Modeling Stormwater Impacts in Coastal South Carolina

Project Location

ACE Basin National Estuarine Research Reserve

Project Lead

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Targeted End Users and Products

- *Project final report*

Project Partners

- *ACE Basin Reserve*
- *Beaufort County*
- *South Carolina Department of Natural Resources*
- *Town of Bluffton*
- *University of South Carolina at Beaufort*

Overview

Coastal South Carolina's population is on the rise. As development to support this growth increases, communities must contend with the increase in stormwater runoff that accompanies the spread of roads, parking lots, and other impervious surfaces. Rather than soaking into the ground, much of this stormwater is flowing directly into coastal water bodies, changing the ecological conditions in which the region's fish and shellfish thrive. To protect coastal waters, officials from the state's Beaufort County need to know which areas are most sensitive to the impacts of this runoff so they can allocate their resources effectively. The ACE Basin reserve worked with these stakeholders and local researchers to meet the need for water quality and rainfall data and modeling to inform Beaufort County policy and management decisions into the future.

Project Benefits

- Developed resources to track water quality impacts and inform stormwater management decisions and a framework for collaborative research partnerships focused on effective stormwater management.
- Improved understanding of the impacts of stormwater on local watersheds, new partnerships, and engaged public officials and other stakeholders in the research ensuring that the results are directly applicable to management challenges.
- Shared the approach and results with 150 stakeholders through three training events and several South Carolina counties, cities, and towns have officially adopted guidance from this project into their local stormwater design manuals.
- Distributed a Low Impact Development manual throughout the reserve system and beyond.

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. Learn more at *www.nerrs.noaa.gov.*

Project Approach

This project was built on a cooperative agreement between *Beaufort County*, *South Carolina Department of Natural Resources*, *University of South Carolina-Beaufort*, and the *Town of Bluffton* to identify the water resources most sensitive to increased stormwater runoff.

- Stakeholder Engagement: The reserve worked with the state and local researchers to use a joint fact-finding approach to address barriers and provide the information needed to support effective stormwater management. Stakeholders also participated in a watershed advisory committee to vet the project's analysis, results, and conclusions.
- Monitoring: The team deployed rain gauges and other instruments to monitor rainfall and salinity in five watersheds selected by Beaufort County helping the county to understand the connections between precipitation, stormwater discharge, and water quality impacts in the estuary.
- Presentations: The team presented its work to the county's Stormwater Management Utility Board, which can now incorporate this information into their decisions and share it with other stormwater managers and environmental groups.