FY21 RSM IPR
Marsh Equilibrium Model Trail Guide

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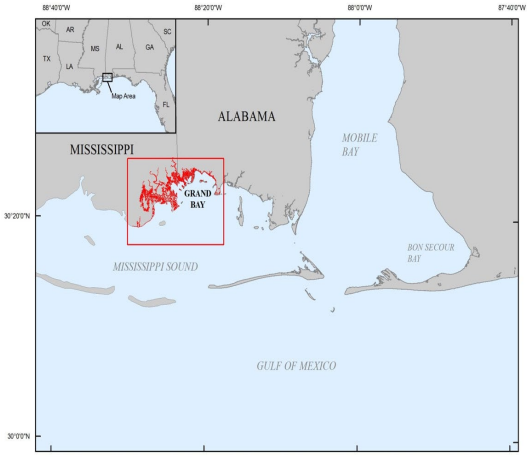
Goal:

Create a Marsh Equilibrium Model trail guide to serve as a tool for practitioners in the planning process of restoration projects.



Objectives

- Promote beneficial use dredge material
- Create a tool for the planning process of restoration efforts
- Explore different thin layer placement (TLP) scenarios
- Produce interactive and informative form of trail guide that serves as data storage

Approach

- Marsh Equilibrium Model to run simulations for GUI
- Use R Shiny to produce accessible web GUI

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Leveraging/Collaborative Opportunities

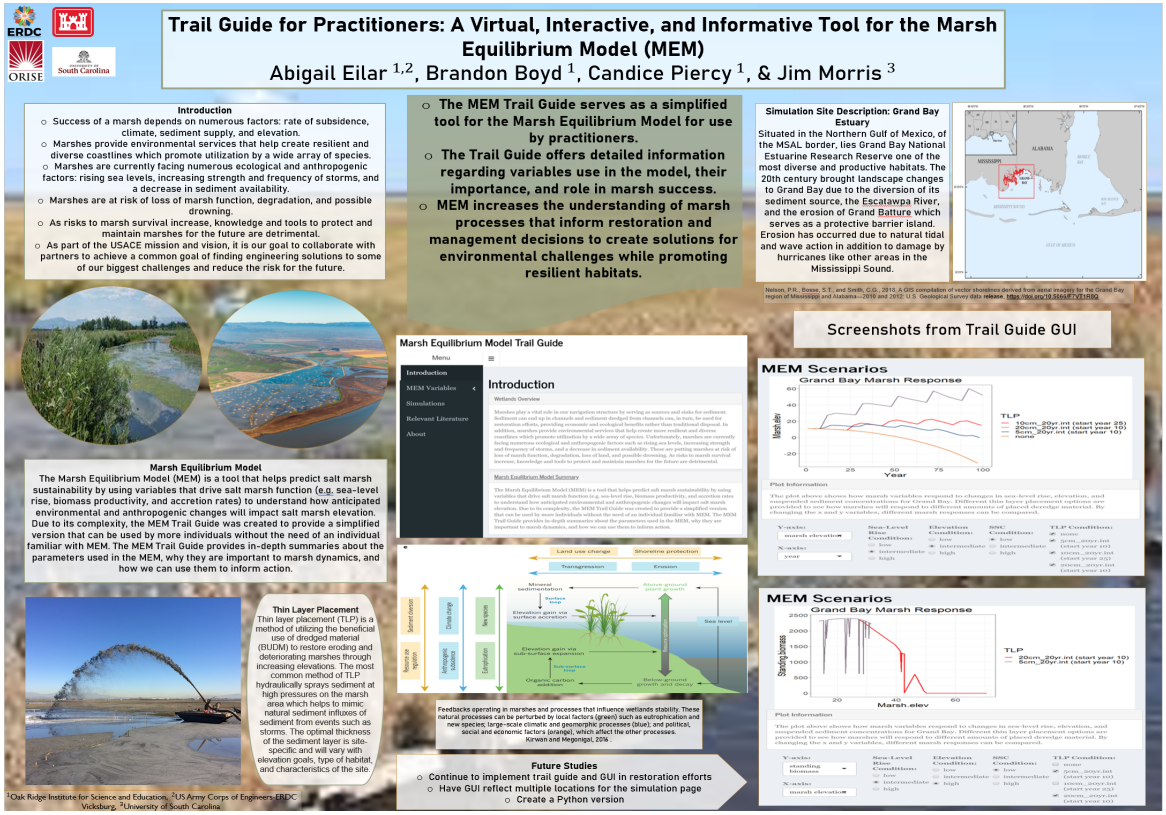
DOER BU in SFB

FY20 RSM BU Planning (SAM)

Stakeholders/Partners

USACE Dredging Community

University of South Carolina



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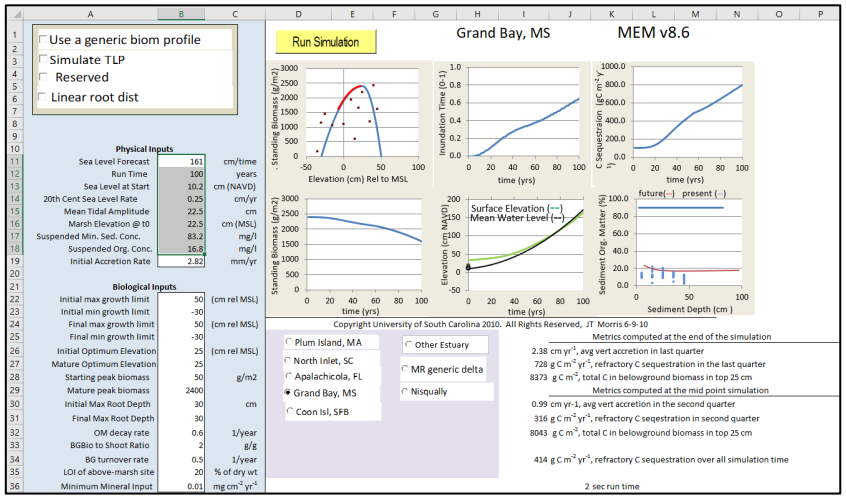

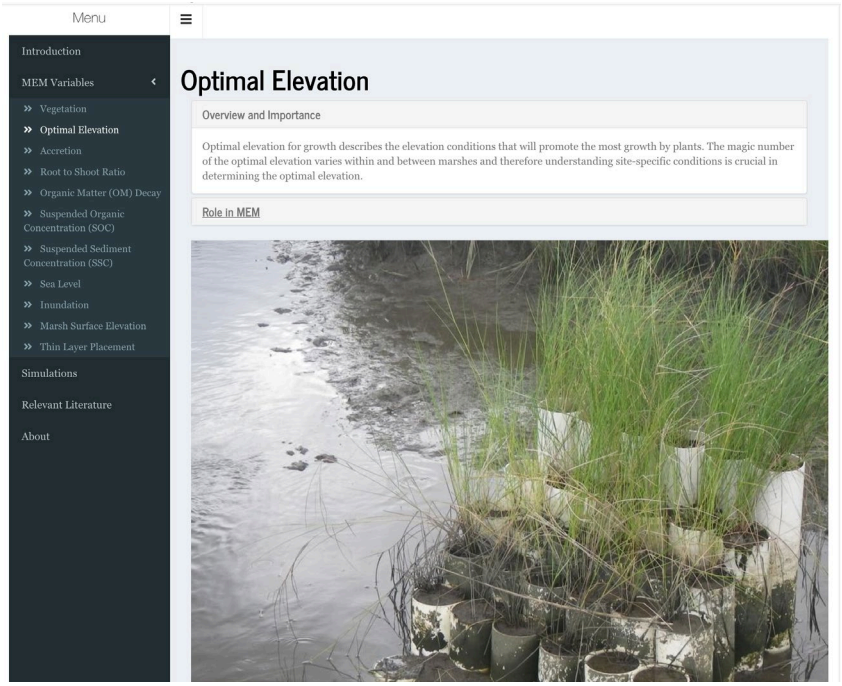

Accomplishments

- Completion of draft trail guide with in-depth explanation of MEM variables with references
- Completion of GUI with simulations for Grand Bay Estuary
- Completion of poster for ASBPA National Coastal Conference
- **Publication: Beneficial Use Decision Support for Wetlands: Case Study for Mobile Bay, Alabama in Journal of WW, Port, Coastal, and Ocean Engineering Sep 2021

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What challenges did you face to get your project to implementation and how did you move past them? If not yet implemented, what is your path forward to construction? What were your lessons learned that you think might benefit other Districts?

- Finding location specific data on sea-level rise, elevation, and accretion to show low, intermediate, and high scenarios of each variable
- Time constraints on providing more than one location in GUI; this is a long-term goal
- Learning R Shiny package simultaneously with MEM and how to best approach the GUI

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How is this project benefiting the USACE and Nation?
(efficiency, monetary, technical, relationship building, outreach, etc.)
(Volume of sediment to be managed, Acres created, etc)

- Enable and promote beneficial use dredge material
- Supplementary tool that can be utilized by practitioners not familiar using MEM
- Tool informs on how to best utilize BUDM (how much sediment should be used and how often) and understand how locations may differ