THE GREAT BAY
LIVING SHORELINE PROJECT

Resources & References Used to Guide
Great Bay Living Shoreline Design Work

Below is a list of relevant resources for understanding and developing living shorelines in New Hampshire and beyond. These resources aided each of the Great Bay Living Shoreline Design Teams as they developed their suggested living shorelines. Target audiences vary among the documents from design professionals, ecologists, regulators, and curious landowners and stakeholders.

NEW HAMPSHIRE LIVING SHORELINE RESOURCES

An Ecological Approach to Designing Salt Marshes (2022)
A technical report produced by the Great Bay Estuarine Research Reserve combines high resolution Coastal Change Analysis Program (C-CAP) tidal habitat data with high resolution light detection and ranging (Lidar) data to assess marsh health and resilience. The combination of the two datasets identify elevation ranges of plant species and ecotones within Great Bay Estuary.

Living Shorelines in New England: State of the Practice Report (2017)
In this document, the Coastal Zone Management Agencies of the five New England coastal states and the Northeast Regional Ocean Council (NROC) partnered with The Nature Conservancy under a grant from the National Oceanic and Atmospheric Administration (NOAA) to conduct an assessment of the State of The Practice on Living Shorelines and provide considerations for their application along the coast of New England. Their website provides supplemental information and site profiles.

Living Shoreline Initiatives
This webpage maintained by the New Hampshire Department of Environmental Services (NHDES) includes information about living shorelines, regional projects, and related programs.

New Hampshire Living Shoreline Site Assessment Mapping Tool (2019)
A companion to the L3SA, this mapping tool allows users to explore the suitability of New Hampshire's entire tidal coastline for living shorelines projects.

New Hampshire Living Shoreline Site Suitability Assessment (2019)
The goal of the New Hampshire living shoreline site suitability assessment (L3SA) is to identify sites (at the finest resolution possible given data availability) that may be suitable for specific living shoreline approaches in order to address erosion issues along the New Hampshire tidal shoreline.

New Hampshire Coastal Flood Risk Summary: Guidance for Using Scientific Projections (2020)
Developed by the NH Coastal Flood Risk Science and Technical Advisory Panel, this document provides guiding principles for incorporating updated coastal flood risk projections into engineering projects, including living shorelines.

NHDES Coastal Lands/Tidal Waters Wetlands Rules (2019)
Legal requirements for resource analysis, resource management, site alteration, and design and construction of structures in tidal waters and wetlands, in order to preserve the productive and protective functions of this resource area and prevent unreasonable encroachment on surface waters of the state. Chapter 600 describes Coastal Lands and Tidal Waters/Wetlands and living shoreline regulations are in Section 609 Tidal Shoreline Stabilization.

Tidal Erosion Planting Guide
This resource provides information regarding shoreline environmental zones as well as tidal plant species and their preferred habitat conditions including approximate elevation in the shoreline zone, soil conditions, light conditions, and salt tolerance.

Wagon Hill Farm Living Shoreline Case Study (2019)
The page includes a field trip video, final design plans, permits, and other useful tidbits about the living shoreline project at Wagon Hill Farm in Durham, NH.

NATIONAL LIVING SHORELINE RESOURCES

Coastal Adaptation Strategies Handbook (2015)
This National Parks Service handbook is a comprehensive report on the NPS's understanding of coastal adaptations as it pertains to its parks. The handbook identifies tools and strategies as well as provides examples of approaches that NPS and other parks have used to address coastal vulnerabilities.

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International Guidelines on Natural and Nature-Based Features for Flood Risk Management NNBF (2021)

Flood risk management is a challenge worldwide, not just in the northeastern United States. The purpose of this document is to promote the technical advancement of nature-based solutions that increase coastal resilience and assist coastal habitats.

Living Shorelines Academy

This website is rich in resources, from guides to primary literature. The Mission of the Academy is to: 1) Increase the abundance of coastal wetlands; 2) Advance the policy, science, and practice of living shorelines; 3) Enhance collaboration among governmental and private stakeholders. By working towards these goals, the Academy aims to reduce the degradation of coastal wetlands fringing shorelines and fish habitat that surrounds our nation's estuaries – one of our nation's most valuable ecological and economic resources.

Living Shorelines Engineering Guidelines (2016)

This report targets design professionals, state regulators, and property owners within the state of New Jersey with the goal of providing parameters critical to the success of living shoreline projects.

Living Shorelines in New England: Site Characterization and Performance Monitoring Guidance (2022)

This document was developed to promote standardization of data collection and performance assessment of living shorelines throughout New England. The two primary goals for this document are 1) to compare before and after living shoreline implementation to assess success or failure of projects and 2) to advance regional knowledge about the practice of living shorelines through various vase studies and lessons learned which will inform design, permitting and construction, and monitoring and maintenance practices.

NOAA Guidance for Considering the Use of Living Shorelines (2015)

This publication was developed in an agency-wide effort to clarify NOAA's encouragement for the use of living shorelines as a shoreline stabilization technique along sheltered coasts. Important components of the guidance include what to consider when selecting appropriate techniques (e.g., vegetation, edging, sills, vegetated breakwaters) to balance shoreline stabilization and coastal and marine resource conservation, and how to navigate NOAA's potential regulatory (consultation and permitting) and programmatic roles in living shorelines project planning.

Research to Inform Living Shoreline Design, Placement, and Monitoring (2019)

This report from a panel webinar hosted by the National Estuarine Research Reserve System (NERRS) Science Collaborative discusses lessons learned and next steps, opportunities, and needs for living shorelines management and research. Panelists included members of the NERRS and partners who have been studying how different living shoreline designs perform in a variety of coastal locations from the Alabama Gulf Coast to New York, and have been developing tools to enhance the use of these techniques.

Tidal Wetlands Guidance Document (2017)

The state of New York developed this guidance document to promote living shoreline designs with a target audience of state regulators, design professionals, and property owners.