

Demonstration of Living Shoreline Technology to Protect and Restore Salt Marsh in Coastal Massachusetts

UPDATE



**Martha's Vineyard
Shellfish Group, Inc.**



Demonstration of Living Shoreline Technology:

Delaware Bay Living Shoreline Initiative



Project Sites

- **Two low energy**
 - Muddy Creek (Lagoon Pond)
 - Trapps Pond (Sengekontacket)
- **Two high energy**
 - Felix Neck (Sengekontacket)
 - MVSG Dock (Lagoon Pond)



Four sites on Martha's Vineyard will be employed by this proposed project: Muddy Creek and the MVSG dock in Lagoon Pond, and Felix Neck and Trapps Pond in Sengekontacket Pond.

Mud Creek

Planting *Spartina alterniflora*





Mud Creek Nov 2014

- Mussels still where they were planted
- Grass mostly intact, going dormant
- Mud filling in behind coir log



Mud Creek - Spring 2015



Mud Creek

July
2015



Mud Creek – November 2015



Trapps Pond Installation



MV Charter School
science class

Trapps Pond

Planting *Spartina alterniflora*



Trapps Pond Nov 2014



Trapps Pond

Spring
2015



**Trapps
Pond
November
2015**



Felix Neck – April 2015



Felix Neck Installation

June
2015



Felix Neck

**Final
installation**



Felix Neck – Damage shortly after installation



Felix Neck

October 2015

**Total destruction
after
Northeast storm**



Lagoon Pond Installation July 2015





Lagoon Pond

**Damage
from
boat wakes**



Coir logs tearing apart



Conclusions

- **DELSI living shoreline method has application for salt marsh restoration/protection in relatively protected sites.**
- **At sites exposed to waves, the method did not succeed.**
- **For the high energy sites. a new design that incorporates logs that will stay in place and not break apart will be required.**
- **A log design/arrangement that approximates a pyramidal shape might be less likely to roll**
- **Coir log construction needs to be much stronger to hold together when subjected to wave energy.**
- **Tidal elevation is important to marsh grass health and survival. The grass will not survive if its roots are not periodically above water.**