

# Climate Research Projects Brief

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# **1. Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use**

Two year project, Fall 2009 – Fall 2011

This project is being followed up by a Sea Grant Law Center Project that will review legal issues surrounding 100 Year Flood Plane assessments. Completion date is 2012.

## Project Objectives:

Assess flood risk associated with combined land use and climate change scenarios in the Lamprey River watershed.

Produce maps at the municipal scale of the 100-year flood risk boundaries and river discharge at specific locations.

Demonstrate the use of associated products to support land use decision-making in coastal communities.


Serve as a model for other watersheds across New England.

## *2. Regional Climate Assessment Report: Climate Change in the Great Bay Watershed*

**Project Duration:** July 2010 to June 2011

The report will describe how the region's climate has changed over the past century, and how climate may change over the course of this century, based on different global greenhouse gas emission scenarios.

Focuses on four themes—

- 1) land conservation and stewardship
  - 2) water quality
  - 3) habitats and biological communities
  - 4) climate change impacts and adaptation
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### 3. NHCP Climate Assessment project, LIDAR

This project is funded by the NHCP with the work being done by the USGS.

Objective: to acquire high resolution elevation data for the NH coastal watershed.

Completion date: Fall 2011

## 4. GBNERR Vertical Control Plan

GBNERR/NHFG project to establish a long term monitoring program to track changes in salt marsh vegetation as it relates to sea level rise and habitat migration

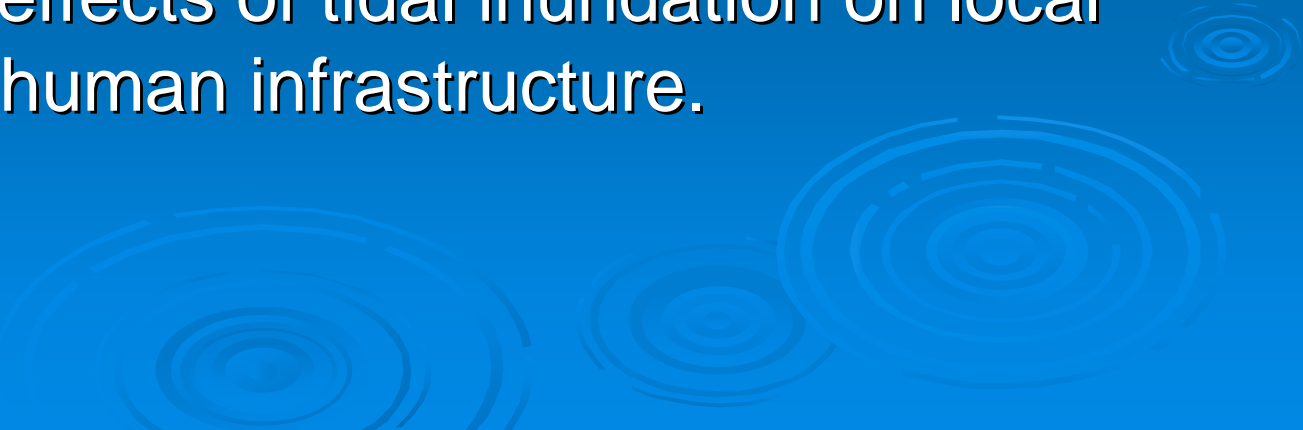
**Project Duration:** Aug. 2010 to Nov. 2011

Future funding being sought.

## **Project description;**

Establishment of a strategic vertical control network for long-term monitoring of ecological alterations, particularly those associated with climate change.

It establishes a long-term data set on which to rest multiple research and monitoring activities, such as modeling effects of tidal inundation on local habitats and human infrastructure.





# 5. CATALYZING LEADERSHIP TO RESPOND TO CLIMATE CHANGE

## Clean Air - Cool Planet's Adaptation Strategies

Building on its work in the Northeast with communities, the private sector, universities and science centers, Clean Air-Cool Planet (CA-CP) is conducting an intensive effort to strengthen the ability of northeast communities to adapt to impending climate-induced change.

Our focus is developing a network of community officials and other stakeholders who are concerned about adaptation, and then using this network as a vehicle to provide access to resources, technical assistance and information from peer communities as well as from federal and state agencies and other NGOs. We aim to create an information hub, outreach program and collaborative network that can serve the Northeast—and serve as a model for other regions.

CA-CP's adaptation initiative is focused on the following activities:

Working closely with other leading nonprofits, state agencies, and researchers to help coordinate, clarify and connect the many exciting adaptation-focused projects and initiatives taking place in the region.

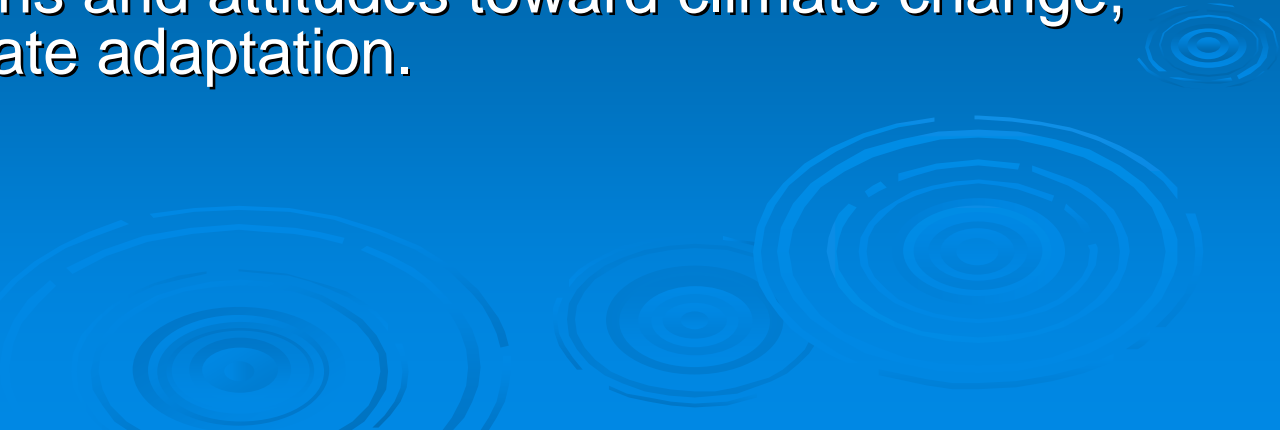
Identifying community-level barriers, resources, and planning needs that are essential to implement adaptation strategies, with the aim of developing and making available by late 2011 a compilation of successful adaptation efforts to date, on the CA-CP website

Collaborating with selected communities on adaptation planning, implementation strategies, and outreach to citizens and businesses, and assist in the creation and dissemination of educational and planning tools that can be utilized by Local Energy Committees. As part of this activity, CA-CP will develop "climate risk" maps and strategic communications plans for two-three selected partner communities.

Organizing and hosting three or more state sub-regional adaptation conferences; one to be held in central New Jersey on November 30th, 2011; another to be held in Fairfield County in 2012; and a third to be held in southern Maine in late 2012.

Linking members of the CA-CP Northeast Adaptation Network to federal resources and to federal programs focusing on adaptation issues.

Providing the results of research conducted by professional public opinion research firm The Mellman Group, on public perceptions and attitudes toward climate change, specifically climate adaptation.



## 6. Project: Enhancement and Further Application of COAST (COastal Adaptation to Sea level rise Tool) Decision Support Tool

**Project goals:** If ultimately funded, this project would apply the COAST economic impact modeling tool (Sam Merrill's tool from the Muskie School in ME) to examine the vulnerability of people (demographics) and road infrastructure to SLR in Hampton and Seabrook (along with other localities in Mass).

**completion date:** sometime 2013

## 7. Consortium for Climate Change Adaptation NE

This group involves universities and will have projects directly relevant to CAW and many others that are more regional in nature.

The group recently submitted a grant pre-proposal to the Northeast Sea Grant College Consortium Human Dimensions of Coastal and Marine Ecosystems RFP.

## 8. EPA's Climate Ready Estuaries Program

PREP may submit a joint application with the Casco Bay NEP to apply the COAST tool to examine vulnerability of wastewater and drinking water infrastructure in Portsmouth, NH and Portland, ME. This proposal submission would be contingent upon interest and match from Portsmouth.

# 9. NH Energy and Climate Collaborative

The NH Energy and Climate Collaborative was formed to track and facilitate the implementation of the 67 recommendations of the 2008 NH Climate Action Plan to reduce greenhouse gas emissions in the future while providing significant economic opportunities across the state.

## NHECC Goals

In order to reach the greenhouse gas reduction goals set out in the 2009 NH Climate Action Plan, implementation must occur at multiple levels across all sectors of society. It will require a high degree of coordination and integration, as well as flexibility, accountability, transparency, communication, and ongoing assessment and reporting. To accomplish this, the Climate Action Plan recommended the formation of the NH Energy and Climate Collaborative to oversee and guide implementation of the Plan.

# 10. NH Fish and Game

Updating the NH Wildlife Action Plan with regard to climate and climate stressors.

# 11. Other State Efforts

Within Health and Human Services

And within the NHDES





# 12. NH Coastal Adaptation Workgroup

An ad-hoc committee, the NH Coastal Adaptation Workgroup (NHCAW), was formed in Dec. 2009.

The purpose of NHCAW is to bring together NH coastal stakeholders with interest in or responsibilities for organizational, municipal, or state level coastal adaptation planning.

The goal is to develop and implement an effective coastal adaptation strategy for NH through a collaborative process by 2011.

The committee is currently working on assessing the needs of NH coastal communities, reviewing adaptation plans and strategies from other states and cities, applying for grants to fund projects.

The NHCAW will identify research and legislative needs, provide a recommended approach for municipalities with a framework of options, tools, and workshops.



NHCAW partners; City of Portsmouth Planning Department, Town of Seabrook Conservation Commission/ Planning Board, UNH Cooperative Extension, UNH Institute for the Study of Earth Oceans and Space, Clean Air-Cool Planet, Piscataqua Region Estuaries Partnership, NH Coastal Program, Rockingham Planning Commission, The Nature Conservancy, NH Sea Grant, NH Department of Environmental Services, Great Bay National Estuarine Research Reserve, and the NOAA Coastal Services Center.