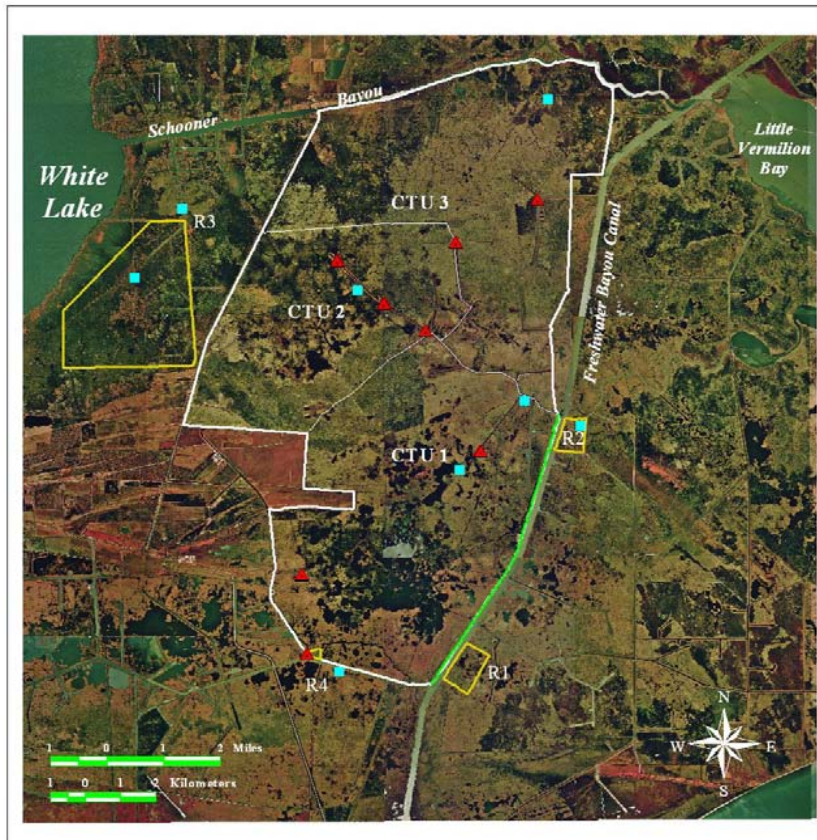


# Freshwater Bayou Wetlands

- Selected on CWPPRA PPL II.
- Construction finished 1/95 (Ph 1) and 10/98 (Ph 2).
- Location: East of Pecan Island, Vermilion Parish, La.



# Project Location



## ● Project Features

- 28,000 ft Rock Dike
- ▲ 8 Additional Water Control Structures
- 7 Data Recorders

Marsh Management

# Planning

- **Assumed Causes of Loss:**
  1. Enlargement of Freshwater Bayou resulted in erosion of perimeter embankments and increased tidal exchange with interior marshes.
  2. Elevated water levels in Grand/White Lake system resulted in marsh ponding due to limited outlets.

## Goals and Objectives

- Stabilize the west bank of Freshwater Bayou Canal
- Reduce ponding and interior marsh loss
- Maintain water level within the range for fresh-intermediate marsh (6" below to 2" above marsh elevation)
- Maintain water salinity within the range for fresh-intermediate marsh (0-5 ppt)
- Increase emergent marsh in shallow open water areas

# Construction

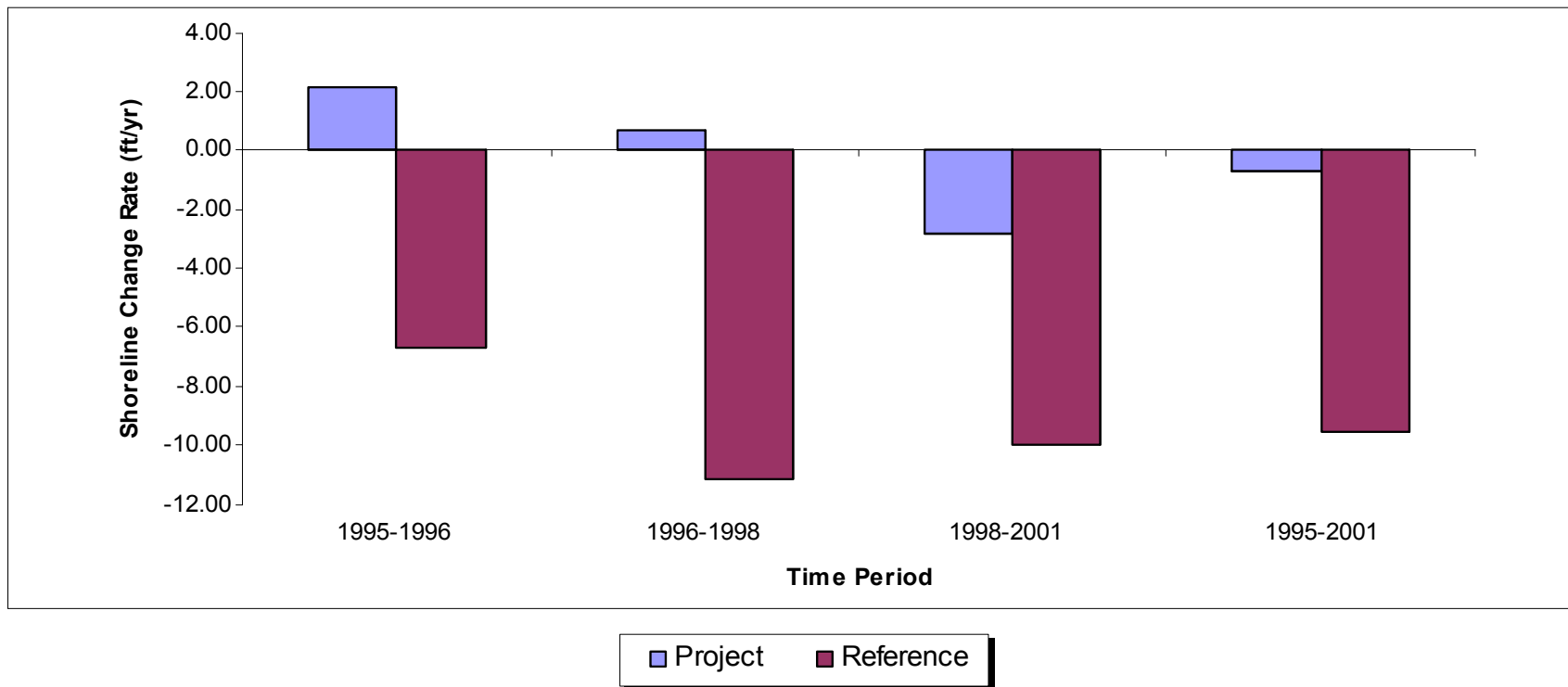
- WVA Features
  - Repair of 10,000 linear feet of perimeter embankment
  - 12 gated water control structures along the southern perimeter embankment
- Final Features
  - 28,000 linear-ft of continuous rock dike along Freshwater Bayou
  - 8 water control structures at 8 separate locations

# Monitoring Variables

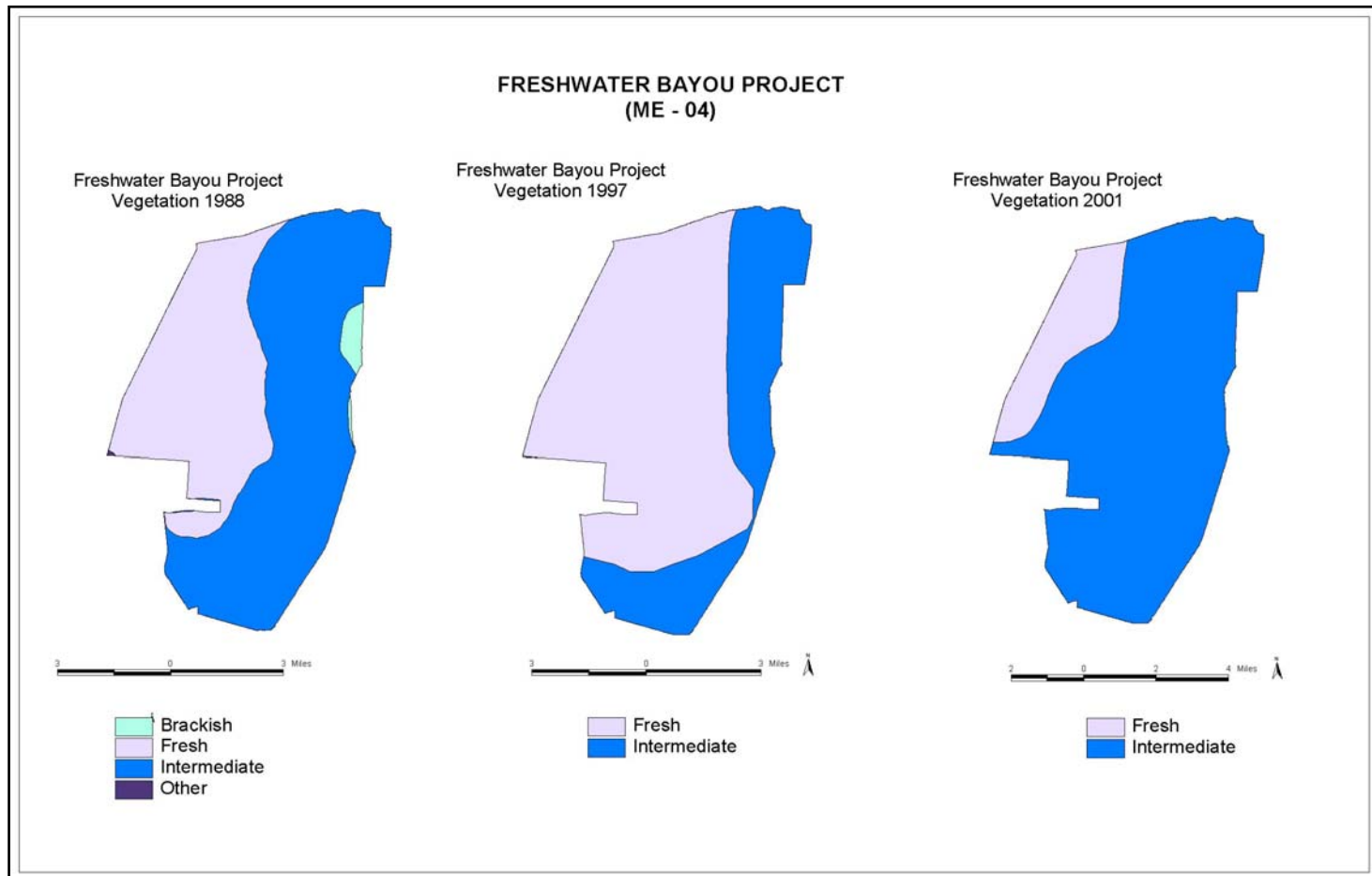
- Habitat and land:water analyses
- Water salinity
- Water level; frequency and duration of marsh inundation
- Emergent vegetation
- Shoreline position

# Physical Response

**Mean Shoreline Erosion Rates At ME-04 Project and Reference Shoreline  
Marker Sites For 1995-1996, 1996-1998, 1998-2001, and 1995-2001**



# Biological Response





# Project Adaptive Management

- Recommended Improvements
  - Rebuild/lift perimeter embankments along Freshwater Bayou Canal and Humble-Acadiana Marina Canal
  - Lighten flapgates on CWPPRA structures to improve operation
  - Modify structure operation for freshwater and sediment introduction

# Lessons Learned for Future Projects

## Recommended for incorporation

- Bank stabilization projects - rebuild perimeter levees where salinity and tidal exchange are of concern
- CWWPRA oversight of O & M on all project features