

**AN ORDINANCE
APPROVING THE AMENDMENT OF THE CHARLESTON COUNTY
COMPREHENSIVE PLAN (TEXT AND MAPS) PROVISIONS TO
IMPLEMENT THE FIVE-YEAR REVIEW.**

WHEREAS, the Charleston County Council (the "County Council") adopted Ordinance No. 1095, effective April 20, 1999, with subsequent amendments and additions made thereto, which enacted and amended the Charleston County Comprehensive Plan (the "Comprehensive Plan") in compliance with the South Carolina Local Government Comprehensive Planning Enabling Act of 1994 (Title 6, Chapter 29 of the Code of Laws of South Carolina 1976, as amended) ("Planning Act"); and

WHEREAS, pursuant to the Planning Act, the County Council adopted Ordinance No. 1274, effective November 18, 2003, with subsequent amendments and additions made thereto, at the Five-Year review of the Comprehensive Plan; and

WHEREAS, pursuant to the Planning Act, the County Council adopted Ordinance No. 1567, effective November 18, 2008, with subsequent amendments and additions made thereto, at the 10-Year Update of the Comprehensive Plan; and

WHEREAS, the Charleston County Planning Commission (the "Planning Commission") adopted a resolution completing the Five-Year Review of the Comprehensive Plan on October 14, 2013, and directed staff to draft amendments to implement the findings of their review and gather public input on the proposed amendments; and

WHEREAS, the Planning Commission has reviewed the proposed amendments to the Comprehensive Plan in accordance with the procedures established in State law and the Charleston County Zoning and Land Development Regulations Ordinance; and

WHEREAS, upon receipt of the recommendation of the Planning Commission, County Council held at least 1 public hearing and after close of the public hearing, County Council approves the proposed amendments to the Comprehensive Plan;

NOW, THEREFORE, BE IT ORDAINED, by the County Council of Charleston County, South Carolina, in meetings duly assembled, as follows:

SECTION I. FINDINGS INCORPORATED

The above recitals and findings are incorporated herein by reference and made a part of this Ordinance.

SECTION II. AMENDMENTS TO THE COMPREHENSIVE PLAN

County Council amends the Comprehensive Plan provisions to implement the findings of the Five-Year Review.

SECTION III. SEVERABILITY

If, for any reason, any part of this Ordinance is invalidated by a court of competent jurisdiction, the remaining portions of this Ordinance shall remain in full force and effect.

SECTION IV. EFFECTIVE DATE

This Ordinance shall become effective immediately upon its approval following third reading by the County Council.

ADOPTED and APPROVED in meeting duly assembled this 6th day of January, 2015.



CHARLESTON COUNTY, SOUTH CAROLINA

By: J. Elliott Summey
J. Elliott Summey
Chairman, Charleston County Council

ATTEST:

By: Beverly T. Craven
Beverly T. Craven
Clerk to County Council

First Reading: December 9, 2014
Second Reading December 18, 2014
Third Reading: January 6, 2015

Local Comprehensive Beach Management Plan (LCBMP) for Unincorporated Charleston County



Charleston County Departments:

- Deputy Administrator for General Services
- Building Inspection Services
- Zoning and Planning
- GIS/Technology Services
- Stormwater/Public Works
- Emergency Management

Preliminary Draft Approval OCRM: August 18, 2014

Comp. Plan Five-Year Review Ordinance Adopted: January 6, 2015

State Approval SC DHEC: March, 2015

Last Updated: January, 2015



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1. INTRODUCTION

In accordance with the South Carolina Beachfront Management Act (SCBMA), Charleston County has prepared this Local Comprehensive Beach Management Plan (LCBMP) for the unincorporated areas of the County in coordination with the South Carolina Department of Health and Environmental Control's (SCDHEC) office of Ocean and Coastal Resource Management (OCRM). This LCBMP is intended for incorporation into the State Beachfront Management Plan in accordance with the provisions of the SCBMA. The SCBMA became law in 1988 with revisions in 1990 and is intended to protect both life and property, protect unique ecological habitats, and preserve the beach for future use by all citizens of South Carolina.

One of the most important provisions of the Act requires local beachfront counties and municipalities develop local comprehensive beach management plans, which refine the State's beach management strategy to address local conditions and issues. The Act requires that these local plans be long-range, comprehensive, and consistent with the SCBMA.

LCBMPs are required to include a minimum of ten elements:

- 1) An inventory of beach profile data and historic erosion rate data;
- 2) An inventory of public beach access points and parking and a plan for enhancing public access and parking;
- 3) An inventory of all structures located in the area seaward of the setback line;
- 4) An inventory of turtle nesting and important habitats of the beach/dune system and a protection and restoration plan if necessary;
- 5) A conventional zoning and land use plan consistent with the Act for the area seaward of the setback line;
- 6) An analysis of beach erosion control alternatives, including renourishment for the beach under the local government's jurisdiction;
- 7) A drainage plan for the area seaward of the setback zone;
- 8) A post disaster plan including plans for cleanup, maintaining essential services, protecting public health, emergency building ordinances, and the establishment of priorities, all of which must be consistent with the Act;
- 9) A detailed strategy for achieving the goals of this chapter by the end of the forty-year retreat period. Consideration must be given to relocating buildings, removal of erosion control structures, and relocation of utilities; and,
- 10) A detailed strategy for achieving the goals of preservation of existing public access and the enhancement of public access to assure full enjoyment of the beach by all residents of this State.

1.1 Purpose

Charleston County has written and adopted this *Plan* for one principal reason: to identify and collect information relevant for the management of Charleston County's unincorporated ocean and inlet shorelines.

1.2 History of Plan Approvals and Revisions

- **June, 2013** – SCDHEC/OCRM sent a letter Charleston County’s Administrator offering assistance in the development of a LCBMP.
- **July, 2013** - Charleston County invited SCDHEC/OCRM to meet with County Staff for an Initial *Coordination Meeting* to identify Charleston County’s and SCDHEC/OCRM’S individual roles and responsibilities, expectations and requirements for the development of the LCBMP.
- **August, 2013** - Charleston County Staff invited the *SCDHEC/OCRM Community Liaison* to meet to discuss unincorporated beach areas under Charleston County’s jurisdiction.
- **November, 2013** – Overlay jurisdictional maps were completed, which delineated beachfront in areas in unincorporated Charleston County to be covered in the LCBMP.
- **January, 2014** - Charleston County Staff initiated its first draft of its LCBMP and provided a copy to SCDHEC/OCRM to determine if they were on the right track and to get additional beach profile and erosion rate data in unincorporated Charleston County.
- **February, 2014** – Charleston County Staff submitted a *Preliminary Draft* of the LCBMP for unincorporated Charleston County to SCDHEC/OCRM.
- **June, 2014** – SCDHEC/OCRM’s *Community Liaison* provided a preliminary review of the *Draft* and provided additional beach profile and erosion rate data for sections 5.0, 5.1, 5.1.1, and 5.1.2.
- **July, 2014** – SCDHEC’s *Community Liaison* provided a presentation with an overview of the LCBMP for Charleston County’s Planning Commission, which covered the (3) beachfront areas in unincorporated Charleston County. He let the Commissioners know that the *Preliminary Draft* was currently under review by SCDHEC/OCRM staff and that the LCBMP would be included in the *Comprehensive Plan Five-Year Review* within the *Natural Resources Element*.
- **August, 2014** – Approval of Charleston County’s *LCBMP Preliminary Draft* from SC DHEC/OCRM’s *Community Liaison*.
- **October, 2014** – Charleston County Planning Commission approval of the *Comprehensive Plan Five-Year Review* on October 13, 2014. Charleston County’s LCBMP was included in the *Comprehensive Plan Five-Year Review*, by way of reference within the *Natural Resources Element*.
- **November, 2014** - Charleston County Council will held a public hearing on the *Charleston County Comprehensive Plan Five-Year Review* at 6:30 p.m., Tuesday, November 18, 2014 in Council Chambers at the Lonnie Hamilton III, Public Services Building, 4045 Bridge View Drive, North Charleston, South Carolina, 29405.
- **January, 2015** – Charleston County Council adopted Ord. #1835 on January 6, 2015, an ordinance approving the amendment of the *Charleston County Comprehensive Plan* (text and maps) provisions to implement the *Five-Year Review*. On January 28, 2015 Charleston County Staff submitted three hard bound copies and one electronic copy of Charleston County Council’s adoption of the ordinance and Charleston County’s LCBMP, with CD’s for the appendices to SCDHEC/OCRM, for state review and approval.
- **February, 2015** – SCDHEC/OCRM initiates a 30-day public comment period.
- **March, 2015** – With the approval from the State, SCDHEC/OCRM Staff to issue a public notice to include the implementation date of *Charleston County’s Local Comprehensive Beach Management Plan* for the unincorporated areas of the County.

1.3 Overview of County/History of Beach Management Approaches

Charleston County borders the Atlantic Ocean with about 100 miles of coastline. Since its early settlement by the English in 1670, this area has experienced many natural disasters, including hurricanes, powerful tropical storms, storm surges, coastal and riverine floods, tornadoes, earthquakes, wildfires and extreme heat and cold. For example, a catastrophic earthquake in 1886 devastated the area and sent shock waves as far away as Chicago, and on September 21, 1989, Hurricane Hugo made landfall in the Charleston area, causing an estimated \$3 billion in damages within the County.

As a result of these and other disasters, Charleston County has put into place robust hazard identification, floodplain management, and risk assessment plans and procedures to safeguard our citizens of today and in the future. Many departments and agencies within Charleston County and the state of South Carolina are responsible for the work and the LCBMP is just one example of those many efforts. With continuing support from the SCDHEC's office of OCRM, the plan will serve as a guide to coastal preservation and protection for the citizens of unincorporated Charleston County and the greater state of South Carolina.

Charleston County has coordinated with SCDHEC/OCRM to fully inventory, analyze, and document each of the ten required elements for the unincorporated areas of the County. The plan also identifies other key local, state and federal policies and authorities related to the management and protection of the unincorporated Charleston County beachfront. This LCBMP represents the foundation for a comprehensive, long-range, and enforceable local management strategy for the beachfront area of unincorporated Charleston County. Charleston County's LCBMP will only evaluate those areas not within an incorporated municipality or under the control of another governmental entity.

In developing and implementing its LCBMP, Charleston County will:

- a) Work closely with property owners and government agencies to maintain the protective, ecological and recreational functions of the beach/dune systems in those areas.
- b) Develop strategies for erosion control and beach/dune restoration that will protect, preserve, restore and enhance the natural character of Charleston County's beach/dune system in those areas, while minimizing potential adverse environmental impacts.
- c) Develop strategies and pursue funding assistance to reduce future losses from flood and storm hazards in those areas.
- d) Develop strategies for working with natural resource agencies to protect critical habitats and threatened or endangered species in those areas.
- e) Periodically revise this Plan to take into consideration changes in shoreline conditions and future oceanfront development in those areas.

The SCBMA states very clearly that the policy of South Carolina is to protect, preserve, restore and enhance the beach/dune system. As such, the State seeks to encourage wise development of the shoreline, including the adoption of appropriate management strategies to deal with existing and future development. Charleston County shares the objectives of the State and will accomplish those objectives through its LCBMP. The County will rely in large part on the existing Comprehensive Plan, ordinances and revisions to those ordinances to implement its Plan.

1.4 Current Beach Management Issues

Charleston County's beaches and beachfront areas are critically important to protect inland development, limit the severity of coastal storms, provide critical habitat to plants and wildlife, promote economic development, and provide beautiful spaces for citizens and visitors alike. In addition to the work within

unincorporated Charleston County, the LCBMP is dedicated to assisting neighboring jurisdictions comprehensively manage our coastal shores.

2. INVENTORY OF EXISTING CONDITIONS

2.1 General Characteristics of the Beach

Beginning from the north end of Charleston County and traveling south, the majority of the coastline belongs to the incorporated municipalities of the Town of McClellanville, Town of Awendaw, Town of Mt. Pleasant, City of Isle of Palms, Town of Sullivan’s Island, City of Charleston, Town of James Island, City of Folly Beach, Town of Kiawah Island, Town of Seabrook Island, and Town of Edisto Beach, South Carolina. There are only three beachfront areas within unincorporated Charleston County: Dewees Island, Botany Bay Island and Pockoy Island. (*Beach Management Overlays* may be found in [Appendix 7.1](#))

A. Dewees Island



Dewees Island is the most developed of the three unincorporated beachfront areas, though the island is not accessible by car and contains no public beach access of any kind. A regular ferry service transports owners and registered guests to and from the island.

This 1200 acre barrier Sea island is about 11 miles northeast of Charleston, South Carolina, located between the City of Isle of Palms, SC and the Town of McClellanville, SC. This is a private community with just 150 home sites on with roughly half of the developable parcels extending seaward of the setback line.



The beach itself is roughly 2.8 miles long. As is typical with barrier islands, a series of dunes divides the beach from the interior of the Island. The wide white sand beach stretches for almost three miles along the Atlantic from Caper's Inlet at the north to Dewees Inlet at the south. The interior of the Island contains two ridges of highlands flanked by marsh and lagoons. The Island elevations range from 0 feet at the beach, lake and lagoons to 25 feet atop the dune ridge at the southern corner of the Island with most of the highlands ranging from 5 to 10 feet above sea level.

All roadways on the island are private and golf carts, bicycles, and pedestrian traffic are the primary means of transportation around the island. The island offers several amenities to owners and visitors, but a primary focus of the island is conserving the natural surroundings.

B. Botany Bay Island

Botany Bay Island is located immediately southward of the Town of Seabrook Island, South Carolina and just north of the Town of Edisto Beach, South Carolina. The area is near the North Edisto River, placing it within the boundary of the Ashepoo, Combahee, and Edisto (ACE) Basin, one of the largest undeveloped estuaries and coastal wildlife sanctuaries in the United States.

Wildlife is a critical concern for the Botany Bay Island area as the undeveloped coasts provide habitat for numerous species including countless birds and the threatened loggerhead sea turtle. Only four homes occupy Botany Bay Island, none of which are seaward of the setback line. The homes are only accessible by water and all roads, sanitation, and water systems are private. The private beachfront area is roughly 1.8 miles long.



C. Pockoy Island

Neighboring Botany Bay Island, to the south and positioned north of Edisto Beach, SC, the Pockoy Island area is also within the boundary of the ACE Basin. The property is owned by the State of South Carolina Budget and Control Board with a collaborative partnership with the South Carolina Department of Natural Resources (SCDNR). No buildable parcels are present and Pockoy Island is part of a larger 3,363 acre site known as the Botany Bay Plantation Heritage Preserve, a Wildlife Management Area (WMA).



The State of South Carolina acquired the property and began allowing public access in 2008. A single, small road is visible and allows limited public access to the beach. The beachfront area is roughly 2.3 miles long.

2.1.1 General Land Use Patterns

Charleston County's Comprehensive Plan is an expression of the County's intent for where and how future growth and development should occur. The plan also identifies parts of the County that may or may not be appropriate for certain types of growth, given the Lowcountry's unique character and natural conditions.

The *Comprehensive Plan* includes ten elements:

- 1) Population
- 2) Economic development
- 3) Natural Resources
- 4) Cultural Resources
- 5) Community Facilities
- 6) Housing
- 7) Land Use
- 8) Transportation
- 9) Priority Investment
- 10) Energy

The Charleston County Planning Commission is mandated by state law to conduct a Five-Year Review of the Plan in response to changing economic and growth trends. *Charleston County's Comprehensive Plan* can be found in [Appendix 7.2](#).

Deweese Island is zoned RM, Resource Management, and implements the Resource Management (Rural Area) policies of the Charleston County Comprehensive Plan. A separate *Architectural and Environmental Design Guidelines* document has been produced in order to minimize developmental impacts on the environment, ([Appendix 7.3](#)). The document states "The philosophy of development at Dewees Island is to limit impact on your neighbor and the native environment and natural character of the island, and for the presence of man to have a positive impact on the environment and ecosystem now, and in the future."

Botany Bay Island is zoned as a Planned Development. Planned development provisions are intended to encourage innovative site planning for residential, commercial, institutional, and/or industrial developments within planned developments. In this case the Planned Development meets the purpose and intent criteria of the County's Zoning and Land Development regulations by encouraging site design that will maintain as much of the development site as possible in natural open space where new development is proposed in rural and agricultural areas outside of existing settlements.

The development objective for Botany Bay Island is to create a small group of property owners to share the use of the island. The property has a Nature Conservancy easement that restricts development. The total number of dwellings for the property will total 14, 12 single family homes, one main house, and a caretaker's home. The objective of the Planned Development is to preserve, protect and enjoy the natural amenities of the island with minimal impacts on the environment.

Pockoy Island is zoned AG-10, Agricultural Preservation, which implements the Agricultural Preservation (Rural Area) policies of the Charleston County Comprehensive Plan. The island is undeveloped and owned by the State of South Carolina. The South Carolina Department of Natural Resources manages the island as part of the Botany Bay Plantation Heritage Preserve. No development is expected.

2.2. Beach Uses

Neither Dewees Island nor Botany Bay Island has public beaches. Both are privately owned property with no public roadways, and no plans to create public beach access.

Pockoy Island is owned by the State of South Carolina Budget and Control Board and has a collaborative partnership with the South Carolina Department of Natural Resources (SCDNR). While the island landmass is named Pockoy Island, the area is a part of the 3,363 acre Botany Bay Plantation Heritage Preserve, a Wildlife Management Area (WMA,) and is often grouped within the larger park.

There is a small roadway that allows beach access, and the causeway to the beach is wheelchair accessible. The area does allow limited hunting, fishing, biking, hiking, horseback riding, canoeing and kayaking, depending upon scheduled events, all of which are controlled through SCDNR. Due to the Preserve's ownership by the State, the County has no jurisdiction to improve or alter beach access. The beach is intended to remain as undeveloped as possible to preserve the natural environment.

2.2.1 Public Beach Access

Dewees Island is a private island with no public roadways or public beach access. Their beach is privately owned and managed and maintained by the property owners. This private beach is an amenity to the property owners of the island.

Botany Bay Island also is private property with no public beach access, public roads, nor are there plans to create a public beach access. The property is used by its property owners to boat, hunt and fish.



Pockoy Island's beach access is part of the Botany Bay Plantation Heritage Preserve. Recreational opportunities and additional information is available on their website. The causeway to the beach is wheel chair accessible. The designated driving tour provides excellent viewing opportunities for the mobility impaired. The area is typically open during daylight hours, except on Tuesdays when the property is closed. All guests must obtain a day use pass when entering the property. *Botany Bay Plantation Heritage Preserve Information and Regulations* are included in [Appendix 7.4](#).

Dewees Island, Botany Bay Island and Pockoy Island are not classified as providing “full and complete public access” in accordance with the State Beachfront Management Plan.

2.3. Beachfront Developments, Zoning and Land Use Regulations

A. Dewees Island

Dewees Island is currently zoned Natural Resource Management Special Purpose District, which implements the “Conservation Management” policies of the Charleston County Comprehensive Plan, referenced within [Appendix 7.2](#).

However, within the *Charleston County Zoning and Land Development Regulations Ordinance*, referenced in [Appendix 7.5](#), Dewees Island is specifically listed as an exception to certain development standards.

From “§5.2.3 Exceptions” of the *Charleston County Zoning and Land Development Regulations Ordinance*, “For property located on Dewees Island, the Planning Director shall be expressly authorized to issue permits for development that complies with *Dewees Island Architectural and Environmental Design Guidelines* (dated October 25, 1996) instead of the Planned Development procedures and standards of this Ordinance.”

Architectural and Environmental Design Guidelines were established in October 1996 and administered by the *Dewees Island Architectural Resource Board* ([Appendix 7.3](#)). The purpose of these *Guidelines* was to inform the homeowner, architects, landscape architects and contractors on environmental issues relevant to building on Dewees Island. Regulations for construction, design and materials were developed to ensure compatibility with the various Dewees Island Covenants, with environmental protection, and with the Island's natural landscape.

B. Botany Bay Island

Botany Bay Island is currently zoned Planned Development, referenced within the *Charleston County Zoning and Land Development Regulations Ordinance*, found in [Appendix 7.5](#). Any development would be restricted to the standards set forth within the *Botany Bay Island Planned Development Documents*, included within [Appendix 7.6](#).

C. Pockoy Island

Pockoy Island is currently zoned AG-10 Agricultural Preservation (Rural) as defined within the *Charleston County Zoning and Land Development Regulations Ordinance*, referenced in [Appendix 7.5](#). However, the property is owned by the State of South Carolina and is designated as a Wildlife Management Area (WMA). The Island has no buildable parcels identified and no additional development is anticipated.

2.3.1 Beachfront Structural Inventory Seaward of Setback Line

Please refer back to the three Overlay Maps referenced in *Section 2.1, General Characteristics of the Beach*, and located in [Appendix 7.1](#).

A. Dewees Island Structures

Forty (40) buildings, the vast majority represent individual homes on separate parcels, are located seaward of the setback line. Forty-three (43) undeveloped parcels include areas seaward of the setback line. A *Structures Inventory Table* is provided in [Appendix 7.7](#) with a list of those structures.

B. Botany Bay Island Structures

Zero (0) buildings seaward of the setback line, however, there are eleven undeveloped parcels that are seaward of the setback line.

C. Pockoy Island Structures

Zero (0) structures of any kind are on Pockoy Island. The land is owned by the State of South Carolina and is considered a wildlife management area. No development is anticipated.

2.4. Natural Resource and Ecological Habitats

Charleston County's shoreline provides an important habitat for a diverse population of migratory shorebirds, including Dunlins, Short-billed Dowitchers, Sanderlings, Ruddy Turnstones, Piping Plovers and many others during the winter months. Some species, such as willets and Wilson's Plovers nest here, while others like the Whimbrel stop off briefly during migration.



Least Terns can be found locally and are recognized as a threatened species under State law. These Terns are shorebirds which rest and forage on the beach during the summer months. Historically, the Least Tern arrives at its breeding grounds in South Carolina in April. The breeding colonies are not dense and may appear along either marine or estuarine shores, or on sand bar islands in large rivers, in areas free from humans or predators.

Within the maritime shrub thicket and forest areas of the Charleston County shore, there also are reports of occurring state-endangered bald eagles as well as federal-endangered red-cockaded woodpeckers.



Sea turtles that have been reported to nest or strand on or in close proximity to Charleston County's shoreline include: the Loggerhead (*Caretta caretta*), Kemp Ridley (*Lepidochelys kempfi*), Leatherback (*Dermochelys coriacea*) and Green (*Chelonia mydas*) sea turtles. The federally threatened Loggerhead Sea Turtle is the only marine turtle that regularly nests on South Carolina beaches. The Loggerhead Sea Turtle (*Caretta caretta*) is the only member of the genus *Caretta*. The genus name "Caretta" is a Latinization of the French "caret", meaning turtle, tortoise, or sea turtle. A loggerhead sea turtle reportedly grows up to 800 lbs (364 kg) and 3.5 feet long. The species feeds on mollusks, crustaceans, fish, jellyfish, and other small to medium-size marine animals, which they crush with their large and powerful jaws. As with other sea turtles, the female Loggerhead turtles return to lay their eggs on or near the same beach where they hatched from. Unlike other sea turtles, courtship and mating usually do not take place near the nesting beach, but rather along the migration routes between feeding and breeding grounds.

Adult loggerheads enter waters offshore to mate in April and will remain until October. From mid-May through August, females come ashore to lay eggs, usually near the base of the primary dune line. On average, 132 eggs are deposited. In some areas, turtle nests suffer heavily from egg predation mainly by raccoons, foxes and ghost crabs.

Other potential threats include human disturbance to nesting females at night and hatchling disorientation caused by artificial lights. SCDNR issues permits for activities involving marine turtles in South Carolina under the authority granted through a cooperative agreement with the US Fish and Wildlife Service under Section 6 of the Endangered Species Act. Activities covered under this jurisdiction include nest monitoring and the handling of stranded turtles.

Undeveloped Botany Bay Plantation WMA maintains coastal habitats important to numerous wildlife species. The beach is utilized for nesting by the federally-threatened Loggerhead Sea Turtle and the state-threatened Least Tern. The maritime forest and coastal scrub/shrub areas provide nesting and foraging habitat for neo-tropical songbirds, including painted buntings and summer tanagers. The uplands support a wide diversity of wildlife. The tidal marshes and managed wetlands contain a variety of fish and shellfish resources and provide foraging habitat for numerous wildlife species.

2.4.1 Threatened and Endangered Species

Rare, Threatened, and Endangered Species and Communities Known to Occur in Charleston County, updated March 13, 2012 by SCDNR can be found in [Appendix 7.8](#).

2.4.2 Turtle Nesting



The United States Fish and Wildlife Service (USFWS) listed the Northwest Atlantic Ocean distinct population segment (DPS) of the loggerhead sea turtle as threatened on September 22, 2011 (76 FR 58868). Under the Endangered Species Act, a final ruling was issued by the USFWS on July 10, 2014. Effective August 11, 2014, the law designates areas along the South Carolina coastline as “critical habitats” for the species. The following image, from USFWS, shows the critical habitat designation which affects Botany Bay Island and Pockoy Island. Charleston County will begin implementation once the plan is adopted.

U.S. Fish and Wildlife Service Proposed Critical Habitat Designation for Botany Bay Island and Pockoy Island

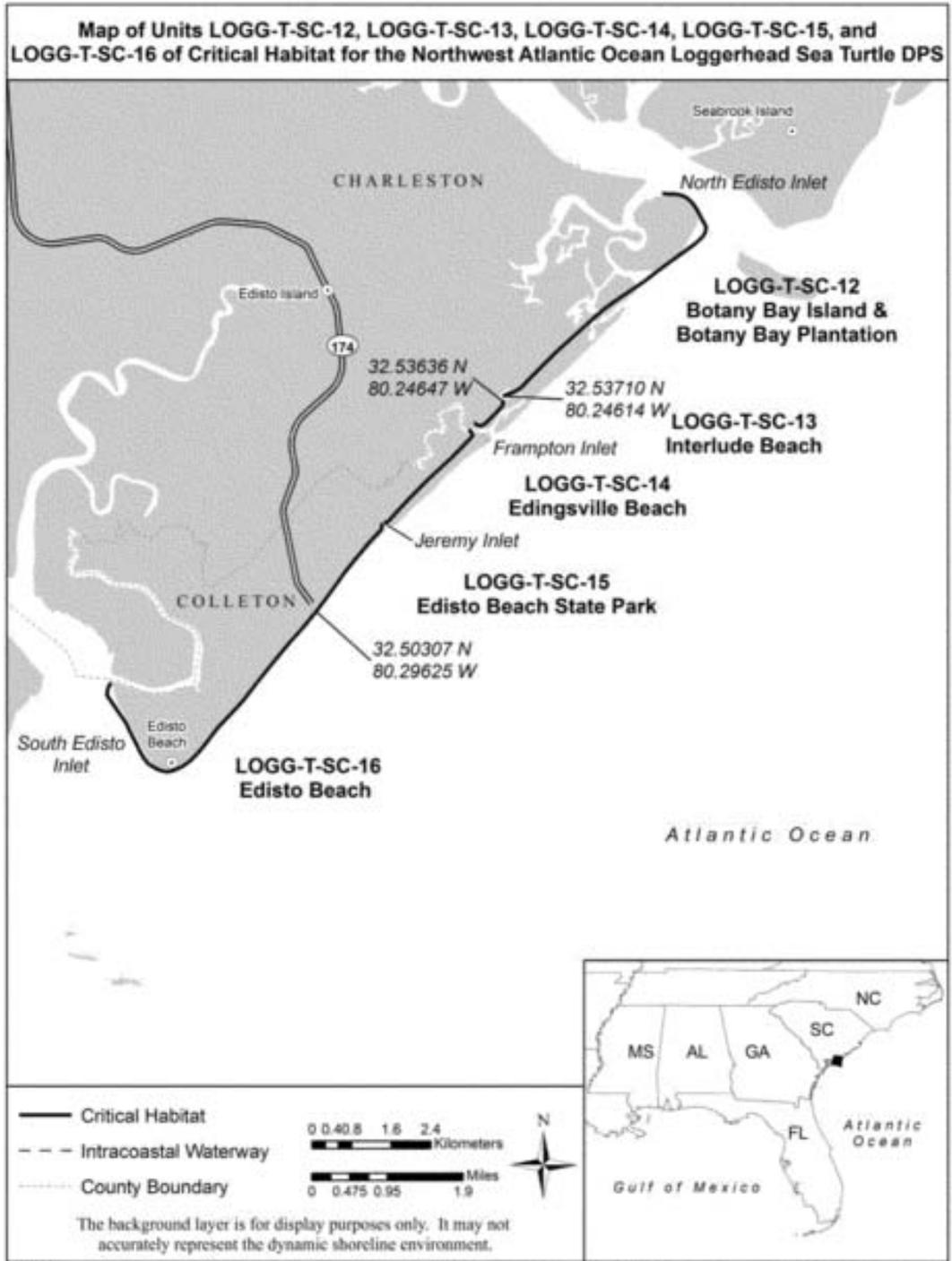


Figure 1

The current model includes Botany Bay and Pockoy Islands as designated critical habitats. Charleston County will continue to monitor loggerhead nestling along these beaches and work with the USFWS to ensure continued protection. Due to the fact that Pockoy Island is part of an undeveloped WMA and Botany Bay Island's limited development is inland of the setback line, no substantial impact is expected with any designation.

The SCDNR's Sea Turtle Conservation Program, several small scale volunteer organizations and Santee Cooper, have joined forces to establish South Carolina United Turtle Enthusiasts (SCUTE), to not only preserve and monitor sea turtle nesting habitats, but to further raise awareness about sea turtles and the hazards that could disrupt their nesting behavior. Therefore, SCUTE focuses on their "lights out" campaign and distributes bumper stickers to remind property owners and visitors to turn off beachfront lights after 10 p.m. during nesting season, as this will unnecessarily disrupt sea turtles.

Multiple community groups also take part in "turtle patrols" during nesting season, where volunteers mark or relocate nests, as well as provide information to beachgoers about the turtles. Dewees Island has such a dedicated group of property owners, called the *Dewees Island Turtle Patrol*; [Appendix 7.9](#) provides a copy of their educational brochure.

3. BEACHFRONT DRAINAGE PLAN

All drainage systems on Dewees Island, Botany Bay Island, and Pockoy Island are privately owned and maintained.

Charleston County's Stormwater Waste Management Program (SWMP) ([Appendix 7.10](#)) aims to promote and protect the quality of life in Charleston County by ensuring all waters are fishable and swimmable. Charleston County has implemented this *Program* in an effort to better address water quality and water quantity issues in the County and to achieve compliance with the requirements of the National Pollutant Discharge Elimination System (NPDES) Phase II permit for small Municipal Separate Storm Sewer Systems (MS4) permit.

Charleston County recognizes that storm water management is a community-wide issue that requires a community-wide solution and they anticipate implementing a drainage program for these remote, private, and largely undeveloped areas.

The SWMP has a staff of 10 full time employees assisting in providing services, conducting programs, and keeping the County aware of the important issues concerning storm water. Daily operations of this department include: review, issuance, and inspection of storm water permits, excavation and cleaning of ditches and canals, installation and repair of storm drainage systems etc.

4. BEACH MANAGEMENT AND AUTHORITIES

4.1. State Authorities

4.1.1 Overview of State Policies (Beachfront Management Act)

The South Carolina Beachfront Management Act was passed by the General Assembly to protect and preserve the state's beach and dune system for the protection of life and property, habitat protection for fauna and flora, and an attractive environment for residents and visitors alike. By adopting the Beachfront Management Act, the General Assembly also acknowledges that a "long-range

comprehensive beach management plan is needed for the entire coast of South Carolina to protect and manage effectively the beach/dune system (...)" S.C. Code of Laws, Section 48-39-250 (11). The policies of the S.C. Beachfront Management Act are codified in Section 48-39-260. The Act states the following policies, to:

- 1) Protect, preserve, restore and enhance the beach/dune system;
- 2) Protect life and property by acting as a buffer from high tides, storm surge, hurricanes, and normal erosion;
- 3) Provide a source for the preservation of dry sand beaches which provide recreation and a major source for state and local business revenue;
- 4) Provide an environment which harbors natural beauty and enhances the wellbeing of the citizens of this State and its visitors;
- 5) Provide natural habitat for indigenous flora and fauna including endangered species;
- 6) Create a comprehensive, long-range beach management plan and require local comprehensive beach management plans for the protection, preservation, restoration, and enhancement of the beach/dune system;
- 7) Restrict the use of hard erosion control devices to armor the beach/dune system and to encourage the replacement of hard erosion control devices with soft technologies;
- 8) Encourage the use of erosion-inhibiting techniques which do not adversely impact the long-term well-being of the beach/dune system;
- 9) Promote carefully planned nourishment as a means of beach preservation and restoration where economically feasible;
- 10) Preserve existing public access and promote the enhancement of public access to assure full enjoyment of the beach by all our citizens including the handicapped and encourage the purchase of lands adjacent to the Atlantic Ocean to enhance public access;
- 11) Involve local governments in long-ranging comprehensive planning and management of the beach/dune system in which they have a vested interest;
- 12) Establish procedures and guidelines for the emergency management of the beach/dune system following a significant storm event.

4.1.2 Beachfront Setback Area

The Beachfront Management Act defines a forty-year retreat policy as a very important part of this law in Section 48-39-280. The Department of Health and Environmental Control, specifically the Office of Ocean and Coastal Resource Management (OCRM) must establish a baseline which parallels the shoreline for each standard erosion zone and each inlet erosion zone. The baseline for each standard erosion zone is established at the location of the crest of the primary oceanfront sand dune. In standard erosion zones in which the shoreline has been altered naturally or artificially by the construction of erosion control devices, groins, or other manmade alterations, the baseline must be established by the department using the best scientific and historical data, as where the crest of the primary oceanfront sand dunes for that zone would be located if the shoreline had not been altered." DHEC-OCRM must determine the baseline for inlet erosion zones that are not stabilized by jetties, terminal groins, or other structures as the most landward point of erosion at any time during the past forty years, unless the best available scientific and historical data of the inlet and adjacent beaches indicate that the shoreline is unlikely to return to its former position. The Act also requires the establishment of a setback line to fully implement the forty-year retreat policy. The setback line must be established landward of the baseline at a distance which is forty times the average annual erosion rate or not less than twenty feet from the baseline for each erosion zone based upon the best historical and scientific data adopted by DHEC-OCRM as part of the State Comprehensive Beach Management Plan. Both the baseline and setback line must be revised not less than every eight years but not more than every ten years after each preceding revision.

4.2 Local Government and Authorities

Charleston County has jurisdiction over the unincorporated areas within its county boundaries, and is responsible for planning, zoning, building regulation, code enforcement, floodplain management, emergency services, etc. In some fashion, the following Charleston County departments have authority over the beach and nearby areas:

- Sherriff's Office (law enforcement and public safety)
- Consolidated Dispatch 911 (law enforcement and public safety)
- EMS (public safety)
- Emergency Management (public safety, emergency operations)
- Building Inspection Services (regulation of new and existing construction, code enforcement)
- Zoning & Planning (land use and development, code enforcement)
- Public Works/Stormwater (roadways and Stormwater management)
- Environmental Management (collection of recycling and storm debris)
- Judicial (adjudication of beach-related violations of the County Codes and Ordinances).

Local authorities that exist in Charleston County with regards to beach management include:

- Charleston County Parks and Recreation Commission
- City of Isle of Palms (LCBMP approved 2008)
- Town of Sullivan's Island (LCBMP approved 1992)
- City of Folly Beach (LCBMP approved 1992)
- Town of Kiawah Island (LCBMP approved 2012)
- Town Seabrook Island (LCBMP approved 1992)
- Town of Edisto Beach (LCBMP approved 2012)

4.2.1 Charleston County's Comprehensive Plan

Charleston County's Comprehensive Plan ([Appendix 7.2](#)) is an expression of the County's intent for where and how future growth and development should occur. The plan also identifies parts of the County that may or may not be appropriate for certain types of growth, given the Lowcountry's unique character and natural conditions.

The *Comprehensive Plan* includes ten elements:

- 1) Population
- 2) Economic development
- 3) Natural Resources
- 4) Cultural Resources
- 5) Community Facilities
- 6) Housing
- 7) Land Use
- 8) Transportation
- 9) Priority Investment
- 10) Energy

The Charleston County Planning Commission is mandated by state law to conduct a Five-Year Review of the Plan in response to changing economic and growth trends. *Charleston County's Comprehensive Plan* can be found in [Appendix 7.4](#).

4.2.2 Charleston County's Hazard Mitigation Plan

Charleston County is vulnerable to coastal hazards, primarily hurricanes and flooding events, due to the roughly 100 miles of coastline along the Atlantic Ocean. The area is also vulnerable to seismic activity, tornadoes, storms, wildfires, and other natural and manmade disasters. Charleston County has comprehensive plans for preparing and responding to events of all sizes and types, and regularly practices such scenarios.

The *Charleston Regional Hazard Mitigation Plan* is an essential tool for mitigating these beachfront areas and the greater Charleston region. The plan includes prioritized lists of current mitigation activities as well as potential future projects. Additional information regarding this plan is available through the Charleston County website and is referenced in [Appendix 7.11](#).

4.2.3 Charleston County's Emergency Operations Plan

The three areas covered by Charleston County's LCBMP are unique. Due to their isolated locations and limited resources, evacuation is the priority for any disaster, if time is available. The areas are not readily accessible to first responders and are not heavily populated. Due to the private infrastructure of these areas, recovery will likely occur through private funding.

In the event of a disaster, the following plans, procedures, and information are applicable for Dewees Island, Botany Bay Island, and Pockoy Island.

A. Initial Damage Assessment

Initial Damage Assessment is one of the very first response functions following a disaster. The primary role of initial damage assessment is to ascertain the extent and severity of the hazard and to aid in the quantitative calculations to possibly obtain state or federal assistance. In all major cases, a computer simulation of a hazard through the HAZUS MH computer system would generate a sufficient damage estimate. Several members of the Charleston County Building Inspections staff have attended FEMA training courses on the program and are assigned to provide the reports during emergencies.

If the computer simulation is not required, as is typical for smaller occurrences, initial damage assessment is performed either by airplane flyovers, windshield surveys, walking inspection teams, or a combination of methods. Initial damage assessment provides critical information for the future stages of response, recovery, and rebuilding.

The *Emergency Service Function (ESF 20) Damage Assessment Procedure* is maintained by the Department of Building Inspection Services and outlines procedures and responsibilities related to damage assessment. It is available within the Charleston County Emergency Operations Plan (EOP), published online.

The full ESF 20 procedure is included in [Appendix 7.12](#) and the complete *Emergency Operations Plan* is included in [Appendix 7.13](#).

B. Substantial Damage and Improvement

As part of damage assessment, Charleston County Building Inspection Services will work closely with many homeowners determining whether a structure has been “substantially damaged.” If the cost to repair a damaged building exceeds 50% of the pre-damaged value, the structure has suffered substantial damage and must be brought into compliance with all current building and flood codes when rebuilt. This determination is very important when it comes to issuing permits to repair the damage, examining construction plans, assisting with financing, etc.

The department utilizes “Substantial Damage Estimator” (SDE) software produced by FEMA which assists homeowners, local officials, and inspectors in estimating damage on structures impacted by the disaster. This is the nationwide standard for use and all software is available online. Charleston County is also closely working with the Information Technology department of the County on ‘preloading’ available home value assessments prior to the hazard to save time in the event of disaster.

“Substantial Improvement” is similar to substantial damage. If improvements to a structure over a five (5) year period meet or exceed 50% of the pre-improved value of the structure, it is considered substantial improvement and the structure may have to be brought into full compliance with all current codes. This is applicable following a disaster or through routine additions and improvements.

C. Permitting

Following a disaster, the Department of Building Services may issue a temporary building permit for minor repairs. Building inspectors and initial damage assessment teams will have blank “Temporary Permit Authorization” forms which can document one of four appropriate actions for the structure:

1. Temporary work is authorized to prevent future damage
2. Notice to apply for a construction permit
3. Potential major damage or substantial damage – contact the department prior to filing for a permit
4. Demolition permit for a totally destroyed structure

The Temporary Permit Authorization Form, the *Building Inspections Department Standard Operating Procedure (SOP) 1-6, entitled Post-Event Damage Assessment Inspections*, and an addendum to the SOP that specifically states that certain coastal properties require DHEC-OCRM approval are located within [Appendix 7.14](#).

Note, while minor work may be given temporary authority to begin, all construction work is to be permitted and adhere to appropriate building codes, ordinances, zoning requirements, stormwater regulations, and floodplain standards. Charleston County has specific zoning requirements and restrictions for these sensitive areas and coordinates any additional regulatory requirements by US Fish and Wildlife Service, DHEC-OCRM, and the US Army Corps of Engineers.

D. Flooding and Flood Zone Requirements

In order to protect persons and property, a flood ordinance has been in effect for Charleston County since November 15th, 1973 when the first National Flood Insurance Program Flood Insurance Rate Maps (FIRM's) were adopted by Charleston County Council. The County's flood ordinance attempts to reduce flooding damage by minimizing the impact to surrounding environment and requiring structures to be more resilient.

The current *Charleston County's Flood Damage Prevention and Protection Ordinance, #1526*, is available online or in print at the Charleston County Building Services office and is included in [Appendix 7.15](#).

The flood ordinance is in the process of incorporating additional safeguards for citizens as well as opportunities to increase the County's Community Rating System score, a voluntary program which rewards additional mitigation measures with reduced flood insurance premiums for citizens.

One of the most significant changes pending in the Charleston County Flood Ordinance involves an even higher regulatory standard by moving from a "one foot freeboard" regulation to a "two-foot freeboard" regulation. This would require all new and substantially improved or damaged structures to be elevated to a minimum of two foot above the base flood elevation. This requirement protects citizens from future flood map revisions, reduces flood insurance premiums, and creates a safer and more resilient housing stock. The update cycle is expected to be completed within two years.

E. Continuity of Operations (COOP)

Charleston County has worked to prepare a comprehensive, prioritized, and effective program to ensure continuity of mission essential county emergency functions under all circumstances. The full COOP is available within the Emergency Operations Plan (EOP) on the Charleston County Emergency Services Website, and included in [Appendix 7.13](#).

F. Debris Management and Cleanup

Following a disaster, the County of Charleston hold eight contracts in place to remove and monitor debris in the event the need exceeds county capability. A full analysis of the debris management portion of the disaster recovery plan is available on the Emergency Management website and *Charleston County's Emergency Services Disaster Recovery Plan* is included in [Appendix 7.16](#).

4.2.4 Beachfront Development Regulations

Properly constructed buildings play a critical role in limiting the effects of a disaster. Charleston County requires buildings to be built according to International Construction standards and constructed to adhere to the federal and state approved Charleston County Flood Ordinance, which exceeds federal standards for floodplain management. The current *Buildings and Building Regulations Ordinance* is available online and included in [Appendix 7.17](#). The current *Charleston County Flood Ordinance* is available online and is included in [Appendix 7.15](#).

4.2.5 Regulations on Beach and Shoreline Protection



Figure 2

Botany Bay Plantation WMA Regulations:

- 1) Horseback riding by permit only on roads open to vehicular traffic and areas specifically designated for horse riding. No groups larger than ten (10) horses. All dikes are closed to horseback riding. No horseback riding during scheduled deer, turkey and hog hunting, except Sunday. Free permits are available at kiosk. Permit must be in possession while riding and data cards completed and returned to the kiosks upon leaving the area.
- 2) No camping is allowed.
- 3) All-terrain vehicles are prohibited except those permitted by SCDNR for special management activities.
- 4) The Fig Island shell rings are closed to all public access except organized scientific management or educational activities permitted by the SCDNR.
- 5) Access to the beach is by foot, bicycle or boat; no horses or dogs are allowed on the beach or the causeway to the beach.
- 6) No collection, removal or possession of shells, fossils, driftwood or cultural artifacts is permitted.
- 7) Sea Cloud Landing on Ocella Creek and all other designated access points are restricted to non-trailer watercraft.
- 8) All hunters, fishermen and visitors must obtain and complete a day use pass upon entering the area and follow all instructions on the pass.
- 9) Botany Bay Plantation WMA is open to public access during daylight hours (1/2 hour before sunrise to 1/2 hour after sunset) except during special hunts and events regulated by DNR.
- 10) Shore based fishing, shrimping and crabbing is allowed only on the front beach and in designated areas only.
- 11) SCDNR reserves the right to close specific areas as needed for management purposes.
- 12) Botany Bay Plantation WMA is closed on Tuesdays to all public access except for designated hunts and other Department organized activities.

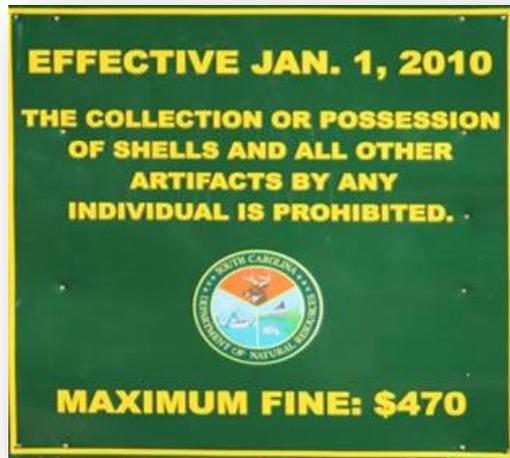


Figure 3

Dewees Island Property Owners Association Regulations:

- Golf carts can be driven down the beach access areas to the parking areas next to the board walks. DO NOT drive golf carts over the dunes or on the beach.
- You must have a valid driver's license to drive a golf cart. Owners living on the Island are eligible for permits at a younger age using their own golf carts (call the Management office for details: 843-886-6624, ext. 82).
- As this will be your mode of travel around the Island, please drive with care.
- A fine will be imposed on those who do not abide by golf cart rules.

4.2.6 Other Regulations on Beach Management

5. EROSION CONTROL MANAGEMENT

5.1 Shoreline Change Analysis

The *Beachfront Management Act*, S.C. Code of Laws 48-39-280, as amended, requires DHEC-OCRM to establish and periodically review (once every eight to ten years) the position of the two lines of beachfront jurisdiction¹, the baseline and setback line, as well as the average annual erosion rate for all ocean front land that is developed or potentially could be developed. The purpose of these jurisdictional lines is to implement Section 48-39-280(A) of the statute, which reads as follows:

A forty-year policy of retreat from the shoreline is established. The department must implement this policy and must utilize the best available scientific and historical data in the implementation. The department must establish a baseline which parallels the shoreline for each standard erosion zone and each inlet erosion zone.

¹ South Carolina's Beachfront Jurisdictional Lines can be found online: <http://gisweb01vm.dhec.sc.gov/shoreline/>

The baseline is the more seaward line of jurisdiction and is typically located at the crest of the primary sand dune. The setback line is the landward line of jurisdiction, and is established landward of the baseline at a distance equal to 40 times the average annual erosion rate, as calculated from the best available historical and scientific data. At a minimum, the setback line is set 20 feet landward of the baseline for stable or accretional beaches. Since 1988, DHEC has collected beach survey data statewide at approximately 400 monitoring stations that are typically spaced 2000 feet apart. Sections of coast that are not likely to be developed, such as Cape Romain National Wildlife Refuge, are not surveyed. Surveys begin landward of the primary oceanfront sand dune, if one exists, and extend down the beach and offshore. In addition to this beach profile monitoring data, other information required to perform this task includes dune field topographic data such as LIDAR (Light Detection and Ranging), historical aerial photographs dating back at least 40 years that depict shoreline locations, any previous shoreline change analysis data or reports, and Geographic Information System (GIS) software.

To establish the baseline position, the shoreline must first be classified as an inlet zone or a standard zone. Areas that are close to inlets and have non-parallel offshore bathymetric contours and non-parallel historical shoreline positions are classified as inlet zones, while all other areas are classified as standard zones. Inlet zones are further classified as stabilized, with jetties, groins, or seawalls, or as unstabilized. In un-stabilized inlet zones, the baseline is located at the most landward shoreline position at any time during the past 40 years, unless the best available data indicates the shoreline is unlikely to return to its former position. This baseline position is established by reviewing historical aerial photographs and identifying the most landward shoreline position. In stabilized inlet zones and standard zones, the baseline is located at the crest of the primary oceanfront sand dune using beach survey data or dune field topographic data such as LIDAR. If the shoreline is armored with a seawall or bulkhead and no sand dune exists, then a theoretical dune crest position is calculated from beach survey data.

To calculate a dune crest position at an armored station the volume of sand on the active beach, seaward of the erosion control structure, is determined from survey data and then compared to the volume of sand from an unarmored reference profile that displays a typical sand dune. Conceptually, the reference profile is overlaid on the armored profile in such a way that the measured sand volumes match, and then the dune crest position can be transferred from the reference profile to the armored profile. This theoretical dune crest position then becomes the baseline.

The first step in this process is to select natural beach profiles in the general area that are unaffected by seawalls, revetments, groins, and other structures. The selected beach profiles are then matched at the +9 foot contour and averaged. The average profile, referred to as the reference profile, is then superimposed over each armored profile such that the unit-width sand volumes seaward of the erosion control structure on the armored profile out to a fixed horizontal datum such as the -6 foot contour, are the same for both profiles. Once this volume-matching position has been determined, the location of the dune crest on the reference profile is transferred to the armored profile as an indication of where the theoretical dune crest on the armored profile would be located. This theoretical dune crest then becomes the baseline location at this monitoring station.

The setback line position is dependent on the baseline position and the local long-term erosion rate. The erosion rate can be calculated in-house by using whatever historical shoreline data is available, or it can be based on any previous shoreline change analysis data or reports. The final erosion rate, expressed in feet per year, is then multiplied by 40 to obtain a 40-year setback distance. The setback line is drawn this distance landward of the baseline. For stable or accretional beaches, the setback line is located a minimum of 20 feet landward of the baseline.

Once the location of these proposed new lines is determined a report is prepared documenting how the new line positions were calculated. The lines are then printed on recent aerial photographs at a scale of 1 inch to 100 feet, and a 30-day public comment period and a public hearing are held for public review and comment on the line positions. Once the lines are adopted as final, copies of the aerial photomaps are distributed to OCRM field offices and to local governments. Reproducible copies of these photomaps are kept at a local blueprint company, where any interested party can purchase a set. The line coordinates are also made available on the DHEC web site in a format that allows them to be downloaded and imported into computer-generated plats by surveyors².

The Beachfront Management Act defines three types of shorelines zones.

- Standard Erosion Zone – a segment of shoreline which is not directly influenced by an inlet or associated shoals.
- Un-stabilized Inlet Erosion Zone – a segment of shoreline along or adjacent to a tidal inlet which is directly influenced by an inlet or its associated shoals which is not stabilized by jetties, terminal groins, or other structures.
- Stabilized Inlet Erosion Zone – a segment of shoreline along or adjacent to a tidal inlet which is directly influenced by the inlet and its associated shoals and which is stabilized by jetties, terminal groins, or other structures.

Charleston County has three areas of shoreline that fall into DHEC's beachfront jurisdiction: Dewees Island, Botany Bay and Pockoy Island. Each is classified as un-stabilized inlet erosion zones.

5.1.1. Beach Profiles

Representative beach profiles measures from fixed starting points provide the best means of quantifying short-term beach changes. These data allow the assessment of changes in beach width (feet) and beach volume (expressed in cubic yards per foot of shore length). Profile data for Dewees Island (Botany Bay and Pockoy do not have established monuments at this time) is provided below:

Nine permanent beach monuments, beginning with station at 3200, located at the northeastern side of the island, and ending approximately halfway along the Dewees Inlet's at station 3210, have been installed by DHEC-OCRM. These monuments³ have been surveyed routinely between 1987 and the present and provide the best island-wide basis for monitoring beach changes

Figures 4-8 show the beach profile changes between 1991 and 2012 at stations 3210, 3220, 3230, 3240 and 3250. Information on other monuments is available at <http://gis.coastal.edu>.

The "0" position on the x-axis of the profile figures marks the location of the beach profile monuments whereas the vertical red line marks the location of the DHEC-OCRM baseline. The figures show the volumes of sand that were measured above the -5 ft contour (NAVD88) and seaward of the DHEC-OCRM baseline for the years 1991, 1992, 1995, 2000, 2006, 2007, 2008, and 2012.

It is important to note that the beach profile volume changes presented in this section are based

² South Carolina's Beachfront Beach Monument Survey Packets can be found online: <http://gisweb01vm.dhec.sc.gov/shoreline/>

³ Monument locations and descriptions sheets can be found here: <http://gisweb01vm.dhec.sc.gov/shoreline/> (descriptions sheet link needs fixing)

on data ranging from 1991 to 2012 whereas the shoreline change rates in Section 5.1.2 are based on historical shoreline positions from as early as 1875 to 2006. The beach profiles show recent, annual changes whereas the long-term erosion rates show the annual erosion or accretion that has occurred since 1872.

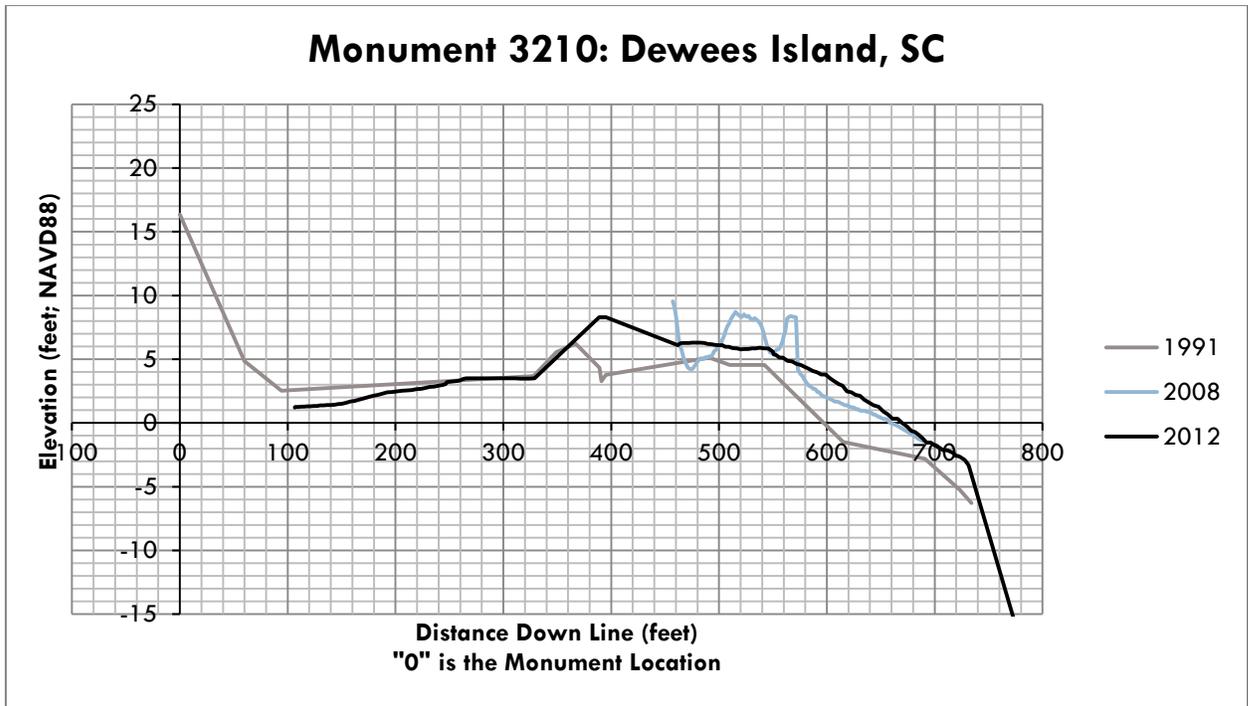


Figure 4

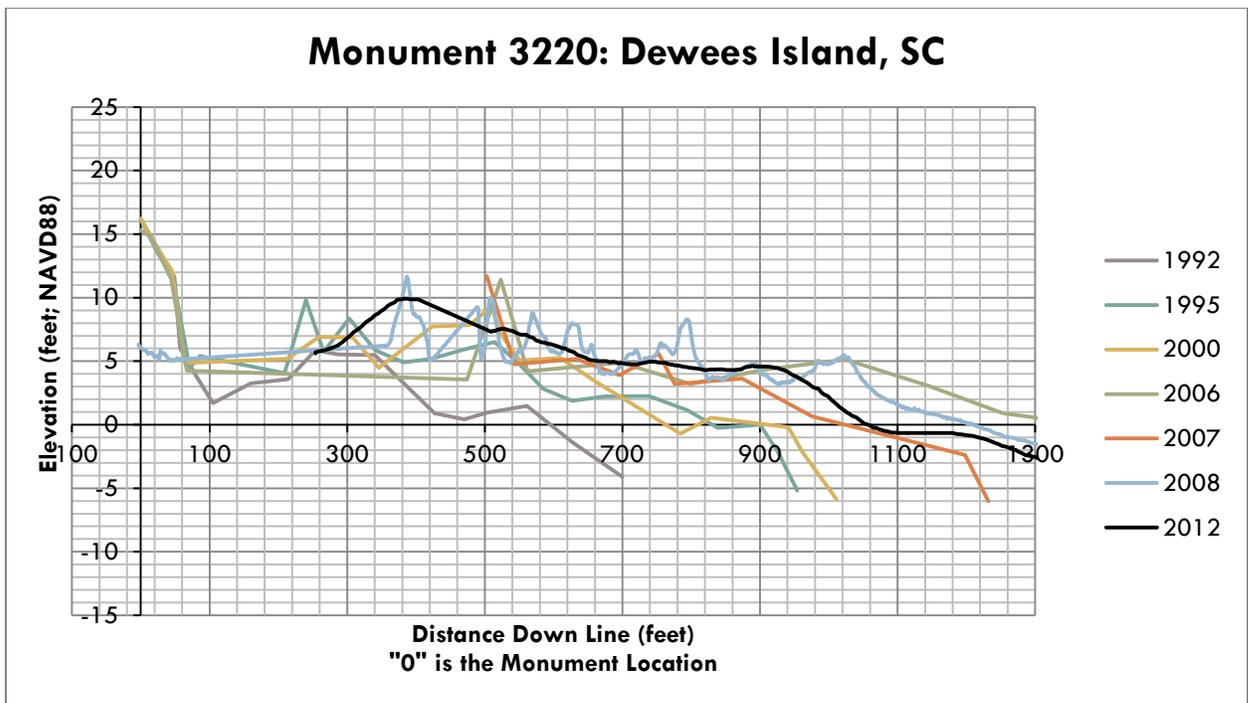


Figure 5

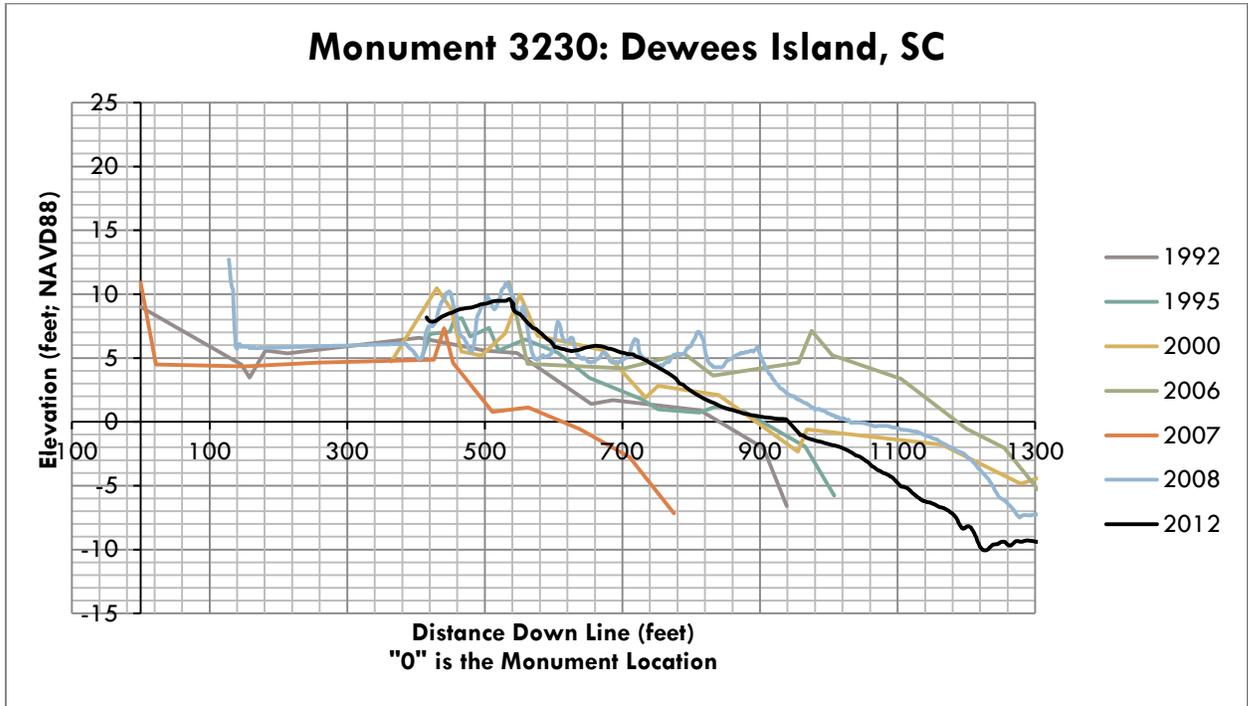


Figure 6

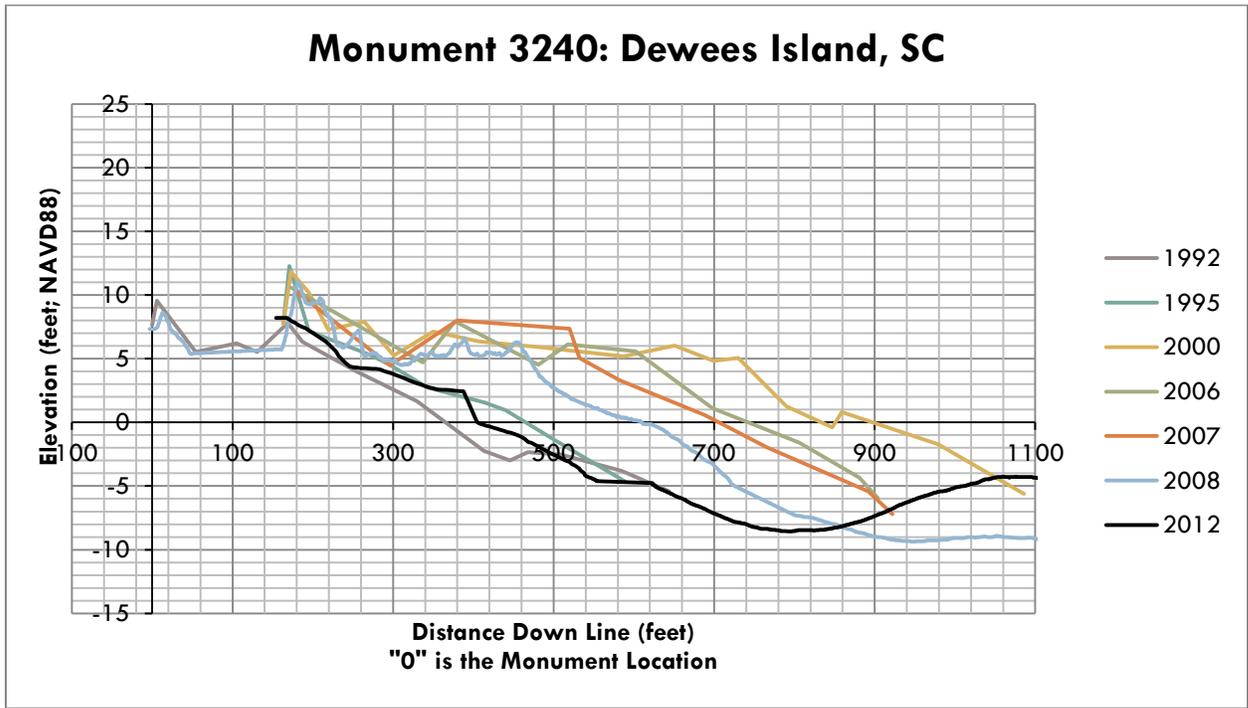


Figure 7

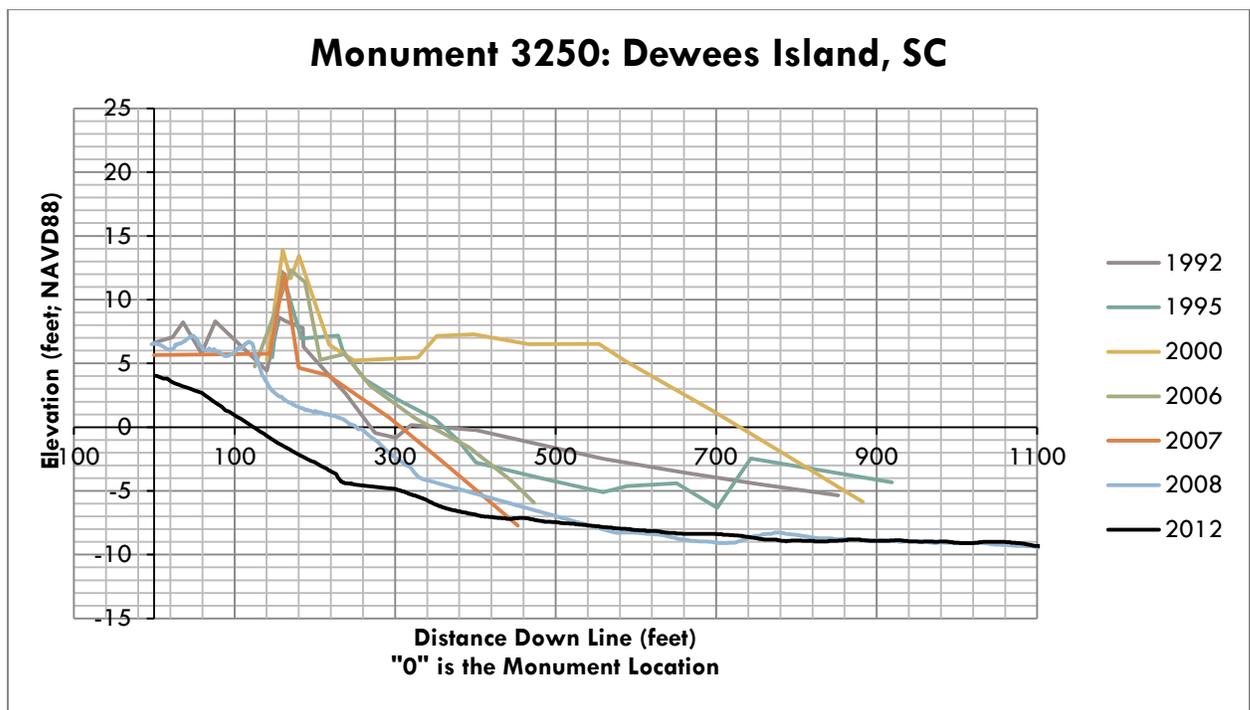


Figure 8

5.1.2 Long-Term Erosion Rates and Shoreline Change

Long-term erosion rates are calculated using the best available historical shoreline data. In most cases, the best available data included historical shoreline positions from as early as the 1850s. These older shoreline positions have also been used by the Federal government to analyze shoreline change, and are considered to be accurate by the National Oceanic and Atmospheric Administration. The long-term erosion or accretion rate at each station was calculated based on an assessment methodology that was developed by the U.S. Geological Survey by using a least-squares best fit regression through all data points. The official long-term erosion rates are listed below and can be found at the South Carolina Beachfront Jurisdictional webpage/application.⁴ It is important to note that a variety of factors can cause short-term rates of change to be significantly different from the long-term erosion rates.

Station/rate (ft/yr)
3210 stable to accretional
3220 stable to accretional
3230 -18.96
3240 -23.43
3250 -19.88

There are two principal sources of historical shoreline change information: 1) historical maps and charts, and 2) historical and recent aerial photographs. Both are available for Charleston County, and both have been used to assess shoreline change.

⁴ <http://gisweb01.vh.dhec.sc.gov/shoreline/> (descriptions sheet link needs fixing)

Digital high water shoreline position maps covering Charleston County have been compiled for the years 1872, 1926, 1934, 1962, 1983, 1984, and 2006. DHEC-OCRM reviewed aerial photographs from 1954, 1958, 1963, 1973, and 1988 for the original establishment of its baseline and setback line along Dewees Island in 1990. The baseline and setback line were revised in 1999 and again in 2009.

Historical shoreline positions in standard beach zones tend to be relatively stable; however inlet zones, particularly un-stabilized inlet zones like Dewees, Botany Bay and Pockoy Island, are much more dynamic. Shoreline positions in these areas tend to fluctuate dramatically over both short and long time scales.

Analysis of historical shorelines in unincorporated Charleston County is provided below:

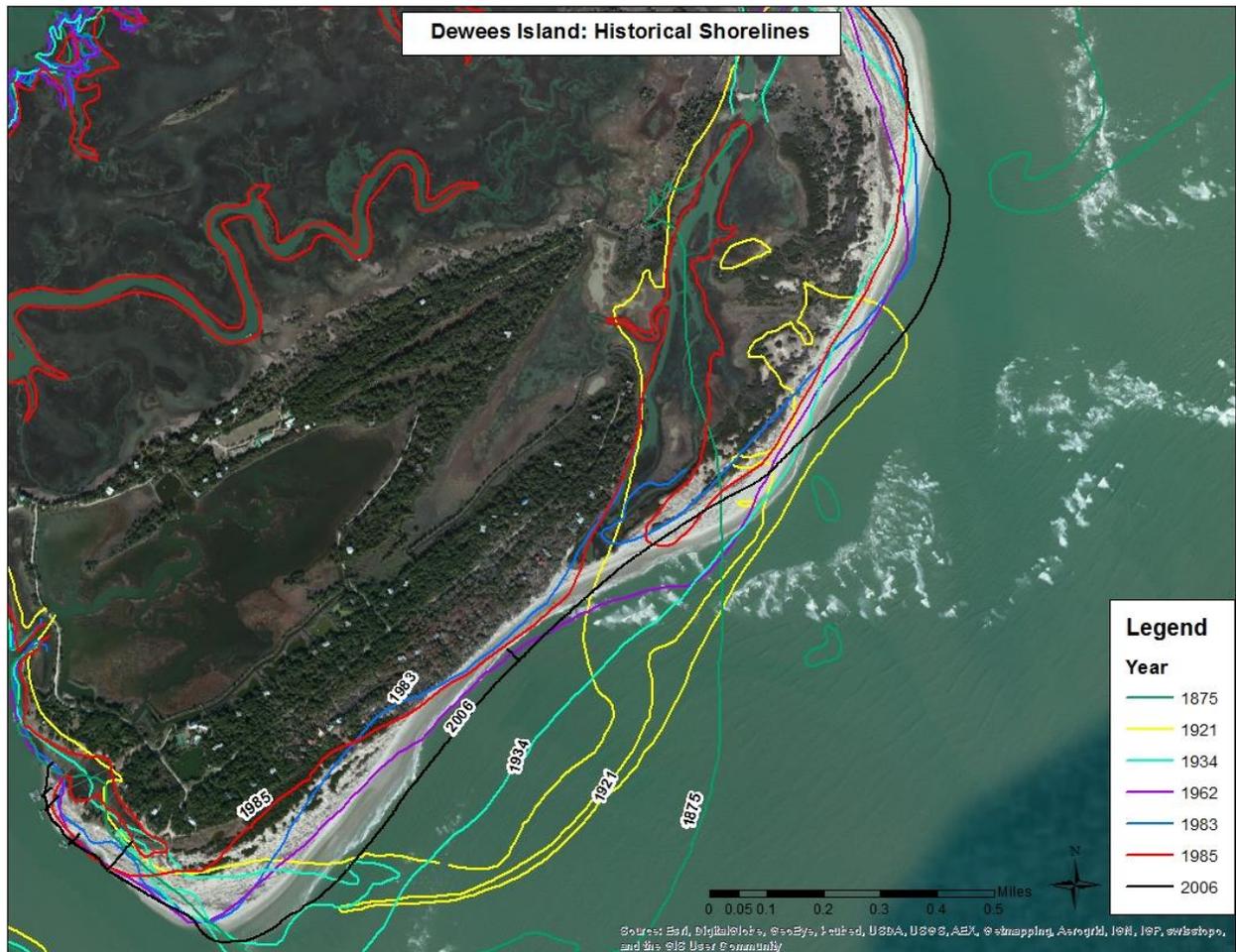


Figure 9

Dewees' shoreline is very dynamic, with long-term erosion rates as high as -24 feet per year for portions of the island, although in recent years most of the island has been stable to accretional. Along the top of a bluff along Dewees Inlet the beach can be very dynamic. For example, the 1934 shoreline was approximately 1,000 feet seaward of its current position; however, recently this area has been fairly stable and exhibited minor accretion. Along the developed southern half of the island, Dewees has experienced erosion. Historically, the shoreline was much further seaward than its current

position. For example, in 1934, shoreline in this area was located over 750 seaward of its current position. The undeveloped northern half of Dewees Island remains fairly stable⁵.

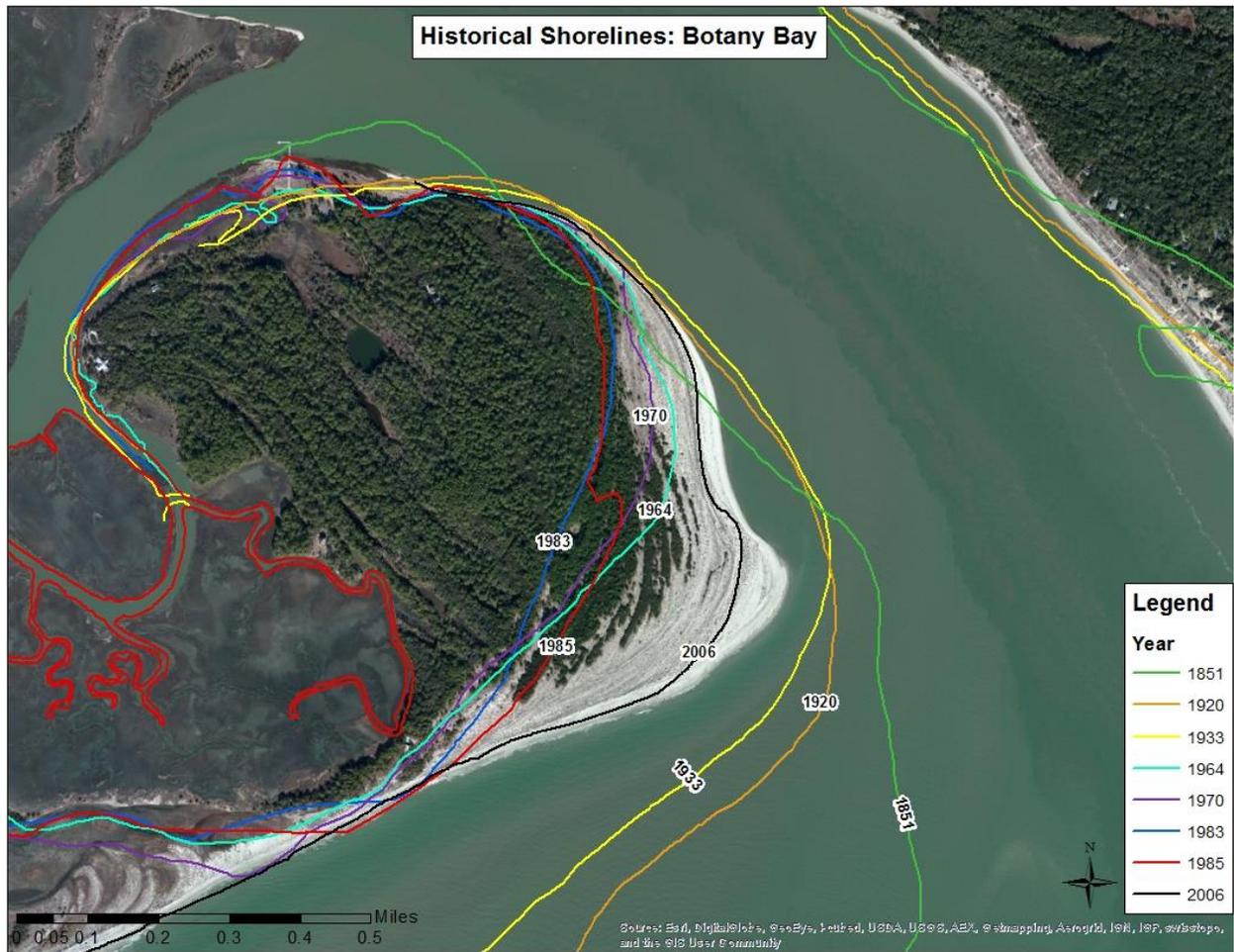


Figure 10

At the southern end of Botany Bay, along the mouth of the inlet to the Edisto River, the shoreline has historically been very dynamic. For example, the current shoreline is located approximately 520 feet landward of the 1933 position; however the current shoreline position is located approximately 1,490 feet seaward of the 1983 shoreline position. The historical shorelines along the northern end of Botany Bay have remained fairly stable however recently has exhibited some minor erosion⁶.

⁵ DHEC-OCRM, State of the Beaches Report (2009), pp. 42.

⁶ DHEC-OCRM, Botany Bay Jurisdictional Line Report (2009), pp. 3.

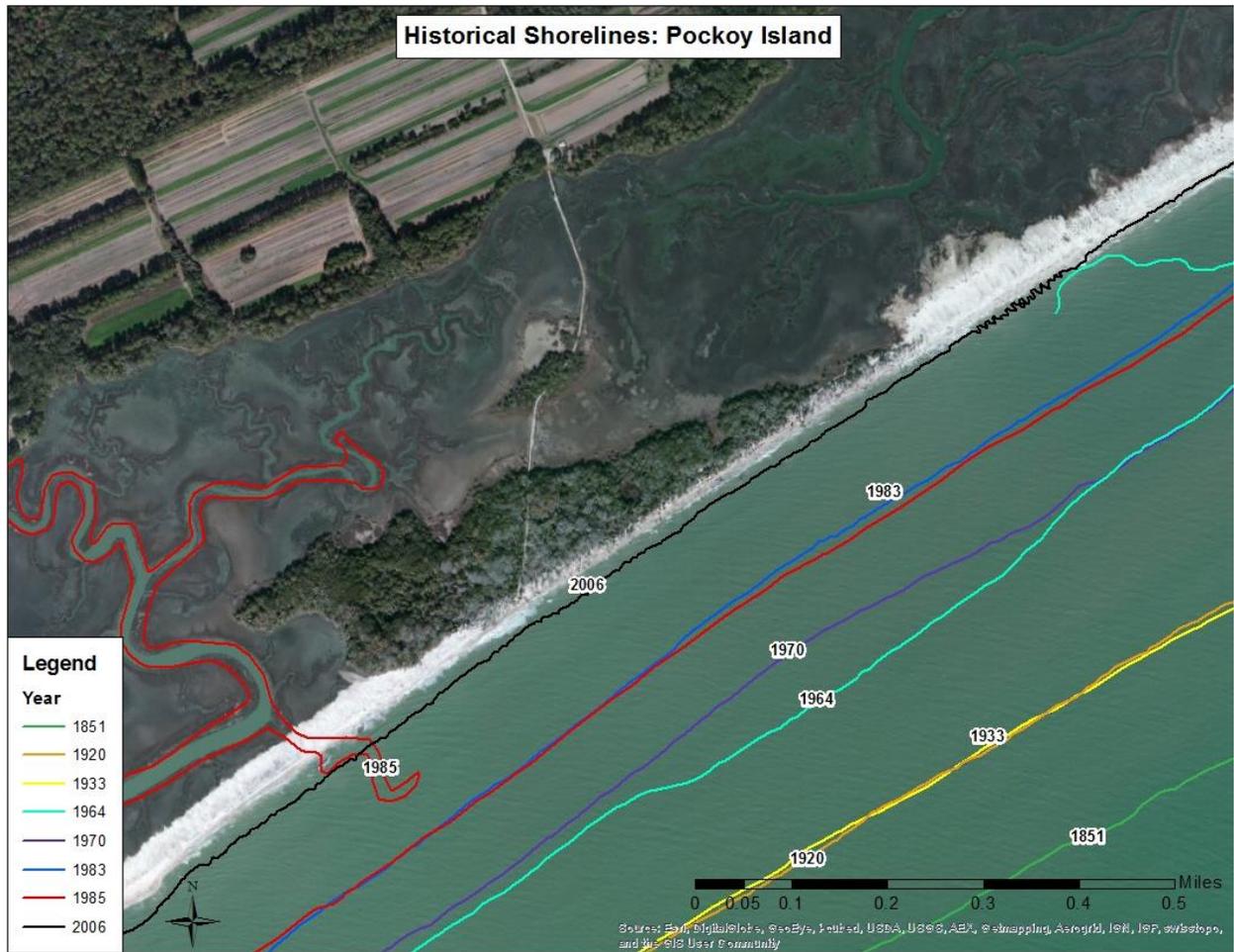


Figure 11

Pockoy Island also has been historically erosive. Shoreline positions has steadily moved landward since 1851.

5.2. Beach Alteration Inventory

5.2.1 Beach Renourishment

There historically have been no Beach Renourishment projects in unincorporated Charleston County, nor are any anticipated in the near future.



5.2.2 Emergency Orders & Sandbags

The term “emergency” is defined by the SC Coastal Tidelands and Wetlands Act as “any unusual incident resulting from natural or unnatural causes which endanger the health, safety, or resources of the residents of the State, including damages or erosion to any beach or shore resulting from a hurricane, storm, or other such violent disturbance.” DHEC-OCRM does not consider long-term, chronic erosion as an “emergency.”

Emergency situations before or after a storm event often prompt local governments to issue Emergency Orders, which allow property owners to construct temporary barriers against wave uprush through one or a combination of the following erosion mitigation techniques: sandbagging, sand scraping, or minor renourishment. Property owners being protected by sandbags are responsible for the maintenance of the bags to insure that they remain in place and in good repair, and they are also responsible for the complete removal of the bags.

Historically, there have been no Emergency Orders issued in unincorporated Charleston County.

5.2.3 Previous Hurricanes or Storm Events

The *Charleston Regional Hazard Mitigation Plan* documents historical hurricanes, storms and natural disasters in Charleston County and outlines current mitigation activities as well as potential future projects. Additional information regarding this plan is available through the Charleston County website and is referenced in [Appendix 7.11](#). Additional, up-to-date information on hurricanes affecting South Carolina can be found at the State Climatologist web site: <http://www.dnr.state.sc.us/climate/sco/>.

5.3. Discussion of Erosion Control Measures

The unincorporated beachfront areas, previously identified, fall into the following two categories:

- A. Privately owned properties with no residential units, public roadways or access, and there currently is no form of erosion control in place.
- B. Privately owned properties which abide by the Property Owners Association's Land Use and Management Plans and Conservation Agreement.

5.3.1 Beach Renourishment

Charleston County's Build-A-Dunes Project

Dunes play a pivotal role in shorelines by serving as wildlife habitat as well as moderating flooding resultant from waves. Build-A-Dune projects have been sponsored by Charleston County, SC Project Impact initiative since the year 2000. Build-a-Dune projects make for great volunteer opportunities. Recruiting local volunteers is encouraged since they will reap the benefits directly. Build-A-Dune project is separated into two stages.

During Stage 1 of restoration, volunteers help install sand fencing. Once enough time has been given for sand to accumulate, between 6 and 12 months, Stage 2 can commence. Stage 2 consists of planting Sea Oats, American Beachgrass and Bitter Panicum to trap wind-blown sand. (*Charleston County's Build-A-Dune brochure can be found in [Appendix 7.18](#)*).

6. NEEDS, GOALS AND IMPLEMENTATION STRATEGIES

Charleston County depends upon its coastal areas and beaches for its economic and social well-being, although most all of the beach-frontage is located within the municipalities. This plan concentrates on the aforementioned smaller beach segments located in the unincorporated parts of the County.

Each municipality has identified their own Needs, Goals and Implementation Strategies within their LCBMPs listed above. The County's LCBMP is intended to complement those and to consider SCDNR's role in the management and regulation of Pockoy Island and the Botany Bay Plantation WMA. With those entities in mind and a focus on the unincorporated areas of the County, Charleston County hopes to attain the following goals as it moves forward:

- Coordinate with private property owners to ensure that new building does not encroach into the OCRM delineated base and setback lines
- Ensure that buildings are safely constructed and that sufficient beachfront area is available to be enjoyed by residents and visitors to Charleston County.
- Where structures are vulnerable to flooding or other disasters due to their beachfront encroachments into OCRM delineated setback or baseline, work with the property owners to mitigate said vulnerabilities.
- Coordinate with OCRM's enforcement of delineated setback lines to assure that buildings are built at a safe distance from oceanic tides.
- Minimize unsafe storm water discharge onto the beach and into the ocean.
- Coordinate with property owners and regulating agencies to remove and/or relocate stormwater discharge onto beachfront.
- Protect undeveloped natural areas along the coast and provide for natural habitats and unspoiled scenic areas;

- Incorporate consideration of ecological data and preservation of the oceanfront into land-use decisions.
- Work with property owners and other governmental agencies to protect, enhance and restore the dune system.
- Provide a safe and enjoyable beach for local residents and tourists.
- Develop policies to mitigate future losses during reconstruction.

6.1. Retreat Strategy

The state of South Carolina established a forty-year policy of retreat as part of the Beachfront Management Act. §48-39-280(A) SCDHEC/OCRM, as the steward of the state's coastal resources, is responsible for implementing this policy through a comprehensive beach management program including regulation, scientific monitoring, state and local planning, and outreach and education §48-39-80. Key sections of the Beachfront Management Act direct SCDHEC/OCRM to regulate and enforce activities that impact occur on oceanfront beaches in the state. The Act also directs the development and implementation of a Comprehensive State Beach Management Plan with a long-ranging planning vision.

The County of Charleston plans to incorporate the 40-year strategy of retreat in a manner consistent with the State of South Carolina, and agrees that erosion and accretion are important natural functions.

Neither Botany Bay Island nor Pockoy Island has any structures seaward of the SCDHEC/OCRM setback line. Dewees Island has 40 structures seaward of the setback line, identified within [Appendix 7.7](#). No structures seaward of the setback line have any hard barriers or seawalls. In addition to meeting approval from SCDHEC/OCRM, these 40 structures have all been constructed under the stringent standards found within the *Dweees Island Architectural and Environmental Design Guidelines*, ([Appendix 7.3](#)) which aims to reduce the impact of construction to the natural environment.

Additional development seaward of the setback line on any of the three islands would require approval from SCDHEC/OCRM, Charleston County Planning and Zoning, and Charleston County Building Services, among others. Approval for any construction would include considerations on retreat consistent with existing policies of the State of South Carolina.

Following a hurricane or other event, which damages homes on the islands, local determinations of substantial damage and improvement, (see Section 4.2.3) along with guidance from SCDHEC/OCRM, may require structures to be rebuilt further inland, consistent with the existing polices of the State of South Carolina.

6.2. Strategy for preserving and enhancing public beach access

The only beach with public beach access located in unincorporated Charleston County is the aforementioned Pockoy Island's Botany Bay Plantation WMA, which is regulated by the State's Department of Natural Resources (SCDNR).

7. APPENDIX

- 7.1 **Beach Management Overlays**
 - Botany Bay
 - Dewees Island
 - Pockoy Island
- 7.2 **Charleston County Comprehensive Plan**
- 7.3 **Dewees Island Architectural & Environmental Design Guidelines**
- 7.4 **Pockoy Island / Botany Bay Plantation Heritage Preserve Information and Regulations**
- 7.5 **Charleston County's Zoning and Land Development Regulations Ordinance**
- 7.6 **Botany Bay Island Planned Development Documents**
- 7.7 **Structures Inventory Table**
- 7.8 **Rare, Threatened, and Endangered Species in Charleston County**
- 7.9 **Dewees Island Turtle Patrol Brochure**
- 7.10 **Charleston County Stormwater Waste Management Program (SWMP)**
- 7.11 **Charleston Regional Hazard Mitigation Plan 2013-2014**
- 7.12 **Charleston County's Emergency Service Function (ESF 20) Damage Assessment Procedure**
- 7.13. **Charleston County's Emergency Operations Plan (EOP)**
- 7.14 **Charleston County Building Inspections Standard Operating Procedures (SOP) Handbook I-6, Post-Event Damage Assessment Inspections**
- 7.15 **Charleston County's Flood Damage Prevention and Protection Ordinance**
- 7.16 **Charleston County's Emergency Services Disaster Recovery Plan**
- 7.17 **Charleston County's Buildings and Building Regulations Ordinance**
- 7.18 **Charleston County's Build-A-Dune Program Brochure**
- 7.20 **Acronyms**
- 7.21 **Sources**



BOTANY BAY

BeachFront Lines

TYPE

— BASE LINE

— SET BACK LINE

ZONED: PD
PLANNED DEVELOPMENT ZONING

PROPERTY BOUNDARY AND STREET CENTERLINES ARE CURRENT.
IMAGERY WAS CAPTURED IN 2012

MAP CREATED NOVEMBER 21, 2013
CHARLESTON COUNTY TECHNOLOGY SERVICES
GIS DIVISION



DEWEES ISLAND

BeachFront Lines

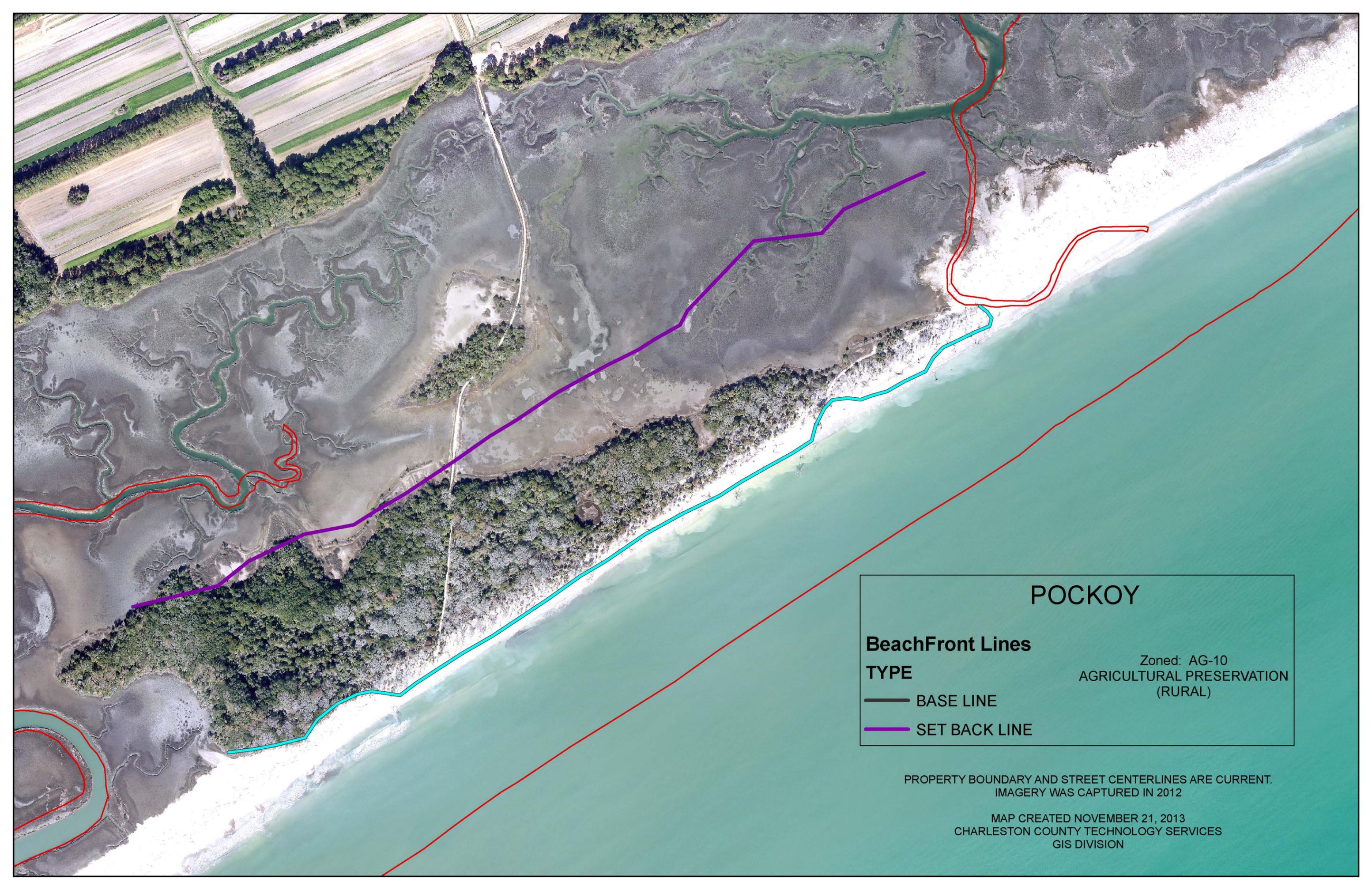
TYPE

- BASE LINE
- SET BACK LINE

ZONED: NRM
 NATURAL RESOURCE MANAGEMENT
 SPECIAL PURPOSE

PROPERTY BOUNDARY AND STREET CENTERLINES ARE CURRENT.
 IMAGERY WAS CAPTURED IN 2012

MAP CREATED NOVEMBER 21, 2013
 CHARLESTON COUNTY TECHNOLOGY SERVICES
 GIS DIVISION



POCKOY

BeachFront Lines

TYPE

- BASE LINE
- SET BACK LINE

Zoned: AG-10
AGRICULTURAL PRESERVATION
(RURAL)

PROPERTY BOUNDARY AND STREET CENTERLINES ARE CURRENT.
IMAGERY WAS CAPTURED IN 2012

MAP CREATED NOVEMBER 21, 2013
CHARLESTON COUNTY TECHNOLOGY SERVICES
GIS DIVISION