# *Strategic Beach Management Plan*

# *Big Bend Gulf Coast Region*

## Division of Water Resource Management

## Florida Department of Environmental Protection

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*Shired Island in Dixie County, FDEP photo 2009.*

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## *Table of Contents*

# *BIG BEND GULF COAST REGION*

There are 4.7 miles of beach in the **Big Bend Gulf Coast** region (Figure 1), which extends from the St. Marks River in Wakulla County to the Anclote River, immediately north of the Pinellas-Pasco County line, as shown on Figure 1. There are 1.9 miles of critically eroded beaches in this subregion, of which 0.2 mile have been restored.

The area is divided into the following three subregions:

The **Apalachee Embayment** subregion extends along the coast from the St. Marks River in Wakulla County to Bowlegs Point in Dixie County.

The **Suwannee Coast** subregion extends along the coast from Bowlegs Point in Dixie County to the Withlacoochee River in Citrus County.

The **Sun Coast** subregion extends along the coast from the Withlacoochee River in Citrus County to the Anclote River, immediately north of the Pinellas-Pasco County line.

Erosion is attributed to tropical storms, hurricanes, and the natural geomorphic changes caused by the pattern of littoral transport of sediments in this area. The most erosive storms in recent years were Hurricane Agnes (1972), Hurricanes Elena and Kate (1985), a severe winter storm in March 1993, Tropical Storm Josephine (1996), Hurricane Gordon (2000), Tropical Storm Frances (2004), and Tropical Storm Debby (2012).

## *STRATEGIES FOR INLETS AND CRITICALLY ERODED BEACHES*

## *DEKLE BEACH, TAYLOR COUNTY*

This is a 0.2 mile segment of critically eroded beach. Erosion on this shoreline is threatening private development.

**Strategy**: Continue to monitor with oblique aerial photography.

## *COTTON ISLAND, BIRD ISLAND, AND SHIRED ISLAND, DIXIE COUNTY*

A segment of critically eroded beach exists on each of these three islands. Each segment is approximately 0.2 miles long. These islands are located near Horseshoe Point. The erosion on these

islands threatens pre-Columbian Indian shell middens and burial sites dating as far back as the late Archaic period (2250-1500 BC). Dixie County initiated truck haul sand placement projects from an upland source at the County park on Shired Island in 2009. The County periodically hauls beach compatible material to the park.

**Strategy**: Protect the endangered upland cultural resources on Cotton, Bird and Shired Islands. Continue truck haul projects to the county park at Shired Island. Continue to monitor with oblique aerial photography.

### *DEER ISLAND, LEVY COUNTY*

As a result of studies completed in 2012 by the University of Florida, Laboratory of Southeastern Archaeology, the northern 2,000 feet (0.4 mile) of the Gulf fronting beach along Deer Island is designated critically eroded threatening ancient pre-Columbian shell middens and burial sites dating to the late archaic period (BC2250-BC1500).

### *CEDAR KEY, LEVY COUNTY*

A 0.5 mile segment of critically eroded beach is located within the Town of Cedar Key. Public roads and development interests are threatened in this area. Sand has been placed at the public beach via truck haul. A feasibility study was completed in 2007 for the shorelines along 1st Street and G Street, recommending several options of sand placement and terminal structures. In accordance with the plan recommendations, a Joint Coastal Permit was issued on December 18, 2009 to the City to construct three low profile rock groins, restore the adjacent beach, construct a vegetated dune and renovate an existing derelict revetment along G Street. Insufficient state and local funding has precluded the construction of the project.

**Strategy**: Maintain the existing armoring along 1st Street. Construct the permitted erosion control project along G Street. Continue to monitor with oblique aerial photography.

### *ATSENA OTIE KEY, LEVY COUNTY*

A 0.2 mile segment of critically eroded beach is located on this state-owned island. The erosion is threatening a Seminole Indian holding area and grave sites from the Second Seminole War, as well as other pre-Columbian graves from earlier occupation of the island.

**Strategy**: Protect the endangered upland cultural resources. Initiate monitoring with oblique aerial photography.

### *FORT ISLAND GULF PARK, CITRUS COUNTY*

This is a 0.2 mile segment of critically eroded shoreline at Fort Island Beach Park, located in the Crystal River area. The beach is nourished approximately every four years using sand from an upland source. The most recent project was conducted in 2012 and involved the placement of 5,250 cubic yards (cy) of material.

**Strategy:** Maintain the project through periodic nourishment, and continue to monitor with oblique aerial photography.

### *HUDSON BEACH, PASCO COUNTY*

This is a 0.2 mile segment of critically eroded beach. The community was built on fill with an isolated beach at the end of a point. The erosion is affecting recreational interests. Several projects have been conducted using sand trucked from inland sites.

**Strategy**: Maintain the project through periodic nourishment. Initiate monitoring with oblique aerial photography.

## *REGIONAL STRATEGIES FOR BEACH AND INLET MANAGEMENT*

### *SPONSORS AND FUNDING*

*Taylor*, *Dixie*, *Levy*, *Citrus* and *Pasco* counties, and the *City of Cedar Key* are governmental entities which could participate with the Department as sponsors of beach management projects at critically eroded beaches within their respective counties. The *Suwannee River Water Management District* owns Atsena Otie Key and it is managed by the U.S. Fish and Wildlife Service as part of the *Cedar Keys National Wildlife Refuge*. Project cost estimates may be found in *FDEP's Beach Management Funding Assistance Program* - Long Range Budget Plan.

### *PROJECT COORDINATION*

Regionalization is the funding and coordination of multiple nourishment and inlet management activities to take advantage of identifiable cost savings through economies of scale, reduced equipment

mobilization and demobilization costs, and elimination of duplicative administrative tasks. Regional opportunities have not been identified for beach management activities at the few critically eroded beaches, which are not located in close proximity to each other, or to the few navigation projects in this region.

## *ENVIRONMENTAL PROTECTION*

The protection of coastal wetlands is the primary environmental concern within this region as well as the protection of seagrass beds and other benthic resources. The endangered West Indian manatee is found seasonally within this region. Protection of cultural resources threatened by coastal erosion is of growing concern in this region. Project design and method of construction are restricted to avoid or minimize adverse impacts to the federally and state listed species and their habitat. The *Big Bend Seagrasses Aquatic Preserve* extends into the Gulf of Mexico offshore of Wakulla, Jefferson, Taylor and Dixie Counties. The *St. Martins Marsh Aquatic Preserve* extends into the Gulf of Mexico offshore of Citrus County. Projects located within and near the aquatic preserve boundaries require additional protection, including stricter water quality standards than in non-aquatic preserve waters, during permitting and construction to ensure preservation of the existing conditions.

## *SAND SOURCES*

As of this time, sand sources sufficient to meet the expected needs of future projects in this subregion over the next 15 years have not been identified. Maintenance dredging of the navigation channels in this region is conducted infrequently. Sand has been trucked in from upland sites for small beach nourishment activities. For additional information on sand sources, FDEP manages a database named the *Regional Offshore Sand Source Inventory (ROSSI)*.

## *ADDITIONAL INFORMATION*

The introduction at the beginning of the state's Strategic Beach Management Plan provides additional information including overviews of:

- The principals followed to help guide the state's management strategies
- The miles of critically eroded beaches under active management
- Statewide sand source studies
- Statewide monitoring programs

- Innovative technologies examined
- Basic suggestions for emergency response plans

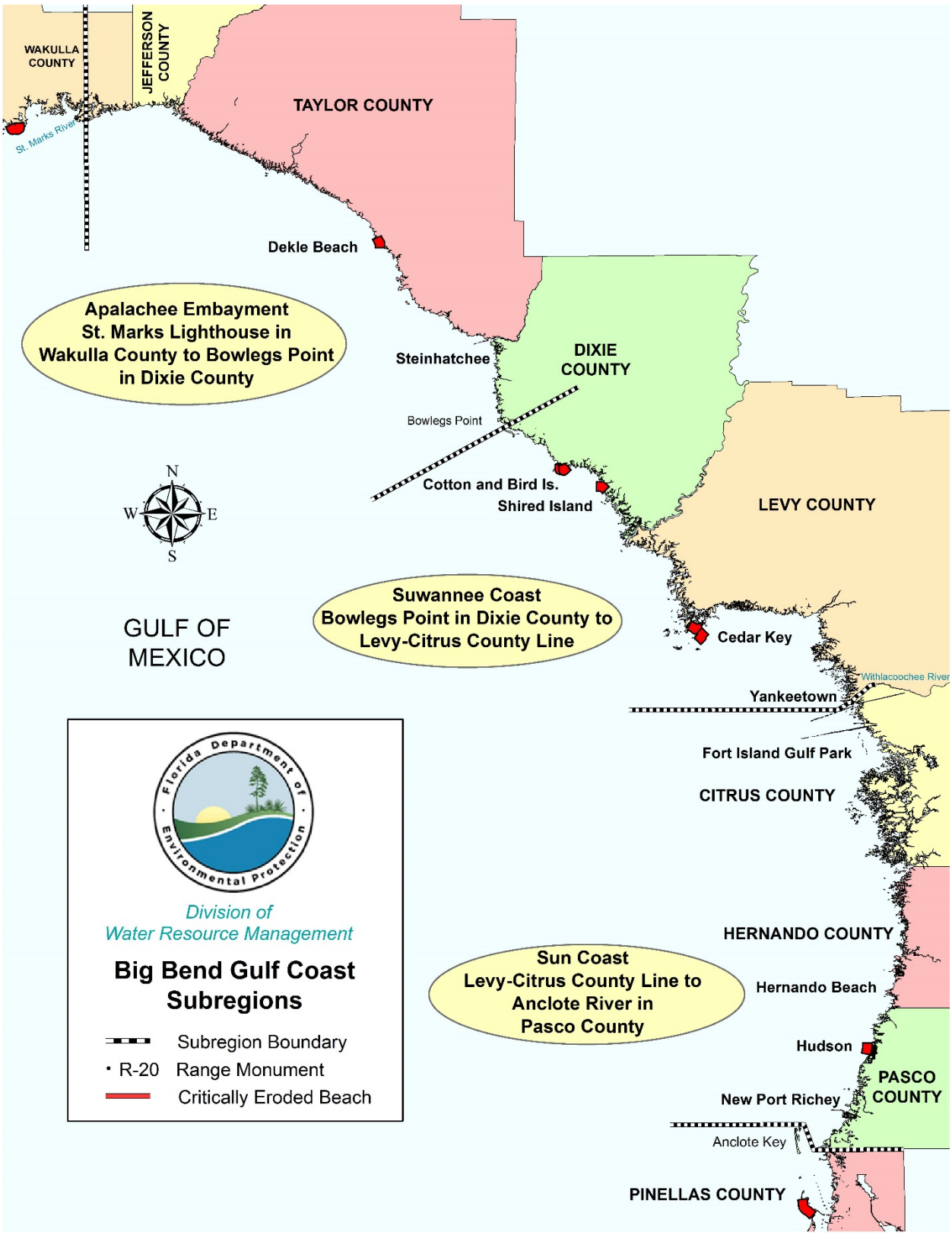


**Figure 1.** Map of the Big Bend Gulf Coast.

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