

# East Grand Terre Island Restoration Project (BA-30)



Grand Terre was a continuous island until 1926 when Pass Abel was created during a hurricane. Pass Abel continued to expand resulting in East and West Grand Terre. Shoreline recession rates are approximately 30 to 40 feet year. These islands separate the Gulf of Mexico from Barataria Bay and are thus an important first line of defense for the interior marshes of Louisiana.

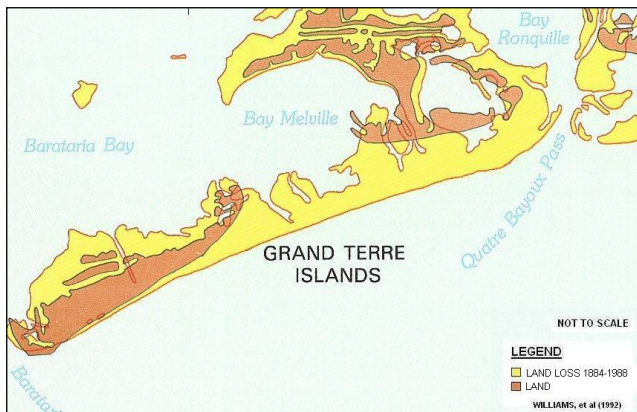
Client: Louisiana Office of Coastal Protection and Restoration, co-sponsored by NOAA-NMFS

Design Summary: 1.8M cy of beach fill  
1.7M cy of marsh fill

Borrow Area: 6 borrow areas containing 7M cy of sand and 4.2M cy of marsh fill

Key Elements: Coastal engineering design  
Borrow area development

CPE developed several design alternatives for both East and West Grand Terre Islands. However, it was determined that the construction budget could not support restoration of both islands so the final design contained only restoration of the more critically eroded East Grand Terre Island.



Land loss between 1884 and 1988.

CPE assessed shoreline retreat rates and used this to develop a sediment budget. The sediment

budget accounted for offshore loss of silt, losses due to relative sea level rise, overwash, and longshore transport.

The design cross-section was developed using SBeach cross-shore modeling while GENESIS modeling was applied for longshore transport.



Aerial View of East Grand Terre during primary dike construction but prior to fill placement.

CPE developed six separate borrow areas for the project. Three of the sand borrow areas contained surficial deposits of sand while a fourth borrow area had multiple layers with portions being a surficial sand while other sections had a mud over burden. This and two other borrow areas were identified to provide marsh fill for the project. Over 7M cy of sand and 4.2M cy of marsh were identified for project construction. The borrow areas were located just offshore of the project area. Modeling showed that the borrow areas could be dredged without resulting in shoreline impacts.

The project was reviewed through the CWPPRA process requiring 30% and 95% design report reviews and presentations. Ultimately, the project was selected for construction using CIAP funding. CPE assisted the State with the development of plans and specifications and the bidding process.

The \$28.5M construction contract was awarded in July 2009 and is under construction.