



# Using Estuary Data to Teach about Coastal Impacts of Climate Change

## Overview

The National Estuarine Research Reserve System has a proven track record of successfully transferring and translating reserve science to a broad suite of educators through teacher workshops. In recent years, teachers have expressed a need for curriculum, data sets, and professional development related to climate change. This grant will enable the New England reserves to develop and offer a series of high-quality teacher workshops focused on the story of climate change impacts on coastal habitats, using a variety of data collected at the reserves. The delivery of new and existing curricula will arm over 50 teachers with the tools and confidence they need to effectively bring the discussion of climate change into the classroom.

## Anticipated Benefits

- Teachers will be able to integrate climate change into their curriculum using a newly developed teaching module and authentic, local data.
- Teachers and students will better understand the impacts of sea level rise on salt marshes and recognize how wetlands store carbon, enabling this audience to act as stewards of estuarine and watershed resources.
- Reserve-based education coordinators will build their knowledge, skills, and portfolios of training resources about climate change.

### Project Location

Great Bay National Estuarine Research Reserve

Narragansett Bay National Estuarine Research Reserve

Waquoit Bay National Estuarine Research Reserve

Wells National Estuarine Research Reserve

### Project Duration

October 2015 to September 2017

### Project Lead

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### Project Type

Science Transfer – promoting the use of science

### Project Partners

- Great Bay National Estuarine Research Reserve
- Narragansett Bay National Estuarine Research Reserve
- Waquoit Bay National Estuarine Research Reserve
- Wells National Estuarine Research Reserve

## Project Approach

The four national estuarine research reserves in New England will work together to share existing and develop new educational resources for the classroom teachers they work with.

- **New Curriculum:** The Waquoit Bay Reserve recently developed a curriculum about blue carbon, “Bringing Wetlands to Market,” which will be shared with the three other New England reserves (Wells, Great Bay, and Narragansett Bay). The reserves will use a similar process to develop localized teaching modules about climate change impacts.
- **Teacher Workshops:** A three- or four-day intensive teacher workshop will be held at each participating reserve in the summer of 2016. Teachers will test out a suite of new educational resources about climate change and receive guidance on how to develop stewardship projects for their students.
- **Application by Other Reserves:** Post-workshop evaluations and meetings will serve as opportunities to discern the successes and challenges associated with the trainings and new curriculum. Revised training and teaching materials will be presented and made available to the entire reserve system.

## Anticipated Products and Targeted End Users

- Training and new resources about climate change for reserve-based educators.
- New education lessons for middle and high school classrooms that draw upon locally collected data related to climate change impacts.
- Four teacher workshops, one at each New England reserve, that help a total of 50 educators improve their teaching about climate change, estuaries, and watersheds.
- Approximately 50 new stewardship projects implemented by participating teachers and their students.

### 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).*