BTNEP
BARATARIA-TERREBONNE NATIONAL ESTUARY PROGRAM

Fourchon Maritime Forest Ridge and Marsh Restoration

Project Status

Project Year: 2003-2015 **Status:** Complete
Category: Restoration
Location: Port Fourchon, LA
Project Partners: Greater Lafourche Port Commission, Shell Oil Co., birding groups and countless private and government organizations and volunteers

Background and Problem Addressed:

Estuaries are some of the most ecologically productive places on the planet due to their changing salinity regimes and varying landforms. Chenier ridges and maritime forests are an important physical and ecological feature of Louisiana's coastal landscape. They stand out giving a vertical relief in the otherwise flat terrain created by the deltaic processes that created the coastal plains, marshes and barrier islands. They act as speed bumps in slowing storm surge during tropical events and provide critically important habitat for many species of shorebirds and Neotropical migratory songbirds. As these landforms are lost, so are the critical habitats over 338 migrating bird species depend upon traveling the Mississippi Flyway each spring and fall.

To combat this loss, new coastal habitats need to be recreated or restored. The Fourchon Maritime Forest Ridge and Marsh Restoration project was the first of its kind utilizing saline sediments to create a maritime ridge for the establishment of trees beneficial to Neotropical migratory songbirds. Use of the readily available surrounding saline sediments is problematic, however, in that they are not initially suitable for the non-halophytic trees selected for this project. BTNEP tried several techniques to mitigate for saline soils in preparation for the planting of woody species. The knowledge gained will help future maritime ridge restoration projects utilizing saline sediments and woody species establishment through soil sampling alone. Through the construction of maritime forest ridges along Louisiana's coast, the "bones" of our salt marshes can now provide storm surge protection and habitat for the millions of Neotropical migratory birds each year.

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Project Description:

Through the acquisition of a Coastal Impact Assistance Program (CIAP) grant, the Greater Lafourche Port Commission and the Barataria- Terrebonne National Estuary Program, with the assistance of many partners, constructed over 5,000 feet of ridge and adjacent marsh during two construction phases in 2005 and 2008. Both phases were built utilizing sediment dredged from new slips created for the expansion of the adjacent Port Fourchon facility that services thousands of petroleum and gas production rigs in the Gulf of Mexico. Sediment from the cutterhead dredge was pumped through a pipe as a slurry to a containment area in the project area approximately 1 to 2 miles away. After allowing time for dewatering, the sediments were removed from the northern and southern edges of the project footprint down to +1.6 feet to create a marsh platform of approximately 100 feet on either side of the ridge. The removed material was pushed up onto the middle area to create an 8 foot high ridge.

Phase One in 2005, created the first 2,000 linear feet with Phase Two in 2008 creating an additional 3,000 linear feet. Herbaceous plantings began immediately after construction with woody species plantings following shortly thereafter. Herbaceous plantings were implemented to reduce erosion, increase the rate of soil conditioning, and provide nesting habitat for shore birds. Woody species plantings followed shortly thereafter. Over the entire project period, over 1,000 volunteers helped to plant over 100,000 woody and herbaceous plants on the ridge.

For Phase Two of the ridge, experimental plantings were implemented each year from 2009 to 2014 to determine when soil conditions become suitable to support the establishment of the targeted beneficial woody species. Species selected for study included live oak, hackberry, sand live oak, American beautyberry, salt matrimonyvine, roughleaf dogwood, wax myrtle, red mulberry, honeylocust, Hercules' club, persimmon, and yaupon. The use of the treatments to the soil of gypsum, fertilizer and organic matter were studied as well. Through soil analysis and plant growth data analysis, recommendations and predictions for plant response on future ridge creation projects utilizing similar in situ saline marsh sediments.

CCMP Action Items Addressed:

Beneficial Use of Dredged and Non-Indigenous Material (Ecological Management #4)

Protection of Habitat for Migratory and Resident Birds (Ecological Management #15)

Citizen Involvement Programs and Activities (Sustained Recognition #3)

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Revised Dec. 2016