



Application of Data from the Grand Bay Estuary System to Enhance Water Quality on the Northern Gulf of Mexico Coast

Overview

Project Location

Grand Bay National Estuarine Research Reserve

Project Duration

June 2017 to May 2018

Project Lead

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Project Type

Science Transfer – promoting the use of science

Project Partners

- Eco-Tours of South Mississippi
- Grand Bay NERR
- Mobile Bay National Estuary Program
- University of North Carolina-Wilmington

This project develops educational materials and tools to educate the general public and decision-makers about the ways man-made land-use changes affect water quality, fisheries, and human health in the region around Grand Bay, Mississippi. Research from a previous Science Collaborative research project, *Legacy Effects of Land-Use Change and Nitrogen Source Shifts on a Benchmark System*, will inform the educational materials produced. This research looked at the history of land-use change in the region and how it shifted nutrient and pathogen sources within the Grand Bay system over time. At the end of the project, the research team and stakeholders worked together to determine what educational outreach materials produced from the research results were of the greatest value to enhance local water quality.

This project produces those educational outreach materials for audiences throughout Grand Bay. The materials will raise awareness of the positive and negative effects of land-use change for the general public, community organizations, and decision-makers within the region. The materials will educate audiences about the ways to preserve and protect Grand Bay from water-borne pathogens and excess nutrients. The project team will use science-based information to reinforce the importance of reducing stormwater contamination, improving wastewater management, and implementing land-use planning that takes water resources into account.

Anticipated Benefits

- Grassroots citizens' groups and the general public will learn about at-risk areas for habitat degradation, fisheries loss, and human health.
- Municipal and regional decision-makers will be able to apply new data to inform fisheries management, land-use planning, zoning, and municipal waste management.

Project Approach

The project team will bring together the original research team, key stakeholders, and a data transfer specialist to adapt their original research on the legacy effects of land use change on nutrients and pathogens into accessible educational outreach materials. These materials may include land-use maps, a land-use change video, a simple predictive model demonstrating how land-use changes have affected nutrients and pathogen sources in the region, an informational website, and handout materials.

The team will use the joint fact-finding approach they applied throughout their research process to determine together the key messages and information from their work. Once draft content is produced, it will be vetted through a larger group of stakeholders to ensure the products are of the greatest interest, utility, and applicability to them. These stakeholders will receive final versions of the outreach materials to distribute through their networks to educate the general public, community groups, and decision-makers.

Targeted End Users and Anticipated Products

- Public, grassroots citizens' groups, and municipal and regional decision-makers will receive educational materials, an informational website, and a predictive tool for understanding the effects of land-use change on water quality, fisheries, and human health in the region.

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 coast.noaa.gov/nerrs or graham.umich.edu/water/nerrs.