October 2003

Caernarvon Diversion Outfall Management (BS-03a)

Project Status

Approved Date: 1993
Cost: $4.5 million
Project Area: 15,556 acres
Status: Complete
Net Benefit After 20 Years: 802 acres
Project Type: Outfall Management

Location

This project is located south of the Braithwaite and Caernarvon communities in Plaquemines Parish, Louisiana.

Problems

Wetlands in the Breton Sound basin are being lost at alarming rates due to the adverse effects of saltwater intrusion, oil field activities, reduced freshwater inflow, and sediment and nutrient starvation.

Since 1956, approximately 3,400 acres of marsh have been lost and converted to open water in the basin. The majority of fresh water from the Caernarvon Diversion structure exits the project area through larger, natural and manmade channels so that benefits to the adjacent marshes are not maximized. These conditions are exaggerated during periods of low diversion discharges or low water levels. The existing Caernarvon Freshwater Diversion project (funded by the Water Resources Development Act) releases water into Big Mar and Bayou Mandeville but does not force water over the marsh.

Water control structures installed through existing earthen closures provide fresh water and nutrient access into previously isolated areas.

Restoration Strategy

The existing Caernarvon structure consists of 5 gated box culverts connecting the Mississippi River with the project area and has a maximum discharge of 8,000 cubic feet/second.

The objective of the project is to promote better utilization and distribution of fresh water and nutrients from the Mississippi River via the diversion structure during low-discharge periods. Management of the outfall will allow water from existing channels into the marsh interior through the placement of water control structures at strategic locations.

The outfall management project includes installing flow-through culverts with water control at 8 sites; 3 plug closures with armor protection; 13,000 feet of spoil bank restoration; and temporary/permanent vegetative plantings where applicable.

Progress to Date

The Caernarvon Diversion structure has been in operation since 1991. Construction of the outfall management features was completed in September 2002 at a cost of $1.9 million. Damage to the marsh interior resulting from Hurricane Lily in October 2002 has caused blockage in several of the channels located in the outfall area of the project management structures. Louisiana Department of Natural Resources (DNR) is in the process of assessing the damage and plans on remediation of damages of the marsh to pre-storm conditions.

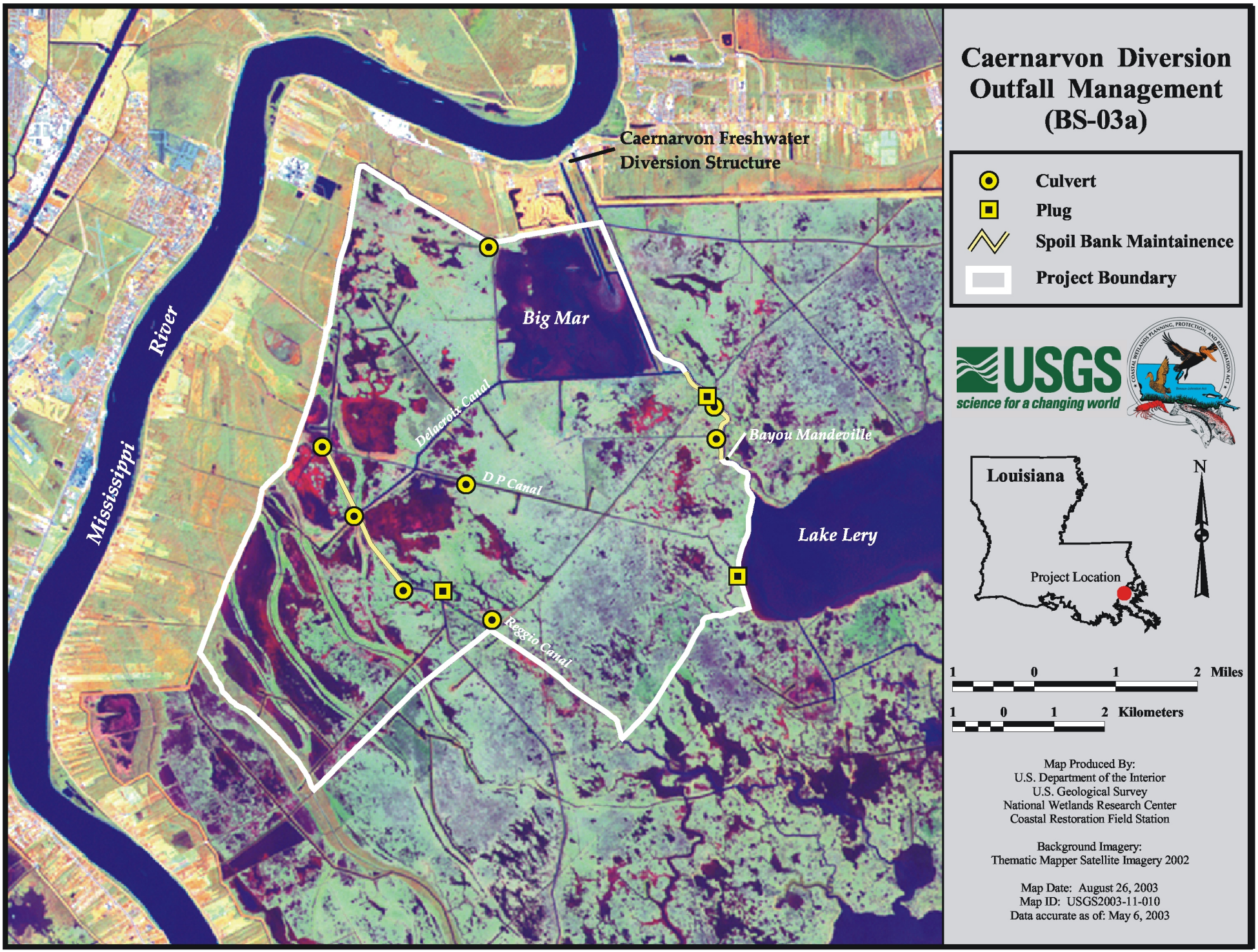
Natural Resources Conservation Service and DNR has initiated the process of installing flow meters at two sites in the southwest corner of the project area to better quantify and evaluate outflow conditions from several outfall management structures.

This project is on Priority Project List 2.

For more project information, please contact:

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

Local Sponsor:
Louisiana Department of Natural Resources
Baton Rouge, LA
(225) 342-7308



Caernarvon Diversion Outfall Management (BS-03a)

- Culvert
- Plug
- Spoil Bank Maintainence
- Project Boundary

USGS
science for a changing world

Louisiana

Project Location

N

1 0 1 2 Miles

1 0 1 2 Kilometers

Map Produced By:
U.S. Department of the Interior
U.S. Geological Survey
National Wetlands Research Center
Coastal Restoration Field Station

Background Imagery:
Thematic Mapper Satellite Imagery 2002

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