rev. February 2008
Cost figures as of: February 2023

Plowed Terraces Demonstration (CS-25)

Project Status

Approved Date: 1995 **Project Area:** N/A
Approved Funds: $0.32 M **Total Est. Cost:** $0.32 M
Net Benefit After 20 Years: N/A
Status: Completed August 2000
Project Type: Demonstration: Sediment and Nutrient Trapping
PPL #: 4

Location

The project is located in Cameron Parish, about 24 miles southwest of Lake Charles, Louisiana, and to the east of Black Bayou.

Problems

Rapid water level fluctuations, ponding, and saltwater intrusion have caused vegetation in the area to die. These problems were created through the construction and maintenance of the Calcasieu and Sabine River ship channels, oil field canals, and their navigation.

Restoration Strategy

Adjacent to the Gulf Intracoastal Waterway, excessive water-level fluctuations, saltwater intrusion, and wind generated wave action have severely eroded marshes in the project area. The soils of the area appear suitable for low-level, plow-constructed earthen terraces and provide an excellent opportunity to develop and demonstrate a nontraditional procedure for constructing earthen terraces in shallow water areas. These demonstration terraces are expected to serve as wave-stilling, sediment-trapping structures that will provide for the establishment of emergent vegetation. Vegetation will also be planted. Terrace dimensions will be measured to determine the total area of wetlands created, and vegetative cover will be assessed.

Even though two large pieces of equipment were required to tow the plow through the water, efforts during project implementation showed this method to be less time consuming than utilizing traditional equipment such as a bucket-type dragline.

New technology, such as this plow, was used to form the low-level terraces by re-forming bottom material from the bay.

Progress to Date

This project was a demonstration project. The original intent was to use a pulled implement (plow) to construct terraces in shallow, open water areas of the marsh. In the summer of 1999, a contract was awarded requiring the construction of the terraces with a pulled implement. This contract was terminated when the shallow water terrace height of 3.0 feet proposed on the construction drawings was not achieved. A second contract employing a new implement was awarded, but once again, the required terrace dimensions were not attained. After three months, the tops of the terraces were roughly at the mean water level of the area.

In this second construction contract, 35,956 feet of terrace were constructed. A separate services contract was awarded to install plants on the terraces and complete the project. The plantings consisted of 22,420 smooth cordgrass plants *(Spartina alterniflora var. vermilion)*. The plants were installed on both sides of the terraces at three and four foot spacings.

A third contract, advertised in January 2000, allowed the contractor to construct the terraces using bucket-type equipment. This contract provided the finished terraces that met the specified dimensions. Construction was completed in August 2000.

This project is on Priority Project List 4.

For more project information, please contact:

Federal Sponsor:
Natural Resources Conservation Service
Alexandria, LA
(318) 473-7756

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

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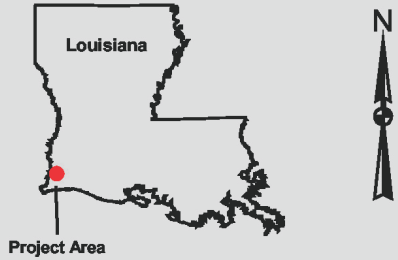
Plowed Terrace

Project Boundary



0.25 0 0.25 0.5 Miles

0.5 0 0.5 Kilometers

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U.S. Geological Survey
National Wetlands Research Center
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