



New Hampshire
Coastal Program
DEPARTMENT OF
ENVIRONMENTAL SERVICES

The State of the Practice: Living Shorelines in NH

New Hampshire Department of Environmental Services Coastal Program

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NH Coastal Climate Summit | June 20, 2018











Pre-storm

Post-storm

Bulkhead



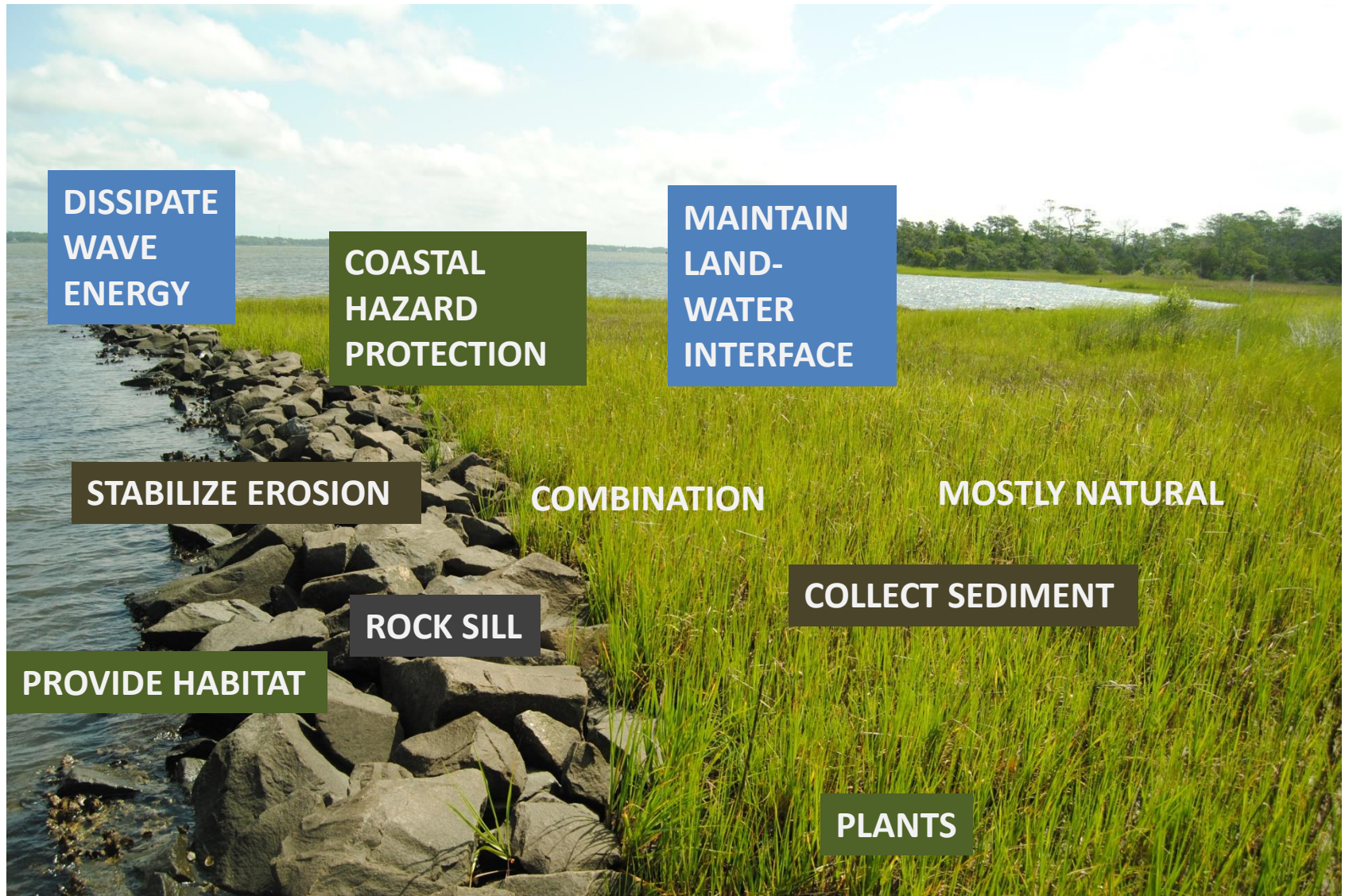
Living shoreline





Fig. courtesy T. Jordan

A living shoreline



Pine Knoll Shores, North Carolina



Living Shorelines in New England: State of the Practice



Prepared For:
The Nature Conservancy



Prepared By:
Woods Hole Group, Inc.



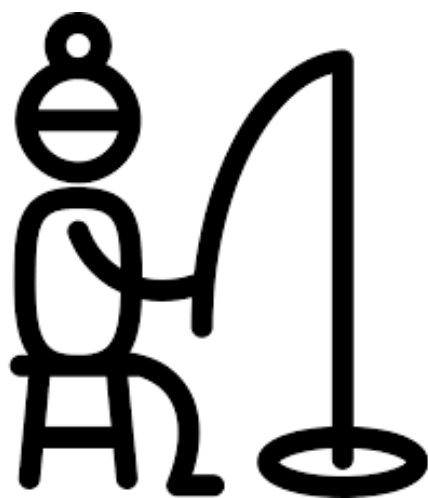
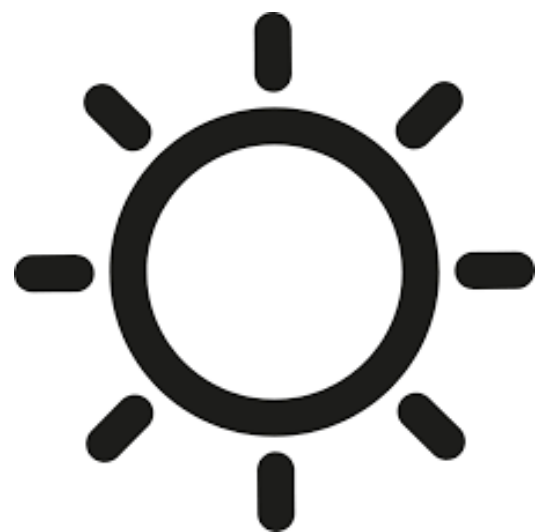
July 2017



Prepared By:
Woods Hole Group, Inc.



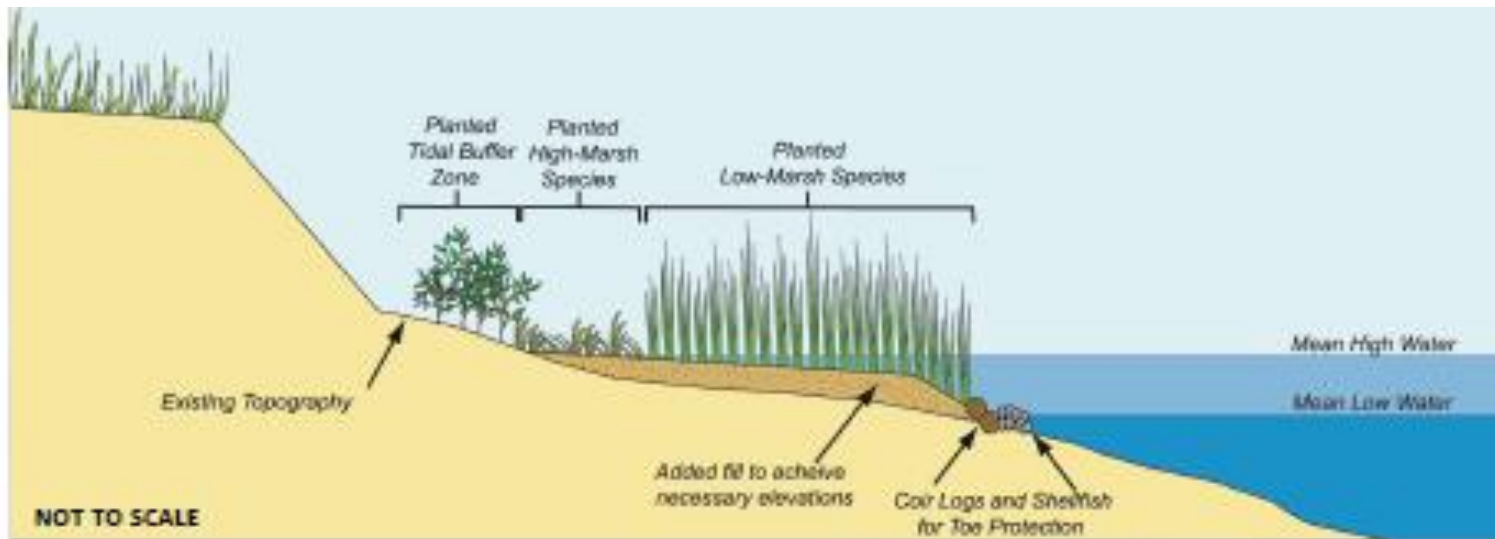
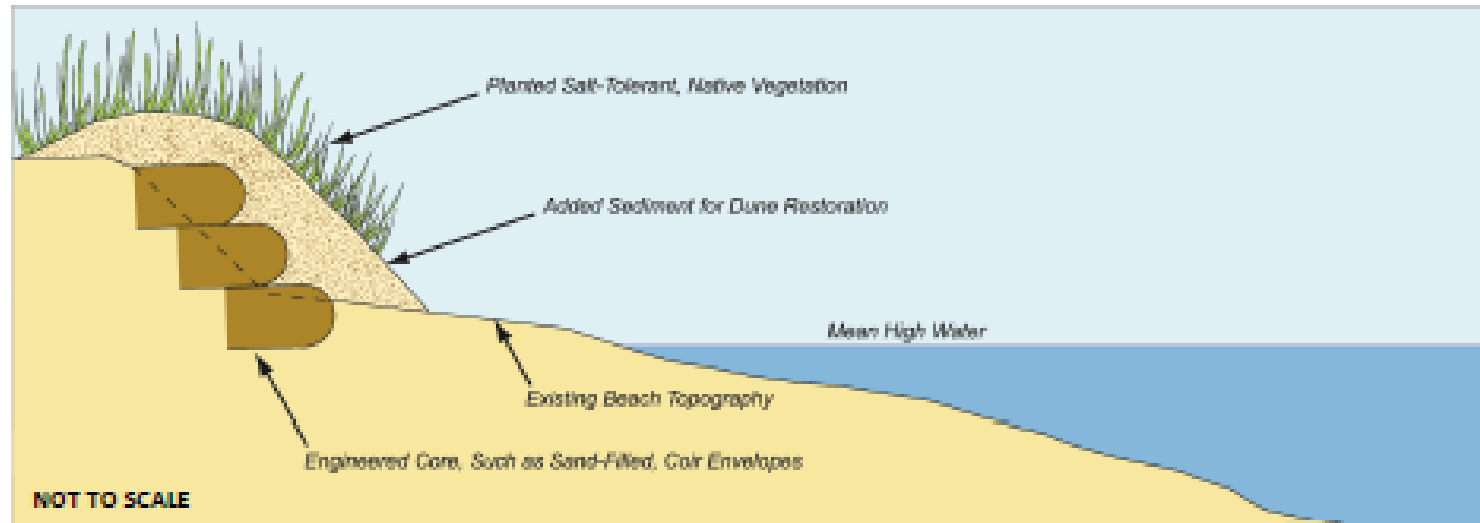
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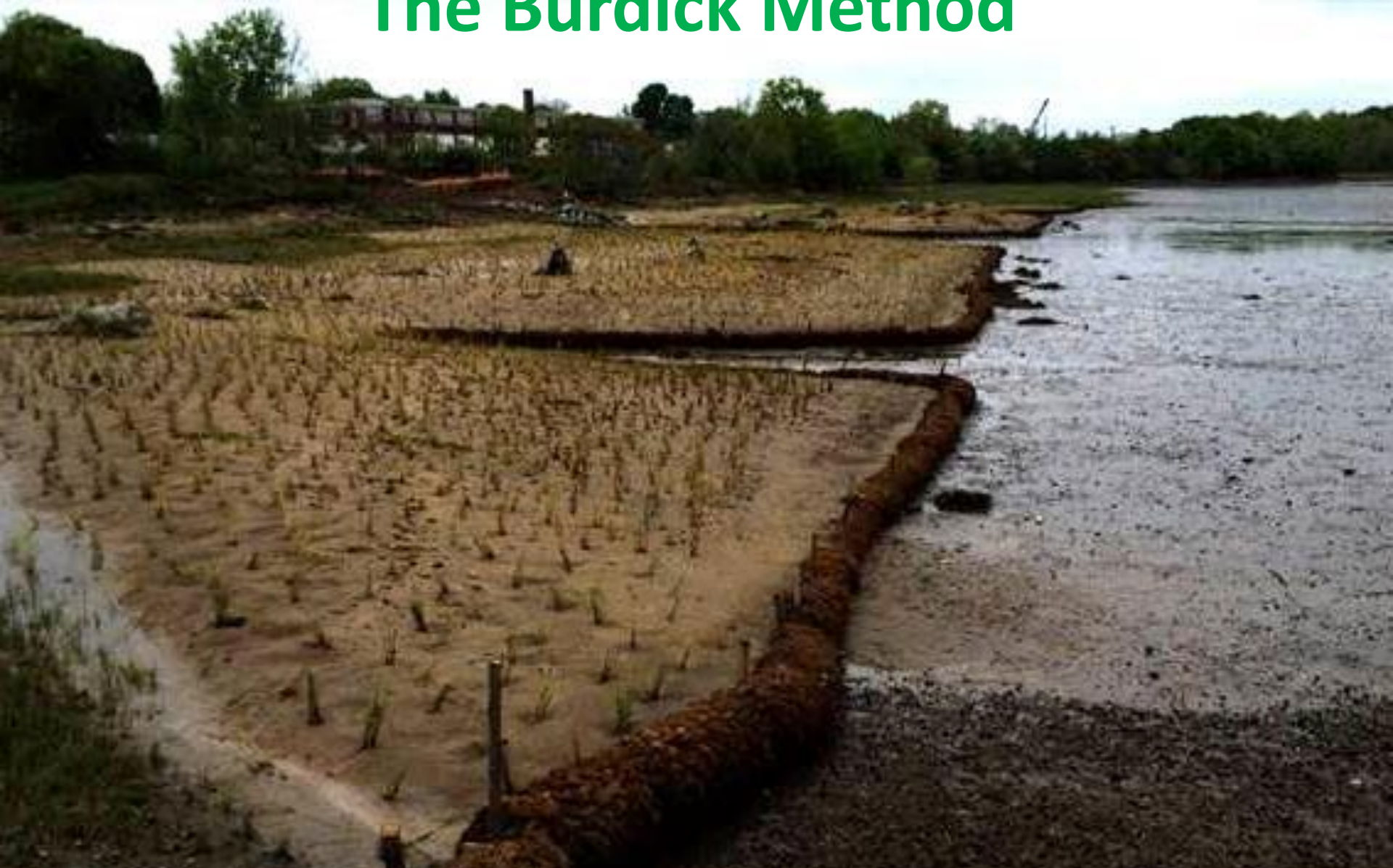
What do we know about living shorelines in the Northeast?



What are some important design considerations for different project types in the Northeast?



Dealing with Ice: The Burdick Method





What do we need to advance living shorelines in NH?



Pilot projects to study



Prioritized, suitable project sites



Permitting clarity and incentives



Perceptions shift



Planning docs that incorporate living shorelines

Planning & Perceptions



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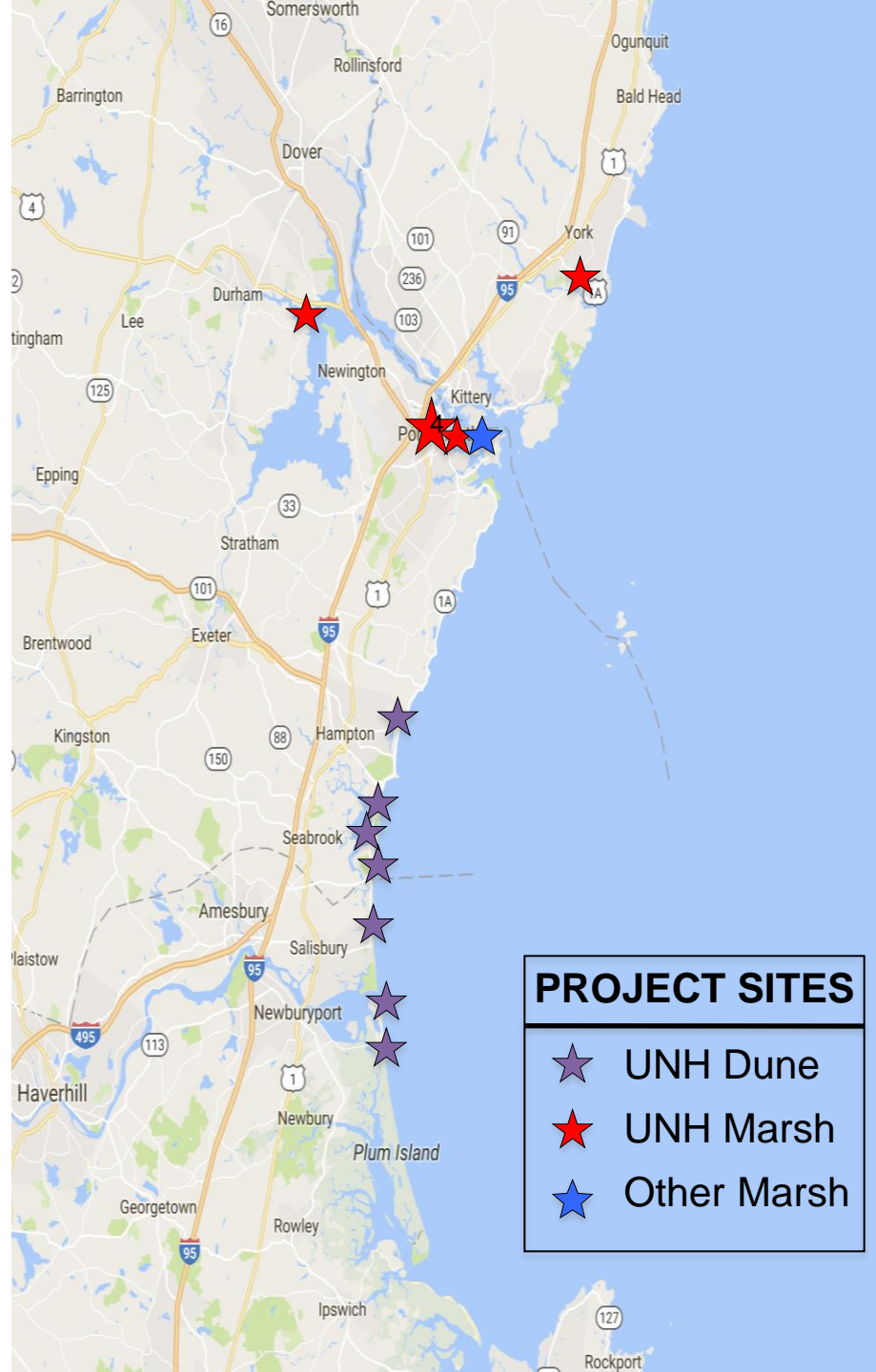
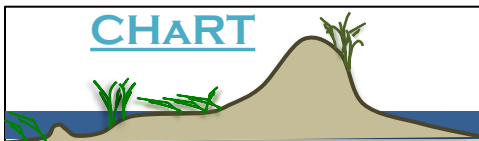
Ensure resiliency of salt marsh wetlands to sea level rise and fund "living shore" techniques and other protective measures.

**Newington Residents are
invited to the
SPRING FOR THE BAY 4
April 24, 2018
5:30 to 8 PM
Newington's Langdon Library**

**LIVING
SHORELINES:
CHANCE for
LITTLE &
GREAT BAY**

Pilot Projects in NH

UNH Coastal Habitat Restoration Team:
Burdick, Moore, Grizzle,
Eberhardt, Ashcraft,
Ballestero
and Technicians
and Students

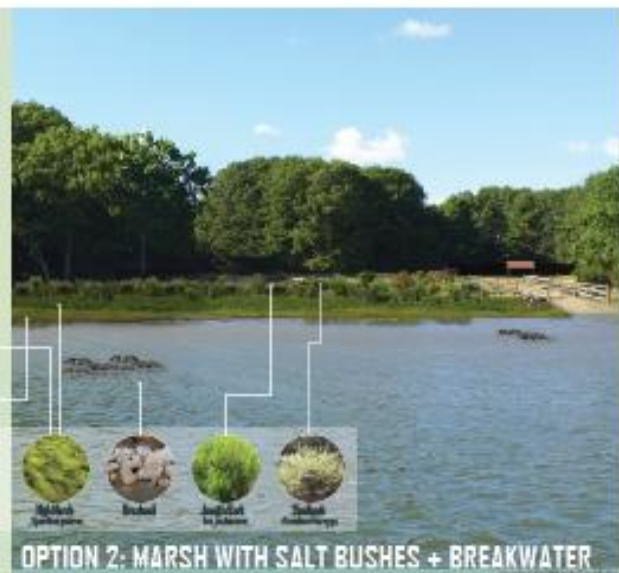




What Could A Living Shoreline at Wagon Hill Farm Look Like?

View of the Wagon Hill Farm Shoreline from the Dyster River

LIVING SHORELINE: A shoreline stabilization technique that utilizes a variety of structural and organic materials such as wetland plants, submerged aquatic vegetation, oyster reefs, coir fiber logs, sand fill, and stone (MMA).



The Problem + Potential Solution

The shoreline of Wagon Hill Farm is retreating. A living shoreline may help stabilize the bank and reduce erosion.

The Town of Durham has owned Wagon Hill Farm and maintained public access to the shoreline at the mouth of the Dyster River for 27 years. Over this time, officials noticed erosion along the property adjacent to the River. Loss of salt marsh vegetation and erosion of marsh sediments have resulted in shoreline retreat at a rate of up to 1 foot/year along almost 2,000 feet of shoreline.

The Town is working with the University of New Hampshire and the New Hampshire Coastal Program to design, pilot, build, and monitor a living shoreline in order to minimize erosion and adapt to expected increases in water levels. The project will include shoreline stabilization, habitat enhancement, and flood damage protection by incorporating natural, green, "soft" infrastructure.



The Town has had to move the fence back a total of 10 feet over multiple occasions due to the eroding shoreline. This map shows how the fence was moved away from the shore and the water level at high tide.

What Causes Erosion?

- Human and animal traffic
- Boat wake
- Tree shade that inhibits marsh vegetation
- Sea level rise
- Ice rafting



Benefits of Living Shorelines

- Stabilization of the shoreline
- Protection of surrounding riparian and intertidal environment
- Improvement of water quality via filtration of upland run-off
- Creation of habitat for aquatic and terrestrial species (MMA)



Project Partners + Credits



Living Shoreline Management Options

Shoreline management options range from vegetation only to combinations of vegetation and structures to a completely hardened bulkhead. It is likely that the best type of living shoreline for Wagon Hill Farm will be a hybrid type that includes marsh, coir logs or fibrous sill, rip-rap, and breakwaters.





Studying our Pilot Projects

Northeast Regional Living Shoreline Monitoring Protocol (in Development)



Erosion pins at Wagon Hill Farm
Dr. Ballesterio + student



Fish sampling at Cutts Cove
Dr. Burdick

Prioritizing Sites

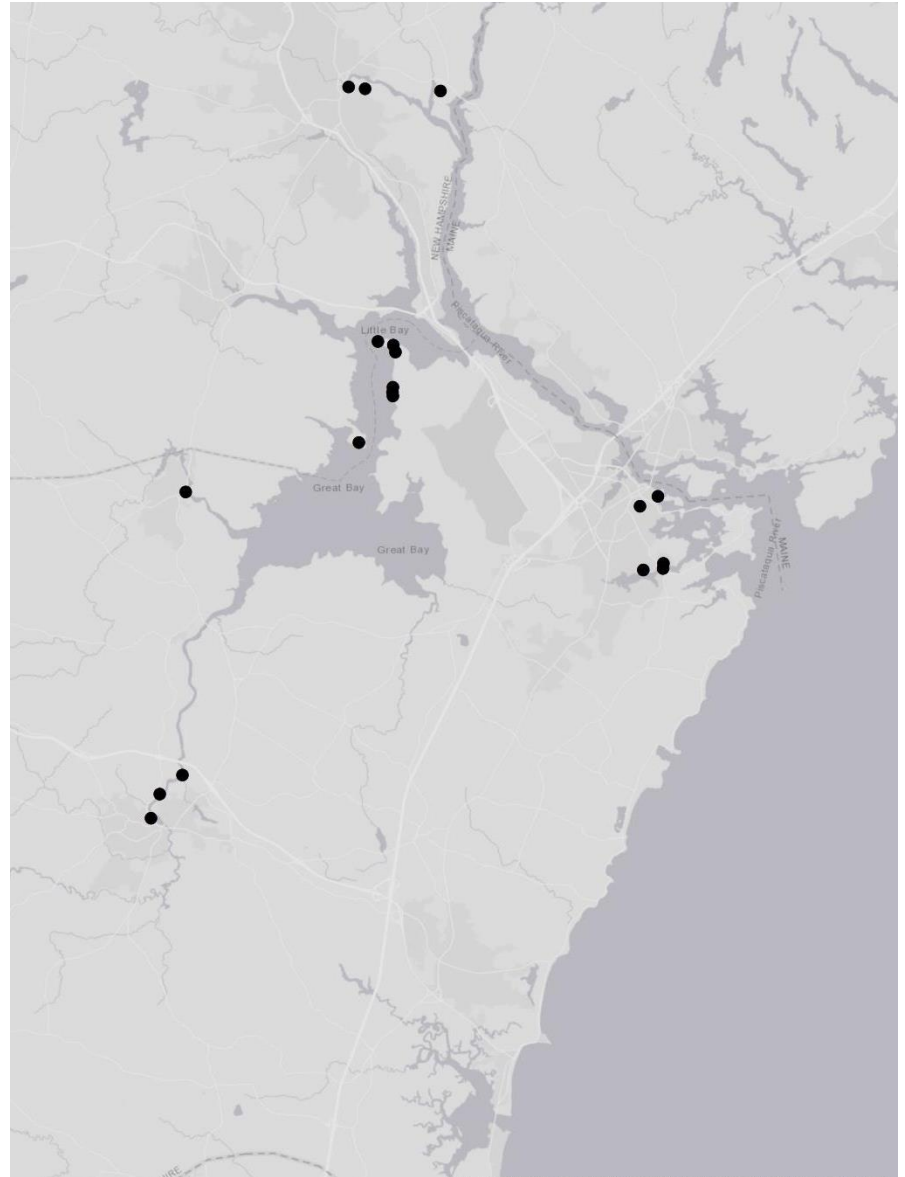


NH Smart Shorelines



Protecting our coast
for People + Nature

How you can help:
Fill out the form in
your packets (now).
Where would you
like to see a living
shoreline project?



**Sites with anecdotal interest for
a living shoreline project**



**University of
New Hampshire**

University of New Hampshire
COASTAL HABITAT RESTORATION TEAM

