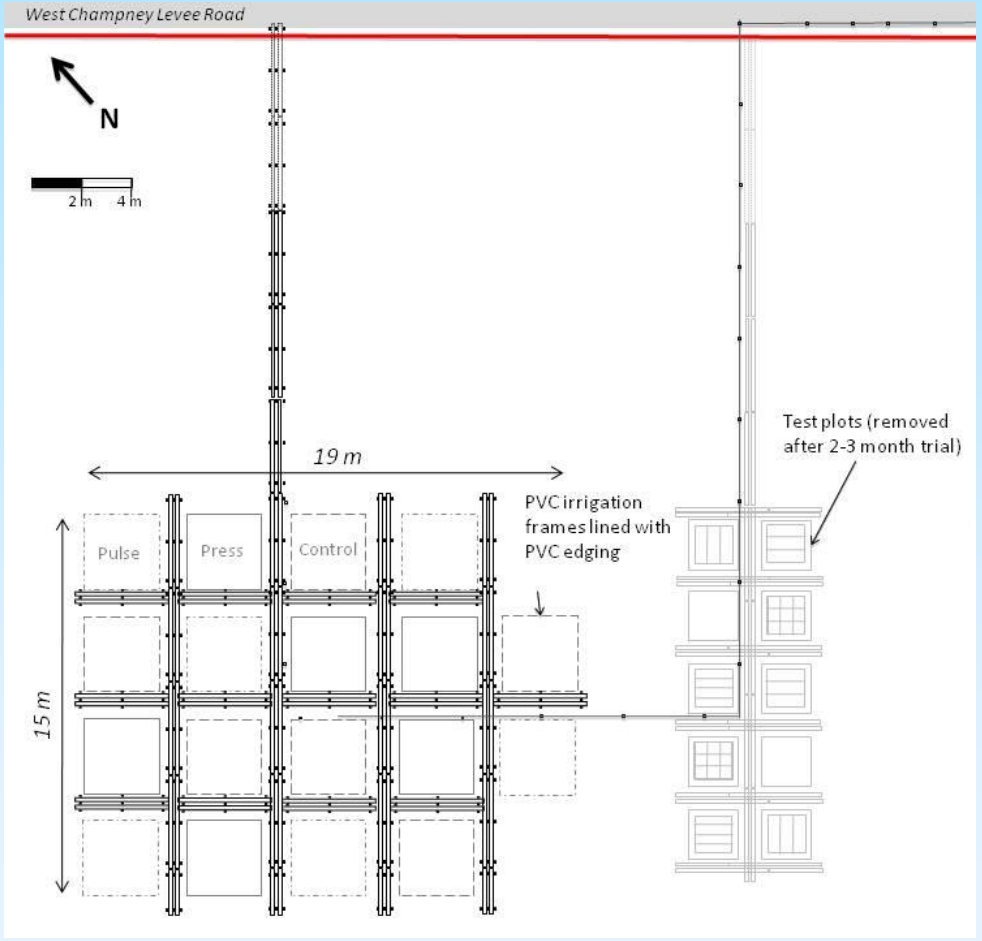
Craft et al. 2009, EPA project

SALTEX (Champney River)

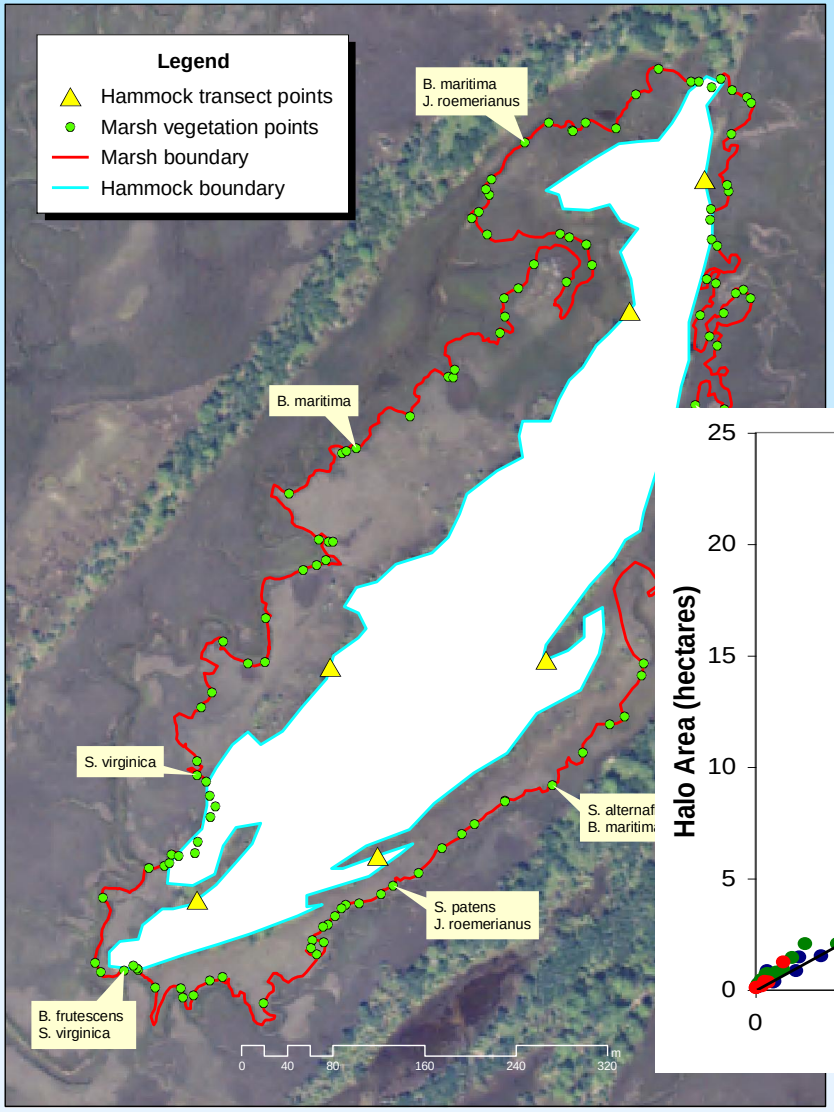
Saltwater addition to plots in freshwater marsh:
Long-term, low level (SLR)
Short-term pulse (drought)

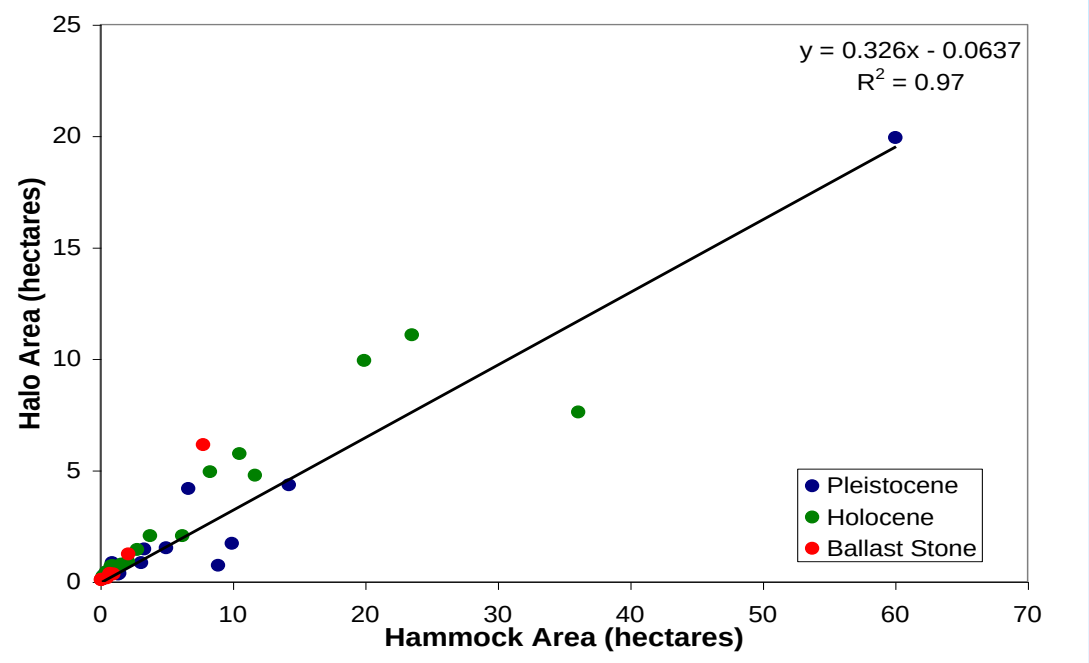
Measurements:

- Vegetation
- Fauna
- Soil
- Nutrients
- Carbon
- Greenhouse gas emissions



Q4 Lateral gradients (upland interface)



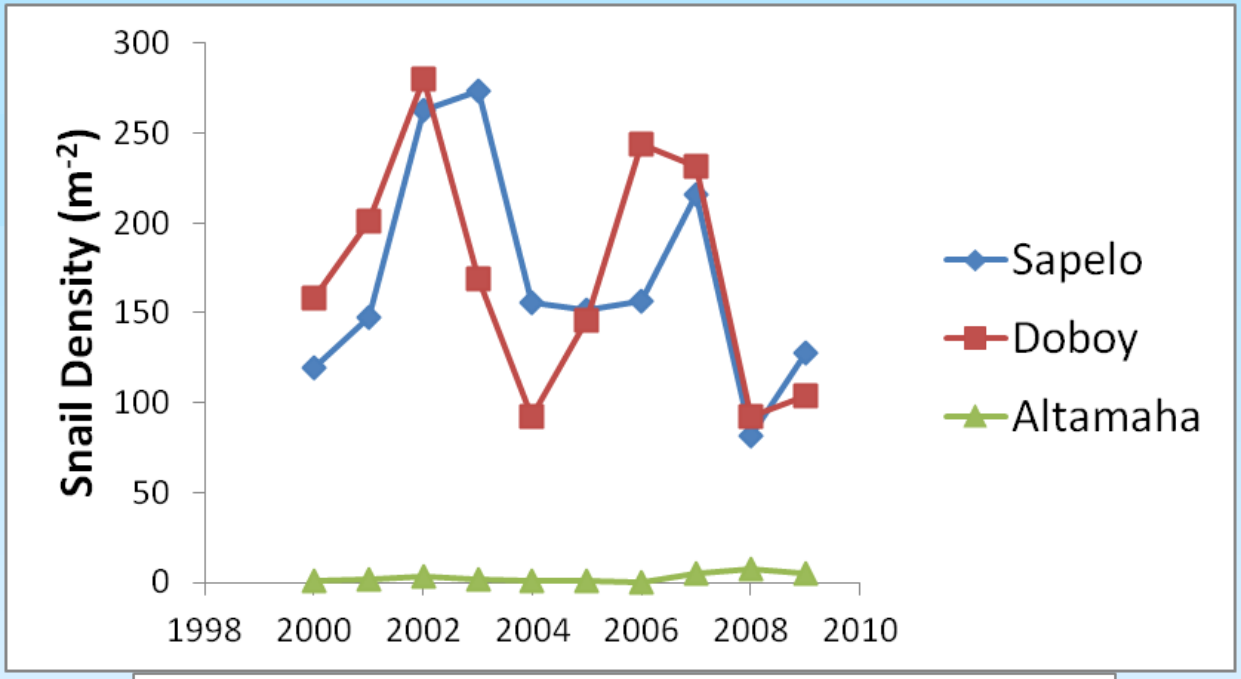


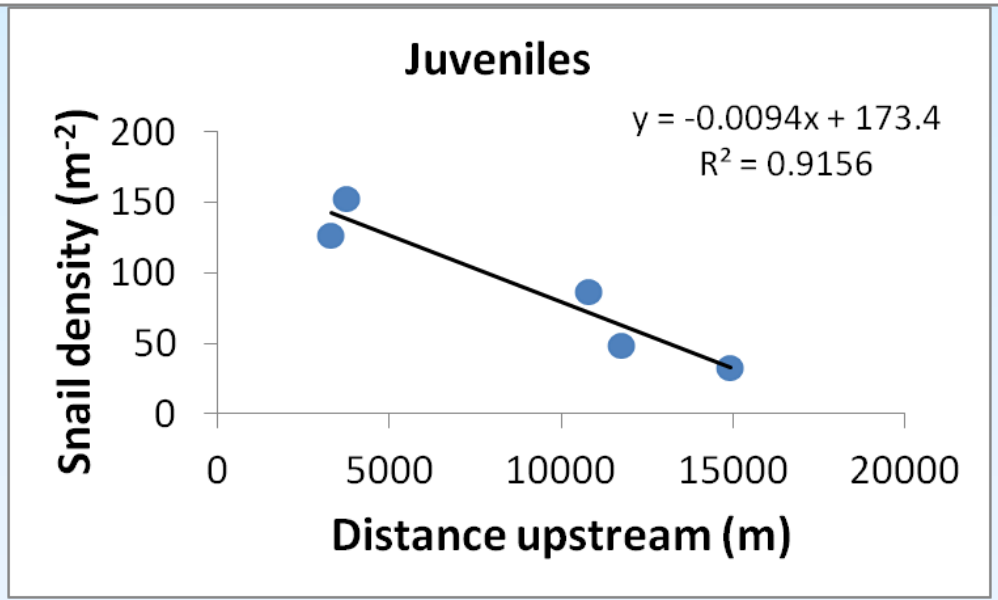
Intensive Study

- Water flow paths, mixing characteristics
- Biogeochemical processes
- Hammock age
- Detailed stratigraphy
- Plant performance
- Plant, groundwater modeling

Q5 Organism Distribution

http://www.jaxshells.org/829yy.jpg





ems LTER

Research Network



> Publications > Journal Articles

Documents - Publications - Journal Articles

Abstracts

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Document *(click on title to view file details)*	Download
Forecasting the effects of accelerated sea level rise on tidal marsh ecosystem services *(contributed by Christopher B. Craft, 2009)*	html
Centuries of human-driven change in salt marsh ecosystems *(contributed by Keryn Bromberg-Gedan, 2009)*	html
Consequences of omnivory for trophic interactions on a salt-marsh shrub *(contributed by Chuan-Kai Ho, 2008)*	html
Nutrient replete benthic microalgae as a source of labile dissolved organic carbon to coastal waters *(contributed by William P. Porubsky, 2008)*	html
Air-sea CO2 fluxes on the US South Atlantic Bight: Spatial and temporal variability *(contributed by Liqing Jiang, 2008)*	html
Like herbivores, parasitic plants are limited by host nitrogen content *(contributed by Steven C. Pennings, 2008)*	html
Rank clocks and plant community dynamics *(contributed by Scott L. Collins, 2008)*	html

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nber of the NSF Long Term Ecological Research Network

ome > Data > Data Catalog | Use Agreement | Distribution Formats | EML Metadata

GCE-LTER Data Catalog

» **Specify criteria below to search the GCE Data Catalog and sort the results**

Contributor: <Any Contributor>

LTER Core Area / GCE Theme: <Any Core Area/Theme>

Study Site: <Any Site>

Data Access: <Any Access>

Metadata text: Any Metadata Contains | Study period: to (M/D/YYYY)

Sort by: Date Added | Ascending | Descending | Rows/page: 15 (0=unlimited) | Reset | Search

314 Records

Page 1 of 21

Data Set	Period	Theme	Contributor	Added
INV-GCEM-0812a1: *(restricted data access)* Mollusc population abundance monitoring: Fall 2008 mid-marsh and creekbank infaunal and epifaunal mollusc abundance based on collections from GCE marsh, monitoring sites 1-10	10/25/2008 - 10/28/2008	Aquatic Invertebrate Ecology	Thomas Dale Bishop	12/17/2008
INV-GCEM-0812a2: *(restricted data access)* Mollusc population size distribution monitoring: Fall 2008 mid-marsh and creekbank infaunal and epifaunal mollusc size distributions based on collections from GCE marsh monitoring sites 1-10	10/25/2008 - 10/28/2008	Aquatic Invertebrate Ecology	Thomas Dale Bishop	12/17/2008
PLT-GCEM-0812a: *(restricted data access)* Fall 2008 plant monitoring survey -- shoot height and flowering status of plants in permanent plots at GCE sampling sites 1-10	10/25/2008 - 10/28/2008	Plant Ecology	Steven C. Pennings	12/11/2008

http://gce-lter.marsci.uga.edu/

ms LTER - Windows Internet Explorer

marsci.uga.edu/public/gis/Introduction.htm

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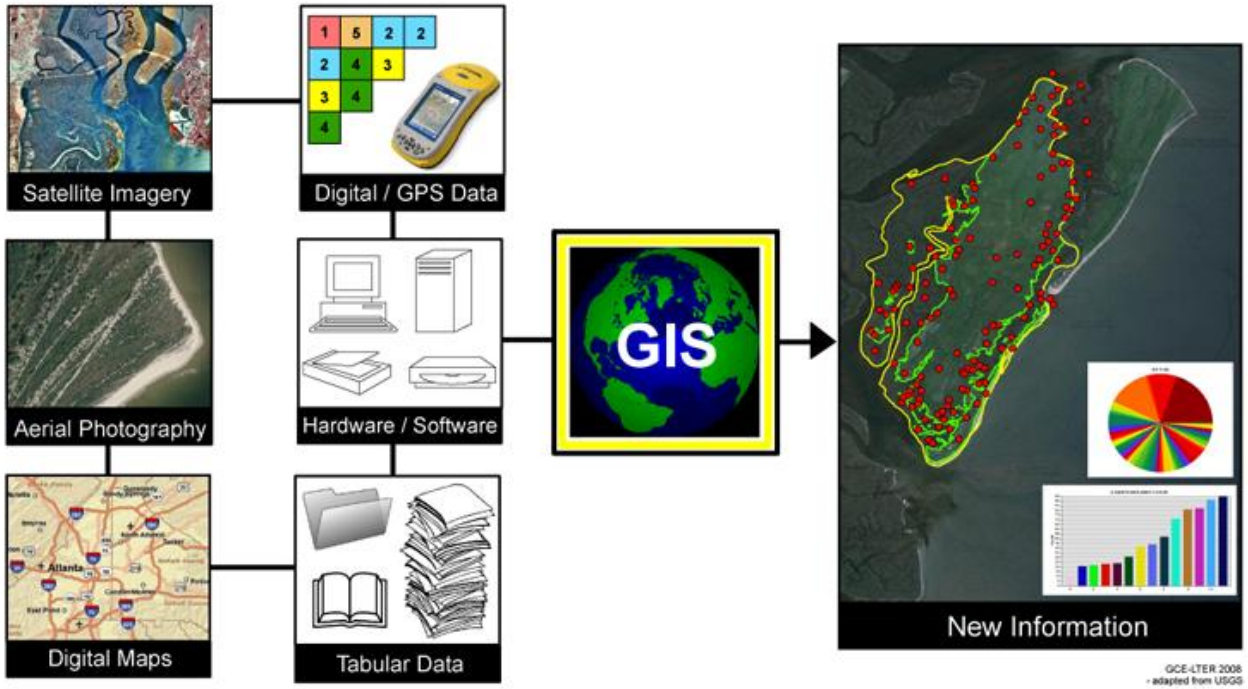
ools Help

systems LTER

GIS Spatial Resources

Introduction

A Geographic Information System (GIS) is a comprehensive suite of computer hardware, software, and data that is used to view, manage, analyze and model spatial information related to the Earth's features and processes. According to the Environmental Systems Research Institute (ESRI), "GIS allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts". The burgeoning number of computer systems and GIS software available today is transforming the way we look at geographic information. GIS allows scientists to ask questions that would otherwise be impossible to answer while also providing a platform to foster the creation of novel research ideas.



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Wade Sheldon

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