

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

View of the Wagon Hill Farm Shoreline from the Oyster River



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 Oyster 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 16 feet over multiple occasions due to the eroding shoreline. The image above 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 (NOAA)



Project Partners + Credits

This poster was prepared by Stafford Regional Planning Commission for the Town of Durham.
Aerial Imagery: Orthophotography was generated by contractors for the Piscataqua Region Estuaries Partnership at the University of New Hampshire (Durham, New Hampshire). Richard Crouse & Associates (Frederick, Maryland) acquired the raw aerial photographs. KAPPA Mapping, Inc. (Bangor, Maine) processed the raw imagery to create the orthophotos and verify that quality assurance objectives were met.
Vegetation Image Credits (from left): City of Madison; SCRiver.org; Ben Kimball, NHDPL; Ben Kimball, NHDPL; Anna Armitage; SurfLandBT.com; TPWOTexas.gov

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 (NOAA).

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.

