March 2009
Cost figures as of: February 2013

Bio-Engineered Oyster Reef Demonstration (LA-08)

Project Status

Approved Date: 2007 **Project Area:** N/A
Approved Funds: $2.31 M **Total Est. Cost:** $2.31 M
Net Benefit After 20 Years: N/A
Status: Engineering and Design
Project Type: Demonstration: Shoreline Protection
PPL #: 17

Location

The project is located along the Rockefeller Wildlife Refuge Gulf of Mexico shoreline west of Joseph Harbor canal in Cameron Parish, Louisiana.

Problems

The purpose of this project is to test a new, bio-engineered, product to address rapid shoreline retreat and wetland loss along the Gulf of Mexico Shoreline in areas with soils of low load bearing capacity. For example, at Rockefeller Refuge, the direct Gulf of Mexico frontage and extremely low soil load bearing capacity (250-330psf), coupled with an average shoreline retreat of 30.9 ft/yr, present unique engineering challenges with a subsequent direct loss of emergent saline marsh.

Restoration Strategy

The goal of this demonstration project is to evaluate the proposed technique as a cost effective technique for protecting areas of Coastal Louisiana's Gulf of Mexico Shoreline with poor load bearing capacities.

The demonstration project would consist of an Oysterbreak, approximately 1000' long. The Oysterbreak is a light-weight, modular shore protection device that uses accumulating biomass (an oyster reef) to dissipate wave energy. The bioengineered structure is designed to grow rapidly into an open structured oyster reef utilizing specifically designed structural components with spat attractant (agricultural byproducts) and enhanced nutrient conditions conducive to rapid oyster growth. The Oysterbreak is constructed by placing modular units into an open interlocked configuration. The units are sized to be stable under storm wave conditions. The height and width of the Oysterbreak are designed to achieve a moderate initial wave energy reduction. As successive generations of encrusting organisms settle on the Oysterbreak, the structure's ability to dissipate wave energy increases.

Top: Existing beach formation at Rockefeller Wildlife Refuge gulf shoreline. Beach material is primarily made up of lightweight Boyster shell fragments (hash).
Bottom: An example of ongoing shoreline erosion on Rockefeller Wildlife Refuge. Dark areas in photo are remnant organic marsh.

Progress to Date

The cooperative agreement between the National Marine Fisheries Service and the Louisiana Department of Natural Resources has been executed. The project design report is nearing completion.

This project is on Priority Project List 17.

For more project information, please contact:

Federal Sponsor:
National Marine Fisheries Service
Baton Rouge, LA
(225) 389-0508

Local Sponsor:
Coastal Protection and Restoration Authority
Baton Rouge, LA
(225) 342-4736

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Project Boundary *

* denotes proposed feature

N

0.2 0 0.2 0.4 Kilometers

0.2 0 0.2 0.4 Miles

Map Produced by:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station
Baton Rouge, La.

Background Imagery:
2007 USDA-FSA-APFO NAIP MrSID Mosaic

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