



Photo credit: Steve Miller

## Project Location

Great Bay National Estuarine  
Research Reserve, New Hampshire

## Project Duration

September 2015 to February 2018

## Project Lead

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## Project Type

Integrated Assessment –  
Evaluating options for action

## Project Partners

- Clark University
- New Hampshire Department of Environmental Services
- Piscataqua Region Estuaries Partnership
- ROCA Communications
- University of New Hampshire

# Buffer Options for the Bay

## *Exploring the Trends, Science, and Options of Buffer Management in the Great Bay Watershed*

### Project Overview

The health of the Great Bay Estuary is strongly influenced by stressors from across the watershed. Seven rivers flow into the estuary, which is recessed 15 miles from the Atlantic Ocean. Science and case studies clearly demonstrate that vegetated buffers along rivers will enhance water quality, defend against storm surge and sea level rise, and protect fish and wildlife. However, New Hampshire does not yet consistently or effectively use buffers to protect the Great Bay Estuary.

In this project, public, academic, and nonprofit organizations collaborated to explore how to balance the benefits and impacts of different options for buffer management, given the Great Bay region's unique scientific, economic, social, and political contexts. The goal of the project, called Buffer Options for the Bay (BOB), was to enhance the capacity of project partners to select and promote locally appropriate strategies for implementing buffer restoration and protection in the Great Bay region.

### Project Benefits

This project resulted in a variety of detailed, standalone products that provide key guidance about buffer management and implementation to decision makers and stakeholders in New Hampshire. Benefits include the following:

- The project team created a user-friendly website that integrates crosscutting themes and organizes project findings to address common questions and challenges associated with buffer management. Products such as maps identifying priorities for buffer restoration, literature reviews, a community needs assessment, and an economic valuation of the Great Bay ecosystem give decision makers and end users a one-stop-shop for credible, detailed information about buffer management.
- Throughout the project, the team tracked and cataloged research or resource gaps, innovative ideas, creative mapping projects, and technical assistance or enforcement needs that were expressed by various parties. The team consolidated and prioritized these into an action plan that project partners will use beyond the life of this project to advance their work on buffers in the Great Bay watershed.

- The project resulted in unanticipated but valuable outcomes at the state level. The New Hampshire Department of Environmental Services adopted the project's maps as an accepted conservation plan that enables applicants to access funding for buffers. The State Legislature has since expressed renewed energy and interest in buffers and requested a presentation by the project team in June of 2017.

## Project Approach

A diverse project team, including resource managers, social scientists, ecologists, hydrologists, and economists, took a multidisciplinary approach to identifying and assessing options for buffer management in the Great Bay watershed. They conducted an integrated assessment to address the pervasive need for trusted, relevant information at every scale of buffer management in New Hampshire. Guided by an advisory committee comprised of scientists, policymakers, outreach professionals, and others, the project team executed a variety of tasks, which included the following:

- Aggregated and organized existing GIS data;
- Reviewed and summarized relevant literature about buffer function and values;
- Explored barriers and opportunities related to buffer science and management;
- Delineated regulatory and non-regulatory options for buffer management;
- Assessed ecosystem services, functions, and benefits arising from buffer protection;
- Quantified potential willingness to pay for management options based on water quality benefits; and
- Assessed community values, knowledge, and assumptions related to buffers.

## What's Next

The action plan, comparison of policy options, and other project resources are helping the project team and advisory committee customize their strategies for advancing the use of buffers in different places. Some of the gaps identified by this project are being addressed through additional projects, such as the [Credit for Going Green](#) program. Great Bay communities are currently exploring options and tapping the technical assistance of the project team, including trainings on legal considerations for buffers.

## Products

- A [website](#) organized around commonly asked questions about buffers that integrates graphics, maps, and technical reports, as well as a comparison of policy options
- [Summaries](#) of information synthesized to clarify the problem and evaluate options, including community perceptions, economics, water quality benefits, and legal analysis about the use of buffers
- [Maps and GIS analysis](#) that support future management and science related to buffers around Great Bay
- A graphical [comparison of policy options](#) that could be used at the state or local level to protect buffers
- An [action plan](#) for project partners that captures key gaps in existing knowledge about buffers and potential actions to address them

### 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](http://coast.noaa.gov/nerrs) or [graham.umich.edu/water/nerrs](http://graham.umich.edu/water/nerrs).*