



North Carolina Coastal Atlas

www.nccoastalatlus.org



Introduction

- The North Carolina Coastal Atlas is a collaborative effort to enable access to coastal data and inform coastal managers, scientists, students and the interested public.

Introduction

- **What**

- Online mapping and investigation system containing...
 - Static and interactive maps
 - Spatial data, basemaps, and reference layers
 - Research and literature

- **How**

- Exploring, analyzing, and learning about North Carolina's coastal issues and resources

- **Who**

- Students, managers, scientists, teachers, and the public.

Purpose

- To provide selected geospatial data, visualization tools and thematic maps focused on coastal resources and hazards.

Purpose

- Need for atlas identified by NC coastal managers and researchers to make NC-specific data available for users
- Emphasis on thematic maps tailored toward needs of users

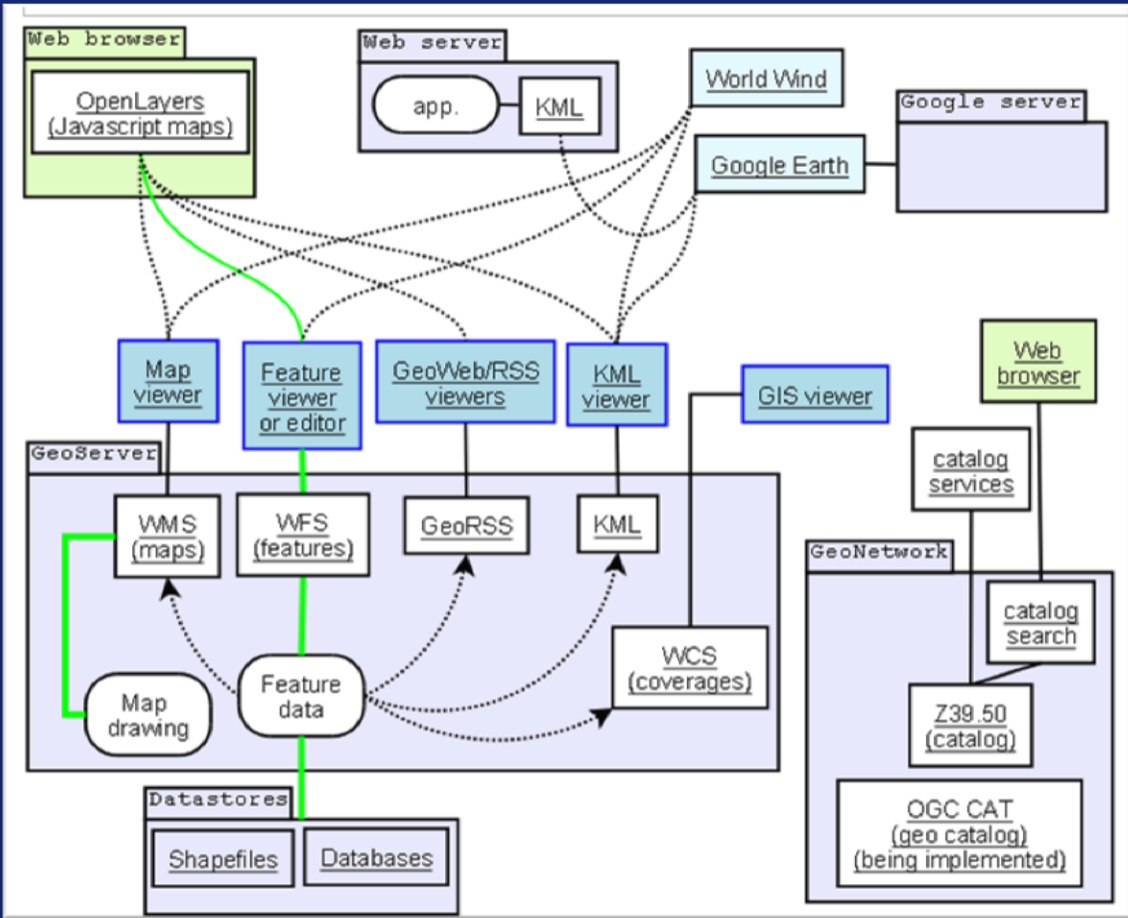
Purpose

- Data catalog provides the ability to customize maps
- Unique library partnership → geotagged bibliographic searches

Details

- **Extent**
 - NC CAMA counties, coastal plain, rivers, estuaries and adjoining marine area.
- **Technology**
 - ArcGIS Server technology for Adobe Flex
 - Client-side browsers with Flash
 - Compatible and interoperable with other OGC map services and servers (WMS, WFS, etc.)
 - Maps able to be consumed by ArcMap, GoogleEarth etc.

Details



Details

- **Partnership**
 - Bibliographic search and databases with ECU Joyner Library
 - Steering committee and stakeholders/partners
 - Memorandum of Understanding

Data Providers

FEMA

esri
ArcGIS Online

NC DIVISION OF COASTAL MANAGEMENT

Albemarle - Pamlico
National Estuary Program

nc
ONE
map
Geospatial Portal

and others

Scholarly Databases

MELENDELEY

East Carolina
UNIVERSITY
Joyner **Library**

The North Carolina Coastal Atlas

ArcGIS Server
geoprocessing tools,
WMS, KML/KMZ, data
download.

Web Services
geo-located
bibliography, data
catalog.

Desktop GIS
managers and GIS
professionals

Visualizers
property owners,
educators and the
interested public



Data Providers



FEMA

esri
ArcGIS Online



and others



Citizen Science and Observation

East Carolina University
Joyner Library

The North Carolina Coastal Atlas

ArcGIS Server
geoprocessing tools, WMS, KML/KMZ, data download.

Web Services
geo-located bibliography, data catalog, social media integration, APIs.

Real-Time Information

Desktop GIS managers and GIS professionals

Mobile on-the-go information access and submission

Visualizers property owners, educators and the interested public

Data

Information

Decisions

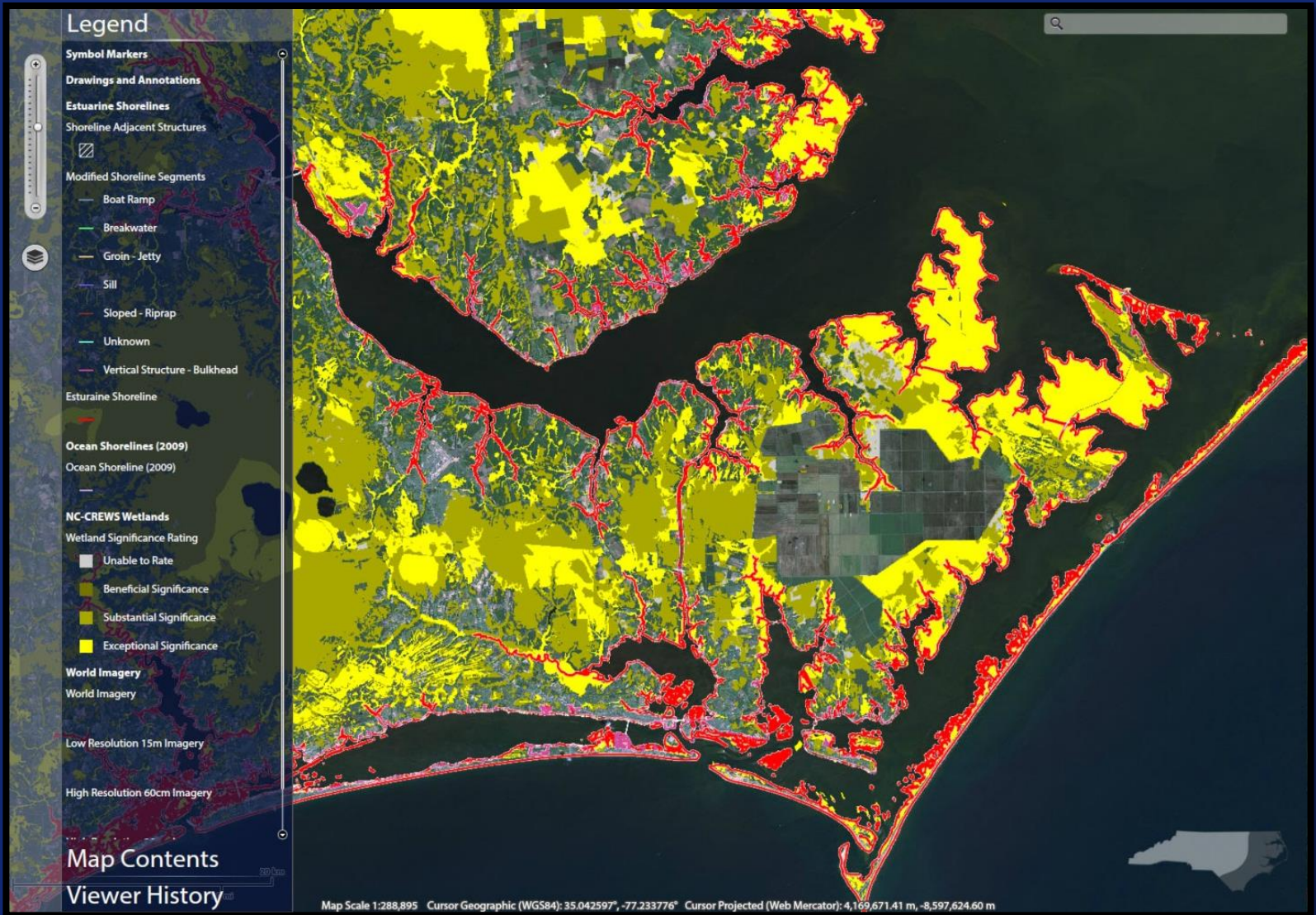
Decision Support

- Interactive reference and thematic maps
- Data Catalogue
- Research and Literature
- *Geoprocessing and user-interactive models,*
 - *Living shoreline suitability*
 - *Marsh Equilibrium Model*
 - *Site vulnerability (Do I live in a floodplain?)*

Estuarine Shorelines



Wetlands, Habitats, & Threats



ECU Coastal Research

Legend


ECU Coastal Research Projects

- ECU Research Projects
 - Climatology
 - Fisheries
 - Hazards
 - Human Dimensions
 - Maritime Heritage
 - Tourism/Recreation
 - Water Quality
 - Wetlands/Shorelines

Project Information

Coastal wetland mapping combining multi-date SAR and LIDAR
Investigator(s): Allen, T.R., Y. Wang, & B. Gore.
Department: Geography
Location: Albemarle-Pamlico
Category: Wetlands/Shorelines


Data Catalog



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Data Catalog



Estuarine Shorelines

N.C. Division of Coastal Management; East Carolina University

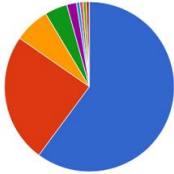
Search the Data Catalog

Search

Trending Searches

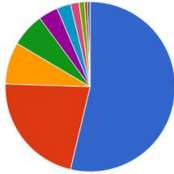
BASEMAP ORTHOPHOTOGRAPHY SHORELINE ORTHO PHOTOGRAPHY WETLANDS OCEAN MARSH LIDAR

Most Popular Data (past 7-days)



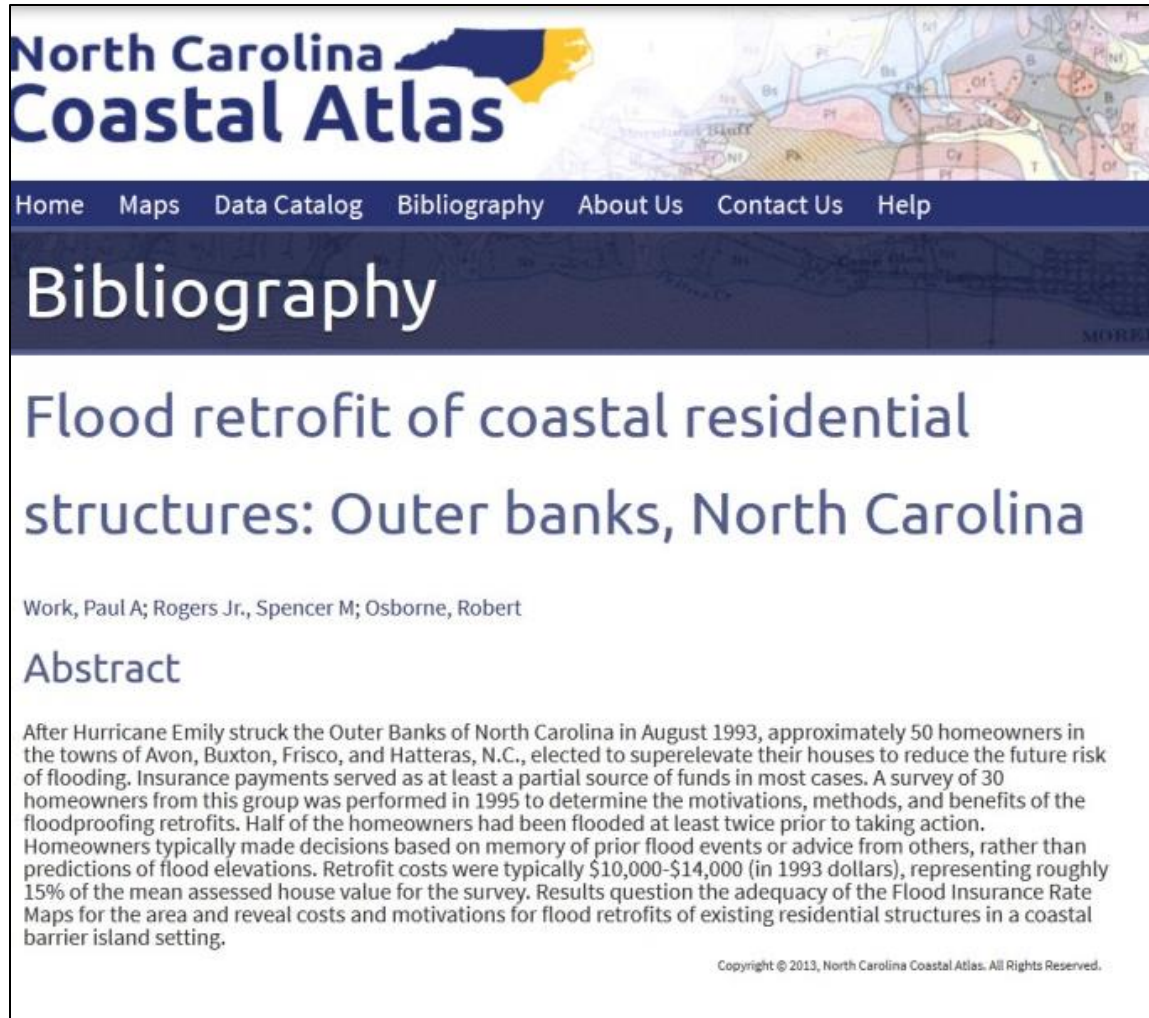
- Statewide Orthoimagery (2010)
- Estuarine Shorelines
- Ocean Basemap
- Dare County Partial Estuarine Shoreline (1949)
- NOAA Nautical Charts
- NAIP Statewide Imagery (2010)
- World Streets
- Submerged Aquatic Veg...
- National Wetlands Invent...

Most Popular Data (past month)



- Statewide Orthoimagery (2010)
- Estuarine Shorelines
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Bibliography



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Bibliography

Flood retrofit of coastal residential structures: Outer banks, North Carolina

Work, Paul A; Rogers Jr., Spencer M; Osborne, Robert

Abstract

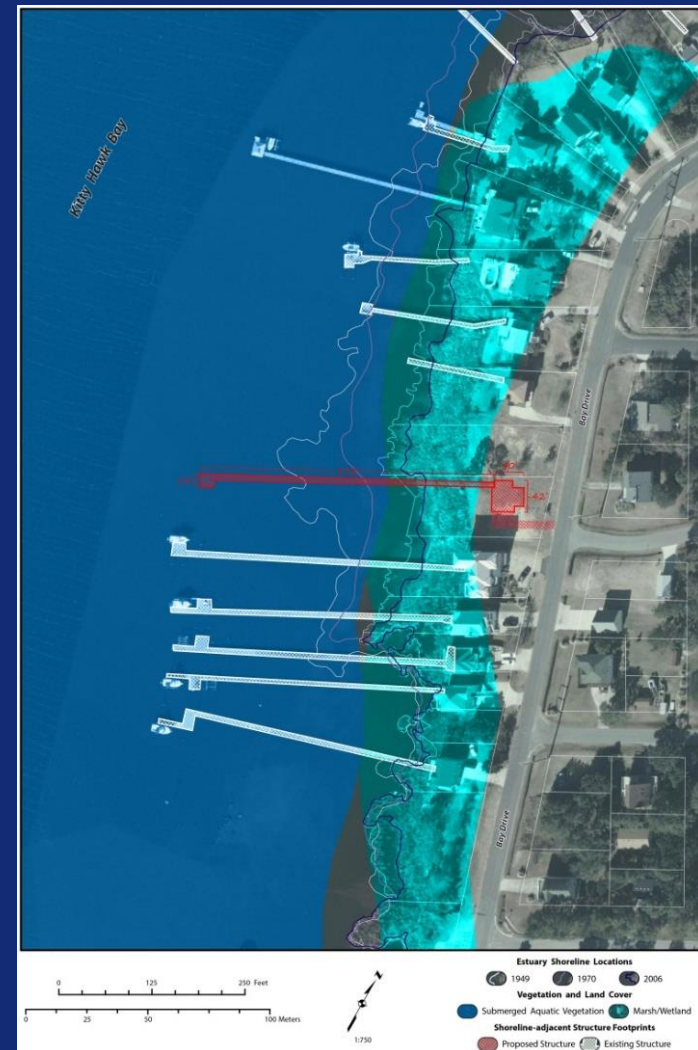
After Hurricane Emily struck the Outer Banks of North Carolina in August 1993, approximately 50 homeowners in the towns of Avon, Buxton, Frisco, and Hatteras, N.C., elected to superelevate their houses to reduce the future risk of flooding. Insurance payments served as at least a partial source of funds in most cases. A survey of 30 homeowners from this group was performed in 1995 to determine the motivations, methods, and benefits of the floodproofing retrofits. Half of the homeowners had been flooded at least twice prior to taking action. Homeowners typically made decisions based on memory of prior flood events or advice from others, rather than predictions of flood elevations. Retrofit costs were typically \$10,000-\$14,000 (in 1993 dollars), representing roughly 15% of the mean assessed house value for the survey. Results question the adequacy of the Flood Insurance Rate Maps for the area and reveal costs and motivations for flood retrofits of existing residential structures in a coastal barrier island setting.

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- Journal articles, technical reports, books, theses, dissertations, and other works
- Enables spatial and topical search and discovery
- Display citations and abstracts
- Provide links to electronic texts

Future Projects

- Permitting tool
- Mark up
- Map Sharing

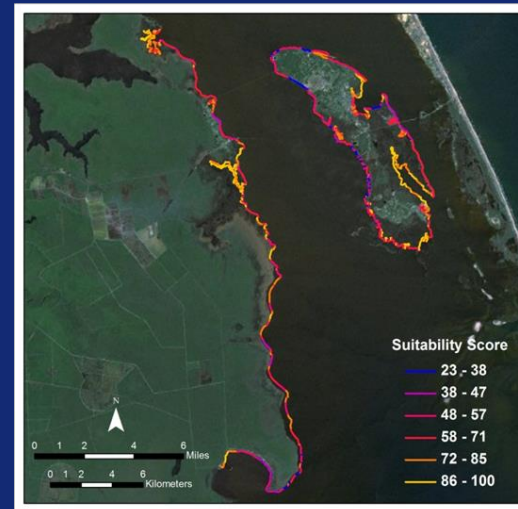


Living Shoreline Screening Tool

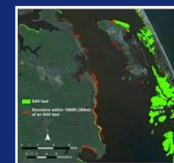
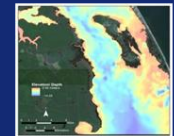
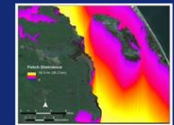
Matt Carey, MA Geography, 2013, NOAA Coastal Services Center

- Multi-Criteria Evaluation

- Depth
- Fetch & wave energy
- Erosion rate
- Marsh type
- Boat wake
- Water clarity & SAV

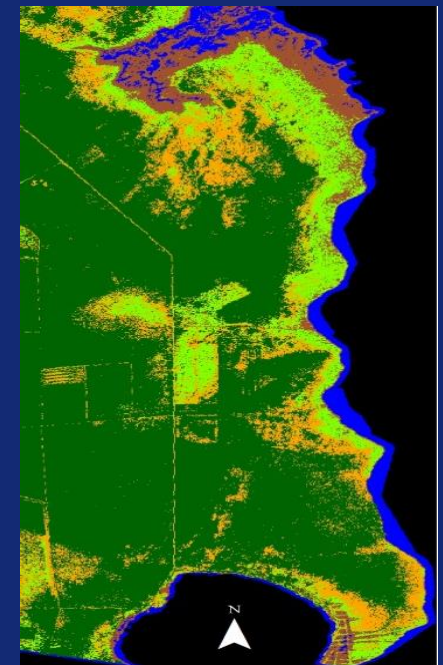
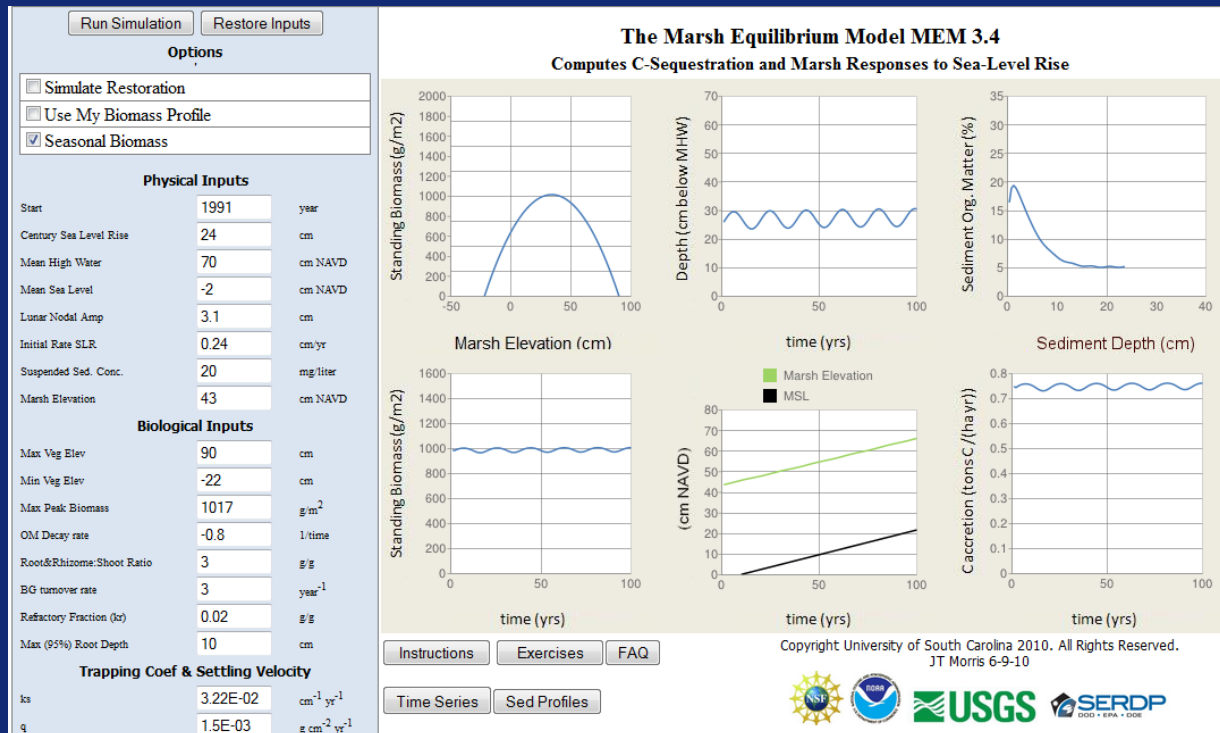


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Wetlands: Inventory, Monitor, Restore, and Adapt

- Marsh mapping and vulnerability (SALCC)
- Community water resource infrastructure vulnerability (CISA)



Where have we been?

- NACIS
- NCAUG
- SEDAAG
- Social Coast
- Carteret County
Community College



Where are we going?

- AAG
- NC Sea Grant Symposium
- TCS and RAE Summit
- Community Events



Take it away Rob...

