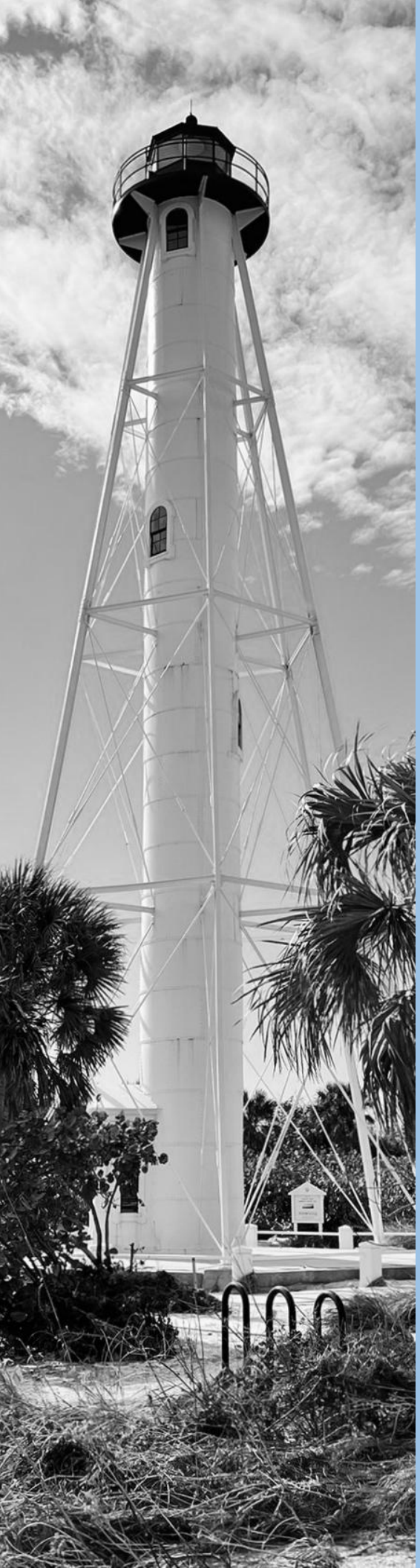

# GASPARILLA ISLAND STATE PARK

Park Chapter

CHARLOTTE HARBOR REGION

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Gasparilla Island State Park

Park Chapter

**Planning Region:** Charlotte Harbor

**County:** Lee

**Lease/Management Agreement Number:** 3338

**Overview:** Part of a chain of Gulf Coast barrier Islands, Gasparilla Island State Park preserves historic elements of Port Boca Grande including the port's original lighthouse and the Amory Chapel. The park is well known for its beaches, clear Gulf waters, and excellent fishing.

**Total Acreage:** 126.54

| Natural Communities | Acres |
|---|---|
| Beach Dune | 8.06 |
| Coastal Strand | 22.94 |
| Estuarine Unconsolidated Substrate | 8.54 |
| Maritime Hammock | 47.04 |
| Mangrove Swamp | 21.35 |
| Marine Unconsolidated Substrate | 4.25 |

| Altered Land Cover | Acres |
|---|---|
| Developed | 13.59 |

**Acquisition:** Gasparilla Island State Park was initially acquired on May 19, 1983, by donation from the Gasparilla Island Conservation and Improvement Association, Inc. Subsequent to this initial donation, several other parcels were acquired through donation.

## Resource Management Component

### Hydrology

- Assess the park's hydrological restoration needs.
- Continue to assist federal, state and local agencies with active monitoring of erosion and accretion cycles and assessment of beach and shoreline conditions following natural disasters.
- Continue to partner with federal, state and local agencies to fund, design, permit, improve and maintain coastal and beach management programs consistent with the DRP mission.
- Continue stakeholder engagement with federal, state and local agencies and researchers in planning and implementation of coastal projects that impact the parks.

### Natural Communities

- Conduct habitat/natural community restoration activities on five acres of coastal beach dune.

**Imperiled Species**

- Update baseline imperiled species occurrence inventory lists for plants and animals.
- Continue to implement existing monitoring protocols for marine turtle species and piping plover, red knot, Wilson's plover, snowy plover, least tern, black skimmer, and American oystercatcher.
- Monitor impacts on shorebird and sea turtle nesting by terrestrial nuisance species in the park.
- Provide visitor interpretation and outreach for shorebirds, seabirds, and wading birds.
- Update survey protocols for two selected imperiled plant species, including joewood and prickly-apple cactus.

**Invasive and Nuisance Species**

- Update long-term invasive plant management plan.
- Monitor and maintain 27 gross acres of habitat already in maintenance.
- Reduce or maintain cover class on 99 acres not in maintenance.
- Implement control measures on four nuisance species.

**Cultural Resources**

- Compile reliable documentation for all recorded historic and archaeological resources.
- Monitor and assess all recorded cultural resources.
- Maintain the historic Port Boca Grande Lighthouse and Assistant Keeper's House in good condition.

## Land Use Component

**Conceptual Land Use**

***Sandspur Use Area***

- Resurface/stabilize parking area and improve delineation of parking spaces.
- Restore beach dune natural community.

***Seagrape Use Area***

- Repair beach access boardwalk.
- Construct permanent restroom.

***Seawall Area***

- Design an effective configuration for a replacement seawall.
- Construct seawall according to design.

***Dunes and Port Boca Grande Lighthouse Use Areas***

- Structurally stabilize and preserve the Amory Chapel.
- Remove non-historic elements of the site.
- Install historical interpretive elements.
- Realign ingress/egress road.
- Pave road and parking spaces.
- Capture stormwater onsite.
- Delineate parking spaces and maximize organization/capacity.
- Reestablish vegetative buffers.
- Conduct post-hurricane historic structures and accessibility assessments for the Port Boca Grande Lighthouse complex.
- Conduct historic structures assessments of the lighthouse and assistant lighthouse keeper's house.
- Reconstruct dune crossover boardwalk.
- Establish accessible on-grade beach access

***Support Facilities and Infrastructure***

- Realign road away from staff residence.
- Add a restroom and shower to the maintenance building.
- Construct a pole barn.
- Design and construct a new administrative building.
- Enhance trailhead with interpretive elements.

**Optimum Boundary**

- 895 Boca Grande Quarantine Station – adjacent to the Lighthouse Use Area.
- Canal parcel(s) north of the current park boundary to provide boat access for park operations.

# INTRODUCTION

## LOCATION AND ACQUISITION HISTORY

Gasparilla Island State Park is located in Lee County. Access to the park is from County Road 771 to Boca Grande Causeway, across a toll bridge or alternatively by private watercraft. The Charlotte Harbor Region map depicts significant land and water resources existing near the park.

Gasparilla Island State Park was initially acquired on May 19, 1983, by donation from the Gasparilla Island Conservation and Improvement Association, Inc. Currently, the park comprises 126.54 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) holds fee simple title to the park. On May 19, 1983, the Trustees leased (Lease No. 3338) the property to the Department of Environmental Protection's (DEP) Division of Recreation and Parks (DRP) under a 50-year lease. The current lease will expire on March 11, 2034.

Gasparilla Island State Park is designated single-use to provide public outdoor recreation and conservation. There are no legislative or executive directives that constrain the use of this property (see appendix). A legal description of the park property can be made available upon request to DEP.

## SECONDARY AND INCOMPATIBLE USES

In accordance with section 253.034(5), Florida Statutes (F.S.), the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of DRP's statutory responsibilities and resource values. This analysis considered the park's natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. It was determined that no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation.

DRP has determined that uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those management activities specifically identified in this plan) would not be consistent with the management purposes of the park.

In accordance with section 253.034(5), F.S., the potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that multiple-use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions and similar measures will be employed on a case-by-case basis as a means of supplementing park management funding. Generating revenue from consumptive uses or from activities that are not expressly related to resource management and conservation is not under consideration.

## PURPOSE AND SIGNIFICANCE OF THE PARK

### Park Purpose

The purpose of Gasparilla Island State Park is to provide opportunities for resource-based recreation, especially saltwater beach activities and interpretation of coastal wildlife and maritime history.

### Park Significance

- The park preserves the wood-frame lighthouse and keeper's residence as well as the historic Amory Chapel, all closely associated with historic Port Boca Grande.
- The park preserves nearly 42 acres of maritime hammock and 27 acres of coastal strand that once characterized the barrier islands along the Florida's Gulf coast.
- The park protects important coastal habitat for imperiled sea turtles, shorebirds and gopher tortoises.
- The park provides approximately 1 mile of Gulf beach for resource-based outdoor recreation, including swimming, snorkeling, beachcombing and shoreline fishing.

### Central Park Theme

Bordering one of the deepest natural passes in Florida, Gasparilla Island State Park's natural features create ideal habitat for sport fish, inspiring the growth of the historic Boca Grande community and local folklore.

### Internal Classification

Gasparilla Island State Park is classified as a Recreation Area in DRP's unit classification system. Major emphasis is placed on maximizing the recreational potential of the unit. Preservation of the park's natural and cultural resources, however, remains important. Depletion of a resource by any recreational activity is not permitted. In order to realize the park's recreational potential, the development of appropriate park facilities is undertaken with the goal of providing facilities that are accessible, convenient and safe, to support public recreational use or appreciation of the natural, aesthetic and educational attributes of the island.

## OTHER DESIGNATIONS

The unit is not within an Area of Critical State Concern as defined in section 380.05, F.S. and it is not under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by DRP's Office of Greenways and Trails.

All waters within the park have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302, Florida Administrative Code (F.A.C.). Surface waters in this park are also classified as Class II waters (shellfish propagation and harvesting area) by DEP. The park is adjacent to the Gasparilla Sound-Charlotte Harbor Aquatic Preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, F.S.).

## PARK ACCOMPLISHMENTS

- Completed beach nourishment in 2019.
- Annually post and rope shorebird nesting areas to protect nesting shorebirds.
- The park's Citizen Support Organization, the Barrier Island Parks Society, conducts interpretive lighthouse climbs throughout the year.
- Statewide Nesting Beach Survey program involving daily sea turtle nesting surveys from April 15 to October 31 with a yearly nesting summary provided to the Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute. The park records, monitors and protects approximately 45 nests a year.

# RESOURCE MANAGEMENT COMPONENT

| Gasparilla Island State Park Management Zones | | |
|---|---|---|
| **Management Zone** | **Acreage** | **Managed with Prescribed Fire** |
| GA-1_RL (Range Light) | 2.07 | No |
| GA-2_RL (Range Light) | 8.62 | No |
| GA-3_IN (Interior) | 86.23 | No |
| GA-4_SG (Seagrape) | 11.22 | No |
| GA-5_SW (Seawall) | 1.67 | No |
| GA-6_LH (Lighthouse) | 16.55 | No |

## TOPOGRAPHY

Gasparilla Island is located in the Peace River District, specifically the Peninsular Coastal Lowlands Province. The island is part of a barrier island chain which includes Little Gasparilla Island to the north and Cayo Costa, Captiva and Sanibel to the south. Collectively, these land masses form a buffer that protects the Charlotte Harbor estuarine system, isolating it from some effects of storm-generated waves in the Gulf. Gasparilla is located directly north of Boca Grande Pass, one of the deepest natural passes in Florida, which connects Charlotte Harbor to the Gulf.

Gasparilla Island is characterized by low relief barrier island topography typical along the west coast of Florida. Barrier island dunes along the southwest coast are lower than those on the east coast (Myers and Ewell 1990). On the Gulf side of the park, beach sands slope up to a low dune (replaced in one area with a seawall) a few feet above mean sea level (msl). The highest points in the state park are along an artificial dune located 11 feet above msl west of the Port Boca Grande Lighthouse that was constructed by Florida Power and Light Company as mitigation for maintenance dredging in adjacent offshore waters in the early 1990s. The park also contains a large water-filled depression known as Old South Bayou with unknown depths. Slight alterations in topography have occurred in the beach areas because of sand placement projects implemented to reduce coastline erosion at the state park and along the Lee County managed shoreline of Boca Grande.

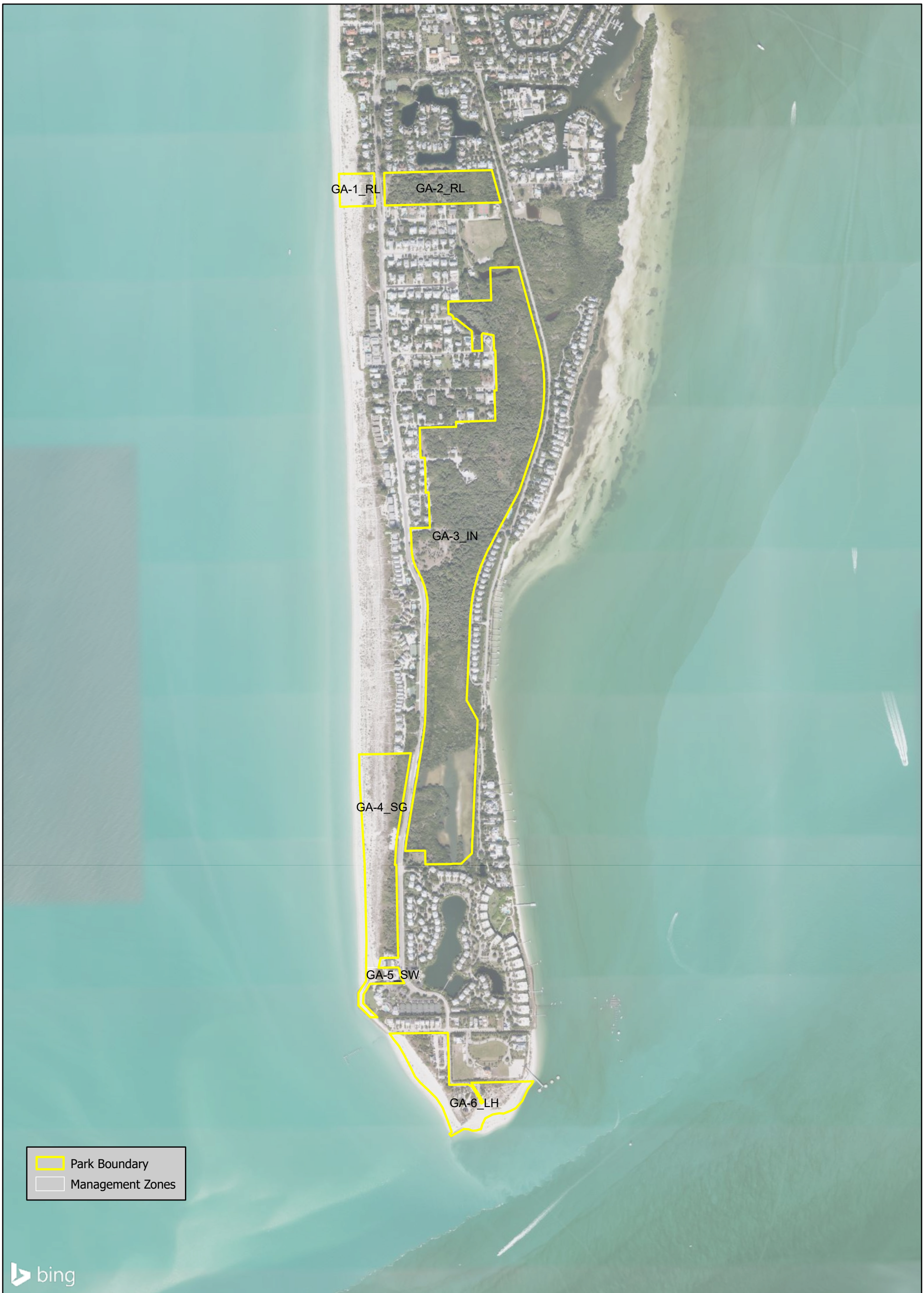
## SOILS

Soils found at Gasparilla are characteristic of barrier islands in this region of the state. They consist mainly of porous sand and shell on the Gulf side of the island and peat soils on the east side in conjunction with tidal and mangrove swamp. The five soil types are: Canaveral Fine Sand, Captiva Fine Sand, Wulfert Muck, Kesson Fine Sand and St. Augustine Sand (see Soils Map). Complete soils descriptions are included in the Southwest District Soils Descriptions appendix.

## HYDROLOGY

Gasparilla Island does not contain freshwater wetlands, with most of the hydrological components arising from mangrove swamp tidal flow through the middle and along the west side of the island. There is one water feature known as Old South Bayou and two additional tidal pools located in management zone GA 3_IN within state park boundaries.

Old South Bayou is designated as Class II Waters by DEP and generally maintains salinities indistinguishable to the adjacent Charlotte Harbor. Old South Bayou once had a natural tidal connection




# GASPARILLA ISLAND STATE PARK
## Management Zones

N

0 500 1,000 Feet

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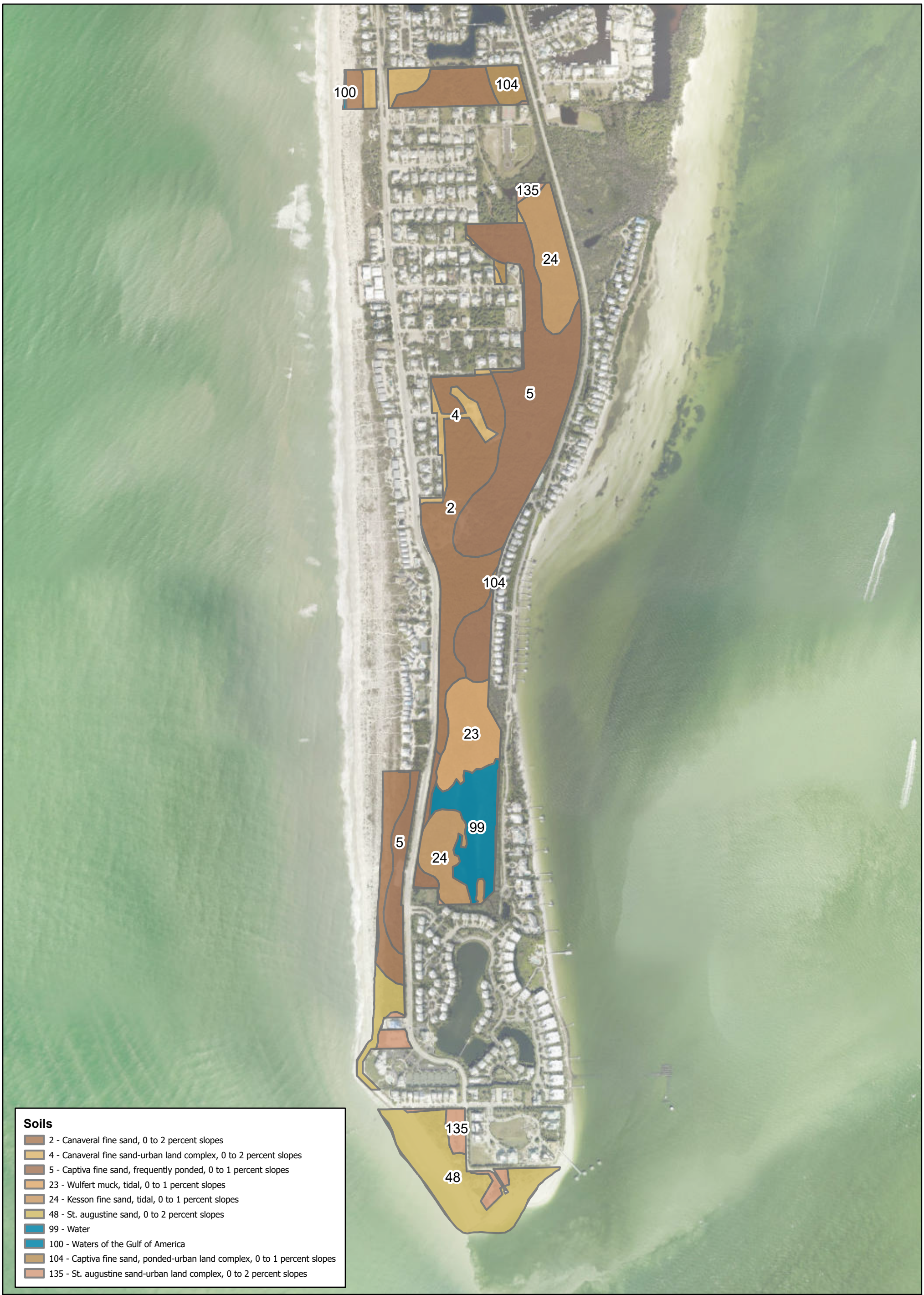


**Soils**

- 2 - Canaveral fine sand, 0 to 2 percent slopes
- 4 - Canaveral fine sand-urban land complex, 0 to 2 percent slopes
- 5 - Captiva fine sand, frequently ponded, 0 to 1 percent slopes
- 23 - Wulfert muck, tidal, 0 to 1 percent slopes
- 24 - Kesson fine sand, tidal, 0 to 1 percent slopes
- 48 - St. augustine sand, 0 to 2 percent slopes
- 99 - Water
- 100 - Waters of the Gulf of America
- 104 - Captiva fine sand, ponded-urban land complex, 0 to 1 percent slopes
- 135 - St. augustine sand-urban land complex, 0 to 2 percent slopes

# GASPARILLA ISLAND STATE PARK
## Soils

N

0 500 1,000 Feet

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with Charlotte Harbor that was closed by the construction of Boca Bay Drive along the east side of the island. Tidal connection was subsequently reestablished through two large culverts placed beneath the road extending out into Charlotte Harbor. Maintaining this tidal connection is the most important hydrological concern for the park, because mangrove health is directly tied to daily tidal flushing. The culverts are inspected periodically to ensure no blockage is present.

**Coastal Erosion/Sedimentation**

The shoreline along Gasparilla Island State Park is considered critically eroded (DEP 2024). Two rock groins installed at the south end of the park along Boca Grande Pass currently assist with holding sand in place at the inlet, protecting the vulnerable historic structures including the Port Boca Grande Lighthouse and Assistant Lightkeeper's House. Previous beach nourishment and dune enhancement activities south of Belcher Road included placement of a 10-foot wide/tall dune along the shoreline as mitigation for a Florida Power and Light maintenance dredging in the 1990s. Additional sand placement activities completed by DRP and others in coordination with Lee County, U.S. Fish and Wildlife Service (USFWS), U.S. Army Corps of Engineers and DEP from mechanical dredge events have historically occurred in the state park to assist with shoreline erosion issues.

Boca Grande Pass is one of the deepest natural passes in Florida, reaching depths of 80 feet. Sand placed along Gasparilla Island from these mechanical dredge events originates from borrow sites located over 1 mile offshore on the north side of the pass channel. The main areas of erosion at the park are adjacent to the historic seawall at Belcher Road. Hardened structures, such as seawalls, are known to hold soil in place landward of the structure but accelerate erosion on adjacent beaches. In addition, the seawall at Belcher Road extends approximately 75 feet seaward of the beaches directly to the north and south, which results in a disruption of sand transport in the area. Previous sand placement activities restored shorelines at Belcher Road temporarily; however, sand erosion along the seawall at Belcher Road in 2019 was swift with sand eroding back to pre-placement levels in mere months. Additional shoreline protections proposed to reduce sand erosion in the vicinity of Belcher Road and the south end of the park have included hardened structures such as submerged offshore breakwaters and T-groins. These structures have not been installed at the park due to the substantial cost and potential negative impact to nesting and hatching marine turtles, which would require an incidental take permit from USFWS.

Shoreline erosion at the park has been exacerbated by three hurricane events over a two-year period including Hurricane Ian in 2022 and Hurricanes Helene and Milton in 2024. Storm surge from Hurricane Ian was so strong that it shifted one of the historic cisterns off its base and then again after Hurricane Milton. Storm surge from the 2024 events moved over 30,000 cubic yards of sand from the beach and dunes into the parking lots and entrance road at the lighthouse beach use area. The Amory Chapel was filled with sand to within a couple of feet of the ceiling, and the parking lots, picnic area and roadways were buried by over 5 feet of sand. The width of the beach substantially narrowed following the storm event with all dunes flattened along the beach.

The seawall was in disrepair following Hurricane Helene with tiebacks exposed and portions of old Beach Road uncovered behind the wall. The following storm surge that accompanied Hurricane Milton caused the seawall to collapse in multiple locations, removing large chunks of concrete. The road behind the seawall exposed by Hurricane Helene was no longer present, having been lifted by the storm surge and dropped landward into parking areas.

Sand cleared from the road and the main beach parking area was replaced onto the beach with 8-foot artificial dunes sculpted to replace those that were present prior to the storm. Additional sand

placement projects originally scheduled for 2024–2025 will be rescheduled according to issuance of permits, entailing a potential expansion of the placement area south of the seawall to replace the width lost to the storm. Reoccurring sand placement projects will be necessary to maintain the shoreline adjacent to the seawall.

### Monitoring and Assessment

***Objective: Assess the park's hydrological restoration needs.***

*Action:*

- Continue to cooperate with state and federal agencies and independent researchers in hydrological research and monitoring programs.

Routine surface water and ground water monitoring for water quality and quantity are not necessary at Gasparilla Island State Park. DRP will rely upon agencies such as South Florida Water Management District, U.S. Geological Survey (USGS), Lee County and DEP to keep it apprised of surface water and groundwater quality. DRP will continue to closely cooperate with state and federals agencies and independent researchers engaged in hydrological research and monitoring programs within the state park, and encourage and facilitate research in those areas.

Two culverts located in the park maintain a critical tidal connection important to the maintenance of natural communities within Old South Bayou. Staff will continue to monitor the culverts to ensure tidal connectivity between the bayou and Charlotte Harbor. The park will also remove restrictions or impediments as needed.

### Erosion Monitoring

***Objective: Continue to assist federal, state and local agencies with active monitoring of erosion and accretion cycles and assessment of beach and shoreline conditions following natural disasters.***

*Action:*

- Continue to cooperate with federal, state and local agencies and researchers regarding monitoring and assessment of beach erosion.

### Interagency Partnerships

***Objective: Continue to partner with federal, state and local agencies to fund, design, permit, improve and maintain coastal and beach management programs consistent with DRP's mission.***

*Action:*

- Continue stakeholder engagement with federal, state and local agencies and researchers in planning and implementation of coastal projects that impact the parks.

## NATURAL COMMUNITIES

Gasparilla Island State Park contains six distinct natural communities, as well as developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in the Southwest District Species Matrix appendix.

### Beach Dune

Beach dunes at Gasparilla Island State Park are wind-deposited ridges of sand that are sparsely to densely vegetated with salt-tolerant pioneer species. This community is fragmented with the largest contiguous stretch and widest areas of beach dune occurring in management zone GA-4_SG. The park's beach dune community is highly variable with dominant vegetation consisting of herbaceous dune forming species such as sea oats (*Uniola paniculata*) and railroad vine (*Ipomea pes-caprae* spp. *brasiliensis*). Other common species include coastal sea rocket (*Cakile lanceolata*), seacoast marshelder (*Iva imbricata*), shoreline seapurslane (*Sesuvium portulacastrum*) and west coast dune sunflower (*Helianthus debilis* subsp. *vestitus*). Shrubs such as the state threatened inkberry (*Scaevola plumieri*) are common, especially in management zone GA-4_SG.

Imperiled species commonly found in the dune community include gopher tortoises (*Gopherus polyphemus*) and nesting sea turtles including the federally threatened loggerhead (*Caretta caretta*) and green (*Chelonia mydas*) sea turtles, which deposit eggs in the sand each year between May and October. State-listed snowy plovers (*Chardrius nivosus*) and least terns (*Sterna antillarum*) have also previously been documented nesting in this community. A large portion of management zone GA-4_SG is pre-posted annually to provide undisturbed habitat for nesting birds.

One problematic species found throughout the beach dune community and Gasparilla Island State Park are black spiny-tailed iguanas (*Ctenosaura similis*), which are frequently found using abandoned gopher tortoise burrows. The fragmented nature of the beach dune community necessitates constant, targeted management of iguanas for protection of these native species. Currently, trapping is conducted by the U.S. Department of Agriculture (USDA) for removal of the species from park property, but given the mosaic property ownership on island, complete removal is likely impossible without collaboration between the park and private landowners.

The beach dune community overall is in poor condition at Gasparilla Island State Park. Fragmentation and patchiness within management zones GA-1_RL, GA-5_SW and GA-6_LH are largely due to foot traffic from the parking areas and shoreline erosion issues. A large artificial dune was previously built to a height of 11 feet along the southern portion of the park near the Port Boca Grande Lighthouse in management zone GA-6_LH. This dune has changed in size and configuration over the years due to major storm events. Hurricane Ian in 2022 and Hurricanes Helene and Milton in 2024 played a significant role in the recent erosion and sedimentation of the beach dune community at the park, and restorative efforts will be necessary moving forward. Natural coastal erosion processes will continue to alter the beach dune community, resulting in iterative acreage fluctuations in this community. New beach dunes will continue to form as the communities shift with changing sea levels and increased erosion patterns.

Management of the beach dune community at Gasparilla Island focuses on imperiled species protection and monitoring, invasive animal and predator control, invasive plant survey and treatment efforts, protection from human disturbances and restoration following storm events. Areas of beach dune where birds have nested historically are pre-posted ahead of nesting season with boundary markers adjusted as needed to account for changes in historic usage and shoreline configuration. Sea turtle nests

are posted for protection and monitored using the FWC protocol throughout the breeding season. DRP staff monitor predation levels at the park and coordinate predator control efforts with USDA for the protection of sea turtles and shorebirds. All wrack and seaweed deposited naturally on the beach dune community should be left in place to allow for the addition of nutrients to the sandy soil of this community.

Additional dune restoration and/or revegetation will be necessary following erosion and sedimentation from Hurricanes Helene and Milton and potential future events. Plant materials for future dune restoration efforts should be sourced by ecoregion to preserve local genetic integrity, except where sufficient research suggests other strategies are appropriate for a given species. All new and existing dune walkovers should be designed in winding or zig-zagged patterns to prevent sand blowouts and avoid changing salt exposure for vegetative communities. Interpretive signs are generally effective in advising park visitors of the need to stay off the beach dunes; however, additional temporary post and roper barriers should be considered in areas where dune vegetation is recovering from significant disturbances or where new plantings have been installed.

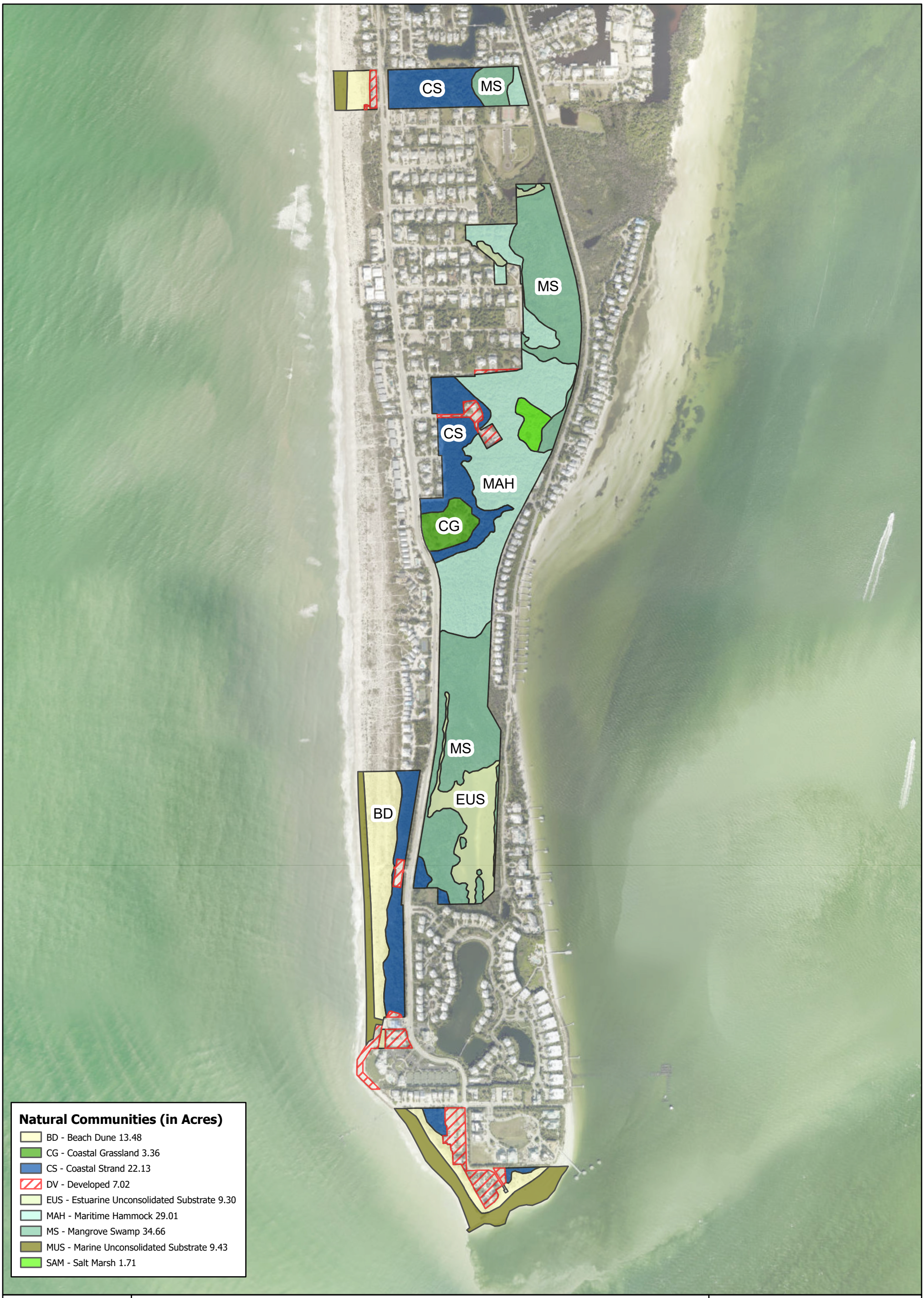
Coastal Strand

Coastal strand at Gasparilla Island typically forms as a transition zone between beach dune and older maritime hammock communities. Coastal strand dunes contain deep, well drained sands that are generally quite stable but become susceptible to severe damage if the vegetation is significantly disturbed. Within portions of the coastal strand at Gasparilla are small pockets of coastal grassland that contain grasses such as hairy gramma (*Bouetoula hirsuta*). In addition to cabbage palms (*Sabal palmetto*), the coastal strand at Gasparilla Island contains tropical, salt tolerant species such as seagrape (*Coccoloba uvifera*), coco plum (*Chrysobalanus icaco*), myrsine (*Myrsine cubana*), beach creeper (*Eronodea littoralis*), white indigoberry (*Randia aculeata*), snowberry (*Chiococca alba*) and numerous others.

The coastal strand at Gasparilla Island State Park is in good condition. It exists in fragmented parcels directly behind the beach dune and east of Gulf Boulevard along the interior park parcel in management zones GA-2_RL and GA-3_IN. Imperiled species commonly found in the coastal strand at Gasparilla Island include state-threatened shellmound prickly pear (*Opuntia stricta*) and gopher tortoises. Intensive efforts to remove invasive non-native plant species such as Brazilian pepper (*Schinus terebinthifolia*), Australian pine (*Causarina equisetifolia*) and white leadtree (*Leucaena leucocephala*) have occurred throughout; however, a large stand of guinea grass (*Urochloa maxima*) in management zone GA-2_RL has proven difficult to irradicate. Black spiny-tailed iguanas are prevalent throughout this community.

Coastal strand is not considered a fire dependent community although it does receive prescribed fire for a variety of reasons including proximity to fire dependent communities. According to the Florida Natural Areas Inventory (FNAI), the natural fire frequency of coastal strand is unresolved (FNAI 2010). The coastal strand community varies in dominant species from temperate areas in north to central Florida, which contain dense saw palmetto (*Seronoa repens*) patches, to tropical areas such as Gasparilla Island dominated by seagrapes. A range of 4 to 15 years has been estimated by DRP; however, variability outside this range may occur based on site specific conditions and management goals. Gasparilla Island State Park does not contain any pyric communities and will not be managing the coastal strand at the park with prescribed fire.

Management of coastal strand at Gasparilla Island State Park largely focuses on invasive plant survey and treatment efforts and invasive animal control. DRP staff will continue periodic surveys for rare plants and invasive plant infestations to catch new infestations early.




# GASPARILLA ISLAND STATE PARK
## Natural Communities - Existing Conditions

N

0 500 1,000 Feet

Sources: ESRI; Florida Department of Environmental Protection
This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

Maritime Hammock

Maritime hammock at Gasparilla Island State Park consists of a canopy of cabbage palms, gumbo limbo (*Bursera simaruba*), live oak (*Quercus virginicus*), strangler fig (*Ficus aurea*) and Jamaican dogwood (*Piscidia picipula*), along with an understory of wild coffee (*Psychotria nervosa*), snowberry, rouge-plant (*Ravina humifusa*) and whisk fern (*Psilotum nudum*). The maritime hammock at Gasparilla Island is in good condition.

A portion of maritime hammock in management zone GA-3_IN formerly served as a landing strip and a golf course for the members of the Boca Grande Hotel, which no longer exists as of 1975 (personal communication, Marilyn Hoeckel). Later, a coconut palm nursery was present on this site, and remnants of irrigation hoses remain as the only sign of that activity. Most of this interior parcel (95 acres) has progressed from a historically disturbed site into maritime hammock. Invasive non-native plant species such as Brazilian pepper (*Schinus terebinthfolia*), white leadtree and carrotwood (*Cupaniopsis anacardioides*) persist throughout despite extensive treatment efforts. Black spiny-tailed iguanas are prevalent throughout this community.

Management of maritime hammock at Gasparilla Island State Park largely focuses on invasive plant survey and treatment efforts and invasive animal control. DRP staff will continue periodic surveys for rare plants and invasive plant infestations to catch new infestations early.

Mangrove Swamp

The mangrove swamp community is the largest natural community at Gasparilla Island State Park dominating the east side of the park mostly as a dense forest of red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*) and buttonwood (*Conocarpus erectus*). These four species can occur either in mixed stands or often in differentiated, monospecific zones based on varying degrees of tidal influence, levels of salinity and types of substrate. Red mangroves dominate the deepest water, followed by black mangroves in the intermediate zone and white mangroves and buttonwood trees in the highest, least tidally influenced zone. Mangrove swamps play an important role in shoreline stabilization, coastline protection, water quality and nutrient cycling and provide important habitat for juvenile fish, crustaceans and birds. Soils found in mangrove swamps at Gasparilla Island State Park and associated islands are typically anaerobic and saturated with brackish water at all times, becoming inundated at high tide. Mangroves in upper tidal reaches at Gasparilla Island typically have a shrub groundcover including seaside oxeye (*Borrichia frutescens*), gray nicker, coinvine (*Dalbergia ecastaphyllum*) and herbaceous species such as saltwort (*Batis maritima*), perennial glasswort (*Sarcocornia perennis*) and giant leather fern (*Acrostichum danaeifolium*).

The mangrove swamp community at Gasparilla Island is in fair condition. Occasional invasive non-native plants can be found interspersed in the upper tidal reaches within the mangrove swamp, but no areas are monocultures of invasive species. Brazilian pepper, portia tree (*Thespesia populnea*) and beach naupaka (*Scaevola taccada*) are the typical invasive plant species found in this natural community. The mangrove community was well developed in the vicinity of Old South Bayou with a dense canopy and sparse vegetation in the understory; however, it was severely damaged by strong winds during Hurricane Ian with much of the overstory defoliated and many trees toppling or dying back. Old South Bayou has less regrowth, two years after Hurricane Ian, than other areas of the park. Mangrove dieback and recovery following Hurricane Irma in 2017 was found to be influenced by increased storm surge and sedimentation (Lagomasino et. al, 2021) and overall resilience class, species composition and canopy height (Xiong et. al, 2022). It is possible that increased sedimentation and the larger canopy heights have

influenced the regrowth in this area of the park. Additional stressors to the mangroves from Hurricanes Helene and Milton in 2024 may further delay or inhibit regrowth and recovery.

At one time, Old South Bayou was undoubtedly a tidal inlet that was subsequently closed off from its connection with Charlotte Harbor by development. It has been re-connected with open water by the installation of two large culverts, placed beneath the road allowing tidal flushing to occur. Listed species of wading birds such as the roseate spoonbill (*Platalea ajaja*) and multiple egrets (*Egretta spp*.) use the bayou for resting and feeding. The community is in good condition with tidal flow restored.

Management of mangrove swamp at Gasparilla Island largely focuses on invasive plant survey and treatment efforts. DRP staff will continue periodic surveys for rare plants and invasive plant infestations to catch new infestations early. Through education efforts, park management will work with neighboring communities to prevent any destruction or removal of mangroves.

Marine Unconsolidated Substrate

Marine unconsolidated substrate at Gasparilla Island State Park consists of expansive unvegetated, open areas of sand beaches, typically along the western and southern shoreline along Boca Grande Pass. The park has approximately 5,389 feet of beachfront, a portion of which was walled with a concrete seawall before acquisition to protect a former public roadway. At the southern end of the park, the shoreline curves around to the east where it is subject to the significant flow and hydrodynamics of Boca Grande Pass. The historic Port Boca Grande Lighthouse and Assistant Lightkeeper's House structures are located here, and erosion has been a concern for this area.

The unconsolidated marine substrate at Gasparilla Island State Park is in good condition. Past beach nourishment projects at the park completed in 2007, 2014 and 2019 resulted in an increase of shoreline width and acreage. While much of the sand placed has been lost to the natural longshore sediment transportation process, the shoreline still provides ample space for imperiled species and recreational opportunities.

The beaches at Gasparilla Island State Park provide nesting habitat for imperiled sea turtles, primarily the loggerhead and green sea turtles and imperiled avian species. In 2014, the marine unconsolidated substrate community along the west side of the island received a designation as critical habitat for the northwest Atlantic Ocean distinct population segment of the loggerhead sea turtle (Federal Register 2014). This community also provides important habitat for various avian species, several of which nest on the higher portions of the beach. Most of these species use the beaches at resting and feeding areas, and many do not tolerate disturbance.

All-terrain vehicles and utility vehicles are used on the beaches for sea turtle nesting surveys, with driving limited to those lower beach areas near or below the high-tide line not utilized by shorebirds and sea turtles in accordance with FWC best management practices. In this community, wrack and seaweed is typically left in place to provide foraging opportunities for shorebirds and additional nutrients to the sandy soil. Situations where hand removal or hand raking of wrack might be necessary include large fish kill events typically associated with harmful algal blooms.

Management of marine unconsolidated substrate at Gasparilla Island largely focuses on imperiled species monitoring efforts, invasive animal and predator control, minimizing habitat disturbances and coordinating with external agency partners regarding shoreline erosion sand placement activities. Areas of beach dune where birds have nested historically are pre-posted ahead of nesting season with boundary markers adjusted as needed to account for changes in historic usage and shoreline configuration. Sea turtle nests are posted for protection and monitored in accordance with FWC protocol throughout the

breeding season. DRP staff monitor predation levels at the park and coordinate predator control efforts with USDA for the protection of sea turtles and shorebirds. Driving on this natural community should be limited to necessary management activities and in accordance with FWC best management practices to avoid conflicts with beach nesting species.

Shoreline erosion in this community will continue to persist due to fragmentation by hardened structures along the island. Future beach nourishment activities should be considered in conjunction with Lee County dredge projects to combat erosion and increase beach width and acreage for the benefit of imperiled species and recreational usage. Installation of additional hardened structures at the state park should only be considered when historic resources are at immediate risk and nourishment activities are not an option.

Estuarine Unconsolidated Substrate

Estuarine unconsolidated substrate at Gasparilla Island State Park encompasses unvegetated, mineral-based estuarine communities that typically fall in subtidal and intertidal locations along the east side of the islands. This includes Old South Bayou and other mud flats, tidal creeks and shallow canals within the larger mangrove swamp communities. These areas provide habitat for fiddler crabs, marsh crabs and other crustaceans and mollusks. Management of these areas largely focuses on protection from outside impacts and monitoring Old South Bayou to ensure the culverts are not obstructed.

**Altered Land Cover Types**

Developed

The developed areas at Gasparilla Island State Park occur in areas that were formerly beach dune, coastal grassland or coastal strand that have been replaced by structures of permanently cleared areas. Developed areas at Gasparilla Island include five parking areas, restroom facilities, Port Boca Grande Lighthouse, Assistant Lightkeeper's House, historic chapel, maintenance facility, one staff residence and a seawall. At the southern tip of the island is the historic Port Boca Grande Lighthouse site where most of the visitor services occur. The Assistant Lightkeeper's house is located here as well and is currently used as the main park office. The seawall with rock revetment was originally constructed to protect railroad and roadbeds that formerly existed on this site. The seawall and revetment now mitigate erosion of the shoreline where various residential and commercial structures have been built. Sand placed in front of the wall during beach nourishment is quickly lost due to erosion. A study was completed in 2013 to assess the stability of the seawall and to address construction needed for continued shoreline stabilization. The findings of the study led to a project to cap deteriorated sections of the wall and place another layer of riprap seaward of the wall.

Management of developed areas at Gasparilla Island State Park largely focuses on invasive plant survey and treatment efforts. DRP staff will continue periodic surveys for rare plants and invasive plant infestations to catch new infestations early. The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Proposed landscaping within developed areas of the park should include only native plant materials sourced by ecoregion to preserve local genetic integrity, except where sufficient research suggests other strategies are appropriate for a given species. Native plants that have been documented within the county but have not been historically documented in the park should be avoided entirely. Additionally, special care should be taken with native plant species that are known to hybridize between ecoregions. For example, the east coast dune sunflower (*Helianthus debilis* subsp. *debilis*) readily hybridizes with the west coast variety (*Helianthus debilis* subsp. *vestitus*), with the latter variety being the only subspecies appropriate to plant

in parks along the west coast of Florida. Proposed planting or landscaping efforts must be approved by DRP District staff prior to installation on site.

**Restoration**

***Objective: Conduct habitat/natural community restoration activities on five acres of coastal beach dune.***

*Action:*

- Revegetate beach dune communities throughout the park with native plant species.

The beach dune communities at Gasparilla Island State Park were severely affected by Hurricane Ian in 2022 and Hurricanes Helene and Milton in 2024. Much of the dune system at the park was flattened by storm surge with sand shifted landward into developed areas and dune vegetation buried beneath several feet of sand. Native plantings are needed in all coastal locations of the park to help rebuild the dune habitat for imperiled species such as gopher tortoises, sea turtles and shorebirds. Additional dune plantings at the park may become necessary following an increase in shoreline erosion or future storm events. Native plant species that should be considered for dune restorative plantings include sea oats, bitter panic grass, railroad vine and seacoast marsh elder. Additional species that could be considered for more landward dune locations include beach creeper and seagrape.

Plant materials for future dune restoration efforts should be sourced by ecoregion to preserve local genetic integrity, except where sufficient research suggests other strategies are appropriate for a given species. All new and existing dune walkovers should be designed in winding or zig-zagged patterns to prevent sand blowouts and avoid changing salt exposure for vegetative communities. Interpretive signs are generally effective in advising visitors of the need to stay off the beach dunes and should be added as needed throughout the park to protect dune vegetation. In some situations, obtaining a Coastal Construction Control Line permit from DEP for the installation of post and rope fences will be necessary to protect emerging or planted dune vegetation from foot traffic.

## IMPERILED SPECIES

Gasparilla Island State Park has a rich diversity of plant and animal life, including a variety of imperiled species that utilize the park for breeding, nesting, resting and feeding grounds. Although the impetus of natural systems management as practiced by DRP is management of natural communities and not individual species, certain species are of particular concern and importance and merit special management attention. At Gasparilla Island, these species include marine turtles and imperiled shorebird and seabird species.

The most common species encountered include the federally threatened loggerhead sea turtle and federally threatened green sea turtle that nest in relatively low numbers at the park. The highest nesting year to date was 2023 in which the park received 60 loggerhead sea turtle nests and nine green sea turtle nests. Kemp's ridley (*Lepidochelys kempii*) sea turtles have also been observed within park boundaries and have washed ashore during stranding events.

Gasparilla Island State Park takes part in the Statewide Nesting Beach Survey program involving daily sea turtle nesting surveys from April 15 to October 31 with a yearly nesting summary provided to FWC's Fish and Wildlife Research Institute. All marine turtle activities conducted by the state park are regulated under a Marine Turtle Permit issued by FWC. The permit allows staff to conduct nesting surveys, conduct stranding and salvage activities, relocate nests for conservation purposes, outfit nests

with self-releasing screens/cages, conduct hatch success evaluations and maintain and display preserved specimens. Nests are posted and monitored daily until hatch with information about tidal inundation, erosion or depredation recorded. Depredation by nuisance animals such as coyotes (*Canis latrans*) and racoons has been an issue for nesting sea turtles at the park. Protective screening of nests involves placing 4x4-foot self-releasing screens over the nests to deter depredation in accordance with the Marine Turtle Conservation Handbook (2016). Screens are secured in place with four tent stakes and buried 2–3 inches below sand surface. Additional nuisance animal removal activities have previously been contracted for the protection of incubating sea turtle nests when depredation levels are high. Nests are excavated three days after hatching occurs or 70 days from the date when eggs are first deposited.

Aside from the historic Port Boca Grande Lighthouse, no structural lighting exists in the park developed areas at Gasparilla Island State Park. If development is planned along any segment of beach, all lights will conform to FWC Marine Turtle Lighting Guidelines designed to prevent adult and hatchling disorientation. Disorientation events attributed to artificial light sources and area sky-glow near the park are reported to FWC and Lee County.

Nesting seabirds and shorebirds are also monitored at Gasparilla Island in accordance with FWC guidelines and DRP Shorebird and Seabird Management standards. This includes completing monthly shorebird focal species nesting surveys during the FWC Florida Shorebird Database windows (March through August). Bird species known to nest at Gasparilla Island include snowy plovers and least terns with other species such as Wilson's plovers (*Charadrius wilsonia*), black skimmers (*Rynchops niger*) and American oystercatchers (*Haematopus palliatus*) utilizing the beaches for resting or feeding grounds. Exclusion of humans and their pets from least tern and black skimmer colonies during the pre-nesting and nesting season is essential for successful nesting. Historical nesting sites are posted by park staff pre-season to provide this disturbance free zone. DRP staff continue to follow the guidelines and recommendations provided in the DRP Resource Management Standard, "Shorebird and Seabird Management," for the protection and management of least terns and other imperiled shorebird, seabird and wading bird species.

Dogs brought by visitors to the park introduce significant and challenging impacts on shorebird nesting success. Most sections of beachfront park are flanked by residential areas. Residents, owners, renters, guests, etc. are known to walk along the shoreline or beachfront into the state park boundary with their dogs despite Lee County ordinances that prohibit animals on the beach. Evidence of dogs is typically observed during every sea turtle and shorebird nesting survey conducted on the island. Signage along the shoreline at the park boundary describes DRP's policy on pets, however, evidence of non-compliance persists.

The current approach to reducing this impact to shorebird nesting depends on multiple partners including law enforcement personnel. Park staff maintain signage and educate visitors on policies when dogs are encountered in areas of the park where prohibited. Rule 62D-2.014(13), F.A.C., includes enforceable language on the presence of pets in restricted areas. This code is enforced by FWC law enforcement at state parks.

Predation critically threatens many rare species (Hecht and Nickerson 1999), with the deleterious impacts of predation losses compounded by habitat loss (Reynolds and Tapper 1996). In Florida, nesting beaches have been substantially altered by urbanization and development, leaving few beaches isolated from development, thereby severely reducing the amount of habitat suitable for successful nesting by sea turtles and shorebirds (Rogers et al., 1995). At the same time, predators are found along many beaches where nesting could otherwise succeed. Nest depredation can have

severe impacts on reproductive success for sea turtles and shorebirds (Engeman et al., 2010).

Coyotes were once considered to be a non-native species; however, FWC now considers them to be native in Florida because of natural range expansion including all 67 Florida counties. Coyotes have recently increased in occurrence at Gasparilla Island and have negatively impacted sea turtle nests at the state park and areas outside of park boundaries. In 2023 and 2024, the Sea Turtle Conservancy contracted with USDA to complete predator removal work at the state park for the benefit of the park and the island to successfully reduce nest depredations.

Gopher tortoises are known to occur within the beach dune, coastal strand and maritime hammock communities at Gasparilla Island State Park, as well as other barrier island sites (Lau 2011). Tortoises will utilize these areas for foraging and habitation in the form of burrows that can reach 2 meters deep. Tortoises at Gasparilla Island primarily select sites within the beach dune and coastal strand habitats, likely due to more accessible ground forage, favorable sediment for burrow construction, open areas for thermoregulation and access to mates. The threats for tortoises at Gasparilla Island are varied. Non-native and nuisance animals can negatively affect tortoises, such as burrow abandonment by tortoises due to black-spiny tail iguanas and direct predation of tortoises by coyotes, raccoons and black spiny-tailed iguanas and their eggs by armadillos and fire ants (Dziadzio 2015). Interactions between gopher tortoises and black-spiny tailed iguanas at Gasparilla Island State Park indicated that occupation or disturbance by iguanas may lead to tortoises abandoning their current burrow, which may expose them to additional risks associated with extreme temperatures, predator interactions and human interactions resulting in mortality (McKnight et. al, 2022). Additionally, adult spiny-tail iguanas are known to consume small birds as prey items, which may contribute to nest abandonment by native sea and shorebirds. Invasive plants such as cogon grass can remove food sources, alter habitat to be unhabitable for burrows and other vegetation and negatively affect tortoise orientation (Basiotis 2007). The fragmented nature of Gasparilla Island State Park creates opportunities for tortoise-human interactions including vehicle strikes, harassment and poaching. Tortoise populations on barrier islands are also incredibly susceptible to flooding, burrow inundation and changes in geography that occur from tropical weather systems (Kushlan and Mazzotti, 1984). DRP will monitor for decreases in the population of gopher tortoises and consult with FWC on data trends. Relocation of gopher tortoises to Cayo Costa and associated islands, like Boca Grande, should not be considered due to the remote nature of the populations and the high potential for introduction of novel pathogens.

Portions of tidally influenced marine unconsolidated substrate at Gasparilla Island fall within the proposed USFWS critical habitat designation for the Florida manatee (*Trichechus manatus latirostris*). The Florida manatee was placed on the federal Endangered Species list in 1973 and is also covered by the federal Marine Mammal Protection Act. Lee County has a manatee protection plan that outlines boating and construction procedures for areas that are utilized by manatees. Park staff are directed to contact FWC for important manatee sightings and for any injured, sick or imperiled individuals seen within or adjacent to park boundaries.

In 2009, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service designated areas at the south end of Gasparilla Island State Park along Boca Grande Pass as critical habitat for the smalltooth sawfish (*Pristis pectinata*) within the Charlotte Harbor Estuary Unit.

Imperiled plant species are managed through the upkeep of the park's natural communities. Five imperiled plant species are currently found at Gasparilla Island State Park including state endangered giant wild pine (*Tillandsia utriculata*), state threatened inkberry, state threatened shellmound prickly pear, state threatened joewood (*Jacquina keyensis*) and west coast dune sunflower. A small population of Joewood had previously been identified within the coastal strand community in

management zone GA-3_IN, but it has not been observed for more than ten years. There is a small joewood tree planted within the lighthouse native plant garden that may be the northernmost population with the other nearest population located south on Cayo Costa. Other species, including west coast dune sunflower and state threatened inkberry, are found parkwide within beach dune community.

In 2016, a final rule was issued by USFWS designating critical habitat for the federally protected prickly-apple cactus (*Harrisia aboriginum*). This rule identifies potential habitat for the endangered cactus, along with areas to be surveyed and potential sites for relocation. All upland natural communities at Gasparilla Island State Park are designated as potential critical habitat to protect the west coast prickly-apple cactus. This cactus has historically been documented by FNAI as occurring within park boundaries, and there is a known population just outside of park boundaries on Lee County property. Staff from Marie Selby Botanical Gardens have completed multiple surveys at the park under permits issued by DRP to locate any existing populations as part of their research efforts in assessing genetic variability throughout its known range along the southwest coast. DRP staff will work with USFWS to identify potential habitat and survey for the presence of cacti, determining whether the state park would be suitable as a protected recipient site for augmentation, introduction or reintroduction.

The table below contains a list of all known imperiled species within the park and identifies their status as defined by various entities. It also identifies the types of management actions that are currently being taken by DRP staff or others and identifies the current level of monitoring effort. The codes used under the column headings for management actions and monitoring level are defined following the table. Explanations for federal and state status as well as FNAI global and state rank are provided in the Southwest District FNAI Element Tracking Codes appendix.

| **Imperiled Species Inventory** | | | | | | |
|---|---|---|---|---|---|---|
| **Common and Scientific Name** | **Imperiled Species Status** | | | | **Management Actions** | **Monitoring Level** |
| | **FWC** | **USFWS** | **FDACS** | **FNAI** | | |
| **PLANTS** | | | | | | |
| Prickly-apple cactus *Harrisia aboriginum* | | E | E | G1, S1 | 2, 3 | Tier 2 |
| West coast dune sunflower *Helianthus debilis subsp vestitus* | | | | G5T2, S2 | 2 | Tier 1 |
| Joewood *Jacquinia keyensis* | | | T | G4, S3 | 2 | Tier 1 |
| Shell-mound pricklypear *Opuntia stricta* | | | T | G4?, S3S4 | 2 | Tier 1 |
| Inkberry *Scaevola plumieri* | | | T | | 2 | Tier 1 |

| Imperiled Species Inventory | | | | | | |
|---|---|---|---|---|---|---|
| **Common and Scientific Name** | **Imperiled Species Status** | | | | **Management Actions** | **Monitoring Level** |
| | **FWC** | **USFWS** | **FDACS** | **FNAI** | | |
| West Indian mahogany *Swietenia mahagoni* | | | T | G3G4, S3 | 2 | Tier 1 |
| Giant airplant *Tillandsia utriculata* | | | E | | 3 | Tier 1 |
| Florida mayten *Tricerma phyllanthoides* | | | T | | 2 | Tier 1 |
| **FISH** | | | | | | |
| Smalltooth sawfish *Pristis pectinata* | FE | E | | G1G3, S1S2 | 13 | Tier 1 |
| **REPTILES** | | | | | | |
| American alligator *Alligator mississippiensis* | FT(S/A) | SAT | | G5, S4 | 13 | Tier 1 |
| Loggerhead sea turtle *Caretta caretta* | FT | T | | G3, S3 | 8, 9, 10, 13 | Tier 3 |
| Green sea turtle *Chelonia mydas* | FT | T | | G3, S2S3 | 8, 9, 10, 13 | Tier 3 |
| Gopher tortoise *Gopherus polyphemus* | ST | | | G3, S3 | 2, 8, 10, 13 | Tier 3 |
| Kemp's ridley sea turtle *Lepiodochelys kempii* | FE | E | | G1, S1 | 8, 9, 10, 13 | Tier 3 |
| **BIRDS** | | | | | | |
| Red knot *Calidris canutus rufa* | FT | T | | G4T2, S2N | 8, 10, 13 | Tier 2 |
| Snowy plover *Charadrius nivosus* | ST | | | G3, S1 | 2, 8, 9, 10, 13 | Tier 3 |
| Wilson's plover *Charadrius wilsonia* | | | | G5, S2 | 2, 8, 9, 10, 13 | Tier 3 |
| Little blue heron *Egretta caerulea* | ST | | | G5, S4 | 13 | Tier 1 |
| Reddish egret *Egretta rufescens* | ST | | | G4, S2 | 13 | Tier 1 |
| Tricolored heron *Egretta tricolor* | ST | | | G5, S4 | 13 | Tier 1 |
| Peregrine falcon *Falco peregrinus* | | | | G4, S2 | 13 | Tier 1 |
| Magnificent frigatebird *Fregata magnificens* | | | | G5, S1 | 13 | Tier 1 |

| Imperiled Species Inventory | | | | | | |
|---|---|---|---|---|---|---|
| **Common and Scientific Name** | **Imperiled Species Status** | | | | **Management Actions** | **Monitoring Level** |
| | **FWC** | **USFWS** | **FDACS** | **FNAI** | | |
| American oystercatcher *Haematopus palliatus* | ST | | | G5, S2 | 2, 8, 9, 10, 13 | Tier 3 |
| Wood stork *Mycteria americana* | FT | T | | G4, S2 | 8, 10, 13 | Tier 1 |
| Roseate spoonbill *Platalea ajaja* | ST | | | G5, S2 | 13 | Tier 1 |
| American avocet *Recurvirostra americana* | | | | G5, S2 | 13 | Tier 1 |
| Black skimmer *Rynchops niger* | ST | | | G5, S3 | 8, 9, 10, 13 | Tier 3 |
| Least tern *Sternula altillarum* | ST | | | G4, S3 | 8, 9, 10, 11, 13 | Tier 3 |
| Sandwich tern *Thalasseus sandvicensis* | | | | G5, S2 | 10, 13 | Tier 2 |
| **MAMMALS** | | | | | | |
| Florida manatee *Trichechus manatus latirostris* | ST | | | G2G3T2T3, S2S3 | 10, 13 | Tier 1 |

**Management Actions:**

1. Prescribed Fire
2. Invasive Plant Treatment/Removal
3. Translocation/Augmentation
4. Hydrological Maintenance/Restoration
5. Nest Boxes/Artificial Cavities
6. Hardwood Control
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from Visitor Impacts
11. Decoys (Shorebirds)
12. Vegetation Planting
13. Outreach/Education
14. Other

**Monitoring Level:**

Tier 1. Non-Targeted Observation/Documentation: includes documentation of species presence through casual/passive observation during routine park activities (i.e., not conducting species-specific searches). Documentation may be in the form of Wildlife Observation Forms or other district specific methods used to communicate observations.

Tier 2. Targeted Presence/Absence: includes monitoring methods/activities that are specifically intended to document presence/absence of a particular species or suite of species.

Tier 3. Population Estimate/Index: an approximation of the true population size or population index based on a widely accepted method of sampling.

Tier 4. Population Census: A complete count of an entire population with demographic analysis, including mortality, reproduction, emigration and immigration.

Tier 5. Other: may include habitat assessments for a particular species or suite of species or any other specific methods used as indicators to gather information about a particular species. [If referenced in table, provide discussion in narrative]

**Inventory**

***Objective: Update baseline imperiled species occurrence inventory lists for plants and animals.***

*Action:*

- Update imperiled species list.

Update imperiled species list as necessary to add or remove species in compliance with current FWC or USFWS listing status and update any accepted nomenclature changes.

**Fauna**

***Objective: Continue existing monitoring protocols for 10 selected imperiled animal species.***

*Actions:*

- Continue to implement existing monitoring protocols for marine turtle species and piping plover, red knot, Wilson's plover, snowy plover, least tern, black skimmer and American oystercatcher.
- Monitor impacts on shorebird and sea turtle nesting by terrestrial nuisance species in the park.
- Provide visitor interpretation and outreach for shorebirds, seabirds and wading birds.
- Review and revise protocols as necessary to remain consistent with FWC and USFWS standards.

Imperiled species management at Gasparilla Island State Park focuses primarily on shorebirds and other coastal bird species, as well as marine turtle species that nest within the parks. The parks coordinate all monitoring of imperiled species at the parks with FWC and submit monitoring data to FWC as required.

Daily marine turtle nesting surveys are completed by park staff and volunteers under a FWC Marine Turtle Permit issued to the state park and in strict accordance with FWC's Marine Turtle Conservation Handbook (FWC 2016). The state park previously used a digital survey application, developed by DRP and adopted by FWC, to collect GPS data in the field and allow direct digital data entry of the marine turtle nesting data. Currently, the state park uses a digital survey application created by FWC that allows direct digital entry from the field and allows FWC to directly pull the annual reports submitted. DRP district biologists are involved in reviewing the results of the monitoring and ensuring it is reported to FWC in accordance with Marine Turtle Permit conditions.

Shorebird surveys are conducted in accordance with DRP Resource Management Standard, "Shorebird and Seabird Management." Surveys are conducted both during the nesting season and during the winter and migratory seasons. Data for nesting shorebirds are submitted to FWC via the online Florida Shorebird Database. The primary focus of surveys is on imperiled shorebird and seabird species that nest on the beaches and in the dunes. An additional survey known as the Winter Shorebird Survey is completed in accordance with Florida Shorebird Alliance guidelines and identifies winter distribution of shorebirds and seabirds in Florida. Park staff routinely monitor shorebird flocks for banded birds, particularly piping plovers and red knots, and report that information to the USFWS and researchers working with these migratory species.

Historic shorebird nesting areas will be posted in advance of seasonal occupation annually in accordance with FWC and DRP guidelines. Individual solitary nesting sites will be posted to provide a buffer as they are encountered on the beach to limit disturbances. The park will work to enhance community outreach

efforts during shorebird nesting season through improved interpretive programming and regular monitoring of posted areas by park staff and volunteers.

Current protocols for nesting surveys include data collection on the presence of terrestrial predators. Staff and volunteers are trained to observe and document predator tracks near shorebird nesting habitat, shorebird nest sites and sea turtle nest sites and false crawls. In accordance with FWC guidelines and permit conditions, self-releasing cages and screens are installed over sea turtle nests by park staff at Gasparilla Island State Park to discourage depredation by nuisance mammal species. Park staff coordinate with DRP district biologists, who monitor shorebird and sea turtle nest depredation activity and coordinate predator removal efforts at all southwestern beach parks. Park staff will continue to communicate with DRP district biologists as depredations occur for timely implementation of predator removal efforts.

Park staff will continue to coordinate with FWC law enforcement to increase enforcement on Gasparilla Island. Continued monitoring will evaluate the effectiveness of the current approach; however, off-leash dogs will continue to threaten the nesting success of several imperiled species found on the park, including the American oystercatcher, least tern, snowy plover and Wilson's plover.

### Flora

***Objective: Survey two selected imperiled plant species in the park.***

*Action:*

- Update survey protocols for two selected imperiled plant species, including joewood and prickly-apple cactus.

Surveys for the prickly-apple cactus, which is present on the island, will be conducted in conjunction with the USFWS critical habitat designation. Joewood is ranked as threatened at the state level and this northernmost population should be monitored. A protocol will be developed, and the population will be documented using GPS and GIS technology for both species.

## INVASIVE SPECIES

Invasive plants are persistent at the park including Brazilian pepper, Australian pine, carrotwood (*Cupaniopsis anacardiodes*) and white leadtree. Widespread invasive plant removal efforts funded by the FWC Invasive Plant Management Uplands Program have taken place in the larger sections of coastal strand and maritime hammock within the island's interior in the recent past including in 2016 and 2023. Future funding should continue to be pursued to assist with maintaining low invasive plant coverage level in all areas of the park.

Black spiny-tailed iguanas are the most visible invasive, non-native animal at Gasparilla Island, and occur frequently in beach dune and coastal strand habitat throughout the park. These reptiles can displace gopher tortoises and limit food sources for many native animals. Intensive island wide removal programs have been conducted by USDA and Lee County contractors to remove the iguana. FWC invasive species staff also completed invasive animal removal work at the park in 2019. Between 2008 and 2011, approximately 10,000 iguanas were removed from Gasparilla Island (Engeman et al., 2011). DRP staff continue to be active in iguana removal within the park boundaries. In addition, a researcher studying spiny-tailed iguana usage of gopher tortoise burrows at the park located a Burmese python

(*Python bivattatus*) hiding in a burrow (Shortuse 2022). While this is believed to be a released pet that was subsequently removed from the burrow by FWC biologists, the park will continue to be vigilante for any additional sitings.

Nuisance imperiled species predators commonly found at Gasparilla Island includes coyotes and racoons, which account for most of the depredation activity for sea turtle nests on the island. Consistent predator control efforts are necessary to reduce depredation levels and have been effective at achieving this at other state parks in southwest Florida. DRP district biologists will coordinate with park staff to monitor depredation levels at the park during nesting seasons and assess when further predator control is warranted.

The nine-banded armadillo (*Dasypus novemcinctus*) also occurs at Gasparilla Island but has not yet become a nuisance sea turtle nest predator despite its reputation at other parks. Staff should monitor the abundance of armadillos and take steps to remove them when they become a problem. Invasive animal removal reports indicate that black rats (*Rattus rattus*) also occur within the park. Staff members remove these animals when encountered, in accordance with DRP procedural guidelines.

| **Invasive Plant Species** | | | |
|---|---|---|---|
| **Species Name**<br>***Scientific Name* - Common Name** | **FISC Category** | **Distribution** | **Zone ID** |
| Earleaf acacia<br>*Acacia auriculiformis* | I | Single Plant or Clump | GA-2_RL |
| | | Scattered Plants or Clumps | GA-3_IN |
| Sisal hemp<br>*Agave sisilana* | II | Scattered Plants or Clumps | GA-2_RL |
| Australian pine<br>*Causarina equisetifolia* | I | Single Plant or Clump | GA-2_RL, GA-3_IN |
| | | Scattered Plants or Clumps | GA-2_RL |
| Coconut palm<br>*Cocos nucifera* | II | Scattered Plants or Clumps | GA-3_IN |
| Carrotwood<br>*Cupaniopsis anacardioides* | I | Single Plant or Clump | GA-2_RL |
| | | Scattered Plants or Clumps | GA-3_IN, GA-4_SG |
| Umbrella plant<br>*Cyperus involucratus* | II | Scattered Plants or Clumps | GA-2_RL |
| Durban crowfootgrass<br>*Dactyloctenium aegyptium* | II | Single Plant or Clump | GA-5_SW |
| | | Scattered Plants or Clumps | GA-1_RL, GA-4_SG, GA-5_SW, GA-6_LH |
| Surinam cherry<br>*Eugenia uniflora* | I | Scattered Plants or Clumps | GA-3_IN |
| Council tree<br>*Ficus altissima* | II | Single Plant or Clump | GA-3_IN |
| Indian laurel<br>*Ficus microcarpa* | I | Scattered Plants or Clumps | GA-3_IN |
| Australian umbrella tree<br>*Heptapleurum actinophylla* | I | Single Plant or Clump | GA-2_RL, GA-3_IN, GA-4_SG, GA-5_SW, GA-6_LH |
| Cogon grass | I | Single Plant or Clump | GA-3_IN |

| Invasive Plant Species | | | |
|---|---|---|---|
| **Species Name**<br>***Scientific Name* - Common Name** | **FISC Category** | **Distribution** | **Zone ID** |
| *Imperata cylindrica* | | Scattered Plants or Clumps | GA-3_IN |
| Life plant<br>*Kalanchoe pinnata* | II | Scattered Dense Patches | GA-3_IN |
| Lantana<br>*Lantana strigocamara* | I | Scattered Plants or Clumps | GA-3_IN |
| Lead tree<br>*Leucana leucocephala* | II | Single Plant or Clump | GA-2_RL, GA-3_IN |
| | | No Current Infestation | GA-4_SG |
| | | Scattered Plants or Clumps | GA-2_RL, GA-3_IN |
| | | Scattered Dense Patches | GA-3_IN |
| Natal grass<br>*Melinis repens* | I | Scattered Plants or Clumps | GA-2_RL, GA-3_IN, GA-4_SG |
| Guinea grass<br>*Panicum maximum* | II | Scattered Plants or Clumps | GA-2_RL, GA-3_IN |
| | | Dominant Cover | GA-2_RL |
| Senegal date palm<br>*Phoenix reclinata* | II | Scattered Plants or Clumps | GA-3_IN |
| Castor bean<br>*Ricinus communis* | II | Single Plant or Clump | GA-2_RL |
| | | Scattered Plants or Clumps | GA-3_IN |
| Bow-string hemp<br>*Sansevieria hyacinthoides* | II | Scattered Plants or Clumps | GA-3_IN |
| | | Scattered Dense Patches | GA-2_RL, GA-3_IN |
| Beach naupaka<br>*Scaevola taccada* | I | Scattered Plants or Clumps | GA-4_SG |
| | | Single Plant or Clump | GA-1_RL |
| Brazilian pepper<br>*Schinus terebinthifolius* | I | Single Plant or Clump | GA-1_RL, GA-2_RL, GA-4_SG, GA-5_SW |
| | | Scattered Plants or Clumps | GA-2_RL, GA-3_IN, GA-6_LH |
| | | Scattered Dense Patches | GA-2_RL, GA-3_IN, GA-4_SG, GA-6_LH |
| Wedelia<br>*Sphagneticola trilobata* | II | Scattered Dense Patches | GA-3_IN, GA-4_SG |
| | | Dominant Cover | GA-2_RL |
| Sea hibiscus<br>*Talipariti tiliaceum* | II | Single Plant or Clump | GA-3_IN |
| Australian almond<br>*Terminalia muelleri* | II | Single Plant or Clump | GA-2_RL, GA-3_IN |
| Caesar's weed<br>*Urena lobata* | I | Scattered Plants or Clumps | GA-3_IN |
| | II | Single Plant or Clump | GA-3_IN |

| Invasive Plant Species | | | |
|---|---|---|---|
| **Species Name**<br>***Scientific Name* - Common Name** | **FISC Category** | **Distribution** | **Zone ID** |
| Washington fan palm<br>*Washingtonia robusta* | | Scattered Plants or Clumps | GA-3_IN |

**Invasive Plant Treatment**

***Objective: Update long-term invasive plant management plan for the park.***

*Actions:*

- Identify the major vectors and pathways for invasive plants at the park and reduce incoming propagules where possible.
- Regularly update surveys to reflect accurate infestation levels of each management zone.
- Develop an early detection rapid response protocol for new infestations.
- Develop a species-specific action plan for each management zone with a prioritization framework.
- Evaluate and update plan on an annual basis and adapt to changing conditions.

***Objective: Monitor and maintain 27 gross acres of habitat already in maintenance condition as needed.***

*Actions:*

- Survey all maintenance areas yearly for new infestations.
- Treat areas where invasive plant spread is imminent (e.g., after prescribed fire, mechanical or other disturbance).
- Document treatments and update surveys in the Natural Resource Tracking System (NRTS).

***Objective: Reduce or maintain cover class on 99 acres not in maintenance.***

*Actions:*

- Survey and treat after prescribed fire for rapid spread of invasive species.
- Treat medium infestations with staff and volunteers where available.
- Reduce high infestations with additional labor sources (e.g., contract funding and strike teams) and plan for passive or active restoration.
- Document treatments and update surveys in NRTS.

**Invasive and Nuisance Animal Control**

***Objective: Implement control measures on four nuisance species.***

*Actions:*

- Remove black spiny-tailed iguanas, coyotes, armadillos and black rats as needed.
- Coordinate with USDA, FWC and DRP staff capable of management to develop control method plans of known non-indigenous/nuisance animals.

USDA staff have directly assisted with sea turtle predator management of coyotes at Gasparilla Island State Park. Sea turtle predator management completed by USDA has been shown to effectively reduce sea turtle nest depredation rates in subsequent seasons at several parks within the DRP district. An increase in coyote depredation on the island of Boca Grande and within park boundaries in recent years

have led to FWC and Sea Turtle Conservancy funding USDA predator removal efforts within the park. DRP district staff will continue to monitor depredation levels at the park during nesting seasons and assess when further predator control is warranted.

FWC, USDA and DRP staff have previously assisted with black spiny-tailed iguana management at Gasparilla Island State Park. District and park staff are currently pursuing options for iguana management due to the increasingly high rate of infestations at the park. Iguana management is vital, as they are known to displace gopher tortoises and have been known to forage on the flowers of the imperiled prickly-apple cactus, which would prevent pollination (Frank 2016). DRP district and park staff will continue to pursue opportunities for invasive species control of iguanas on the island.

Historically, management of rats was completed in response to infestations around areas vital to park operation or visitor accommodation. Management activities include mechanical methods such as trapping and opportunistic removal. The use of bait should be avoided at the park to prevent secondary poisoning of predator species, such as hawks, owls and bald eagles. Management activities should be prioritized around areas of greatest need as complete eradication is likely impossible.

## CULTURAL RESOURCES

The Florida Master Site File (FMSF), maintained by the Division of Historical Resources (DHR), reveals three historic structures within Gasparilla Island State Park including the Port Boca Grande Lighthouse (8LL637a), Assistant Lightkeeper's House (8LL637b) and Amory Chapel (LL00968). Both the Lighthouse and the Assistant Lightkeeper's House are collectively called the Boca Grande Lighthouse Station. Port Boca Grande Lighthouse Station is located on 3.5 acres of land at the southern tip of Gasparilla Island. The Amory Chapel is located directly North of the Lighthouse Assistant Keeper's house on the southern tip of the island.

The Port Boca Grande Lighthouse Station (8LL637) was listed on the National Register of Historic Places in 1980. The Boca Grande Lighthouse Station National Register listing consists of two contributing buildings and five non-contributing structures. The significant—or contributing—buildings include the Port Boca Grande Lighthouse (8LL637A) and the Boca Grande Lighthouse Assistant Keeper's House (8LL637B). The non-contributing structures include the two cisterns, the corrugated metal building, the paint locker and the beacon.

The Lee County Historic Preservation Board designated the properties in the Boca Grande Lighthouse District (98-06-01) as a historic resource in 1998, including the Lighthouse, Assistant Lightkeeper's House and Amory Chapel. The Lee County Historic Preservation Board also designated Amory Chapel (95-03-01) an individual historic resource in 1995. Consequently, Chapter 22 of the Lee County Land Development Code applies to these properties.

Constructed in 1890, the Port Boca Grande Lighthouse marked the pass from Charlotte Harbor into the Gulf until its decommission in 1967. The lighthouse assisted navigation to and from Boca Grande Harbor, which became the major shipping point for phosphate mined in Polk County to a worldwide market. The lighthouse is an iron screw pile design with a wood frame and is visible up to 12 miles away. Phosphate was originally barged down the Peace River and later moved by railroad to Port Boca Grande for transfer to ocean-going vessels. The structure was restored in the mid-1980s to its 1890 appearance and is presently used as a museum. The Assistant Lightkeeper's House, constructed at the same time, has been rehabilitated for use as a park office.

A physical condition assessment of the Lighthouse Station is provided in the "Historic Structures Report for the Boca Grande Lighthouse Complex, 2003" document. The document states that all components of the lighthouse are in good condition. Mentioned, however, and corroborated by the park manager is that there is oxidation of the 19 iron pilings, but they remain in good condition. The stairs and deck are in good condition but are not in compliance the Americans with Disabilities Act (ADA). An elevator was installed in the Lighthouse structure to accommodate visitors needing assistance with the raised deck.

The assessment from the same document listed above states that all components of the Assistant Lightkeeper's House are in good condition. The 16 iron pilings are described as having evidence of oxidation but are in good condition. The Lighthouse is one of the few remaining lighthouses with screw pilings, which were once typical on the Gulf Coast. The stairs are not original, and no ADA accessibility options are available for this structure.

In 2013, the Alliance for Integrated Spatial Technologies at the University of South Florida were contracted as part of a DRP Districts 4 and 5 project to perform predictive modeling of cultural resource potential in state parks. During this project, aerial LiDAR data was used to refine maps showing the complex surface elevations of the park (Collins 2014). Fieldwork was also conducted to survey with sub-meter instrumentation and GPS camera equipment to ground truth previously recorded sites, and potential new sites. As a result of the park visit, the FMSF records for the Boca Grande Lighthouse Station (8LL637) and Boca Grande Lighthouse (8LL637A) were updated to accurately reflect their spatial locations.

The Amory Chapel (LL00968) served the African Methodist Episcopal and Shiloh Baptist congregations in Tarpon Pass Estates on alternating Sundays from 1959 to the early 1980s. Boca Grande's African American community was largely tied to the development of the railroad, port and sport fishing in the area in the early 20th century. The opening of the Gasparilla Inn in 1911 increased the need for service workers as the island became a popular resort for wealthy northerners, fishermen and industry tycoons. In the late 1950s, Boca Grande's African American community was displaced by private landowners who wanted to develop their downtown holdings and relocated to a new subdivision on the south end of the island called Tarpon Pass Estates. In the early 1980s, residents of the estates were evicted once again, this time due to flooding. The Amory Chapel is the only surviving building from the Tarpon Pass Estates community. The chapel itself is a simple, rectangular building with finished concrete flooring. The interior is a single large open room, with multiple windows that allow in natural light. The chapel was frequently used for staff and community meetings as well as weddings. The building had air conditioning and accommodated 75 people. The Lee County Historic Preservation Board designated the chapel a historic resource in 1995. The Amory Chapel sustained damages from hurricane events in 2022 and Hurricanes Helene and Milton in 2024, which inundated and filled the interior with sand to near ceiling level. After the most recent hurricanes, significant interior and structural damage was documented on the building, and various preservation methods were evaluated. Collaborative evaluations have concluded feasibility of preserving the historic chapel structure with its original stucco, stabilizing the walls from the interior such that the structure may remain entirely intact. Interior modifications or additions that have been compromised by storm damages are to be removed. The sealing door will be replaced with an architecturally appropriate metal gate such that the chapel will no longer be climate controlled. Interpretive exhibits will be sensitively planned on exterior versus interior. Exterior structural additions, including the small restroom annex and connecting covered walkway, which were also damaged, will be permanently removed. The southern and eastern perimeters of the Amory Chapel must be buffered with native vegetation comparable to that occurring prior to the hurricanes of 2024. Backside of nearest dunes located to the west of the chapel may require sand catchment to prevent

dunes from shifting onto or into the chapel. Preservation elements are detailed further in the Conceptual Land Use Plan.

The park has no collections in its possession. All holdings are owned and managed by the Barrier Island Parks Society, which is in the process of completing an inventory of all materials.

| Cultural Sites Listed in the Florida Master Site File | | | | | |
|---|---|---|---|---|---|
| **Site Name and FMSF #** | **Culture/Period** | **Description** | **Significance** | **Condition** | **Treatment** |
| Boca Grande Lighthouse (8LL637a) | Historic/19th Century | Historic Structure | NR | G | P |
| Lighthouse Assistant Keeper's House (8LL637b) | Historic/19th Century | Historic Structure | NR | G | P |
| Amory Chapel (LL00968) | Historic/Mid-20th Century | Historic Structure | NE | P | ST |

**Significance:**
NRL - National Register Listed
NRE - National Register Eligible
LS - Locally Significant
NE - Not Evaluated
NS - Not Significant

**Conditions:**
G - Good
F - Fair
P – Poor

**Recommended Treatment:**
RS - Restoration
RH - Rehabilitation
ST - Stabilization
P - Preservation
R – Removal

### Documentation of Recorded Sites

***Objective: Compile reliable documentation for all recorded historic and archaeological resources.***

*Actions:*

- Continue to survey the park and document all historic and archaeological resources encountered with the FMSF.
- Follow the DHR Matrix and required Compliance and Review consultations when ground disturbing activities are planned.

Park staff will continue to complete surveys of the park to identify and document all historic and archaeological resources encountered through the submittal of new or updated FMSF forms to DHR.

According to the predictive model completed in 2014, 54.6% of Gasparilla Island State Park has a high probability of archaeological sites (Collins 2014). The DRP matrix should be followed for any area where ground disturbing activities are planned. DHR compliance and review consultations will be triggered by the level of disturbance identified in the DHR Matrix for ground disturbing activities.

### Condition Assessment

***Objective: Monitor and assess all recorded cultural resources.***

*Action:*

- Complete assessments of three recorded cultural sites/historic structures annually.

Park staff will continue to assess and update FMSF forms as needed to DHR. The management recommendations referenced in the "Historic Structures Report for the Boca Grande Lighthouse

Complex, 2003" and the "Secretary of the Interior Standards and Guidelines" for the treatment of historic properties will be followed. A Historic Structures Report should be considered for the Amory Chapel, which turned 50 years old since the last plan update.

### Preservation Measures

***Objective: Maintain two of three cultural sites in good condition.***

*Action:*

- Maintain two historic structures in good condition.

The Lighthouse and Assistant Keeper's House structures are painted annually. While the Lighthouse has been restored to its 1890 appearance, it is managed with a hybrid restoration/rehabilitation approach. Enough modifications have been made to the structure and the surrounding site that it is not a true restoration. Still, the emphasis in the management of the structure, particularly regarding its external appearance, is to preserve and restore its 1890 appearance to the extent possible. The Assistant Keeper's House has been rehabilitated so that it retains the basic historic character while serving the compatible use of office and meeting space.

## SPECIAL MANAGEMENT CONSIDERATIONS

### Arthropod Control Plan

In 1995, a Lee County Mosquito Control District/DEP agreement that allowed a three-year experimental use of Abate, with monitoring by Mote Marine Laboratory, after which Abate use would continue unless "substantial adverse impacts to non-targets" were shown by Mote. The experiment concluded with a finding of no significant impacts, and the use of Abate was authorized in a formal amendment to the arthropod management plan (AMP) in 1999.

Even though the 1987 AMP only allowed Bti, the 1999 Amendment to that AMP stated that "the use of methoprene, Bti, and monomolecular films…remains unchanged. All other chemicals used on designated lands will be reported". Because of the heightened concern with the toxicity of Abate, the 1995 agreement defined the low marsh "recurring breeding areas" as those which needed regular treatment and high marsh "non-recurring areas" as those which only needed occasional treatment. The types of habitats were mapped, ground-truthed and adopted by mutual consent. The 1999 amendment did not institute these designations but rather identified "treatment areas" and "non-treatment areas". The amendment required an annual meeting between Lee County Mosquito Control District and DEP staff, prior to the treatment season, to review maps and decide which acreages should be classified in the two categories for that year.

In 2017, DEP approved limited aerial adulticiding in state parks within Lee County, with specific restrictions, excluding Gasparilla Island State Park. Additionally, the use of Spinosad was authorized in designated areas, with its use subject to reevaluation every five years.

Mosquito control plans temporarily may be set aside under declared threats to public or animal health, or during a declared state of emergency.

See the Florida State Park System – Statewide Philosophy and Framework for additional information.

# LAND USE COMPONENT

## VISITATION

Gasparilla Island State Park consists of multiple parcels spread out over the southern end of Gasparilla Island, providing visitors with multiple opportunities for beach access. The restored 1890 Port Boca Grande Lighthouse and museum at the southern end of the island is the centerpiece of the park. The island has a long history of fishing, leading to Boca Grande Pass becoming known as the Tarpon Capital of the World.

### Trends

Visitation at Gasparilla Island State Park is highest during late winter months into spring. Annually, the park receives approximately 706,000 visitors. Beach activities such as swimming, shelling and fishing are popular.

### Economic Impact

Gasparilla Island State Park recorded 1,077,914 visitors in FY 2023-24. By DRP estimates, the FY 2023-24 visitors contributed $128,745,969 in direct economic impact, the equivalent of adding 1,802 jobs to the local economy (DEP 2024).

## EXISTING FACILITIES AND INFRASTRUCTURE

The park's northernmost area is referred to as Sandspur, situated just north of the Gasparilla Range Lighthouse. Intended for Gulf beach access, this area consists of a paved parking area with one restroom. Beach access is provided with an on-grade path with honor box.

One-half mile south on Gulf Boulevard is a staff residence and the maintenance area. A hiking trail extends through a portion of the island interior in the vicinity of this support area, meandering through the maritime hammock.

Farther south is the Seagrape Use Area which consists of an unpaved parking area and dune-crossover boardwalk to reach the beach. Two portable restroom units are located at the north end of the parking area.

A seawall is located at the southern point of a nearly 0.5-mile segment of park shoreline. The seawall site does not offer visitor amenities and is not a designated use area but serves an important role in protection of the island from erosion.

A short distance south of the seawall is the historic Port Boca Grande Lighthouse and associated structures, which are situated at the southernmost point of the island overlooking Boca Grande Pass and the north end of Cayo Costa State Park. An elevated restroom supports visitors to both the Dunes Beach Access area and Lighthouse, which offers historic and cultural interpretation.

### Facilities Inventory

| *Sandspur Use Area* | |
|---|---|
| Restroom (with outside shower) | 1 |
| Paved Parking | 50 |
| Honor Box | 1 |

| | |
|---|---|
| *Seagrape Use Area* | |
| Beach Boardwalk (damaged) | 1 |
| Unpaved Parking | 36 |
| Honor Box | 1 |
| Portable Toilets | 2 |
| *Seawall Use Area* | |
| Unpaved Parking | 25 |
| Portable Toilets | 2 |
| Honor Box | 1 |
| *Dunes Use Area* | |
| Amory Memorial Chapel | 1 |
| Beach Boardwalk (destroyed) | 2 |
| Unpaved Parking | 120 |
| Elevated Restroom | 1 |
| *Lighthouse Use Area* | |
| Boca Grande Lighthouse Museum and Visitor Center | 1 |
| Administrative Offices | 1 |
| Picnic Tables | 8 |
| Grills | 6 |
| Unpaved Parking | 80 |
| Honor Box | 1 |
| *Maintenance Area* | |
| Park Manager's Residence | 1 |
| Maintenance Building | 1 |

## CONCEPTUAL LAND USE PLAN

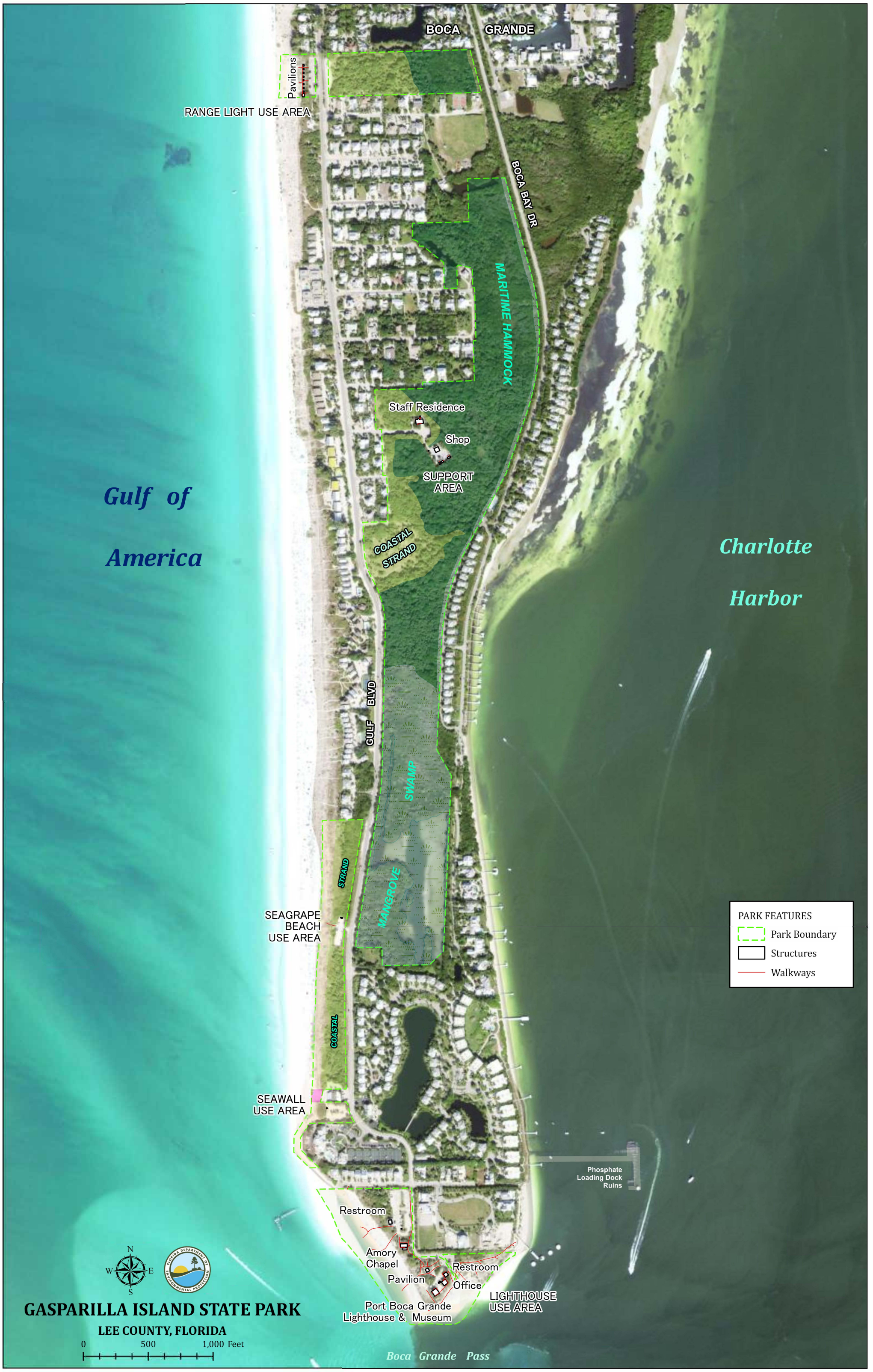
### Sandspur Use Area

***Objective: Improve access and restore natural landscape.***

*Actions:*

- Resurface/stabilize parking area and improve delineation of parking spaces.
- Restore beach dune natural community.

Asphalt pavement of the parking area is fractured and spalling due to age and the impacts of storm surge inundation. Repaving and delineating of spaces are needed. Currently two beach access points extend from the parking area: a primary visitor access walkway at the south end of the parking area and an unstabilized pathway at the north end that serves as a designated access point for law enforcement. Consideration has been given to closure of the northern pathway such that all visitors would enter and exit the beach past the restroom and requiring an alternative access point for law enforcement. Designating a single beach access, along with the prior removal of the former pavilions, would provide opportunity to eliminate habitat bisection and restore the beach dune habitat of the use area. Restoring the quality and depth of the forward dune field provides habitat for coastal wildlife and improves natural aesthetics of the area and defense against future storm surge. To mitigate for closure of the north beach access path and recognizing the popularity of this beach access point, walkway improvements, including widening, would be considered. Protection of the adjacent coastal strand and dune scape would then need to be prioritized.


BOCA GRANDE
Pavilions
RANGE LIGHT USE AREA
BOCA BAY DR
MARITIME HAMMOCK
Staff Residence
Shop
SUPPORT AREA
COASTAL STRAND
Gulf of America
Charlotte Harbor
GULF BLVD
SWAMP
STRAND
MANGROVE
SEAGRAPE BEACH USE AREA
COASTAL
SEAWALL USE AREA
Phosphate Loading Dock Ruins
Restroom
Amory Chapel
Pavilion
Restroom
Office
Port Boca Grande Lighthouse & Museum
LIGHTHOUSE USE AREA
Boca Grande Pass
PARK FEATURES
Park Boundary
Structures
Walkways
N
W
E
S
GASPARILLA ISLAND STATE PARK
LEE COUNTY, FLORIDA
0
500
1,000 Feet

Alternatively, in post-hurricane restoration efforts, this approximately one-acre site has been delineated by post and rope to preclude patterns of trampling and erosion. Replanting efforts are planned for the delineated area. Through this site, limited access has been reserved between post and rope for local law enforcement to reach the beach. If dune habitat protection is successful at this site, then the north access is considered sustainable for ongoing use.

**Seagrape Use Area**

***Objective: Reestablish access and support facilities following hurricane impacts.***

*Actions:*

- Repair beach access boardwalk.
- Construct permanent restroom.

This use area consists of a parking area with capacity for 36 vehicles, including two ADA cement pads. The remainder of the parking area consists of compacted natural surface. As a popular site for beach access, expansion of the parking area has been evaluated and determined infeasible by natural communities constraints. Protection of the adjacent coastal strand and maritime hammock is prioritized, such that improvements to the existing footprint are feasible but not expansion.

The beach is accessed via a dune-crossover boardwalk. This structure was destroyed by Hurricane Ian in 2022, and its replacement was damaged by Hurricane Milton in 2024. The existing boardwalk requires assessment/repairs to ensure safe access to the beach and to deter unsanctioned trails to the beach that further damage and bisect the beach dune community. If necessary, a replacement boardwalk may be constructed within the footprint of the existing. Given the profile of the dunes at this location, on-grade matting is considered infeasible.

Historically, restroom needs at Seagrape have been met with small portable units. However, the increased popularity of this use area warrants construction of a permanent restroom. The new facility is to be located near the boardwalk in vicinity of ADA parking. It should be noted that construction of a permanent restroom will require a code compliant elevated structure with an ADA ramp. Such a structure will reduce the number of parking spaces.

**Seawall Area**

***Objective: Reconstruct the seawall to protect the shoreline against erosion.***

*Actions:*

- Design an effective configuration for a replacement seawall.
- Construct seawall according to design.

The seawall was catastrophically damaged by the storm surge events of Hurricanes Ian, Helene and Milton. Although this site is not a formally designated use area, it is frequently utilized by anglers for shoreline casting. Management of safety and appropriate visitor use are addressed as necessary. The seawall, however, is considered essential infrastructure to prevent further erosion at this vulnerable point along the Gasparilla Island shoreline. Engineering assessments of the complex coastal dynamics are required prior to construction of the seawall. Alternative methods of wave energy attenuation and erosion mitigation will be evaluated.

**Dunes and Port Boca Grande Lighthouse Use Areas**

***Objective: Evaluate and implement historic post-hurricane preservation and interpretation of the Amory Chapel.***

*Actions:*

- Structurally stabilize and preserve the Amory Chapel.
- Remove non-historic elements of the site.
- Install historical interpretive elements.

The southern tip of Gasparilla Island was heavily impacted by back-to-back storm surges from Hurricanes Helene and Milton in 2024. Surge flattened the dunes and carried most of the sand to the east, burying the parking areas and nearly filling the Amory Chapel. While the sand has been largely relocated to form an unconsolidated dune forward of the structures, its impact to the parking areas and the historic chapel require attention. Proper drainage within both parking areas has been compromised, necessitating redevelopment. This may include re-grading, repaving and addition of stormwater handling features. An engineering assessment of the Amory Chapel has determined that structural integrity has been compromised, however, a strategy for structural stabilization has been identified. Beams will be installed on the interior walls, all non-historic elements will be removed, and gates will be installed at the entryways such that all public interaction with the chapel will be from the exterior. The attached covered walkway and restroom building will be removed, leaving only the original chapel structure on this historic site. Appropriate interpretive signage regarding the history of the chapel will be installed near the Gulf-facing west face. DRP will determine the most effective way to continue to connect visitors to the significance and history of the Amory Chapel. The type, design, quantity and specific placement of interpretive elements to deepen understanding and improve orientation will be specified during this planning process. Durability of interpretive elements in this dynamic coastal area will be considered.

*Potential Long-range Preservation and Interpretation Alternatives:*

Recognizing the vulnerability of this site to tropical events and other coastal dynamics, the structural integrity of the Amory Chapel may again be compromised, prompting yet further preservation measures and interpretive innovations. As conditions may eventually require, DRP will coordinate with DHR to determine appropriate options. Examples of historic structures interpretation in other conservation/preservation settings where structures have been compromised beyond repair or altogether lost (e.g., President's House Site within Independence National Historic Park, Washington D.C.) set precedent for commemorating non-extant architecture with frames rather than complete reconstructions. In a storm-prone coastal environment such a minimalist approach to historic structures interpretation may be advantageous. Ultimately, developing a concept to preserve the chapel's historic presence will require a thorough interagency and community engagement process.

***Objective: Redesign ingress/egress and parking to alleviate capacity and congestion challenges.***

*Actions:*

- Realign ingress/egress road.
- Pave road and parking spaces.
- Capture stormwater onsite.
- Delineate parking spaces and maximize organization/capacity.
- Reestablish vegetative buffers.

1. Sandspur Use Area - Resurface parking area and improve parking delineation. Restore beach dune.

2. Support Facilities and Infrastructure - Realign road away from staff residence. Construct a pole barn.

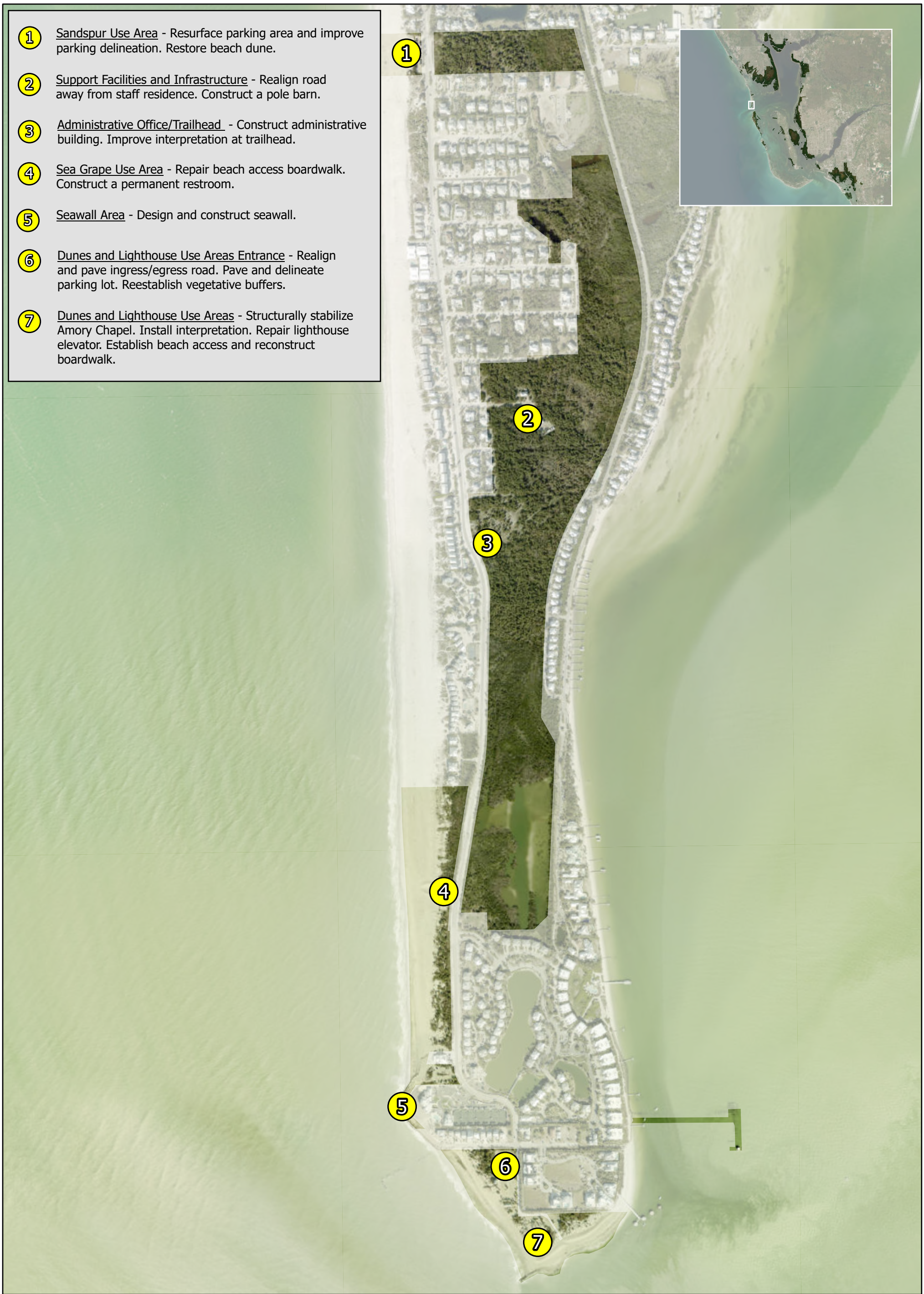
3. Administrative Office/Trailhead - Construct administrative building. Improve interpretation at trailhead.

4. Sea Grape Use Area - Repair beach access boardwalk. Construct a permanent restroom.

5. Seawall Area - Design and construct seawall.

6. Dunes and Lighthouse Use Areas Entrance - Realign and pave ingress/egress road. Pave and delineate parking lot. Reestablish vegetative buffers.

7. Dunes and Lighthouse Use Areas - Structurally stabilize Amory Chapel. Install interpretation. Repair lighthouse elevator. Establish beach access and reconstruct boardwalk.




# GASPARILLA ISLAND STATE PARK
## Conceptual Land Use Plan

N

Feet

0 500 1,000

This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

The unpaved north-south access road (Gulf Boulevard) for the parking areas of the historic lighthouse, chapel and beach has been challenged by longstanding traffic congestion and parking that does not meet increasing visitor demand. Hurricanes exacerbated pre-existing challenges with erosion and uneven surfacing throughout the parking area. Surveys in conjunction with post-hurricane repair efforts revealed a boundary discrepancy—that Gulf Boulevard partially traverses the neighboring private parcel (Hill Tide Estates). Options for acquisition of the road corridor were evaluated; however, an alternative reconfiguration of the access and parking was ultimately selected such that the travel lanes will be contained within the parking area (versus the current alignment along the eastern perimeter of the parking area). To meet high demand for park access, the capacity will increase from 82 to an estimated 127 parking spaces with stormwater swales self-contained within the footprint of the existing parking area. Stormwater swales are expected to resolve water and sand discharge concerns on Belcher Road along the north boundary of the parking area. Increase in parking capacity is feasible without footprint expansion by paving and formally delineating spaces. Site planning will entail revegetation of the peripheral landscaping, especially to buffer the historic Amory Chapel from the parking area.

***Objective: Conduct post-hurricane historic structures and accessibility assessments for the Port Boca Grande Lighthouse complex.***

*Actions:*

- Conduct historic structures assessments of the lighthouse and assistant lighthouse keeper's house.
- Repair elevator for access to the historic lighthouse.

***Objective: Install resilient and sustainable beach access.***

*Actions:*

- Reconstruct dune crossover boardwalk.
- Establish accessible on-grade beach access.

Historically, beach access was largely provided by boardwalks. Such boardwalks that cross dunes consisted of extensive decking that has proven highly vulnerable to storm surge and contribute to post storm debris that complicates recovery efforts. Minimizing structural elements in favor of well-placed on-grade matting is being evaluated as alternative formats of beach access. If a medium of stabilization is deemed necessary along any segments of on-grade pathway, natural biodegradable materials such as coir matting (typically manufactured from coconut husk and widely applied for erosion control in coastal and riverine environments) should be considered as an alternative to synthetic materials that are otherwise typical of mobility mats. As with any dune crossing, an on-grade path should, where spatially feasible, consist of one or two directional switchbacks, to avoid or at least mitigate breach points during future storm surges. Currently, beach access for visitors with mobility impairments is facilitated via on-site provision of specialized, motorized wheelchairs that safely and efficiently traverse beach sand (a service provided by park staff on an as-needed basis).

Where on-grade access matting is applied for beach access, best practices require that mats are not to extend farther seaward than the toe of the foredunes and may extend inland as far as necessary to meet accessibility standards. The seaward limit avoids interference with nesting habitat.

**Support Facilities and Infrastructure**

***Objective: Improve function of maintenance area.***

*Actions:*

- Realign road away from staff residence.
- Add a restroom and shower to the maintenance building.
- Construct a pole barn.

Currently the road leading to the maintenance area extends past the park manager's residence. For privacy and security, the road should be rerouted. This rerouting is contingent on development of a new trailhead (with parking) associated with the proposed administrative building since the current maintenance area road alignment provides the only access to the trail system of the park.

Currently, staff rely on a portable restroom inside the maintenance compound. Renovations to the maintenance building should include a permanent restroom with shower as well as additional space for staff lockers. Additionally, a pole barn should be constructed within the established footprint of the maintenance complex to protect equipment from the elements.

***Objective: Provide administrative and outdoor interpretive space at a more central and less vulnerable location.***

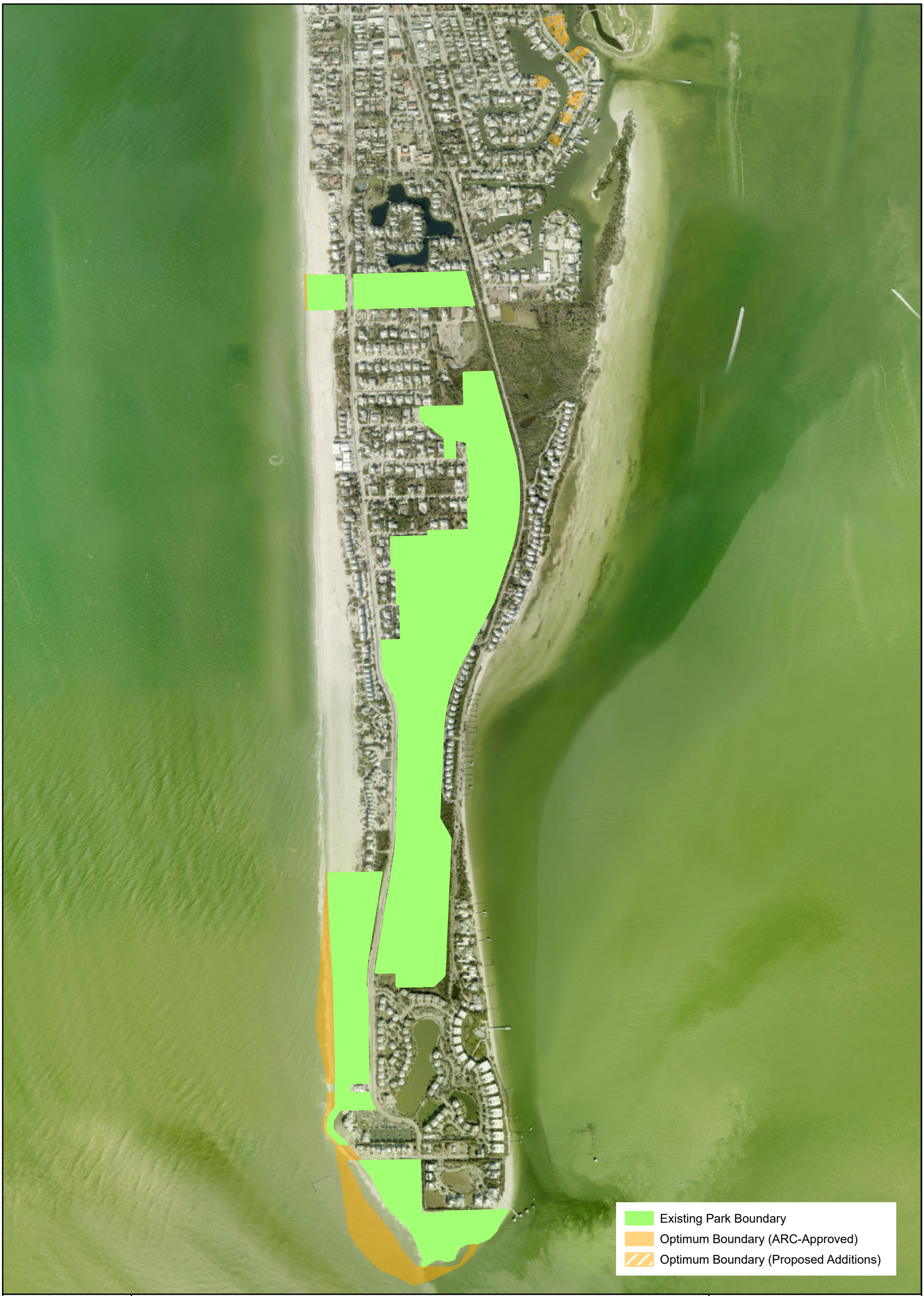
*Action:*

- Design and construct a new administrative building.
- Enhance trailhead with interpretive elements.

The park administrative office is currently located inside the historic assistant lighthouse keeper's residence. While adaptive reuse of historic structures is always considered and often encouraged as a measure to ensure proper upkeep, co-locating administrative space within such a heavily visited use area is no longer practical or desirable. A more suitable location for an administrative office is along Gulf Boulevard. This area is centrally located, relatively sheltered from storm events compared to the beach access areas, and well-situated for incorporation with an interpretive trailhead. The existing trailhead includes minimal interpretation and is infrequently visited; however, considerable opportunity exists for a more robust interpretive walk from this site. The site can also accommodate necessary parking and provide outdoor interpretive space. The type, design, quantity, and placement of interpretive elements to deepen visitor understanding of Gasparilla Island's upland natural communities and wildlife and improve orientation will be specified during interpretive planning. Appropriateness and weather resistance in this dynamic coastal area will be considered.

## OPTIMUM BOUNDARY

Across Belcher Road from the entrance to the Lighthouse Use Area stands the Boca Grande Quarantine Station. Built in 1895, this is where ship crew members and phosphate laborers would be quarantined to isolate communicable disease infections. This historic landmark could be interpreted to further tell the history of the island and the lighthouse. Multiple potential acquisition and management options (e.g., by local conservation/preservation entities) may be viable. Even under potential management by an alternative entity, DRP emphasizes the preservation and interpretation need for this contributing cultural element of the Port Boca Grande landscape.




# GASPARILLA ISLAND STATE PARK
## Optimum Boundary

N

0 500 1,000 Feet

This graphical representation is provided for informational purposes and should not be considered authoritative for navigational, engineering, legal, and other uses.

North of the park, several undeveloped parcels with canal frontage are identified on the optimum boundary map. Any of these parcels would yield significant logistical value for access to Gasparilla Island and the nearby barrier island parks via boat (an efficient alternative to congested road commutes) While the limited ecological value of such canal parcels may preclude conventional acquisition funding sources, they are nonetheless identified for operational benefit.