

Living Shorelines Along the Central Coast of North Carolina



North Carolina Coastal Federation

Working Together for a Healthy Coast

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South Atlantic Living Shorelines Summit

Best Practices for Designing and Constructing Living Shorelines and Lessons Learned in the GSAA Region

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Living Shoreline Techniques

Oyster Shell Bag Sills



Oyster Shell Bag Marsh Toe Revetments





Jones Island, Hammocks Beach State Park



Jones Island Oyster and Salt Marsh Habitat Restoration Project













Erosion on Jones Island





Jones Island Oyster and Salt Marsh Habitat Restoration Project

Patch Oyster Reefs

Oyster Shell Bag Sills

Marsh Grass Plantings



Obtaining the Recycled Oyster Shells

- Purchased from seafood and trucking companies (\$2.48 -\$3.00 per bushel)
- Donated from oyster roasts
- Restaurants





Making the Oyster Shell Bags





















Transporting the Bags





Oyster Shell Bags Stockpiled on Jones Island



Oyster Shell Bag Sill Design





6 ft. wide



Oyster Shell Bag Sills at Jones Island (1,773 linear feet)





Oyster Shell Bag Sills at Jones Island





Salt Marsh Grass Plantings



Sporting alterniflorg (smooth cordgrass)

Spartina patens (salt meadow hay)

Juncus roemerianus (black needlerush)

- Plugs ordered in fall
- \$0.42 \$0.75 per plug
- Trays of 50 or 75 plugs
- Boxes of 250 plugs
- Clip tall blades



Planting Technique

- Numerous plugs
- In spring for 1-3 consecutive years
- One plug per hole, 6 inches deep, six inches to 1 foot apart
- Fertilizer not always needed
- Planted at low tide and after sill in place













Salt Marsh Plantings at Jones Island (over 116,000 plugs)



Patch Oyster Reefs at Jones Island (18 Reefs, 23,000 bushels of recycled oyster shells)







Patch Oyster Reef Design





Oyster Shell Bag Marsh Toe Revetments







Types of Shorelines for Oyster Shell Bag Marsh Toe Revetments









Deer Creek Oyster Restoration Project Applicant: Work Plat Drawing 2 of 2: Oyster Shell Bag Marsh Toe Revetment Design - Cross-Section View Date: February 5, 2015

The revetment will consist of layers of oyster shell bags placed perpendicular to the shoreline, no more than 5 feet waterward of the erosion escarpment and no higher than 6 inches from the elevation of the existing marsh substrate. Each oyster shell bag is approximately 2 feet long, 6 inches wide and 6 inches high.



Oyster Shell Bag Marsh Toe Revetment.



Example of Oyster Shell Bag Marsh Toe Revetment.



Cross-Section/Profile of Oyster Shell Bag Marsh Toe Revetment.

Oyster Shell Bag Marsh Toe Revetments at Beacon Island





Coastal Ecosystem Resiliency Grant December 2015 – December 2018

- Increase the number and demand for living shorelines and North Carolina's coastal resiliency and fish habitat.
- Implement up to 20 living shorelines at various public and private sites along the coast.
- Cost-share component for private property owners.
- Mechanism to pay contractors to be trained in field.







Partnerships and Funding













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