Cape Cod Area Living Shoreline Projects

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Importance of proper planting in various coastal planting areas

- Buffer Zone
- Coastal Bank
- Salt Marsh





Importance of Root Morphology



Panicum virgatum

http://www.tva.gov/river/landandshore/stabilization/benefits.htm

Root Matrix of a Healthy Native Plant Community



Ecological Restoration Rather than Planting a Monoculture



Re-establishing Coastal Bank Communities

American Beachgrass Poverty Oat Grass Crinkled Hair Grass Purple Love Grass Eastern Showy Aster Switchgrass Sickle-Leaved Grass Little Bluestem Seaside Goldenrod Salt Meadow Hay Beachplum Northern Bayberry

Ammophila breviligulata Danthonia spicata Deschampsia flexuosa Eragrostis spectabilis Eurybia spectabilis Panicum virgatum Pityopsis falcata Schizachyrium scoparium Solidago sempervirens Spartina patens Prunus maritima Morella pensylvanica

Diverse Coastal Bank Modeled on Natural Communities





5-Years' Growth

So how does one keep the plants in place long enough to take root???



Focus on Coir-Based Bioengineering Products

Coir resists biological degradation in a marine environment

Coir photo-degrades in sunlight

Life-expectancy of coir is well-matched with needs to stabilize sediment sufficiently for establishment of plants in a marine environment

Pre-Vegetated Fiber Rolls





Fiber Rolls can Reinforce the Toe of a Coastal Bank & Also Support Plants



If the slope angle is undercut, the bank is often re-graded to a more sustainable slope angle



Pre-Vegetating Allows for Fiber Rolls to be installed with a Full Season of Growth Already Underway



Coir Fiber Rolls are Buried to Facilitate Plant Growth & Provide U.V. Protection



1st Growing Season





Importance of proper blanketing above the toe protection



Juno Wrack Line was 4-5' above the top of this fiber roll array – no damage.



Proper Erosion Control Blanket Installation

6" deep lock-in trench at top and bottom of slope

- Overlap blankets a minimum of 6"
- Use appropriate staking to match the sediment
- Only run orientation of blankets perpendicular to the contours (up and down slope)

Importance of Fringe Marshes in Coastal Stabilization is Frequently Overlooked



Fringe Salt Marsh Restorations with Coconut Fiber-Based Materials



Fringe Marshes can intercept storm energy & stabilize fluctuating beach elevations, which protects nearby upland resources from erosion

Coir Pillows are Well Vegetated with Saltmarsh Species Prior to Installation





"Simulated Salt Marsh" Pre-Vegetated Peat Shelf / Fringe Marsh



Combined Strategies to Stabilize Beach Elevation and Manage Erosion



Pre-Vegetated Fiber Rolls Used with Pre-Vegetated Marsh Mats



Thank you for listening

