

# Increasing Resilience and Reducing Risk through Successful Application of Nature-based Coastal Infrastructure Practices in New England

## Project Location

Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut

## Project Partners

- Brunswick – Topsham Land Trust
- Brunswick, Maine
- Casco Bay Estuary Partnership
- Connecticut Institute for Resilience and Climate Adaptation
- East Providence, Rhode Island
- Great Bay National Estuarine Research Reserve
- Maine Coast Heritage Trust
- Maine Coastal Program
- Maine Department of Marine Resources
- Maine Department of Transportation
- Maine Geological Survey
- Massachusetts Office of Coastal Zone Management
- National Oceanic and Atmospheric Administration
- New Hampshire Department of Environmental Services Coastal Program
- Northeast Regional Ocean Council
- Rhode Island Coastal Resources Management Council
- Sacred Heart University- Coastal and Marine Science
- The Nature Conservancy
- University of New Hampshire – School of Marine Science and Ocean Engineering

## Project Funding

This project is funded by the National Oceanic and Atmospheric Administration (NOAA), FY2017 Coastal Resilience Grant Federal Funding Opportunity Award Number: NA17NOS4730141, with support from project partners.

## Project Period

October 2017 to September 2020



Stratford Point Living Shoreline (reef ball breakwater), Stratford, CT

## Issue Overview

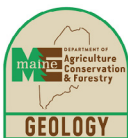
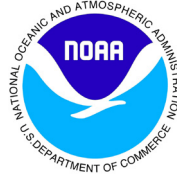
Coastal storm events can result in loss of life and significant damage to homes, businesses, infrastructure, and natural resources in New England coastal communities. Accelerating sea level rise and storms of greater intensity and frequency will exacerbate these threats in the future. Yet development pressure in coastal areas continues to increase, and requests for new and replacement shoreline stabilization structures (e.g., seawalls and revetments) to protect properties from coastal erosion and flooding continue.

Encouraging natural approaches to shoreline management is more urgent than ever. If the current trend of shoreline destabilization continues, New England communities will lose additional coastal resources that support economically important recreation areas, fisheries economies, natural storm damage protection, and other critical habitats. Nature-based alternatives must address public health and safety issues while also preserving and restoring coastal ecosystems that are vital to New England's coastal economy.

In suitable locations, nature-based coastal infrastructure practices like living shorelines may reduce risk to people, infrastructure, and habitats from coastal erosion and flooding while also increasing community resilience and maintaining or enhancing coastal ecosystem function. However, vital data and information about the performance of these practices in New England's coastal environment is needed to inform the appropriate siting, design, permitting, construction, and maintenance of these projects.



New Hampshire  
Coastal Program  
DEPARTMENT OF  
ENVIRONMENTAL SERVICES



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## Project Overview and Approach

To advance the science and practice of nature-based coastal infrastructure and inform the appropriate use of these practices for the benefit of people and nature in New England, project partners are:

### *Developing Standardized Monitoring Metrics, Protocols, and Guidance*

Project partners are assembling standardized metrics, protocols, and guidance for site suitability analysis and design, permitting, construction, and performance monitoring of nature-based projects in the region.

### *Learning from Experience*

After designing, constructing, and monitoring both new and existing demonstration projects with the draft standardized metrics, project partners will assess and recommend changes to the monitoring guidance, develop case studies to highlight performance of various project types, and make recommendations to improve regulatory review of nature-based coastal infrastructure projects.

### *Increasing Capacity and Awareness*

Workshops, training events, and outreach materials will be used to increase capacity and illustrate appropriate application of these practices, and the potential benefits and limitations of various approaches. Regulators, planners, practitioners, coastal property owners, and members of the public will benefit from outreach and education activities.

## Project Deliverables

- Guidance document for designing, permitting, and monitoring the performance of living shorelines with standardized metrics and protocols.
- Demonstration projects constructed on coastal beaches, bluffs, and salt marshes in Maine, Massachusetts, and Rhode Island.
- Performance monitoring data from living shoreline projects, including existing projects in Portsmouth and Durham, New Hampshire and the Stratford Point Living Shoreline in Stratford, Connecticut.
- Case studies and best practices from select demonstration projects.
- State and federal policy recommendations aimed at promoting and incentivizing the use of nature-based coastal infrastructure where appropriate.
- Workshops, site-visits, and educational materials to raise awareness of these practices and share the project findings to inform future project development, construction, monitoring, and maintenance activities.



Eroding bluff - Rose Larisa Park, East Providence, RI



Marsh creation with toe protection, Portsmouth, NH



Eroding marsh - potential demo site, Brunswick, ME



Dune restoration, Duxbury Beach, MA

This project builds upon priorities identified in the 2017 report *Living Shorelines in New England: State of the Practice* available online at: [https://www.conservationgateway.org/ConservationPractices/Marine/crr/Documents/Final\\_StateofthePractice\\_7.2017.pdf](https://www.conservationgateway.org/ConservationPractices/Marine/crr/Documents/Final_StateofthePractice_7.2017.pdf)

## Project Contacts

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