



## Project Location

South Carolina

## Project Duration

September 2015 to August 2018

## Project Lead

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Research Reserve  
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Natural Resources  
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## Project Type

Collaborative Research – generating  
science that informs decisions

## Project Partners

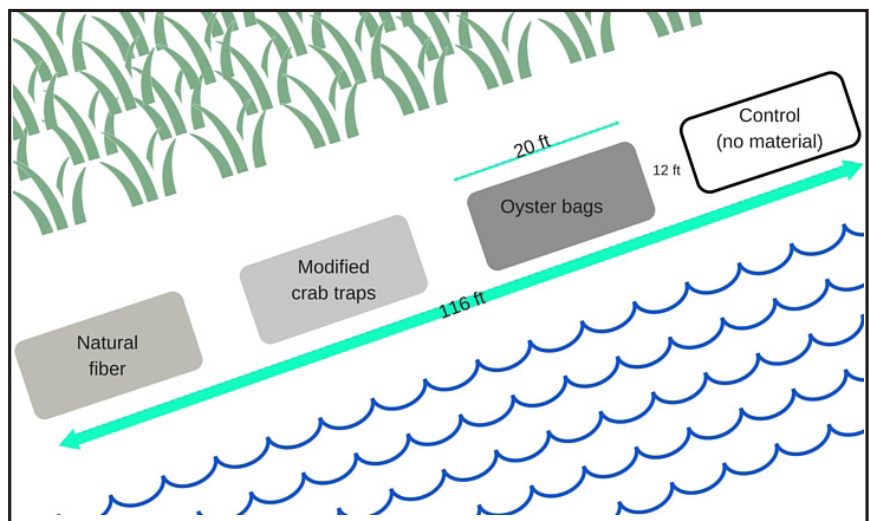
- ACE Basin National Estuarine Research Reserve
- North Inlet–Winyah Bay National Estuarine Research Reserve
- South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management
- South Carolina Department of Natural Resources, Marine Resources Research Institute
- South Carolina Department of Natural Resources, Office of Fisheries Management

# Evaluating Living Shorelines to Inform Regulatory Decision-Making in South Carolina

## Overview

Living shorelines show great promise in coastal South Carolina as a tool to control erosion, increase habitat, and protect coastal areas from hazards both short-term (e.g., storms) and long-term (e.g., sea level rise). The South Carolina Department of Natural Resources and the Ashepoo, Combahee, and Edisto (ACE) Basin National Estuarine Research Reserve have constructed oyster-reef-based living shorelines adjacent to public land for 15 years, and private property owners are also showing interest in using living shorelines to prevent erosion. Current South Carolina permitting processes, however, do not address this emerging strategy, which serves as a barrier for private property owners wishing to pursue this approach.

This project responds to the state's desire to develop a comprehensive, science-based regulatory process to address the design and permitting of living shorelines. The researchers will analyze a suite of living shoreline possibilities specifically suited to South Carolina, noting their performance under varying physical and environmental conditions. Using a stakeholder-driven process, case study assessments, experimental research sites, and monitoring, the project team will generate the information needed to develop a statewide living shoreline policy. Ultimately, this project will help remove a critical barrier to living shoreline implementation.



## Anticipated Benefits

- Stakeholders and coastal management agencies collaborate more effectively.
- Information gaps are identified and addressed.
- Agencies and stakeholders better understand the function and performance of various living shoreline techniques in varying environmental conditions.
- South Carolina state agencies and stakeholders are able to make more informed decisions about estuarine shoreline stabilization.

## Project Approach

The project team will implement a collaborative framework that regularly encourages and facilitates end user engagement and input to inform planned research, monitoring, and analyses. Agency representatives and stakeholders, including private property owners, will convene to provide their perspectives and share information on shoreline stabilization methods. The project team will review and carefully analyze existing data from previous living shoreline projects to better understand the conditions under which living shorelines have been deployed, their relative success, and the gaps in current knowledge and data. Existing shoreline structures will be monitored over the course of the project to enable a better understanding of the features that facilitate success or failure. Additionally, new experimental sites will be constructed using various approaches and evaluated using various parameters to measure their success. Using criteria developed jointly by the project team, end users, and stakeholders, the project will conduct analyses of the living shoreline structures and their relative success in different areas and using different materials.

## Targeted End Users and Anticipated Products

- Guidance document to help end users determine the appropriate siting of living shoreline projects.
- Workshop with stakeholders and end users to share research findings and describe available living shoreline options and their respective optimal environmental and physical conditions.

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### About the Science Collaborative

*The National Estuarine Research Reserve System's Science Collaborative supports collaborative research that addresses coastal management problems important to the reserves. The Science Collaborative is managed by the University of Michigan's Water Center through a cooperative agreement with the National Oceanic and Atmospheric Administration (NOAA). Funding for the research reserves and this program comes from NOAA. Learn more at [www.nerrs.noaa.gov](http://www.nerrs.noaa.gov) or [www.graham.umich.edu/water/nerrs](http://www.graham.umich.edu/water/nerrs).*