

# Assessing Habitat Vulnerability in a Time of Change

## Project Location

Chesapeake Bay Virginia National Estuarine Research Reserve, Virginia

North Inlet-Winyah Bay National Estuarine Research Reserve, South Carolina

## Project Lead

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## Targeted End Users and Products

- [Project Website](#)
- [Climate Change Vulnerability Assessment Tool for Coastal Habitats \(CCVATCH\)](#)
- [CCVATCH Guidance Document](#)

## Project Partners

- [Chesapeake Bay Virginia Reserve](#)
- [Great Bay Reserve](#)
- [Mission-Aransas Reserve](#)
- [Narragansett Bay Reserve](#)
- [Carolinas Integrated Sciences and Assessment](#)
- [The Nature Conservancy, South Carolina](#)
- [Virginia Coastal Zone Management Program](#)

### 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](http://www.nerrs.noaa.gov).

## Overview

As the climate shifts, coastal habitats face a number of threats—changes in precipitation patterns, higher temperatures, rising seas, and invasive species. Land managers and decision makers need to know which habitat types are most vulnerable to these changes in order to prioritize their actions. Several reserves collaborated to develop the Climate Change Vulnerability Assessment Tool for Coastal Habitats. The tool helps decision makers evaluate a habitat's vulnerability to climate change and prioritize it for conservation or restoration. South Carolina's North Inlet-Winyah Bay Reserve and the Chesapeake Bay Virginia Reserve worked with local partners to refine and pilot this tool and share it with the national reserve system.

## Project Benefits

- The Climate Change Vulnerability Assessment Tool for Coastal Habitats (CCVATCH) combines an analysis of a habitat's potential exposure to climate change impacts, how the habitat is likely to respond, and its vulnerability and capacity to adapt. Coastal decision makers will be able to use CCVATCH to identify vulnerable habitat, plan protection efforts, prioritize funding, and inform permitting decisions.
- Presentations of the tool were made to the South Carolina Chapter of the Wildlife Society, the North American Congress for Conservation Biology, and the Mission-Aransas Reserve in Texas.

## Project Approach

The project used stakeholder feedback to refine an early version of the decision-support tool, making it more relevant and useful for climate change adaptation projects involving habitat conservation or restoration.

- **Collaboration with Users:** Two reserves collaborated to pilot the tool with their local partners and stakeholders—Chesapeake Bay, Virginia, and North Inlet-Winyah Bay, South Carolina. During kickoff workshops held in each location, the participants determined the conditions for the pilot, such as the emissions scenarios, time frame, geographic scale, habitat type data needs, and potential applications of the results.
- **Tool Refinement:** Working with habitat managers, decision makers, and researchers, the team evaluated ways to improve the tool and the accompanying guidance document. The evaluation looked at the time and resources needed to complete the assessment, the perceived accuracy of the tool, and the applicability of the results to coastal management needs.