

Maine Assesses its Climate Vulnerability

Project Summary/Overview

This report constitutes Maine's first systematic assessment of its vulnerability to a change in shoreline position as a result of accelerated sea-level rise associated with global climate change. Although there is a great deal of uncertainty associated with projections of global climate change, this report assesses the vulnerability and identifies options for the state to be considered as an anticipatory response strategy.

Project Background

The report was prepared as a state-university cooperative project and was funded by a grant from the United States Environmental Protection Agency's Climate Change Division to the Maine State Planning Office.

Geologists and climate modelers have been able to verify sea level has continued to gradually rise in all of Maine's major coastal municipalities during the past 50 years. A continuation of sea level rise places many shoreline properties in jeopardy from coastal erosion and inundation.

Project Implementation

The research team used a range of sea-level rise scenarios derived from national studies to assess vulnerability to projected changes in shoreline position. The researchers focused on study sites within Casco Bay and Saco Bay, with 3 different environmental settings: salt marshes, bluffs, and sand beaches.

The researchers also analyzed possible adaptive response strategies the state might adopt to mitigate the negative impacts of a change in shoreline position and associated impacts of global climate change. The study analyzed possible adaptive response strategies from several different angles:

- The relative costs and benefits of selected preliminary response strategies for one specific case study area;
- The responsiveness of existing state and federal laws and policies to address the most significant negative

- impacts on coastal resources identified by the vulnerability assessment;
- The legal considerations for Maine's policy response including potential legal challenges to regulatory tools; and
- Approaches already adopted or evaluated by other states for coastal erosion or coastal hazard mitigation.

Project Outcomes and Conclusions

The study made 2 major recommendations: 1) The state should protect and strengthen the ability of natural systems to adjust to changes in shoreline position; and 2) the state should prevent new development which is likely to intervene with the ability of natural systems to adjust to changes in shoreline position.

The report also recommended the state: 1) make concrete anticipatory policies and design standards to guide public investment; 2) create specific planning and regulatory policies; and 3) explore longer-range strategic assessment, research, and educational actions.

Anticipatory Planning for Sea Level Rise Along the Coast of Maine - Published September 1996 by the U.S. EPA Office of Policy, Planning, and Evaluation

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Part of the Northeast Climate Change Adaptation Project

*In 2011, the [Northeast Regional Ocean Council](#) (NROC) and the [Gulf of Maine Council on the Marine Environment](#) (GOMC) received funding from the [National Oceanic and Atmospheric Administration's](#) (NOAA's) [Climate and Societal Interactions Program](#) (CSI) to examine innovative municipal approaches to climate change adaptation in the coastal zone of the Northeast and Bay of Fundy. The two-year project, *Stimulate Innovation and Increase the Pace of Municipal Responses to a Changing Climate in the Coastal Zone of the Northeast and Bay of Fundy*, was completed in June, 2013. The research and outreach for the project was conducted by the following partners: the [Marine Affairs Institute](#), a partnership of [Roger Williams University School of Law](#), [Rhode Island Sea Grant Legal Program](#), and [University of Rhode Island](#); [Blue Urchin](#); [StormSmart Coasts Network](#); and [Clean Air-Cool Planet](#).*

Read more about the Northeast Climate Change Adaptation Project on our website:
<http://necca.stormsmart.org/>