

Strategic Beach Management Plan:
Big Bend Gulf Coast Region

Office of Resilience and Coastal Protection

Florida Department of Environmental Protection

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For questions or additional information on the [SBMP](#), please contact:

*Florida Department of Environmental Protection
Office of Resilience and Coastal Protection
Beaches Inlets and Ports Program
2600 Blair Stone Road
Tallahassee, Florida 32399*

*Telephone:
W. Guy Weeks at 850-245-7696 or
Main Office # at 850-245-2094
william.weeks@FloridaDEP.gov*

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Deer Island in Levy County, Florida showing a natural beach. FDEP photo taken by Ralph Clark, February 2014. See [construction photos](#) of beach nourishment projects.

Introduction – Big Bend

There are 4.7 miles of beach in the **Big Bend Gulf Coast Region**, 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 2.3 miles of critically eroded beaches in this subregion, of which 0.2 mile has been restored. Currently, there are no [inlet management plans](#) in this subregion. For additional inlet management and sand bypassing information, see the [Annual Inlet Report](#).

For additional beach management or project information, see the current [Critically Eroded Beaches Report](#), the [joint coastal permits](#) by county or the [local government funding requests](#) by county web pages. Each subregion listed below will have the introductory paragraph listing miles of coastline and erosional events/storms that have affected the subregion. Each title within the subregion will list the coastal location and the county for the critical erosion area. In addition, there will be a subregion map highlighting the critical erosion areas and the managed project areas. Finally, references to coastal reports will also be listed at the end of each subregion. At the end of each region is a list of acronyms associated with beach management activities.

For more specific information concerning projects or strategies along Florida’s coastline, see the following links for the other six coastal regions of Florida. For background information, see the Strategic Beach Management Plan’s Introduction.

[Strategic Beach Management Plan’s Introduction](#)

[Northeast Atlantic Coast Region](#)

[Central Atlantic Coast Region](#)

[Southeast Atlantic Coast Region](#)

[Florida Keys Region](#)

[Southwest Gulf Coast Region](#)

[Panhandle Gulf Coast Region](#)

For additional information pertaining to beach and ocean conditions, coastal associations, educational institutions or government agencies, see these [related coastal links](#).

The State of Florida was significantly impacted by two hurricanes in 2022, Hurricane Ian and Hurricane Nicole. For additional information on funding to address recovery for the beaches and dunes, see the [Hurricanes Ian and Nicole Recovery Plan](#). For all other hurricane-related material and the [post-](#)

[storm impact reports](#), visit DEP’s Office of Resilience and Coastal Protection [hurricane web page](#).

Big Bend Gulf Coast Region

The Big Bend Gulf Coast Region 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 unnamed winter storm in March 1993, Tropical Storm Josephine (1996), Hurricane Gordon (2000), Tropical Storm Frances (2004), Tropical Storm Debby (2012), Tropical Storm Colin (2016), Hurricane Hermine (2016), and Tropical Storm Elsa (2021).

Monitoring of the beaches along the Big Bend is accomplished through vertically controlled aerial photography. There are no Department range or reference (R) monuments along the beaches of the Big Bend. The Department’s [interactive maps](#) have virtual (V) monuments for reference points along the Big Bend’s shoreline.

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: Monitor.

Bird Island, Cotton Island, and Shired Island, Dixie County

A segment of critically eroded beaches 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: Conduct a feasibility study to protect the endangered upland cultural resources on Cotton, Bird and Shired Islands. Continue truck haul projects to the county park at Shired Island and monitor.

Deer Island, Levy County

As a result of studies completed in 2012 by the University of Florida’s Laboratory of Southeastern Archaeology, the northern 2,000 feet or 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 (2250-1500 BC).

Strategy: Conduct a feasibility study to protect endangered upland cultural resources and monitor.

Cedar Key, Levy County

A 0.5-mile segment of critically eroded beach is located within the City 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 precluded the construction of the project. Joe Rains Beach living shoreline was constructed in early 2017. The City submitted a new permit application for the G Street Shoreline Restoration project in 2019 and construction was completed in the summer of 2020, with additional wave protection added in spring of 2021. [Three living shorelines](#) have now been constructed around Daughtry Bayou in Cedar Key. See more about the [living shoreline master plan](#) for Cedar Key.

Strategy: Develop design alternatives for an environmentally acceptable beach restoration project along 1st Street and maintain the living shoreline project along G Street.

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: Conduct a feasibility study to protect the endangered upland cultural resources and monitor.

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 of material.

Strategy: Maintain the project through periodic nourishment with upland material and monitor.

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. This beach has been mostly armored to protect the park from erosion. A portion of the beach is not armored and provides beach and Gulf access to visitors.

Strategy: Maintain the unarmored beach area through periodic nourishment with upland material and monitor. Conduct a feasibility study for the purposes of restoring the shoreline to when it first opened in 1960.

Regional Strategies for Beach and Inlet Management

Sponsors and Funding

[Taylor](#), [Dixie](#), [Levy](#), [Citrus](#) and [Pasco](#) counties, as well as 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 the [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 near 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 threatened 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. The [Nature Coast Aquatic Preserve](#) extends into the Gulf of Mexico offshore of Citrus, Hernando and Pasco counties. 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, visit the Department's [Regional Offshore Sand Source Inventory \(ROSSI\) database](#).

Additional Information

The introduction of the state's Strategic Beach Management Plan provides additional background information on the Department's Beach Management Programs and includes overviews of:

- The principles and statutes followed to help guide the state’s management strategies
- Comprehensive list of Florida’s inlets
- 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
- Beaches, Economics and Tourism

Additional Links

The Big Bend Gulf Coast Region includes eight counties whose coastline is primarily marsh with pocket beaches; however, it is rich in natural resources and recreational opportunities that can be found in the managed areas that protect the environment for wildlife and for the enjoyment of Florida’s citizens and visitors.

For more information about the Big Bend’s coastal region, see the following links below:

[Nature Coast Coalition](#)

[St. Marks National Wildlife Refuge](#)

[Flint Rock Wildlife Management Area](#)

[Econfina River State Park](#)

[Big Bend Wildlife Management Area](#)

[Tide Swamp Unit – Big Bend Wildlife Management Area](#)

[Lower Suwannee National Wildlife Refuge](#)

[Cedar Keys National Wildlife Refuge](#)

[Waccasassa Bay Preserve State Park](#)

[Crystal River Preserve State Park](#)

[Chassahowitzka National Wildlife Refuge](#)

[Weeki Wachee Springs State Park](#)

[Werner-Boyce Salt Springs State Park](#)

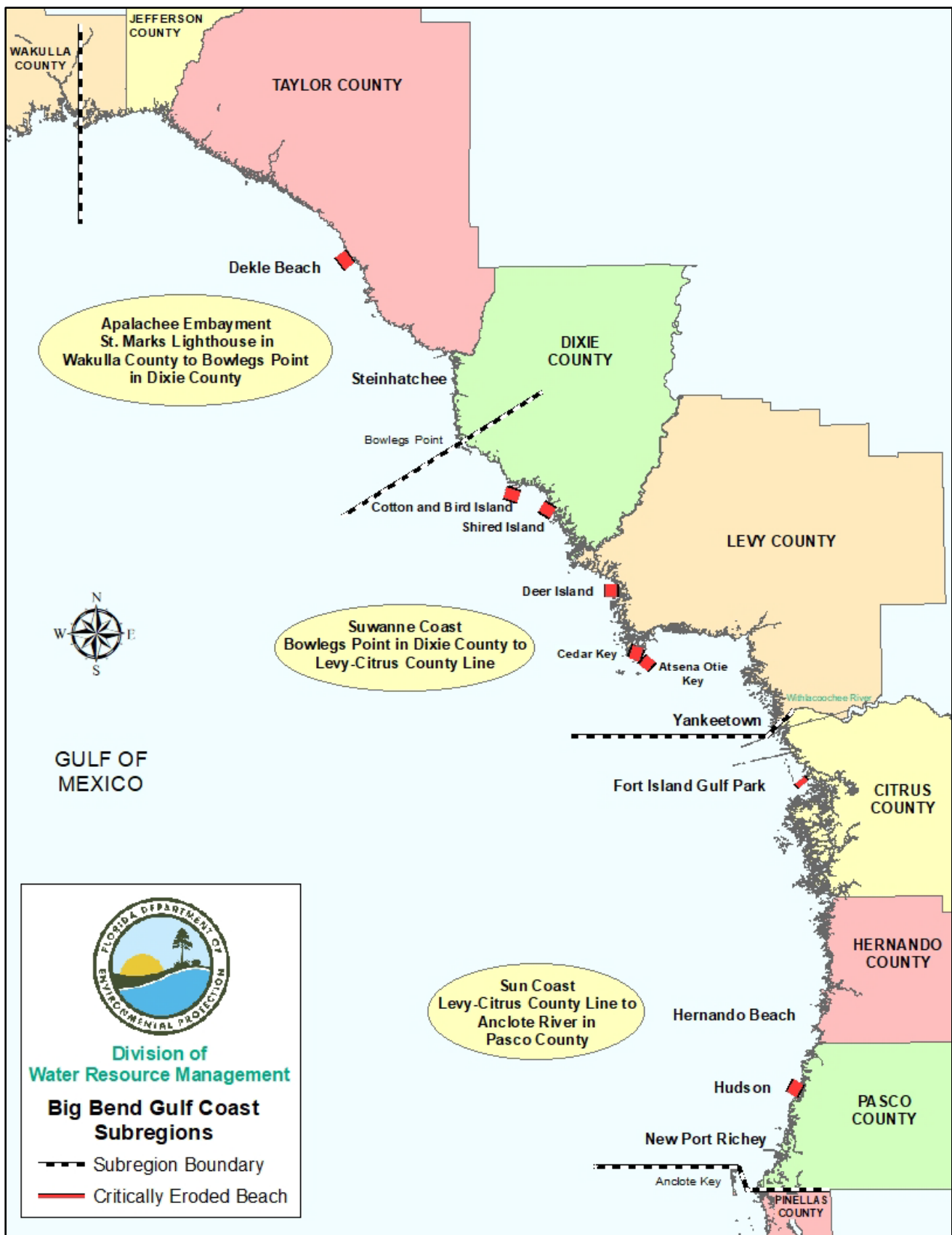


Figure 1. Map of the Big Bend Gulf Coast subregions. View an [interactive map](#) or [COASTS imagery](#).

References

Clark, R.R., 1986a. *The Impact of Hurricane Elena and Tropical Storm Juan on Coastal Construction in Florida*, Florida Department of Natural Resources, Division of Beaches and Shores, Post-storm Report No. 85-3, 142 p.

Clark, R.R., and West, S., 1996. *Tropical Storm Josephine, October 7, 1996, Storm Damage Summary*, Florida Department of Environmental Protection, Bureau of Beaches and Coastal Systems, Post-storm Report, 11 p.

Florida Department of Environmental Protection, 2022. *Critically Eroded Beaches in Florida*, Office of Resilience and Coastal Protection, 89 p.

Olsen Associates, Inc., 2007. *Feasibility Study of Beach Improvements: 1st and G Streets, Cedar Key, FL*, 101 p. with appendices.

U.S. Army Corps of Engineers, 1998. *Water Resources Development in Florida*.

Appendix - Acronyms

Acronyms associated with the Florida Department of Environmental Protection’s Strategic Beach Management Plan and coastal management activities:

Coastal Associations Acronyms:

- ASBPA – American Shore & Beach Preservation Association
- FSBPA – Florida Shore & Beach Preservation Association
- DCA – Dredging Contractors of America

Federal Agencies Acronyms:

- BOEM – Bureau of Ocean Energy Management
- CBRA – Coastal Barrier Resources Act
- CHL – Coastal and Hydraulics Laboratory
- CIRP – Coastal Inlets Research Program
- CMS – Coastal Modeling System
- CSRMS – Coastal Storm Risk Management
- CZMA – Coastal Zone Management Act
- EA – Environmental Assessment
- EIS – Environmental Impact Statement
- ERDC - Engineer Research and Development Center
- FCCE – Flood Control and Coastal Emergency
- FEMA – Federal Emergency Management Agency
- FRF – Field Research Facility
- GRR – General Reevaluation Report
- HCPs – Habitat Conservation Plans
- HSDR – Hurricane and Storm Damage Reduction
- LPP – Locally Preferred Plan
- LRR – Limited Reevaluation Report
- MMP – Marine Minerals Program
- NAVD 88 – North American Vertical Datum of 1988
- NEPA – National Environmental Policy Act
- NGVD 29 – National Geodetic Vertical Datum of 1929
- NHC – National Hurricane Center

- NOAA – National Oceanic and Atmospheric Administration
- NPS – National Park Service
- NWR – National Wildlife Refuge
- ODMDS - Ocean Dredge Material Disposal Site
- OCS – Outer Continental Shelf
- RSM – Regional Sediment Management
- SAJ – Jacksonville District, South Atlantic Division
- SPP – Shore Protection Project
- SLC – Sea Level Change
- SLR – Sea Level Rise
- TSP – Tentatively Selected Plan
- USACE – United States Army Corps of Engineers
- USFWS – United States Fish and Wildlife Service
- WRDA – Water Resources Development Act

State Agencies Acronyms:

- AIWW - Atlantic Intracoastal Waterway
- APP – Aquatic Preserve Program
- BIPP – Beaches, Inlets and Ports Program
- BMA – Beach Management Agreement
- BMFA – Beaches and Mines Funding Assistance Program
- BMP – Best Management Practices
- BSM – Bureau of Survey and Mapping
- CCCL – Coastal Construction Control Line
- COASTS – Collection of Aerials and Shoreline Trends Systems
- DEP – Department of Environmental Protection
- DMMA – Dredge Material Management Area
- DSL – Division of State Lands
- DWRM – Division of Water Resource Management
- ECL – Erosion Control Line
- EOC – Emergency Operation Center
- FAC – Florida Administrative Code
- FAR – Florida Administrative Register
- FDEM – Florida Department of Emergency Management

- FDFS – Florida Department of Financial Services
- FDOT – Florida Department of Transportation
- FHCF - Florida Hurricane Catastrophe Fund
- FIND – Florida Inland Navigation District
- FPS – Florida Park Service
- FS – Florida Statutes
- FWC – Florida Fish and Wildlife Commission
- HCP – Habitat Conservation Plan
- IMP – Inlet Management Plan
- IWW – Intracoastal Waterway
- JCP – Joint Coastal Permit
- LABINS – Land Boundary Information System
- LGFR – Local Government Funding Request
- LRBP – Long Range Budget Plans
- MHWL – Mean High Water Line
- MLLW – Mean Lower Low Water
- MLW – Mean Low Water
- MOA – Memorandum of Agreements
- MOU – Memorandum of Understandings
- NERR – National Estuarine Research Reserve
- OCULUS – DEP’s Electronic Document Management System
- OGC – Office of General Counsel
- ORCP – Office of Resilience and Coastal Protection
- R – Range or Reference Monument/Survey Marker
- RCP – Resilience and Coastal Protection
- ROSSI – Regional Offshore Sand Source Inventory
- SAND – Sediment Assessment and Needs Determination Study
- SBMP – Strategic Beach Management Plan
- SOP – Standard Operating Procedures
- SOW – Scope of Work
- TAC – Technical Advisory Committee
- TIITF – Trustees of the Internal Improvement Trust Fund
- WCIND – West Coast Inland Navigation District