

Strategic Beach Management Plan:
Northeast Atlantic Coast Region
Office of Resilience and Coastal Protection
Florida Department of Environmental Protection
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South Amelia Island Beach Nourishment Project being constructed in December 2021 and sponsored by SAISSA. Photo courtesy of Al Browder with Olsen Associates. See additional [construction photos](#) of beach nourishment projects.

Introduction - Northeast

The **Northeast Atlantic Coast Region** has a total of 135.7 miles of beaches, of which 64.7 miles are critically eroded, and 29.9 miles are actively managed. There are also seven inlets within the Northeast Atlantic Region, three of which have an [inlet management plan](#). 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.

Each subregion listed below includes an introductory paragraph listing the miles of coastline and erosional events/storms that have affected the subregion. Each title within the subregion lists the coastal location, the county, and the range (R) survey markers for the critical erosion area. For inlets, river entrances, or passes the title, the county, and the adjacent range survey markers are stated. In addition, a subregion map highlighting the critical erosion areas and the managed project areas is included. Finally, references to coastal reports are also listed at the end of each subregion.

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](#)

[Central Atlantic Coast Region](#)

[Southeast Atlantic Coast Region](#)

[Florida Keys Region](#)

[Southwest Gulf Coast Region](#)

[Big Bend 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 sites](#).

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](#).

Sea Islands

There are 27.7 miles of beaches in the Sea Islands subregion, which extends from the south end of Cumberland Island, Georgia, to the Duval–St. Johns County line, as shown in Figure 1. There is a total of 18.1 miles of critically eroded beaches in this subregion (7.7 miles in Nassau County and 10.4 miles in Duval County), of which 17.8 miles have been restored and are maintained.

Erosion is attributed to frequent northeasters, occasional hurricanes, and the effects of the St. Mary’s River Entrance, the St. Johns River Entrance, Nassau Sound, and Ft. George Inlet. The most erosive storms have been the Thanksgiving northeaster of 1984, a series of northeasters in November and December in 1992, Hurricane Floyd (1999), Tropical Storm Gabrielle (2001), Hurricane Frances (2004), Hurricane Ophelia (2005), Tropical Storm Tammy (2005), Subtropical Storm Andrea (2007), October northeasters (2007), Tropical Storm Noel (2007), Tropical Storm Beryl (2012), Hurricane Matthew (2016), Hurricane Irma (2017), Hurricane Ian (2022) and Hurricane Nicole (2022). Other events causing severe impacts include the Ash Wednesday northeaster of March 1962, Hurricane Dora (1964), and the February 1973 northeaster.

Strategies for Inlets and Critically Eroded Beaches

St. Marys River Entrance, Nassau County

The St. Marys River Entrance is part of the federally authorized Fernandina Harbor Navigation Project and is the entrance to the Port of Fernandina and Kings Bay Naval Base in St. Marys, Georgia. Maintenance dredging generally occurs on an annual basis with beach quality sand placed on the inlet shoreline at Fort Clinch State Park, on the ocean shoreline of Fernandina Beach, or in a nearshore disposal area. Dredged material containing excessive fines, but which is otherwise beach compatible, is placed in a nearshore disposal area. The U.S. Navy and the State of Florida executed a Memorandum of Understanding in 1986 that states all beach compatible material dredged from the St. Marys River is to be placed on downdrift beaches or in nearshore areas of Amelia Island.

The Florida Department of Environmental Protection (Department or DEP) adopted the [St. Marys River Entrance Inlet Management Study Implementation Plan](#) in May 1998, which established an annual bypassing objective of between 554,000 and 779,000 cubic yards (cy).

Sand tightening of the south jetty was completed in 1988 in conjunction with deepening the federal navigation channel. The improvements to the groin field at Fort Clinch as recommended in the plan

were completed in April 2000. In 2004, a feasibility study was performed to investigate removal of the interior north jetty shoal of Cumberland Island. Several legal issues need to be resolved before this study's recommendations can be given further consideration. Updating the sediment budget and inlet management plan are needed for this project area when analyzing monitoring data from the last 16 years. From 2008 until 2023, the U.S. Army Corps of Engineers (USACE) has bypassed sediment to the North Beach/ Fernandina Beach shoreline (R13-R27) and placed approximately 2,653,444 cy of beach compatible material to the benefit of the Nassau County Shore Protection Project. This has allowed the maintenance of the restoration project to exceed its predicted five-year nourishment interval. The USACE report entitled, "Northeast Florida Regional Sediment Management," dated March 2016, studied this subregion and the St. Marys River Entrance. The report outlines additional opportunities that would enhance the Regional Sediment Management (RSM) program in Northeast Florida. It has been shown that additional investigation is needed to maximize the potential beach quality sand for use on adjacent eroding beaches.

Strategy: Update the sediment budget and adopt an updated inlet management plan; continue to bypass beach compatible sediment to the downdrift beaches to mitigate the effects of the inlet; place non-compatible dredge material in the nearshore.

Fort Clinch, Nassau County, 2,500 feet west of R1-R9

This is a 2.5-mile segment of critically eroded inlet shoreline of Amelia Island fronting the St. Marys River Entrance. Located within this shoreline are the historic Fort Clinch and Fort Clinch State Park. Sand placement from maintenance dredging has occurred in the groin field, inlet shoreline and at the south jetty in 2007, 2009, 2010, 2012, 2015, 2017, 2018, 2019, 2020, 2021 and 2023.

Strategy: Maintain the groin field that protects Fort Clinch; continue strategic sand placement from the navigation project or other sources.

Fernandina Beach, Nassau County, R9-R33

This is a 4.4-mile segment of critically eroded beach extending from the south jetty of the St. Marys River entrance to Sadler Road in Fernandina Beach. The **Nassau County Shore Protection Project** was federally authorized in 1972 in response to Hurricane Dora (1964). Federal emergency funds were appropriated in 1965 to place granite stone revetments along 2.8 miles of shoreline between R12 to R27. Sand dredged from the St. Marys River Entrance Channel has been placed in this segment since 1978. See the project history in Table 1. The initial beach restoration was completed in 2008, using approximately 1,932,000 cy of sand from an offshore borrow site that was placed within the municipal

boundary of Fernandina Beach (R13-R34.5). The City of Fernandina Beach is the local government sponsor for the project. The project design consists of a beach berm at elevation +10 ft NAVD that is intended to protect the existing dune and upland development. The nourishment interval was five years, but the project has exceeded design expectations due to minimal storm impacts and the periodic bypassing of material from the St. Marys River Entrance Channel in 2011, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 and 2023. Since the initial restoration in 2008, a total of 2,653,444 cy has been placed along the North Beach/ Fernandina Beach shoreline. As a result of the bypassing, the federal shore protection project is performing well, and the first full nourishment date is to be determined. The federal project is authorized until 2058.

Table 1. Nassau County Shore Protection Project beach placement that includes bypassing from St. Marys Entrance Channel.

Date Completed	Volume (cy)	Source	Project Location (by R monument)	Length (mi)
1978	1,000,000	St. Marys Entrance Channel	R12-R22	1.9
1982	360,000	St. Marys Entrance Channel	R19-R25	1.1
1988	907,000	St. Marys Entrance Channel	R13-R22	1.7
1992	201,739	St. Marys Entrance Channel	R13-R22	1.7
1995	254,220	St. Marys River Entrance	R13-R22	1.7
1998	416,028	St. Marys Entrance Channel	R13-19	1.1
1999	402,211	St. Marys Entrance Channel	R14-R20	1.1
2002	265,185	St. Marys Entrance	R13-R22	1.7
2003	38,298	St. Marys Entrance Channel	R13-R22	1.7
2004	243,511	St. Marys Entrance Channel	R13-R22	1.7

Date Completed	Volume (cy)	Source	Project Location (by R monument)	Length (mi)
2005	42,092	St. Marys Entrance Channel	R13-R22	1.7
2007	125,000	St. Marys Entrance Channel	R13-R22	1.7
September 2008	1,932,000	Offshore	R13-R34.5	3.8
2011	89,988	St. Marys Entrance Channel	R13-R16	0.6
2013	130,000	St. Marys Entrance Channel	R13-R16	0.6
March 2014	107,634	St. Marys Entrance Channel	R13-R16	0.6
April 2015	400,704	St. Marys Entrance Channel	R14-R20	1.1
March 2016	302,695	St. Marys Entrance Channel	R20-R27	1.3
March 2017	164,303	St. Marys Entrance Channel	R13-R15.5	0.5
March 2018	70,268	St. Marys Entrance Channel	R25-R27	0.4
2019	358,936	St. Marys Entrance Channel	R24-R34	1.9
March 2020	206,136	St. Marys Entrance Channel	R13-R16	0.6
March 2021	129,626	St. Marys Entrance	R13-R16	0.6
March 2021	354,251	St. Marys Entrance Channel	R20-R27	1.3
March 2022	195,609	St. Marys Entrance Channel	R16 to R19.5	0.7
March 2023	143,294	St. Marys Entrance Channel	R13 to R15	0.4

Strategy: Maintain the project through monitoring and periodic nourishment using sand from offshore and from inlet maintenance.

South Amelia Island, Nassau County, R60-R80

This is a 3.3-mile segment of critically eroded beach along the southern portion of Amelia Island, including the South Amelia Island Shoreline Stabilization Association (SAISSA) and the Amelia Island State Park. The alternating northern and southern migration of Nassau Sound has resulted in alternate periods of accretion and erosion at the ends of Amelia and Little Talbot Islands. The non-federal South Amelia Island Beach Nourishment Project (R60-R80) was initially constructed in 1994 using sand obtained from an offshore borrow area. The project design consists of a beach berm at elevation +10 ft NAVD. The project was designed for nourishment at eight-year intervals. Dredging of the Atlantic Intracoastal Waterway (AIWW) through Nassau Sound is scheduled for every three to five years, with placement of beach quality sand between R73 and R79. The project history for the R60-R80 segment of shoreline is described in Table 2. To stabilize the south end of the island, a terminal rock groin and offshore breakwater were constructed in 2004. Due to the importance of emergent shoals in Nassau Sound for migrating and resident bird populations, the terminal rock groin was designed to be “leaky” to allow for the continued movement of sand across the Sound to feed the emergent shoals. The south end of the project within the boundaries of the state park (R76-R79) was nourished in 2006 with 400,000 cy of sand dredged from the Sawpit Creek Cut section of the AIWW. The maintenance of the Intracoastal Waterway at Sawpit Creek Cut continues to contribute sand to nourish the beaches along the South Amelia Island project. A full nourishment (R59.5-R77) followed in 2011, using 2,100,000 cy of material from an offshore source. In 2013, 580,000 cy of beach disposal material from the AIWW was placed along the park shorefront from R75 to R77.5. SAISSA supported a reconnaissance-level field investigation that collected vibracores in offshore federal waters to identify potential sand sources in 2016. The AIWW beach disposal from Sawpit Creek occurred in April 2019 with placement of approximately 576,868 cy of sand between R75 and R77.5. A beach nourishment started again in July 2021 and was completed in January 2022 with a total of 1,800,421 cy of sand placed between R59 to just north of R77. The next full nourishment event is scheduled for 2030/2031.

Table 2. South Amelia Island Beach Nourishment project history.

Date Completed	Volume (cy)	Sand Source	Project Location	Length (mi.)
August 1994	2,600,000	Offshore	R60-R78	3.2
September 1997	300,000	Sawpit Creek Cut - AIWW	R73.5-R78	0.85
2001	300,000	Sawpit Creek Cut - AIWW	R73.5-R78	0.85
September 2002	1,900,000	Offshore	R60-R79.5	3.4
2006	400,000	Sawpit Creek Cut - IWW	R76-R79	0.4
2011	2,100,000	Offshore	R59.5-R77	3.2
2013	580,000	Sawpit Creek Cut - AIWW	R75-R77.5	0.5
April 2019	576,868	Sawpit Creek Cut - AIWW	R75-R77.5	0.5
January 2022	1,800,421*	Nassau Sound Ebb Shoal	R59-R77	3.3

*Pay Volume

Strategy: Maintain the project through monitoring and nourishment using sand from offshore; placement of beach compatible sand from maintenance dredging of the AIWW.

Nassau Sound, Nassau County R79 to Duval County R1

This is an undeveloped, highly variable inlet with migrating emergent shoals. A draft inlet management plan was formulated in 1993 by stakeholders but was never adopted by the Department. The inlet ebb shoal was dredged in 2021/2022 as a borrow source for the South Amelia Island Project that is sponsored by SAISSA, County and the Florida Park Service.

Strategy: Conduct an inlet study and develop and an inlet management plan.

Little Talbot Island State Park, Duval County, R21-R23

This is a 0.3-mile segment of critically eroded beach on the southern end of Little Talbot Island, fronting the Atlantic Ocean (R21-R23), and a 0.7-mile segment of critically eroded shoreline fronting Fort George Inlet (R23 – A1A bridge). The inlet shoreline and part of the Atlantic shoreline has a rock revetment to protect the bridge abutment. In 1999, a federal shore protection project consisting of a revetment to protect the shoreline and bridge abutment on Little Talbot Island was authorized, but the federal project was not constructed. Park facilities have been relocated due to erosion from the inlet

migration and storm damage. In early 2019 the USACE, along with the SAISSA, initiated the process for a Section 111 feasibility study to address erosion problems near the inlet and Little Talbot Island. Later in 2020/2021, the Florida Park Service (Little Talbot Island) volunteered to be the local sponsor for the Section 111/ Continuing Authorities Program (CAP) study on the [Ft. George Inlet Erosion Control Project](#).

Strategy: Monitor; coordinate with the USACE on the CAP Study to implement cost effective strategies for inlet management and an erosion control project.

Fort George Inlet, Duval County, R25-R26

Fort George Inlet is a natural inlet that has not been altered or maintained for navigation but has been strongly affected by navigation improvements at the St. Johns River Entrance since the 1800s. The shoal north of the northern St. John’s River Entrance jetty has grown and is currently used as a City of Jacksonville Huguenot Memorial public park. The inlet channel has migrated north and is eroding Little Talbot Island State Park.

The Department’s Division of Recreation and Parks sponsored a study of the inlet in 1999, which recommended relocation of the inlet channel to its historic southern location and the closure of the existing inlet by the hydraulic placement of the sand derived from new channel construction. The study did not investigate the alternative of bypassing sand to the downdrift shoreline south of the St. Johns River Entrance or bypassing to the eroded northernmost segment of Talbot Island. The inlet was studied again in 2011 by the Beaches and Shores Resources Center. The USACE report entitled, “Northeast Florida Regional Sediment Management,” dated March 2016, studied this subregion and the Ft. George Inlet. The report outlines additional opportunities that would enhance the Regional Sediment Management (RSM) program in Northeast Florida and showed that additional investigation is needed to maximize the potential beach quality sand for use on adjacent eroding beaches. In early 2019, the USACE, along with the SAISSA initiated a Section 111 feasibility study to address erosion problems near the inlet and Little Talbot Island. Later in 2020/2021, the Florida Park Service (Little Talbot Island) volunteered to be the local sponsor for the Section 111/ Continuing Authorities Program (CAP) study on the [Ft. George Inlet Erosion Control Project](#). The USACE completed an Engineering Modeling Report in August 2022 for the inlet study that recommended and examined a 1000 linear foot groin feature and channel dredging.

Strategy: Monitor; coordinate with the USACE on the CAP Study to implement cost effective

strategies for inlet management and an erosion control project.

St. Johns River Entrance, Duval County, R30-V501

The St. Johns River Entrance is part of the federally authorized Jacksonville Harbor Navigation Project and is the entrance to the Port of Jacksonville and Mayport Naval Station. The maintenance dredging of the entrance channel generally occurs on a semi-annual basis, with the placement of beach compatible sand on the downdrift shoreline south of the river entrance where it continues to contribute sand to nourish the beaches along the Duval County Shore Protection Project. More than 1 million cy of material is dredged annually from the remaining 26 miles of the navigation channel and placed in upland disposal sites or in an Offshore Dredged Material Disposal Site. The [USACE](#) completed the Jacksonville Harbor Channel Deepening Study and the report was signed by the Chief of Engineers in April 2014. The current depth of the channel is approximately -40 feet (NAVD 88), and the study looked at deepening the channel to a maximum depth of -50 feet. A Joint Coastal Permit for the Jacksonville Harbor Federal Channel Expansion project has been reviewed and issued by the Department to authorize the deepening of the federal navigation channel to a depth of -47 feet or -49 feet, depending on the river section, with an allowable 2-foot over depth dredging from mean lower low water (MLLW). The Department issued the permit for the channel expansion in July 2016. Dredging began in February 2018 for the deepening of the federal navigation channel and was completed in September 2020.

The USACE completed the “Northeast Florida Regional Sediment Management” report dated March 2016, which studied this subregion and the St. Johns River to enhance the USACE-RSM program. The study showed that additional investigation is needed to maximize the potential for beach quality sand for potential use on the adjacent beaches.

The Mayport Naval Station is planning to conduct dune restoration in 2023/2024 along the NS Mayport coast that were damaged by recent storms in 2021 and 2022. The project is planning to be completed in two one-half mile phases. The project will result in rebuilt dunes that are approximately 90 feet wide at the base and 10 feet high and will require approximately 65,000 cy of beach quality sand. Suitable beach quality sand is expected to be mined from an existing dredged material disposal site located on NS Mayport. It is planned that phase-one will construct dunes from the southern property line to the north for one-half mile. Phase-two will continue from the phase one stopping point and continue north to the northern installation property boundary. Dune revegetation will take place immediately following each phase of the dune restoration project.

Strategy: Continue to bypass suitable sediment from maintenance dredging to the downdrift beaches; adopt an inlet management plan of the St. Johns River Entrance - Fort George Inlet complex; continue to coordinate with the USACE's RSM work.

St. Johns River to the Duval - St. Johns County Line, Duval County, V501-R80

This is a 10.1-mile segment of critically eroded beach from the southern jetty of the St. Johns River entrance southward to the Duval – St. Johns County line. The project history for this segment of shoreline is described in Table 3. The federally authorized Duval County Shore Protection Project (South Jetty-R31-R80) was initiated in 1977 and completed in 1980, using sand from maintenance dredging of the river entrance and from an offshore borrow area. Nourishments occurred in 1985, 1986, 1987, 1991, and 1995. In 2003, nourishment began using sand dredged from the river entrance. This work stopped after placement of about 120,000 cy, when it was determined the material contained excessive amounts of shell and clay and it was therefore deemed unsuitable for placement on the beach. The project was reinitiated and completed in 2005 using material from an offshore borrow area. Work included repair of 8,500 feet of dunes located between R43 and R80. In the 2011 nourishment, 689,015 cy of material was placed along Duval County's Atlantic shoreline. The project design consists of a beach berm at elevation +8 ft NAVD to protect the existing dune and upland development. The project is authorized until 2028. The next nourishment was planned for the fall of 2016 to place approximately 682,000 cy of material along most of Atlantic Beach, all of Neptune Beach, and all of Jacksonville Beach. There were construction delays due to Hurricane Matthew, and additional post-storm work was completed in May 2017 with placement of approximately 222,088 cy. An additional 192,851 cy of material was used for dune restoration. Due to Hurricane Irma, the next beach nourishment construction event was constructed in the winter of 2018/2019. The USACE beach nourishment event placed approximately 777,847 cy for the beach berm and 90,156 cy for the dune from an offshore borrow area. The next nourishment construction event is scheduled for spring 2024 to place approximately 1.1 million cy out on the beach berm and an additional 200,000 cy to be placed in the dune. Barring additional storm repairs, this will be the final periodic nourishment done under the existing federal authorization, which is to 2028.

Table 3. Duval County Shore Protection Project history.

Date Completed	Volume (cy)	Source	Project Location (by R monument)	Length (mi)
September 1978	1,267,800	Offshore borrow area	R34.5-R52.7	3.3
October 1980	1,609,200	Offshore borrow area	R52.7-R80	5.0
October 1980	822,800	St. Johns River Entrance Channel	S. Jetty-R33	1.5
1985	1,284,400	St. Johns River Entrance Channel	R39-R53.7	2.8
1986	308,650	Offshore borrow area	R52.7-R67	2.4
1987	849,770	Offshore borrow area	R60 to R80	3.8
1991	300,000	Offshore borrow area	R44-R52.7	1.6
November 1995	1,187,279	Offshore borrow area	R47-R80	7.0
2003	120,000	St. Johns River Entrance Channel	R72-R80	1.5
August 2005	615,198	Offshore borrow area	R43-R53 and R57- R80	6.0
August 2011	689,015	Offshore borrow area	R43.5–R53 and R57- R80	5.9
December 2016	682,000	Offshore borrow area	R52-R80	5.3
May 2017	192,851*	Offshore borrow area	R45-R72.5	5.2
May 2017	222,088	Offshore borrow area	R45-R80	6.6
January 2019	777,847	Offshore borrow area	R33.5-R80	9.6
January 2019	90,156*	Offshore borrow area	R39-R53 and R72.5-R80	3.9

* Dune Only

Strategy: Maintain the project, including the dune feature through monitoring, nourishment and sand bypassing.

Regional Strategies for Beach and Inlet Management

Sponsors and Funding

This subregion contains the governmental entities of Nassau County; the [City of Fernandina Beach](#); Duval County; and the Cities of Jacksonville, Atlantic Beach, Neptune Beach, and Jacksonville Beach; the [Port of Jacksonville](#); and the Florida Inland Navigation District (FIND). There are two major military installations in this area, Kings Bay Naval Base (Georgia) and Mayport Naval Station, which share navigation facilities with civilian resources and are maintained by the USACE Jacksonville District (SAJ). There are significant public park lands in this area, including the north and south ends of Amelia Island, Big Talbot Island and Little Talbot Island, administered by the Department's [Division of Recreation and Parks](#), and Huguenot and Hanna Park administered by the City of Jacksonville.

Participants with the Department as sponsors of beach management projects include the City of Fernandina Beach, Duval County, the [City of Jacksonville](#), the Department's Division of Recreation and Parks, the [South Amelia Island Shoreline Stabilization Association](#) (SAISSA), the [FIND](#), and the [USACE](#). Project cost estimates and schedules may be found in [Beach Management Funding Assistance Program - Long Range Budget Plan](#).

Project Coordination

Regionalization is the funding and coordination of multiple erosion control projects 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. Opportunities in this subregion include:

1. The Department and the USACE have completed a regional sediment management demonstration project in the Sea Islands and St. Johns Beaches subregions. Tasks included designation of government liaisons to coordinate beach management activities, development of methods and techniques for exchange and dissemination of planning and project information, coordination of USACE input, review and comment on the Strategic Beach Management Plan and Long-Range Budget Plan, and monthly updates on USACE activities pertinent to statewide sediment management opportunities and issues. The USACE is currently pursuing ways to implement this project's recommendations.
2. The maintenance of the navigation project at the St. Johns River Entrance should be

coordinated with beach nourishment of the beach erosion control project for Duval County if material is determined to be beach compatible.

3. The maintenance of the Intracoastal Waterway at Sawpit Creek Cut should be coordinated with beach nourishment of the South Amelia Island project.

Environmental Protection

The protection of marine turtles, right whales, beach mice, shorebirds, and their habitats are primary environmental concerns within this subregion. Sensitive areas for shorebirds include Fort Clinch, south Amelia Island, Sawpit and the Talbot Islands, and Huguenot Park. Additionally, emergent shoals within the Nassau Sound are utilized by resident and migrating birds and must be maintained or restored. These areas are subject to change as conditions change, and coordination with [FWC shorebird staff](#) is encouraged during project development. The timing of construction activities has not been restricted during the marine turtle nesting season of May 1 through October 31, but activities must be monitored. Project design and method of construction may be restricted to avoid or minimize adverse impacts to the listed species and their habitat. Fort Clinch on Amelia Island is a significant historical resource where material from maintenance dredging has been placed and shore protection structures have been constructed. The [Nassau River - St. Johns River Marshes and Fort Clinch Aquatic Preserves](#) are located within the Sea Islands Subregion, and encompass critically eroded beaches. Projects located within and near the Aquatic Preserve boundaries require additional protection, including meeting more stringent anti-degradation water quality standards.

Sand Sources

Sufficient sand sources for beach nourishment over the next 15 years have been identified for all projects. A regional sediment management (RSM) strategy that uses beach quality sand from upland dredged material management areas and the maintenance dredging of navigation projects should be incorporated into the maintenance of the projects. The Department has outlined various RSM strategies in its inlet management plans and strategic beach management plans. The USACE, Jacksonville District (SAJ) RSM work effort through the South Atlantic Division's Center of Expertise (CX) aids the Department in updating these plans. The USACE-SAJ published an RSM technical report in FY 2015, by their Engineer and Research Development Center (ERDC), to better jointly manage navigation, coastal storm damage reduction, and ecosystem restoration projects. It is the goal of the Department to coordinate with the USACE-SAJ and implement strategies mutually beneficial to the USACE and the Department's missions by leveraging federal authorities, permits,

and funding. For additional information on sand sources, the Department manages a database named the [Regional Offshore Sand Source Inventory \(ROSSI\)](#).

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 plan
- Beaches, Economics and Tourism

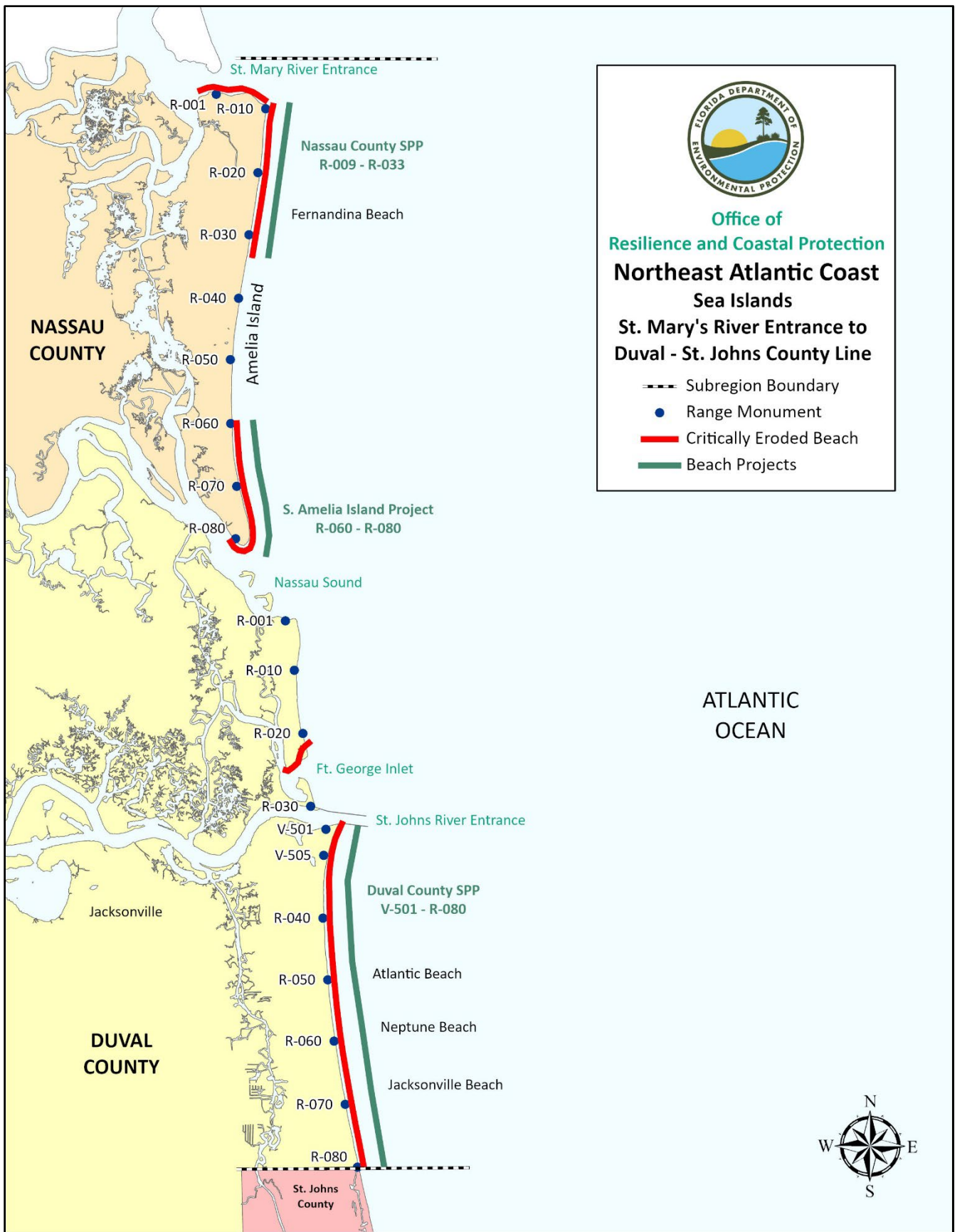


Figure 1. Map of the Sea Islands subregion of the North Atlantic Region of Florida. View an [interactive map](#) or [COASTS imagery](#).

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St. Johns Beaches

There are 43.7 miles of beaches in the St. Johns Beaches subregion, which extends from the Duval–St. Johns County line to just south of Marineland in Flagler County (R15), as shown on Figure 2. There are 16.9 miles of critically eroded beaches in this subregion (16.3 miles in St. Johns County and 0.6 mile in northern Flagler County), of which 3.8 miles have been restored and maintained.

Erosion is attributed to frequent winter northeasters, occasional tropical storms and hurricanes, and the effects of St. Augustine Inlet and Matanzas Inlet. The most erosive storms in recent years were a February 1973 northeaster, the Thanksgiving Day northeaster of 1984, Hurricane Floyd (1999), Hurricane Irene (1999), Tropical Storm Gabrielle (2001), Hurricanes Frances and Jeanne (2004), Hurricane Ophelia and Tropical Storm Tammy (2005), Subtropical Storm Andrea (2007), October northeaster (2007), Tropical Storm Noel (2007), Tropical Storm Fay (2008), Hurricane Matthew (2016), Hurricane Irma (2017), Hurricane Dorian (2019), Hurricane Ian (2022) and Hurricane Nicole (2022). Other events with severe impacts include the Ash Wednesday northeaster of March 1962 and Hurricane Dora (1964), which made landfall at St. Augustine.

Strategies for Inlets and Critically Eroded Beaches

Ponte Vedra Beach, St. Johns County, R26-R31

This is a 0.9-mile segment of critically eroded beach in the Ponte Vedra Beach area. This area was impacted by Hurricane Matthew (2016) and Hurricane Irma (2017), leaving residential development vulnerable to future high frequency storm erosion. The USACE has funds to conduct a Coastal Storm Risk Management feasibility study for the North Ponte Vedra area between R1 to R46. It has been determined through communications with riparian upland property owners that the study area has been reduced by the USACE to only include the coastal segment between R16 to R46. In addition, a local homeowners' group is considering design and permitting tasks for construction of a beach or dune restoration project. A feasibility study was conducted by a private firm for Ponte Vedra in 2020 and the critical erosion designation (R26-R31) determined by the Department is still listed within the Critically Eroded Beaches Report of 2022. A reexamination of the federal feasibility study is being conducted by the USACE (2021-2023) for Ponte Vedra, GTM Reserve and South Ponte Vedra. The USACE revealed the [tentatively selected plan](#) (TSP) for the study in April 2023. The TSP for North Ponte Vedra segment was Alternative 1 that found a coastal storm risk management project would not be economically justified. However, the TSP did find for South

Ponte Vedra that periodic beach nourishment along 5.1 miles of shoreline in the South Ponte Vedra segment between R-78 to R103.5 was justified. The Department issued a permit for beach restoration in 2021. Dune restoration work was completed in September 2022 for the Ponte Vedra Beach with FEMA funds. See additional updates on the [St. Johns County coastal projects](#) site.

Strategy: Complete federal feasibility study, design and construct permitted project; maintain dune restoration project; monitor.

South Ponte Vedra Beach and Vilano Beach, St. Johns County, R76–R117.5

This is an 8.2-mile segment of critically eroded beach located north of St. Augustine Inlet and within the area of inlet influence. A federal feasibility study was initiated in 2005 to evaluate erosion control alternatives, but funding availability delayed completion of the study for many years. Design alternatives were considered for dune restoration in 2008 at the local level, but the project was never constructed.

Hurricane Sandy (2012) and northeasters accelerated erosion in this area. An additional 0.7-mile segment of critical erosion was added to the critically eroded list for South Ponte Vedra in 2014. Another 2.2 miles were added to the critically eroded list between South Ponte Vedra and Vilano Beach in 2015. Hurricane Matthew caused severe damage and erosion throughout this segment in October 2016, resulting in another 1.6 miles of critical erosion being added to the north end of South Ponte Vedra in 2017.

Funding was secured in 2015 to continue the federal feasibility study. This area is eligible for receiving inlet dredge material in accordance with the updated St. Augustine Inlet Management Plan (2014). Dredged material from St. Augustine Inlet in the amount of 165,226 cy was placed in the designated nearshore disposal area of Vilano Beach in the summer of 2015. An additional amount of dredged material from the Intracoastal Waterway (123,344 cy) and St. Augustine Inlet (13,937 cy) was placed on Vilano Beach between R113 to R117, totaling 137,281 cy, and work was completed in April 2017. Additional major damage and erosion was caused by Hurricane Irma in September 2017.

In response to Hurricane Matthew (2016), the County is pursued a beach and dune restoration project between R76 and R103.5. Emergency funds for constructing the dune/ beach restoration project were secured. Design and permitting the dune/ beach restoration project had taken additional time due to securing a Bureau of Ocean Energy Management (BOEM) permit for use of an offshore borrow site in federal waters. The dune/beach restoration project placed approximately 778,206 cy of sand (20 cy per

ft. on average) and construction was completed in July 2022.

The [USACE](#) released the feasibility study and environmental assessment for the South Ponte Vedra Beach, Vilano Beach, and Summer Haven Reaches in February of 2016. The selected plan for this coastal storm risk feasibility study is located north of St. Augustine Inlet for three miles of shoreline between R102.5 and R117.5 at Vilano Beach and a small portion of southern South Ponte Vedra. A reexamination of the federal feasibility study is being conducted by the USACE (2021-2023) for Ponte Vedra, the GTM Reserve beach and South Ponte Vedra. The USACE revealed the [tentatively selected plan](#) (TSP) for the study in April 2023. The TSP and study determined that periodic beach nourishment was needed along 5.1 miles of shoreline in the South Ponte Vedra segment between R-78 to R103.5.

The initial beach and dune restoration for the **St. Johns County/ Vilano Beach Coastal Storm Risk Management Project** is located between R102.5-R117.5 and placed approximately 1,297,862 million cy of beach compatible sand from the St. Augustine inlet flood shoals with a 60-ft seaward berm extension and maintenance of the existing dune. In addition, there will be an additional placement of 866,000 cy of beach compatible sand in four periodic nourishment events at 12-year intervals. The initial restoration began in October 2020 and completed construction in January 2021. In addition to sand placement, dune plantings were completed in April 2021 with a total of 390,000 salt tolerant plants installed. Due to an erosive nor'easter in the fall of 2021 and Hurricane Nicole (2022), the next nourishment for the federal Vilano Beach project area is scheduled for summer 2023 with expected placement of approximately 1 million cy of offshore material (borrow site N3) on the beach and the USACE picking up 100% of the construction cost due to the storm induced erosion. See additional updates on [St. Johns County coastal projects](#) site.

Strategy: Maintain the projects through monitoring and nourishment; consider alternative sand sources for the project; conduct inlet sediment bypassing consistent with the updated St. Augustine Inlet Management Plan (2014); conduct federal feasibility study on the South Ponte Vedra segment.

St. Augustine Inlet, St. Johns County, R122-R123

St. Augustine Inlet was created by dredging a new inlet in 1940 north of the historic St. Augustine Inlet, located near the current location of Salt Run. The north jetty was constructed in 1941 and a south jetty was completed in 1957. The inlet is part of the federal St. Augustine Harbor Navigation Project. Maintenance dredging of the inlet channel follows the best natural alignment across the inlet

bar that exists at the time. Between 1940 and 1986, 1,373,000 cy of material were dredged from the inlet. Maintenance dredging occurred frequently during the 1970s, but the channel was only dredged in 1986 and 1996 due to reductions in the authorized channel depth and changes in shoaling patterns. Dredged material was typically disposed of offshore, until the 1996 dredging event placed 170,000 cy of sand on the beaches both north and south of the revetment at St. Augustine Beach. The St. Augustine Inlet Management Study Implementation Plan was approved for adoption in 1998. Periodic maintenance dredging of the Intracoastal Waterway near St. Augustine Inlet and the Salt Run navigation channel was initiated in 1999, with beach placement of dredged material at Anastasia State Park and St. Augustine Beach. The federally authorized St. Johns County Shore Protection Project (R137-R150) used sand from the St. Augustine Inlet ebb shoal as the sand source in 2003 and 2005. The project dredged sand from Vilano Point, the St. Augustine inlet channel, and the inlet ebb shoal to nourish the beach again in 2012. The [St. Augustine Inlet Management Implementation Plan](#) was updated in 2014. The USACE dredged the inlet navigation channel in 2018 and the south lobe of the ebb shoal to provide sand for the nourishment of the St. Johns County Shore Protection Project.

Strategy: Comply with the updated IMP (2014) strategies which are: (1) bypass sediment to the adjacent beaches to meet an average annual placement objective of 278,000 cy; (2) inlet sand transfer material shall be placed in designated critically eroded areas to the north or south of the inlet between R84 and R152, St. Johns County, in accordance with Implementation Strategy #1 (3) inlet dredge material may be obtained from the federal navigation channel, the intracoastal waterway channel, the south lobe of the ebb shoal and flood shoals adjacent to the federal channel, including the Porpoise Point borrow area, for placement in accordance with Implementation Strategies #1 and #2 (4) the south lobe of the ebb shoal and the federal navigation channel, including below the authorized project depth may be used as the primary sources of sand for the St. Johns County Shore Protection Project in an amount not to exceed 179,000 cubic yards per year times the number of years between beach nourishment events. However, additional material may be removed from the authorized navigation channel when necessary for required interim navigation channel maintenance dredging (5) engineering and geotechnical investigations shall be conducted of additional borrow areas to meet the inlet bypassing objective. These investigations shall identify the beach quality and quantity of material available, as well as any potential dredging impact on the inlet system or adjacent beaches; (6) feasibility investigations may be conducted of the north jetty to determine the beach management benefits and impacts of possible jetty modifications, including but not limited to sand tightening, lengthening, and raising elevations. The impact evaluation shall specifically identify

any physical impact to the inlet system or adjacent beaches including Anastasia State Park; (7) a comprehensive beach and inlet hydrographic monitoring program shall be implemented to evaluate performance and impact of existing projects and to update the inlet sediment budget. The monitoring program shall include topographic and bathymetric profile surveys at each of the Department's reference monuments between R80 and R157, and along the Porpoise Point spit. Monitoring shall also include bathymetric surveys of the inlet system, including the inlet flood shoal complex and the entire ebb shoal between not less than R116 and R132, as well as the navigation channels and the navigation easement adjacent to and including the shoreline of the Porpoise Point spit (8) the inlet sand bypassing objective in Implementation Strategy #1 may be updated following a review and analysis of additional monitoring data collected over at least a five (5) year period. The updated inlet sand bypassing objective shall not become effective less than two (2) years prior to a scheduled beach nourishment of the shore protection project to allow adequate time for project planning and design.

Anastasia State Park and St. Augustine Beach, St. Johns County, R123-R128 and R132–R152

This is a combined 4.8-mile segment of critically eroded beach located south of St. Augustine Inlet and within the area of influence of the inlet. This segment includes a one-mile portion at the northern end of Anastasia State Park (R123-R128) and then a 3.8-mile segment of Anastasia State Park and the City of St. Augustine Beach (R132-R152). In 1973, a spur groin was built at Anastasia State Park, and a coquina revetment was built along the south end of St. Augustine Beach. In 1988, an additional spur groin was built at the northern end of the historic seawall. Since 1996, maintenance dredging of the St. Augustine Inlet has placed sand on the beaches within this area.

Initially authorized in 1986, the federal St. Johns County Shore Protection Project (R137-R151) was reauthorized in 1999 to add mitigation of the effects of the navigation project as a new project purpose. The project history of nourishment for this segment of shoreline is described in Table 4. Initial restoration was completed in January 2003, with sand excavated from the St. Augustine Inlet ebb shoal. The project included the local option extension of the restoration project 4,600 feet north into Anastasia State Park to R132. Following Hurricanes Frances and Jeanne in 2004, both of which caused severe erosion in this area, the nourishment schedule was accelerated, and construction of a nourishment project was completed in September of 2005 using sand excavated from the St. Augustine Inlet ebb shoal. Construction occurred again in August 2012 for the St. Johns County Shore Protection Project, with sand excavated from Vilano Point, the St. Augustine inlet channel,

and the inlet ebb shoal. The project design consists of a beach berm at elevation +9 ft NAVD to protect the existing dune and upland development. The project is authorized until 2051.

Nourishment was completed again in June 2018 and placed approximately 747,185 cy of sand along St. Augustine Beach between R139.7 and R144.4. The next nourishment is scheduled for summer 2023 with an approximate volume of 2 million cy of offshore material (borrow site S1) placement on the beach with the USACE picking up 100% of the construction cost due to the nor’easter in the fall of 2021 and Hurricane Nicole in 2022. See additional updates on [St. Johns County coastal projects](#) site.

Table 4. St. Johns County Shore Protection Project history.

Date Completed	Volume (cy)	Sand Source	Project Location (by R monument)	Length (mi.)
January 2003	4,200,000	Inlet channel and ebb shoal	R132 to R151	3.7
September 2005	2,800,000	Inlet channel and ebb shoal	R137 to R151	2.7
August 2012	2,199,340	Vilano Point, inlet channel, and ebb shoal	R139 to R147	1.5
June 2018	747,185	Inlet channel and ebb shoal	R139.7 to R144.4	0.9
June 2023	2,000,000*	Offshore	R139 to R147	1.5

*Approximate date, volume and length.

Strategy: Maintain the project through monitoring and nourishment; consider alternative sand sources for the project; continue to coordinate with the USACE in developing and implementing the RSM study.

Matanzas Inlet, St. John’s County, R196-R197

Matanzas Inlet is a natural inlet that is strongly affected by a bridge abutment and revetment on the south shoreline, the dredging of the Intracoastal Waterway, and stabilization of Rattlesnake Island. The Intracoastal Waterway, separated from the inlet by Rattlesnake Island, is dredged about every three years, and the sand is placed at Summer Haven, south of the inlet. Inlet is affecting Summer Haven that includes the breaches that are occurring.

Strategy: Conduct a feasibility study to investigate alternatives to mitigate inlet impacts; develop a sediment budget and adopt an inlet management plan to address the adjacent eroding beaches.

Summer Haven, St. Johns County, R197-R209

This is a 2.4-mile segment of critically eroded beach in unincorporated Summer Haven and is within the area of influence of Matanzas Inlet. Sand from the Intracoastal Waterway dredging is placed by FIND on the Summer Haven beaches when available. Dredging has resulted in beach placement of dredge material during the following events, and the project history for this segment of shoreline is described in Table 5. The 1992 event placed 191,502 cy; 1999 event placed 765,000 cy; 2004 event placed 214,475 cy; and 2007 event placed 187,862 cy. In 2002 and 2003, sand was truck-hauled from upland sites to construct small emergency protective berms and partially restore sand lost during Tropical Storm Gabrielle and Hurricane Floyd, using funds from FEMA. A federal reconnaissance study has been completed, and a federal feasibility study was initiated in 2005 for Summer Haven.

Barrier island overwash has historically been a problem in Summer Haven, but in 2008 Tropical Storm Fay produced an overwash and a breach at R200. From 2009 to 2010, the breach allowed the Matanzas River to be filled with beach sand in the vicinity of Summer Haven, inhibiting the flow of the river from just east of the A1A bridge to approximately R203. The St. Augustine Port, Waterway, and Beach District was issued a permit by the Department in February 2014 to excavate sand from the Matanzas River, Summer Haven had 1,280 cy of material from the Intracoastal Waterway placed on the beach in 2015. The [USACE](#) released the draft feasibility study and environmental assessment for the South Ponte Vedra Beach, Vilano Beach and Summer Haven Reaches in February of 2016. The selected plan did not include any of the Summer Haven Reaches for several reasons: a non-federal sponsor was not identified; limited public access; previous relocation of State Road A1A; minimal number of structures in southern portion; limited road access and damage susceptibility; county purchases of properties when able; the cost-benefit-ratio would not justify a 50- year federal project; and limited alternatives due to the Coastal Barrier Resources Act (CBRA) unit in three-quarters of the reach. Due to Hurricane Matthew (2016), another breach occurred near R204.5. The county filled the breach by dredging the river adjacent to the breach (this was outside of the originally authorized river restoration project's dredge area). In addition, both Hurricane Irma (2017) and Dorian (2019) caused tidal over-topping between R203.5 and R204.5. The USACE completed dredging of the Intracoastal Waterway in April 2017, with 432,487 cy of material placed in Summer Haven between R204 and R207.5. The River Restoration Project commenced in November 2016 and

was mostly completed by November 2017, but additional time was needed to fully complete the project in July 2019. Approximately 390,000 cy of material was placed onto the beach between R200 and R203.5 from the river. The river restoration project was a separate project funded through a special appropriation and is not part of the selected plan of the federal feasibility study. The USACE placed 394,028 cy of maintenance dredged material from the Intracoastal Waterway between R200 and R208 at Summer Haven in December 2019. The county conducted further dune and berm restoration between R203 and R205 due to overwash and a breach at the R204.5 area in 2020/2021. Additional erosion has occurred in this area due to Hurricanes Ian and Nicole (2022), with two reoccurring breaches caused by H. Nicole at R200 and R204.9.

Table 5. Summer Haven beach and dune placement history.

Date Completed	Volume (cy)	Sand Source	Project Location (by R monument)	Length (mi.)
1992	191,502	Intracoastal Waterway	R200-R208	1.8
1999	765,000	Intracoastal Waterway	R200-R208	1.8
2004	214,475	Intracoastal Waterway	R200-R208	1.8
2007	187,862	Intracoastal Waterway	R200-R208	1.8
2015	1,280	Intracoastal Waterway	R204-R208	0.8
April 2017	432,487	Intracoastal Waterway	R204-R207.5	0.7
September 2017	275,000	River	R200-R204	0.8
February 2018	67,000	River	R200-R202	0.4
April 2019	47,000	River	R200-R202	0.4
December 2019	394,028	Intracoastal Waterway	R200-R208	1.8

Strategy: Monitor.

Marineland, Flagler County, R1-R4

This is a 0.6-mile segment of critically eroded beach (R1-R4) and is threatening development and recreational interests at Marineland. Marineland is within the area of influence of Matanzas Inlet.

This area has rock revetment and coquina rock groins. Following storm damage by Hurricane Floyd in 1999, the revetment was restored, and new revetment was constructed to the south at a more landward alignment with dune restoration. The Flagler County Hurricane and Storm Damage Reduction Project Draft Integrated Feasibility Study and Environmental Assessment (USACE-SAJ, 2014) did not recommend a project for this area.

Strategy: Maintain dune and monitor.

Regional Strategies for Beach and Inlet Management

Sponsors and Funding

This subregion contains the governmental entities of [St. Johns County](#); [Flagler County](#); the [St. Augustine Port, Waterway and Beach District](#); the City of St. Augustine Beach; the Towns of Marineland and Flagler Beach; the [Florida Inland Navigation District](#); and the [USACE](#). All but St. Augustine Beach and the Town of Marineland are sponsors of beach management projects. There are significant public park lands in this area, including the Guana River Marsh Aquatic Preserve, the Guana-Tolomato-Matanzas National Estuarine Research Reserve, Anastasia State Park, Fort Matanzas National Monument, and Washington Oaks Gardens State Park. Project cost estimates and schedules may be found in the Department's [Beach Management Funding Assistance Program - Long Range Budget Plan](#).

Project Coordination

Regionalization is the funding and coordination of multiple erosion control projects 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. Opportunities in this subregion include:

1. The Department and the USACE have completed an RSM demonstration project in the Sea Islands and St. Johns Beaches subregions. Tasks included designation of government liaisons to coordinate beach management activities, development of methods and techniques for exchange and dissemination of planning and project information, coordination of USACE input, review and comment on the Strategic Beach Management Plan and Long-Range Budget Plan, and monthly updates on USACE activities pertinent to statewide sediment management opportunities and issues. The USACE is currently pursuing ways to implement the RSM initiatives.

2. The maintenance of the navigation project at St. Augustine Harbor should be coordinated with nourishment of Anastasia State Park shoreline and South Ponte Vedra/Vilano Beach shorelines.
3. The maintenance dredging material from the Intracoastal Waterway near St. Augustine Inlet and Matanzas Inlet should be coordinated with FIND and utilized for nourishment at Anastasia State Park and Summer Haven, respectively.

Environmental Protection

The protection of marine turtles, right whales, beach mice, shorebirds, and their habitats are the primary environmental concerns within this subregion. Sensitive areas for shorebirds include St. Augustine Inlet (Bird Island, north end of Anastasia State Park, and Porpoise Point when habitat is present), Anastasia State Park, Fort Matanzas National Monument, and Summer Haven beaches. Sensitive areas for beach mice include Anastasia State Park, Ocean Hammock Park, Butler County Park, Crescent Beach Park, and Fort Matanzas National Monument. Within those sensitive areas, natural communities identified as primary and secondary dunes as well as scrub dunes, back dunes, coastal scrub and or coastal strand all provide essential habitat for beach mouse populations. Additionally, primary dunes and secondary dunes that occur on private lands are important for resilience of those developed lands and sustaining wildlife populations and should be maintained or restored. These areas can be subject to change as conditions change, and coordination with the FWC Regional Species Conservation Biologist for the FWC region for the project is encouraged during project development. Construction activities during the marine turtle nesting season of May 1 through October 31 were not approved in the permit for sand transfer from the Matanzas/SJ-1 Dredged Material Management Site to the beach at Summer Haven but were approved for the St. Johns County Shore Protection Project. Project design and method of construction may be restricted to avoid or minimize adverse impacts to the listed species and their habitat. The beaches located within the boundaries of the [Guana River Marsh Aquatic Preserve](#) and the [Guana Tolomato Matanzas National Estuarine Research Reserve](#) have not been declared critically eroded. Projects located within and near the Aquatic Preserve boundaries require additional protection, including meeting more stringent water quality standards than outside the Aquatic Preserve's water boundaries.

Sand Sources

Sand sources in the vicinity of St. Augustine Inlet and St. Augustine Beach have been investigated. The volume of available sand in the inlet ebb tidal shoal has been reevaluated by the Department and

USACE for the needs of the St. Johns County shore protection project during the next 15 years. Additionally, the USACE has identified a possible sand source north of St. Augustine Inlet to be used as an alternative borrow source for the St. Johns Shore Protection Project. For the next 15 years, sand could be used from the Vilano Point inlet channel, eastern inlet channel, ebb shoal and the new alternative shoal complex A6/A7. Sand sources for Vilano Beach and South Ponte Vedra have been identified in Vilano Point inlet channel, the St. Augustine inlet channel, IWW Shoal, North Flood Shoal, and South Flood Shoal. Strategy 5 implementation that is listed in the [St. Augustine Inlet Management Plan](#) makes reference to a relic shoal south of the inlet that has been investigated by the USACE. Initial results of this investigation determined this shoal is not a viable sand source option. Additionally, the USACE has identified another sand source (borrow site S-1) further offshore of St. Augustine Beach that has been determined to be a viable sand source for the project at St. Augustine Beach. St. Johns County is permitting a borrow source (N-3) through BOEM that is seven miles offshore of northern St. Johns County coastline. Adequate sand sources for the next 15 years have not been adequately identified for Summer Haven. The Department has outlined various regional sediment management (RSM) strategies in its Inlet Management Plans and Strategic Beach Management Plans. The USACE-SAJ RSM work aids the Department in updating these plans. It is the goal of the Department to coordinate with the USACE-SAJ and implement strategies mutually beneficial to USACE's and the Department's missions by leveraging federal authorities, permits, and funding. For additional information on sand sources, the Department manages the [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

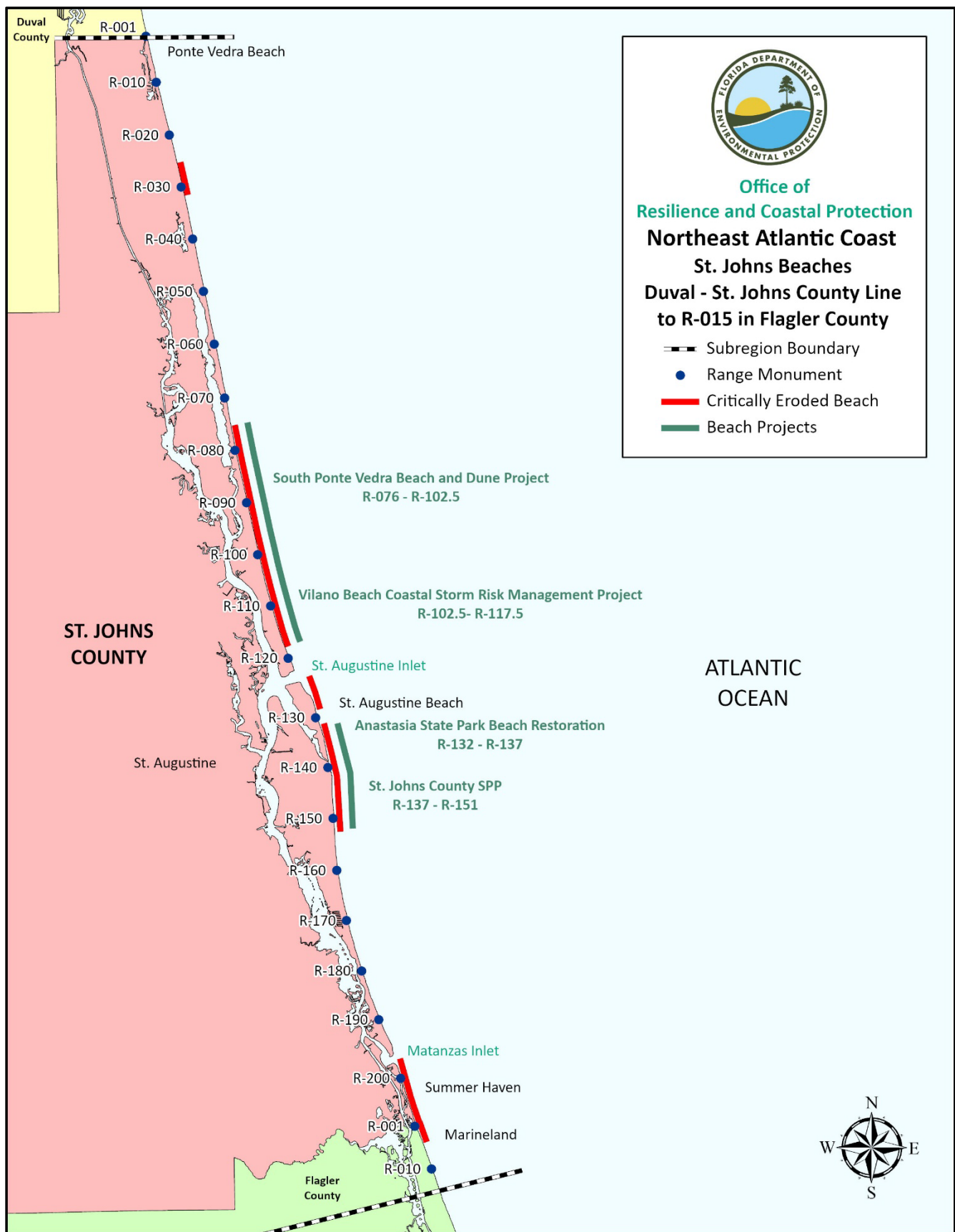


Figure 2. Map of St. Johns Beaches subregion of the North Atlantic Region of Florida. View an [interactive map](#) or [COASTS imagery](#).

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Flagler-Volusia Beaches

There are 64.3 miles of beaches in the Flagler-Volusia Beaches subregion, which extends from just south of Marineland in Flagler County (R15) to the Volusia–Brevard County line, as shown on Figure 3. In this subregion, there are a total of 27.5 miles of critically eroded beaches (6.8 miles in Flagler County and 21.0 miles in Volusia County), none of which have been restored. Erosion is attributed to winter northeasters, occasional tropical storms and hurricanes, and the effects of Ponce de Leon Inlet. The most erosive storms in recent years were Hurricane Dora (1964), the November and December northeasters of 1981, the Thanksgiving Day Storm of 1984, Hurricanes Floyd and Irene (1999), Tropical Storm Gabrielle (2001), Hurricanes Charley, Frances, and Jeanne (2004), Hurricanes Ophelia and Wilma (2005), Subtropical Storm Andrea (2007), October northeasters (2007), Tropical Storm Noel (2007), Hurricane Matthew (2016), Hurricane Irma (2017), Hurricane Dorian (2018), Hurricane Ian (2022) and Hurricane Nicole (2022). Phase I dune restoration activities were conducted by Flagler County following the 2016/2017 hurricane seasons between R12 and R35 with placement of approximately 116,500 cy of material. The dune work was completed in early 2018. In Phase I and Phase II a total of 403,287 cy of material was placed along 11.4 miles of dune in Flagler County from R2 to R65 starting in November 2017 and completion in March 2019. The material was from an upland sand source. Dune restoration activities began again in January 2023 in northern Flagler County along 1.6 miles of coastline between MalaCompra County Park northward to Washington Oaks State Park with the goal of FEMA picking up 75% of the cost and the department and FDEM picking up the remaining 25% of the costs for the dune restoration project. This North Flagler County Dune Restoration Project is in response to the erosion losses caused by a nor' easter in 2021, Hurricane Ian (2022) and Hurricane Nicole (2022) and will be placing approximately 47,500 cy of upland sand at 6 cy per-foot in early 2023 between Washington Oaks State Park (R15.9) to Hammock Beach (R24.3). Beach restoration is expected in the southern portion (R65 to R100) of Flagler County in 2024/2025 using an offshore sand source. In Volusia County, dune reconstruction activities were conducted following the 2004 hurricane season. Projects in critically eroded areas included sand fence installation at North Peninsula State Park (R1-R6, Volusia County). This area was removed from the critically eroded beaches list in 2012 after recovery of the beaches due to FEMA berm construction activities that included vegetative plantings between R40-R145 and R161-R208, in Volusia County. The Florida Department of Transportation (FDOT) has done extensive dune repairs following Hurricane Matthew (2016), using an upland sand source that has restored damaged dunes north of R65 in Volusia County.

Strategies for Inlets and Critically Eroded Beaches

Area Wide Studies

A [federal feasibility study](#) for Flagler County was finalized in September 2014 by the USACE. The federal feasibility study for Flagler County has four reaches listed (Reach A through Reach D). Only Reach A (R50-R60) and Reach C (R80-R94) met the cost-benefit ratio for pursuing a federal project. However, Reach A in Flagler County was not classified as critically eroded by the state at the time of the study and the USACE only pursued a federal project in Reach C located at Flagler Beach and didn't pursue a federal project at Reach A. Reach C continues to be classified as critically eroded by the state. Another federal feasibility study was authorized by the USACE for Volusia County in 2006; however, the Volusia County feasibility study was put on hold due to local funding concerns. Volusia County communicated to the USACE in 2021 a renewed interest in pursuing a federal feasibility study on coastal erosion for the entire county shoreline. The study is considered a new start project and may take some time to be authorized by the USACE. The County developed a Beach and Dune Management Study in July 2022.

Painters Hill, Flagler County, R50-R57

This is a 1.1-mile segment of critically eroded beach in the Painters Hill area. This area was severely impacted by Hurricane Matthew (2016) and Hurricane Irma (2017), leaving residential development vulnerable to future high frequency storm erosion.

The Flagler County Hurricane and Storm Damage Reduction Project Final Integrated Feasibility Study and Environmental Assessment (USACE-SAJ, 2014), which was conducted before Hurricane Matthew (2016), did not recommend a project for this area. The study recommended monitoring and post-storm dune restoration activity. Post-storm dune restoration occurred in summer of 2018 for this area. Additional responses due to Hurricane Matthew-induced erosion included County construction of two seawalls made of vinyl sheet pile with a concrete cap. The contiguous seawalls were constructed between R55 and R57, with the first seawall being 434 ft long and the second seawall 805 ft long.

Strategy: Maintain dune restoration and monitor.

Northern Flagler Beach, Flagler Beach and Southern Flagler Beach, Flagler County, R65.2-R100/south county line

This is a 6.4-mile segment of critically eroded beach at Flagler Beach. This area was severely impacted by Tropical Storm Gabrielle (2001), Hurricane Jeanne (2004), and Hurricane Matthew (2016). The Flagler County Hurricane and Storm Damage Reduction Project Final Integrated Feasibility Study and Environmental Assessment (USACE-SAJ, 2014) recommend a project for the area of R80 to R94.

In 2019 FDOT constructed a Low-Impact Secant-Pile Seawall seaward of A1A between R65 (Osprey Dr.) and R70.1 (N. 18th St.) that is 4,902 feet in length. The County is pursuing a local plan for a beach and dune restoration project north of the pier (R65.2 to R79) and has obtained the necessary permits at the state and federal level.

Most of the mid-section of Flagler Beach (R76 to R94.8) area has been armored with a rock revetment constructed by FDOT following the named storms above. In 2006, FDOT constructed a segment of vertical seawall in this area. The [Flagler County Hurricane and Storm Damage Reduction Project Final Integrated Feasibility Study and Environmental Assessment \(USACE-SAJ, 2014\)](#) has been approved by the Civil Works Review Board and authorization by the U.S. Congress occurred in December of 2016 through the Water Resources Development Act. The selected plan from the federal feasibility study for Flagler County at Flagler Beach resulted in a construction concept of a variable seaward extension of the existing dune and beach profile between R80 to R94 (2.6 miles), known as Reach C, using an offshore borrow site. The County is also planning to move forward with a local plan for a beach/dune project north of the pier (R65.2 to R76) by pursuing construction activities. This area was severely impacted by Hurricane Matthew (2016), which damaged approximately 3,350 ft of State Road A1A and approximately 7,920 of rock revetment. Construction is scheduled for summer of 2024 for the federal project and the county project north of the pier and south of the federal project area (R94) will be pursued in 2024/2025. The federal project is expected to place approximately 1.3 million cy of offshore sandy material on the beach south of the pier and north of Gamble Rodgers State Park.

Strategy: Construct and maintain the selected federal beach restoration project plan and the local county beach restoration project plan; monitor.

Northern Volusia and Ormond-By-The-Sea, Volusia County, R24-R33

This is a 1.6-mile segment of critically eroded beach in northern Volusia County and in Ormond-By-The-Sea. This area was impacted by Hurricane Matthew (2016) with dune erosion that threatened State Road A1A. Volusia County communicated to the USACE in 2021 a renewed interest in pursuing a federal feasibility study on coastal erosion for the entire county shoreline. The study is considered a new start project and may take some time to be authorized by the USACE. Given the impacts of Hurricanes Ian and Nicole in 2022, the county may pursue a locally funded feasibility study to accelerate the study process.

Strategy: Conduct feasibility study; perform dune restoration and monitor.

Ormond Beach to Wilbur-by-the-Sea, Volusia County, R57–R118

This is an 11-mile segment of critically eroded beach in Ormond Beach, Daytona Beach, Daytona Beach Shores, and Wilbur-by-the-Sea. Beach erosion has been progressing with each major storm, followed by partial recovery. Hurricane Frances (2004) caused minor beach and dune erosion; however, Hurricane Jeanne followed in 2004 with major beach and dune erosion, leaving much of this area with little recreational beach. The USACE initiated a federal feasibility study in 2006, but the local sponsor chose at the time not to pursue the study further due to local funding concerns. Volusia County communicated to the USACE in 2021 a renewed interest in pursuing a federal feasibility study on coastal erosion for the entire county shoreline. The study is considered a new start project and may take some time to be authorized by the USACE. Given the impacts of Hurricanes Ian and Nicole in 2022, the county may pursue a locally funded feasibility study to accelerate the study process.

Strategy: Conduct feasibility study; design a beach restoration project; perform dune restoration seaward of vegetated shoreline and monitor.

Ponce de Leon Inlet, Volusia County, R148-R149

Ponce de Leon Inlet is a natural tidal inlet near the center of Volusia County that includes the federally authorized Ponce de Leon Inlet navigation channel and two granite boulder jetties. The north shore (0.6 mile) of the inlet is critically eroded and threatens the Lighthouse Point County Park. Maintenance dredging of the entrance channel has occurred annually since 2008, with the sediment

bypassing occurring on the north or south sides of the inlet in the nearshore. Sediment bypassing placed material on the beach in 2005 and 2009. Maintenance dredging or bypassing did not occur in 2011. Modification of the north jetty has stabilized the shoreline north of the inlet, and future maintenance dredging events are anticipated to place material on the downdrift shoreline south of the inlet. The south jetty has been authorized for a 1000-ft extension and alignment change, with construction pending receipt of federal funding. Neither federal nor local funding has materialized for many years for the 1000-ft. extension of the south jetty.

The Department adopted the Ponce de Leon Inlet Management Study Implementation Plan in March 1997, which defines corrective measures to mitigate the adverse impacts of Ponce de Leon Inlet, including establishing an average annual bypassing objective of 43,000 cy. The 1997 IMP strategies do not balance the sediment budget for the inlet, nor do they accurately mitigate erosion of beaches adjacent to the inlet. Therefore, they are not consistent with 2008 amendments to Section 161.142, Florida Statutes. An updated inlet sediment budget and final report was submitted to the Department in October 2019. The Department developed and adopted an updated [IMP](#) in September 2020. The north jetty at Ponce Inlet experienced critical damage due to Hurricane Nicole (2022). Both FIND and the USACE will coordinate to maintenance dredge the IWW channel and place the material north of the inlet in 2023/2024 to assist with hurricane recovery efforts.

Strategy: Comply with the updated IMP (2020) strategies which are: (1) conduct a comprehensive beach and inlet hydrographic monitoring program; (2) sand bypass shall be performed from Ponce de Leon Inlet federal navigation project channel to the adjacent beaches or active nearshore to the north and south of the inlet between R125 and R170; (3) on an average annual basis, the initial target inlet sand bypassing quantity shall be 40,000 cy per year to the north and 20,000 cy to the south; (4) acceptable beach quality sand may also be obtained from IWW maintenance dredging or the DMMA area; (5) the north jetty structure that was damaged from Hurricanes Matthew, Irma and Dorian, shall be repaired; (6) the Congressionally authorized federal navigation project south jetty extension may be constructed as previously permitted, pending reauthorization.

New Smyrna Beach and Bethune Beach, Volusia County, R160.8 – R207.8

This is an 8.4-mile segment of critically eroded beach south of Ponce de Leon Inlet along New Smyrna Beach and Bethune Beach. The northern portion of this segment to R165 is located within the area of influence of Ponce de Leon Inlet. Much of New Smyrna Beach has vertical seawalls and bulkheads, and much of Bethune Beach has rock revetments. Beach erosion has been progressing

with each major storm, followed by partial recovery. Hurricanes Frances and Jeanne (2004) damaged 5,145 ft. of seawalls and inflicted severe beach and dune erosion, leaving much of this area with little recreational beach. Hurricane Wilma (2005) caused additional cumulative erosion and wall damage. Following the impacts of Hurricanes Frances, Jeanne, and Wilma, the New Smyrna Beach Emergency Beach and Dune Restoration Project was constructed between January and September 2006. Approximately 745,000 cy of fill material from the FIND dredged material management area MSA 434 (an upland spoil island inside Ponce de Leon Inlet) was placed between R161 and R187. An additional 22,000 cy of material was truck-hauled from another FIND site (Cut V-26 in Edgewater) to fill the template from R187 to R189. Two years later, between February and October 2008, FIND and the USACE dredged the Intracoastal Waterway near Ponce de Leon Inlet between Cuts V-22 and V-35, and placed approximately 432,000 cy of sand between R161 and R174. This additional dredge material has resulted in approximately 1.2 million cy of nourishment for the project area. Volusia County communicated to the USACE in 2021 an interest in pursuing a federal feasibility study on coastal erosion for the entire county shoreline. The study is considered a new start project and may take some time to be authorized by the USACE. Given the impacts of Hurricanes Ian and Nicole in 2022, the county may pursue a locally funded feasibility study to accelerate the study process to pursue a beach restoration project. Volusia County did place approximately 10,000 cy of sifted sand back onto the beach from overwash material from Hurricanes Ian and Nicole in early 2023 between R201 (Grouper Ave.) to R206.3 (Starfish Ave.).

Strategy: Conduct feasibility study, design a beach restoration project, perform dune restoration seaward of vegetated shoreline and monitor.

Regional Strategies for Beach and Inlet Management

Sponsors and Funding

This subregion contains the governmental entities of [Flagler County](#), Volusia County, Flagler Beach, Ormond Beach, Daytona Beach, Daytona Beach Shores, Ponce Inlet, New Smyrna Beach, the FIND, and the USACE. Participants with the Department as sponsors of beach management projects include the Volusia County, the [Florida Inland Navigation District](#) and the [USACE](#). 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 erosion control projects 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. Opportunities in this subregion include:

1. Development of beach erosion control projects within this subregion was initiated in 2005 through feasibility studies of beach restoration. This provides an opportunity to implement projects on a regional basis, including sand source investigations, design, and awarding construction contracts to a single contractor to reduce mobilization costs and reap economies of scale.
2. The future maintenance dredging of Ponce de Leon Inlet and the Atlantic Intracoastal Waterway may be coordinated with maintenance of a planned restoration project in New Smyrna to Bethune Beach.

Environmental Protection

The protection of marine turtles, right whales, beach mice, shorebirds, gopher tortoises and their habitats, as well as nearshore hardbottom, are primary environmental concerns within this subregion. Sensitive areas for shorebirds include Ponce Inlet (Lighthouse Point Park, Smyrna Dunes Park, Disappearing Island) Daytona Beach Shores and Bethune Beach. Sensitive areas for beach mice include Smyrna Dunes Park (SDP) and the North Beach neighborhood Park at Sapphire Road. Within SPD, natural communities identified as primary and secondary dunes as well as scrub dunes, back dunes, coastal scrub and or coastal strand all provide essential habitat for beach mouse populations and host shorebird nesting. Additionally, primary dunes and secondary dunes that occur on private lands are important for resilience of those developed lands and sustaining wildlife populations and should be maintained or restored. These areas can be subject to change as conditions change, and coordination with the FWC Regional Species Conservation Biologist for the FWC region where the project is occurring is encouraged during project development. This is the northernmost subregion where hardbottom habitat may occur. Construction activities during the marine turtle nesting season of May 1 through October 31 were authorized in 2023 in the department's permit for placement of dredged material from maintenance of Ponce de Leon Inlet on the downdrift beach. Future project design and method of construction may be restricted to avoid or minimize adverse impacts to marine turtles and other protected species and their habitat.

Sand Sources

Initial design of the South Peninsula Beach and Dune Restoration Project identified sufficient sand sources for the restoration project. The USACE conducted a sand search in conjunction with the federal feasibility study that has identified borrow area 3A as a sufficient sand source for beach nourishment activities at Flagler Beach for the next 50 years. A regional sediment management strategy that uses beach quality sand from upland dredged material management areas and the maintenance dredging of the navigation projects should be incorporated into the maintenance of any future beach restoration projects. The Florida Department of Transportation has done extensive dune repairs following Hurricane Matthew (2016) using an upland sand source that have restored damaged dunes north of R65 in Volusia County. For additional information on sand sources, the Department manages the [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 plan
- Beaches, Economics and Tourism

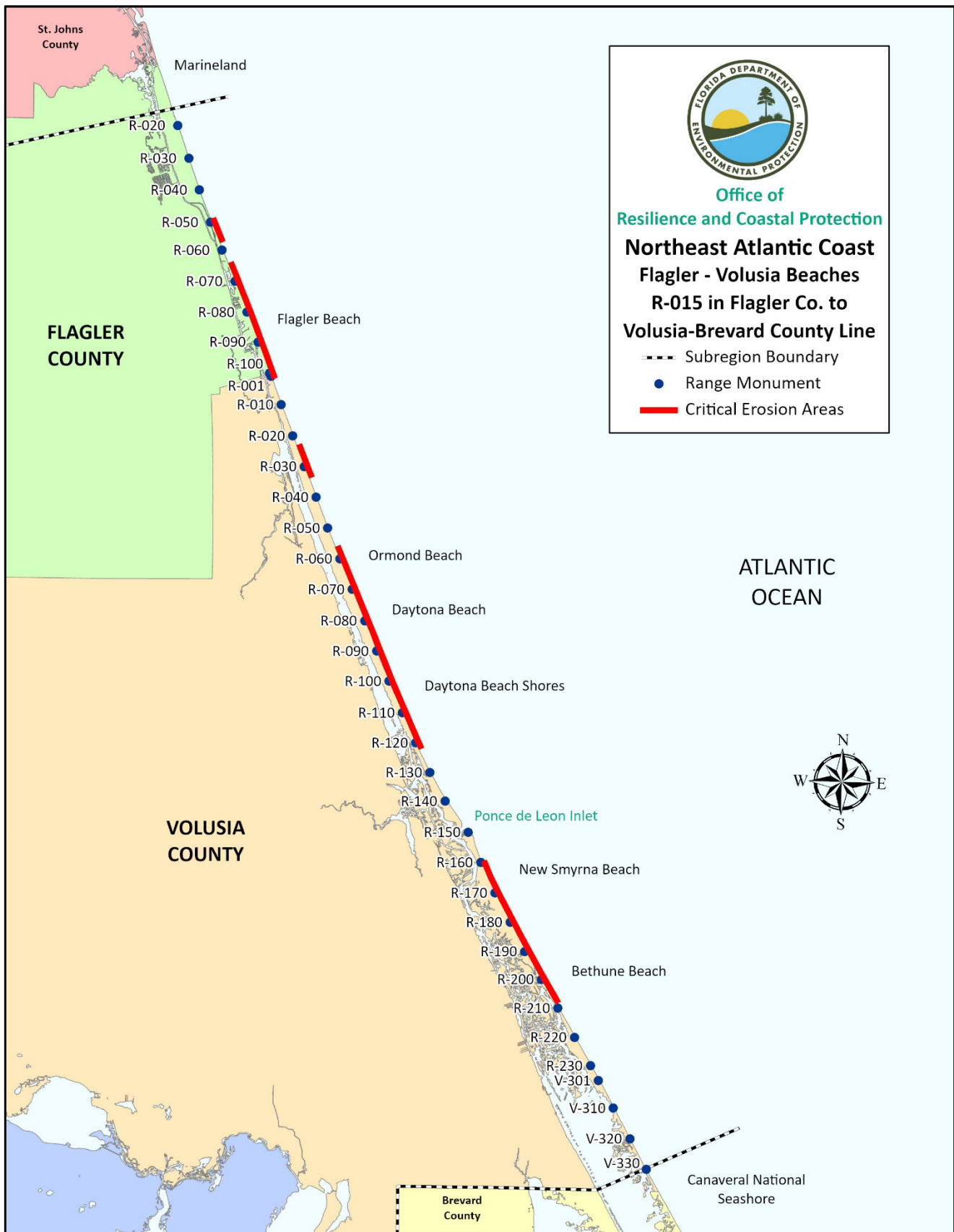


Figure 3. Map of Flagler/Volusia subregion of the North Atlantic Region of Florida. View an [interactive map](#) or [COASTS imagery](#).

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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