



Rubble mound breakwater at the Swift Tract living shoreline project (extreme low tide) in Mobile Bay, Alabama.  
Photo credit: Bret Webb

## Alabama Comprehensive Living Shoreline Monitoring Program: Mobile Bay, Alabama

### Project Overview

This study evaluates the performance of existing projects relative to shoreline stability and ecosystem health and tests standard monitoring protocols for future projects. The overarching aim is to develop protocols for a comprehensive monitoring framework to assess the performance of NNBF projects in coastal Alabama. Funded by the RESTORE Act for a five-year funding period, nine project locations and four control sites were chosen, covering a range of project age, wave exposure, salinity, and project type/design. Many of the projects associated with these sites were completed years before this case study, and pre- and post-construction monitoring data were available.

### Key Takeaways

There are several steps necessary to assess the success of NNBF projects. First, “success” must be defined. Next, what is being measured must be determined. Finally, standardized protocols for how to conduct these measurements must be created.

### Project Context

Many existing NNBF projects have never been assessed in terms of their performance. This project aims to outline best practices for monitoring coastal NNBF projects by asking what should be measured, how should it be measured, and how success is defined.

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Collecting monitoring data at a living shoreline project site. Photo credit: Bret Webb

## Results

This monitoring project is ongoing. The expectation is that the monitoring of physical, chemical, and biological metrics will be used to assess and evaluate performance at different sites and improve future projects.

## Implications for Practice

Dr. Webb's team has found that NNBF projects may only be "successful" when specific dimensions are measured. For example:

- In coastal Alabama, NNBF projects have had positive impacts from a fisheries standpoint but have not worked well for shoreline stabilization, marsh protection, or oyster aquaculture.
- Oyster habitats integrated into NNBF projects do not necessarily result in healthy self-sustaining oyster populations, often failing due to poor larval recruitment and water quality.

## Speaker: Dr. Bret M. Webb

Dr. Bret Webb is a Professor of Coastal Engineering in the Department of Civil, Coastal, and Environmental Engineering and serves as Director of the Center for Applied Coastal Engineering and Science at the University of South Alabama. Dr. Webb has more than 20 years of experience as a civil/coastal engineer, including considerable time in both consulting and academia.

## Resources

- [Dr. Bret Webb's University of South Alabama Profile](#)
- [Dr. Webb's Google Scholar](#)
- [USCRP 2019 Funded Research](#)
- [USCRP 2023 Funded Research](#)
- [Webb BM, B Dix, SL Douglass, S Asam, C Cherry, B Buhning \(2019\) Nature-Based Solutions for Coastal Highway Resilience: An Implementation Guide. 229. Washington, D.C.: U.S. Department of Transportation Federal Highway Administration](#)



**About SRIJB** (<https://srijb.org/>): The SRIJB is a CUNY-wide institute created through a partnership amongst the National Park Service, the City of New York, and the City University of New York (CUNY). Our mission is to produce integrated knowledge that increases biodiversity, well-being, and adaptive capacity in coastal communities and waters surrounding Jamaica Bay and New York City. The Institute is hosted and supported by Brooklyn College and works closely with member organizations including NY Sea Grant, the Jamaica Bay Rockaway Parks Conservancy, and the Jamaica Bay Ecowatchers.

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