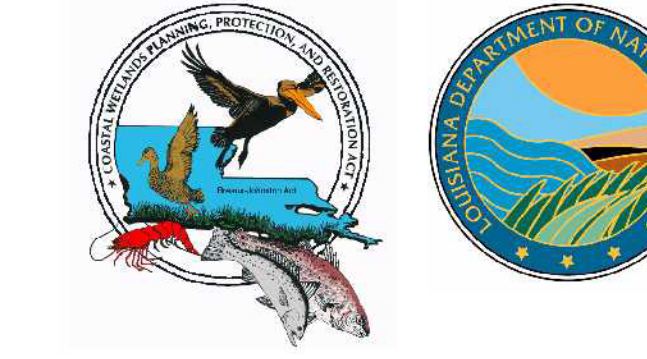


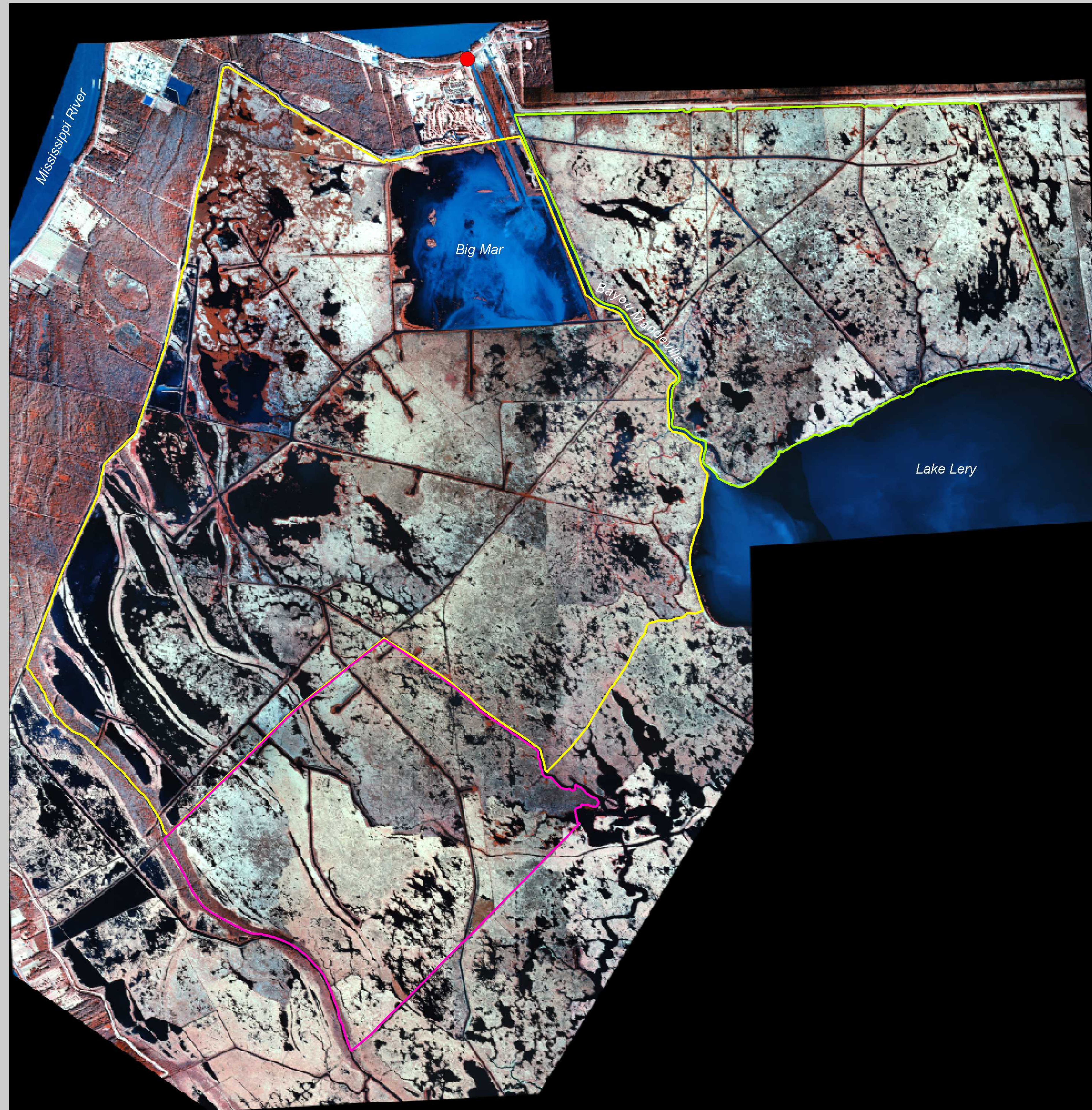
# Caernarvon Diversion Outfall Management (BS-03a)

## Coastal Wetlands Planning, Protection and Restoration Act

### 2000 Photomosaic and Land-Water Analysis



2000 Photomosaic



**Project Description:**

The Caernarvon Diversion Outfall Management project (BS-03a) is located west of Breton Sound basin in Plaquemines Parish, Louisiana. The project area totals 19,533 acres, of which 10,638 acres are land and 8,895 acres are open water.

Breton Sound is an estuarine basin located within the Mississippi River deltaic plain in southeastern Louisiana. Marshes in this area are being lost at alarming rates. Since the early 1900s, levees built along the Mississippi River have prevented fresh, nutrient rich water from flooding the adjacent marshes. Canals dredged for navigation or oil and gas pipelines have allowed saltwater to penetrate into previously fresh marshes and have increased tidal scouring. The natural process of subsidence has also contributed to land loss in this area.

In the Caernarvon Diversion Outfall Management project area, 5,546 acres of land converted to open water from 1932 to 1990. During 1958 to 1974, land loss rates peaked at more than 270 acres/yr. the number of oil and gas pipeline canals had increased dramatically during this time period, significantly increasing tidal scouring and saltwater intrusion into the upper reaches of Breton Sound basin. The increasing effects of saltwater intrusion transformed the project area from a primarily intermediate marsh in 1968 to a primarily brackish marsh in 1978.

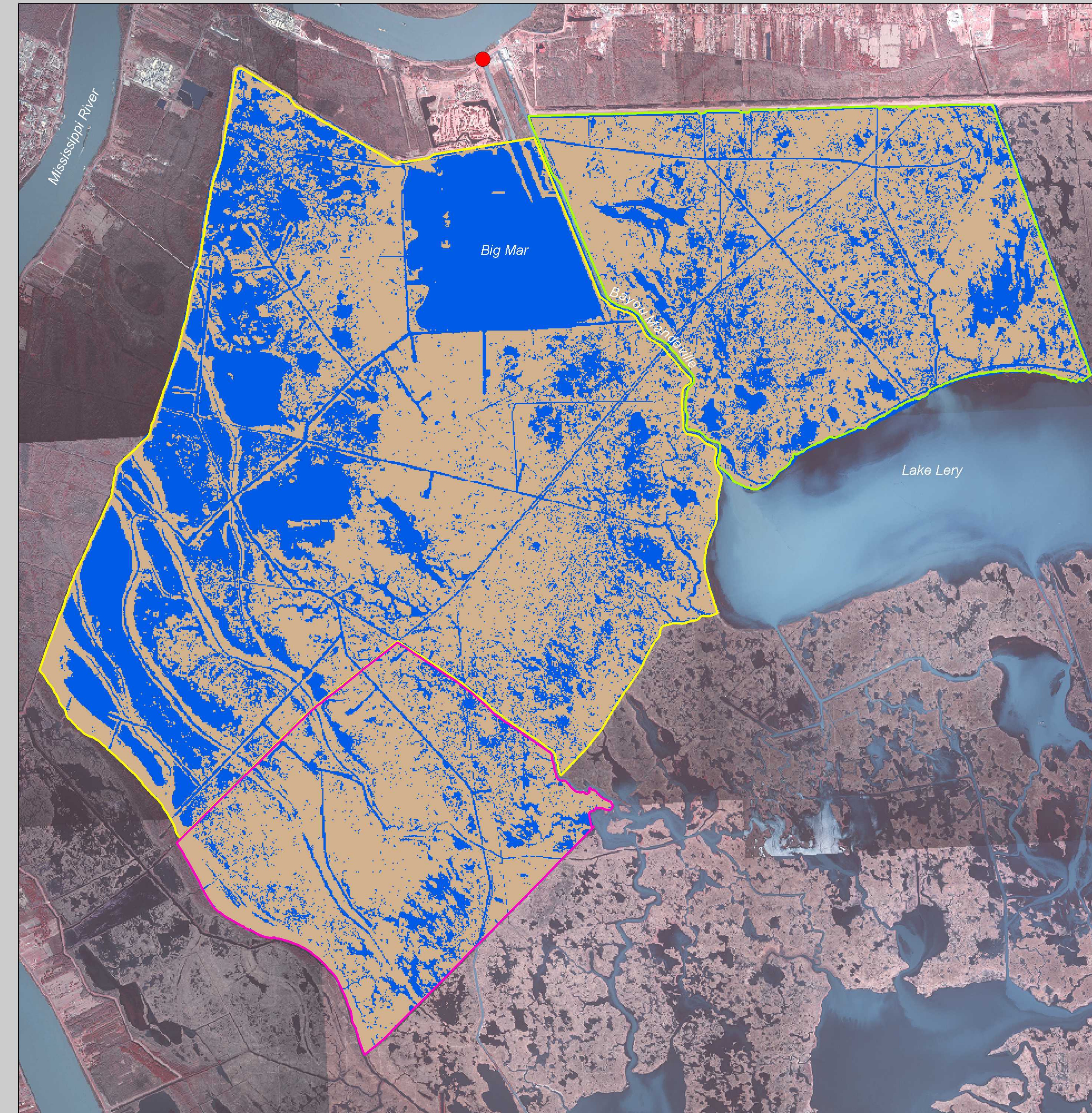
The goal of this project is to maximize benefits from the Caernarvon Freshwater Diversion project to the marshes immediately south and west of Big Mar, a failed agricultural impoundment. The Caernarvon diversion structure was constructed between 1988 and 1991 for the purpose of diverting fresh water from the Mississippi River to the marshes of the Breton Sound basin. The Caernarvon Freshwater Diversion project releases water into Big Mar and Bayou Mandeville but does not force water over the marsh. Only 34% of the discharge from the diversion structure flows south and west of Big Mar. The majority of the freshwater exits the Caernarvon Outfall Management project area through larger, natural and human-made channels that do not maximize benefits to adjacent marshes.

This project will encourage the inundation of the marshes to the south and west of Big Mar by installing culverts with either interior flap gates or exterior sluice gates into existing plugs and spoil banks. Retention time will be increased by enhancing existing spoil banks and installing plugs.

- Project Area
- Reference Area 1
- Reference Area 2
- Caernarvon Freshwater Diversion Structure

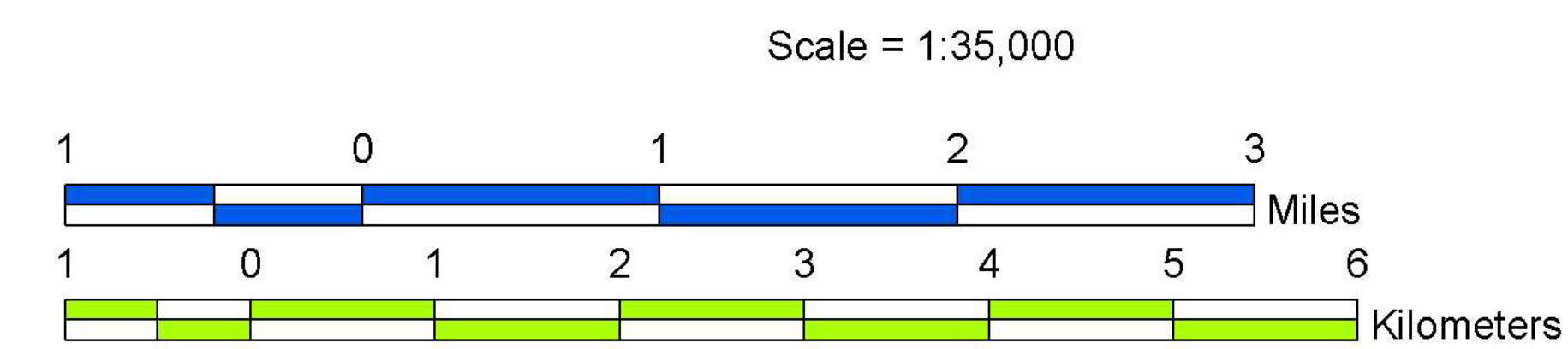
Class	Project Acres	Reference 1 Acres	Reference 2 Acres
Land	10,638	6,264	4,520
Water	8,895	2,487	1,101
<b>Total</b>	<b>19,533</b>	<b>8,751</b>	<b>5,621</b>

2000 Land-Water Analysis



Prepared by:  
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U.S. Geological Survey  
National Wetlands Research Center  
Lafayette, LA  
and  
Louisiana Department of Natural Resources  
Coastal Restoration Division  
New Orleans Field Office

**Project Location:**



Data Source:  
Land-Water data were derived from 1:24,000 scale, color infrared photography obtained November 29, 2000. The data were overlaid on a 2004 Digital Orthophoto Quadrangle.

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