



**FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION**

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April 21, 2014

Ms. Jennifer Carver  
Planning Manager  
Office of Park Planning, Division of Recreation and Parks  
Department of Environmental Protection  
3900 Commonwealth Boulevard, MS 525  
Tallahassee, FL 32399-3000

**Re: Seabranh Preserve State Park – Lease # 3954**

Dear Ms. Carver:

The Division of State Lands, Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund, hereby approves the Seabranh Preserve State Park management plan. The next management plan update is due April 21, 2024.

Approval of this land management plan does not waive the authority or jurisdiction of any governmental entity that may have an interest in this project. Implementation of any upland activities proposed by this management plan may require a permit or other authorization from federal and state agencies having regulatory jurisdiction over those particular activities. Pursuant to the conditions of your lease, please forward copies of all permits to this office upon issuance.

Sincerely,

A handwritten signature in black ink, appearing to read "MS Gengenbach".

Marianne S. Gengenbach  
Office of Environmental Services  
Division of State Lands





# **Seabranh Preserve State Park**

**APPROVED  
Unit Management Plan**

**STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION**

**Division of Recreation and Parks  
April 21, 2014**







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## INTRODUCTION

Seabranh Preserve State Park is located in Martin County in the Port Salerno area, just south of the City of Stuart (see Vicinity Map). Access to the park is from State Road A1A, which runs along the western side of the park (see Reference Map). The Vicinity Map also reflects significant land and water resources existing near the park.

Seabranh Preserve State Park was initially acquired on October 22, 1991 through funds from the Conservation and Recreation Lands (CARL)/Preservation 2000 (P2000) program. Currently, the park comprises 922 acres. The Board of Trustees of the Internal Improvement Trust Fund (Trustees) hold fee simple title to the park and on June 10, 1992, the Trustees leased (Lease Number 3954) the property to DRP under a 50-year lease. The current lease will expire on June 9, 2042.

Seabranh Preserve State Park is designated single-use to provide public outdoor recreation and other park-related uses. There are no legislative or executive directives that constrain the use of this property (see Addendum 1).

### Purpose and Significance of the Park

#### PURPOSE AND SIGNIFICANCE OF THE PARK

The purpose of Seabranh Preserve State Park is to preserve and protect its uniquely important and irreplaceable ecosystem and provide natural areas for resource-based outdoor recreation and conservation. The park protects natural communities that provide habitat for rare plant and animal species, preserves water quality in a designated aquatic preserve and provides recreational opportunities for the enjoyment of Florida residents and visitors.

#### Park Significance

- The park, together with adjacent St. Lucie Inlet Preserve State Park, protects a unique cross-section of natural communities that are part of an intact biological system extending from the reef, beach, dunes, mangroves, estuarine, hammock and low pine flatwoods to scrub.
- The park protects a dense freshwater baygall natural community, a rare habitat southeast Florida. The baygall community provides habitat for two rare epiphytes, the vanilla orchid (*Vanilla mexicana*) and the hand fern (*Ophioglossum palmatum*).
- The park contains some of the last remaining coastal scrub in southeast Florida and provides habitat for a number of scrub endemics and rare species, including Curtiss' milkweed (*Asclepias curtissi*), Large-flowered rosemary (*Condradina grandiflora*), nodding pinweed (*Lechea cernua*) and Florida Scrub-Jay (*Aphelocoma coerulescens*).

- The park's primary recreation area benefits visitors by offering integrated ecological communities, increasingly rare in South Florida. The park provides residents and visitors with high-quality hiking, wildlife viewing and picnicking adjacent to highly populated areas.

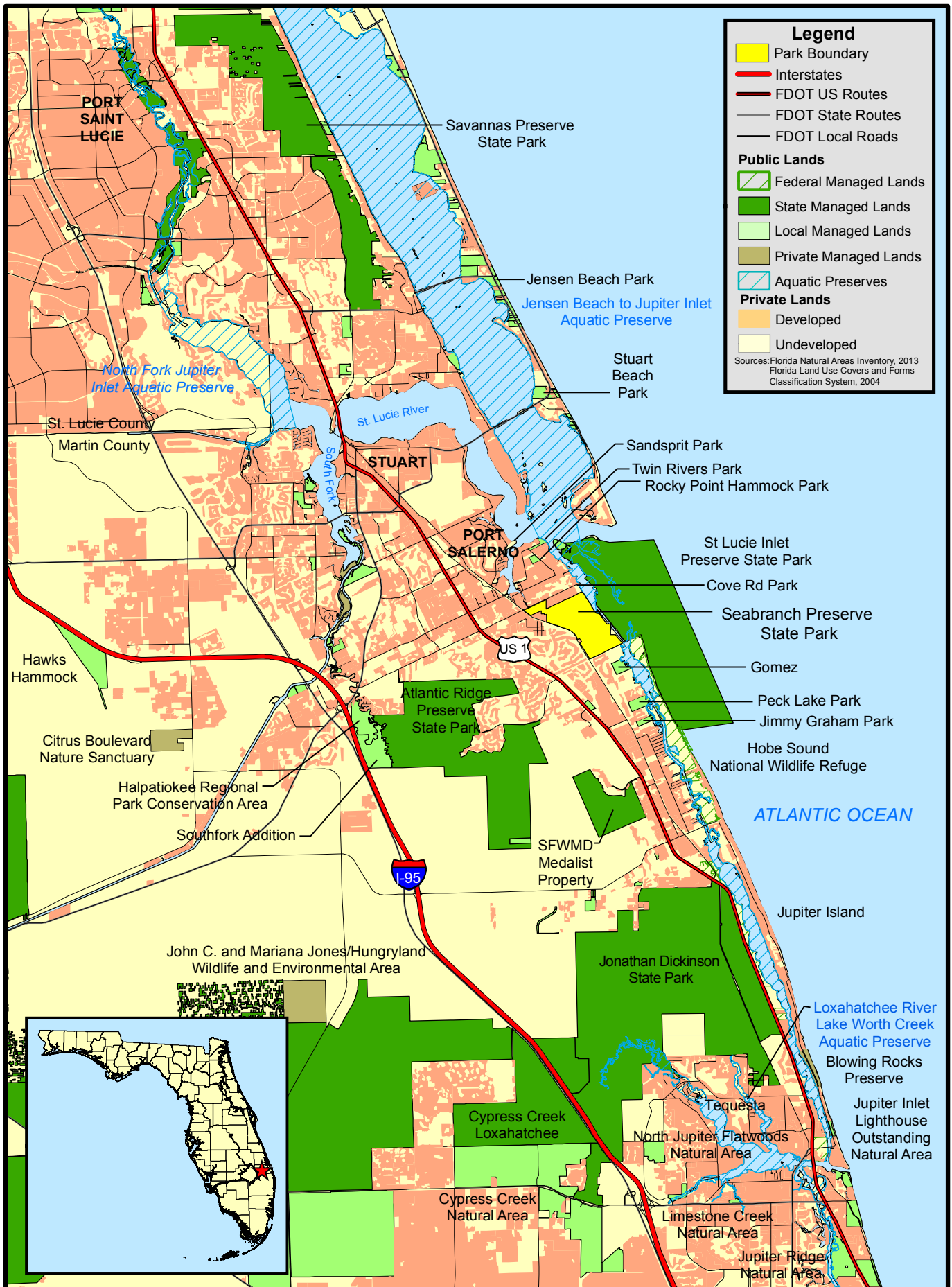
Seabranh Preserve State Park is classified as a State Preserve in the DRP's unit classification system. In the management of a State Preserve, preservation and enhancement of natural conditions is all important. Resource considerations are given priority over user considerations and development is restricted to the minimum necessary for ensuring its protection and maintenance, limited access, user safety and convenience, and appropriate interpretation. Permitted uses are primarily of a passive nature, related to the aesthetic, educational and recreational enjoyment of the preserve, although other compatible uses are permitted in limited amounts. Program emphasis is placed on interpretation of the natural and cultural attributes of the preserve.

### **Purpose and Scope of the Plan**

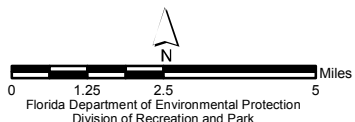
This plan serves as the basic statement of policy and direction for the management of Seabranh Preserve State Park as a unit of Florida's state park system. It identifies the goals, objectives, actions and criteria or standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives and provide balanced public utilization. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and is intended to be consistent with the State Lands Management Plan. With approval, this management plan will replace the 2002 approved plan.

The plan consists of three interrelated components: the Resource Management Component, the Land Use Component and the Implementation Component. The Resource Management Component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management needs and issues are identified, and measurable management objectives are established for each of the park's management goals and resource types. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, imperiled species management, cultural resource management and restoration of natural conditions.

The Land Use Component is the recreational resource allocation plan for the park. Based on considerations such as access, population, adjacent land uses, the natural and cultural resources of the park, current public uses and existing development. Measurable objectives are set to achieve the desired allocation of the physical space of the park. These objectives identify use areas and propose the types of facilities and programs as well as the volume of public use to be provided.



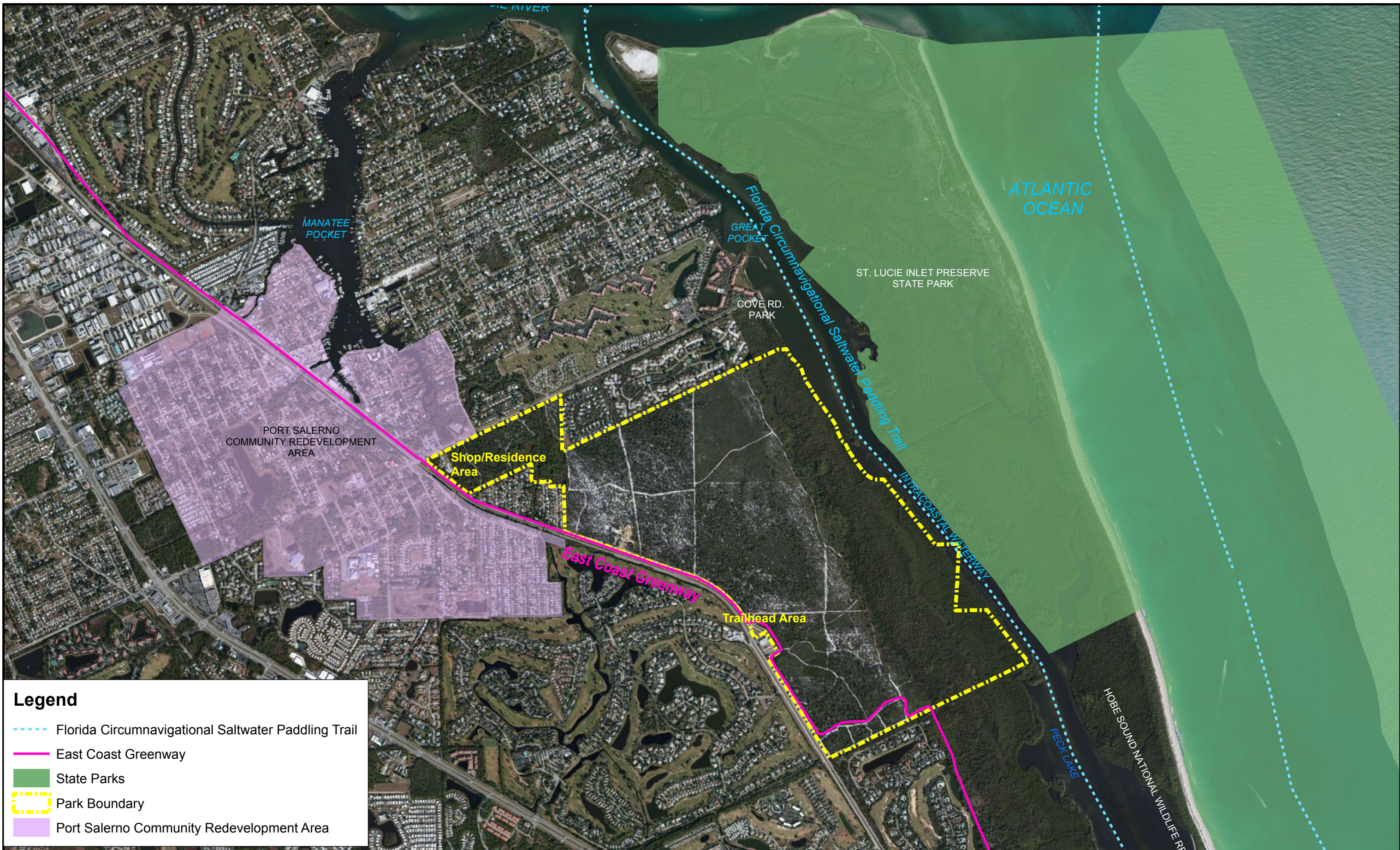
**SEABRANCH PRESERVE STATE PARK**



**VICINITY MAP**



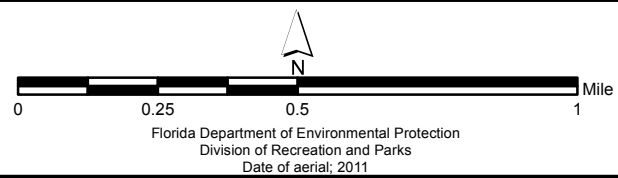




**Legend**

- - - Florida Circumnavigational Saltwater Paddling Trail
- East Coast Greenway
- State Parks
- Park Boundary
- Port Salerno Community Redevelopment Area

SEABRANCH PRESERVE STATE PARK



REFERENCE MAP





The Implementation Component consolidates the measurable objectives and actions for each of the park's management goals. An implementation schedule and cost estimates are included for each objective and action. Included in this table are (1) measures that will be used to evaluate the DRP's implementation progress, (2) timeframes for completing actions and objectives and (3) estimated costs to complete each action and objective.

All development and resource alteration proposed in this plan is subject to the granting of appropriate permits, easements, licenses, and other required legal instruments. Approval of the management plan does not constitute an exemption from complying with the appropriate local, state or federal agencies. This plan is also intended to meet the requirements for beach and shore preservation, as defined in Chapter 161, Florida Statutes, and Chapters 62B-33, 62B-36 and 62R-49, Florida Administrative Code.

In the development of this plan, the potential of the park to accommodate secondary management purposes was analyzed. These secondary purposes were considered within the context of the DRP's statutory responsibilities and the resource needs and values of the park. This analysis considered the park natural and cultural resources, management needs, aesthetic values, visitation and visitor experiences. For this park, 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. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan.

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.

The DRP may provide the services and facilities outlined in this plan either with its own funds and staff or through an outsourcing contract. Private contractors may provide assistance with natural resource management and restoration activities or a Visitor Service Provider (VSP) may provide services to park visitors in order to enhance the visitor experience. For example, a VSP could be authorized to sell merchandise and food and to rent recreational equipment for use in the park. A VSP may also be authorized to provide specialized services, such as interpretive tours, or overnight accommodations when the required capital investment exceeds that which DRP can elect to incur. Decisions regarding outsourcing, contracting with the private sector, the use of VSPs, etc., are made on a case-by-case basis in accordance with the policies set forth in the DRP's Operations Manual (OM).

## Management Program Overview

### Management Authority and Responsibility

In accordance with Chapter 258, Florida Statutes and Chapter 62D-2, Florida Administrative Code, the Division of Recreation and Parks (DRP) is charged with the responsibility of developing and operating Florida's recreation and parks system. These are administered in accordance with the following policy:

*It shall be the policy of the Division of Recreation and Parks to promote the state park system for the use, enjoyment, and benefit of the people of Florida and visitors; to acquire typical portions of the original domain of the state which will be accessible to all of the people, and of such character as to emblemize the state's natural values; conserve these natural values for all time; administer the development, use and maintenance of these lands and render such public service in so doing, in such a manner as to enable the people of Florida and visitors to enjoy these values without depleting them; to contribute materially to the development of a strong mental, moral, and physical fiber in the people; to provide for perpetual preservation of historic sites and memorials of statewide significance and interpretation of their history to the people; to contribute to the tourist appeal of Florida.*

The Board of Trustees of the Internal Improvement Trust Fund (Trustees) has granted management authority of certain sovereign submerged lands to the DRP under Management Agreement MA 68-086 (as amended January 19, 1988). The management area includes a 400-foot zone from the edge of mean high water where a park boundary borders sovereign submerged lands fronting beaches, bays, estuarine areas, rivers or streams. Where emergent wetland vegetation exists, the zone extends waterward 400 feet beyond the vegetation. The agreement is intended to provide additional protection to resources of the park and nearshore areas and to provide authority to manage activities that could adversely affect public recreational uses.

Many operating procedures are standardized system-wide and are set by internal direction. These procedures are outlined in the OM that covers such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, public use regulations, resource management, law enforcement, protection, safety and maintenance.

## Park Management Goals

The following park goals express the DRP's long-term intent in managing the state park:

- Provide administrative support for all park functions.
- Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.
- Restore and maintain the natural communities/habitats of the park.
- Maintain, improve or restore imperiled species populations and habitats in the park.
- Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.
- Protect, preserve and maintain the cultural resources of the park.
- Provide public access and recreational opportunities in the park.
- Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.

## Management Coordination

The park is managed in accordance with all applicable laws and administrative rules. Agencies having a major or direct role in the management of the park are discussed in this plan.

The Florida Department of Agriculture and Consumer Services (FDACS), Florida Forest Service (FFS), assists DRP staff in the development of wildfire emergency plans and provides the authorization required for prescribed burning. The Florida Fish and Wildlife Conservation Commission (FFWCC) assists staff in the enforcement of state laws pertaining to wildlife, freshwater fish and other aquatic life existing within the park. In addition, the FFWCC aids DRP with wildlife management programs, including imperiled species management. The Florida Department of State (FDOS), Division of Historical Resources (DHR) assists staff to ensure protection of archaeological and historical sites. The Florida Department of Environmental Protection (DEP), Office of Coastal and Aquatic Managed Areas (CAMA) aids staff in aquatic preserves management programs. The DEP, Bureau of Beaches and Coastal Systems aids staff in planning and construction activities seaward of the Coastal Construction Control Line (CCCL). In addition, the Bureau of Beaches and Coastal Systems aid the staff in the development of erosion control projects.

## Public Participation

The DRP provided an opportunity for public input by conducting a public workshop and an Advisory Group meeting to present the draft management plan to the public. These meetings were held on December 10 and 11, 2013, respectively. Meeting notices were published in the Florida Administrative Register, December 3, 2013, Vol. 39/233, included on the Department Internet Calendar, posted in clear view at the park, and promoted locally. The purpose of the Advisory Group meeting

is to provide the Advisory Group members an opportunity to discuss the draft management plan (see Addendum 2).

#### Other Designations

Seabranh Preserve State Park is not within an Area of Critical State Concern as defined in Section 380.05, Florida Statutes, and it is not presently under study for such designation. The park is a component of the Florida Greenways and Trails System, administered by the Department'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. Surface waters in this park are also classified as Class II waters by the Department. This park is adjacent to the Jensen Beach to Jupiter Inlet Aquatic Preserve, an aquatic preserve as designated under the Florida Aquatic Preserve Act of 1975 (Section 258.35, Florida Statutes).

## **RESOURCE MANAGEMENT COMPONENT**

### **Introduction**

The Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP) in accordance with Chapter 258, Florida Statutes, has implemented resource management programs for preserving for all time the representative examples of natural and cultural resources of statewide significance under its administration. This component of the unit plan describes the natural and cultural resources of the park and identifies the methods that will be used to manage them. Management measures expressed in this plan are consistent with the DEP's overall mission in ecosystem management. Cited references are contained in Addendum 3.

The DRP's philosophy of resource management is natural systems management. Primary emphasis is placed on restoring and maintaining, to the degree possible, the natural processes that shaped the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management for imperiled species is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

The DRP's management goal for cultural resources is to preserve sites and objects that represent Florida's cultural periods, significant historic events or persons. This goal often entails active measures to stabilize, reconstruct or restore resources, or to rehabilitate them for appropriate public use.

Because park units are often components of larger ecosystems, their proper management can be affected by conditions and events that occur beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program that assesses resource conditions, evaluates management activities and refines management actions, and reviews local comprehensive plans and development permit applications for park/ecosystem impacts.

The entire park is divided into management zones that delineate areas on the ground that are used to reference management activities (see Management Zones Map). The shape and size of each zone may be based on natural community type, burn zone, and the location of existing roads and natural fire breaks. It is important to note that all burn zones are management zones; however, not all management zones include fire-dependent natural communities. Table 1 reflects the management zones with the acres of each zone.

<b>Management Zone</b>	<b>Acreage</b>	<b>Managed with Prescribed Fire</b>	<b>Contains Known Cultural Resources</b>
SB-A	305.50	Yes	Yes
SB-B	53.00	Yes	No
SB-C	190.78	Yes	Yes
SB-D	130.5	Yes	No
SB-E	162.50	Yes	Yes
SB-F	34.32	Yes	No
SB-G	25.4	Yes	No
SB-H	11.00	No	No

## **Resource Description and Assessment**

### **Natural Resources**

#### Topography

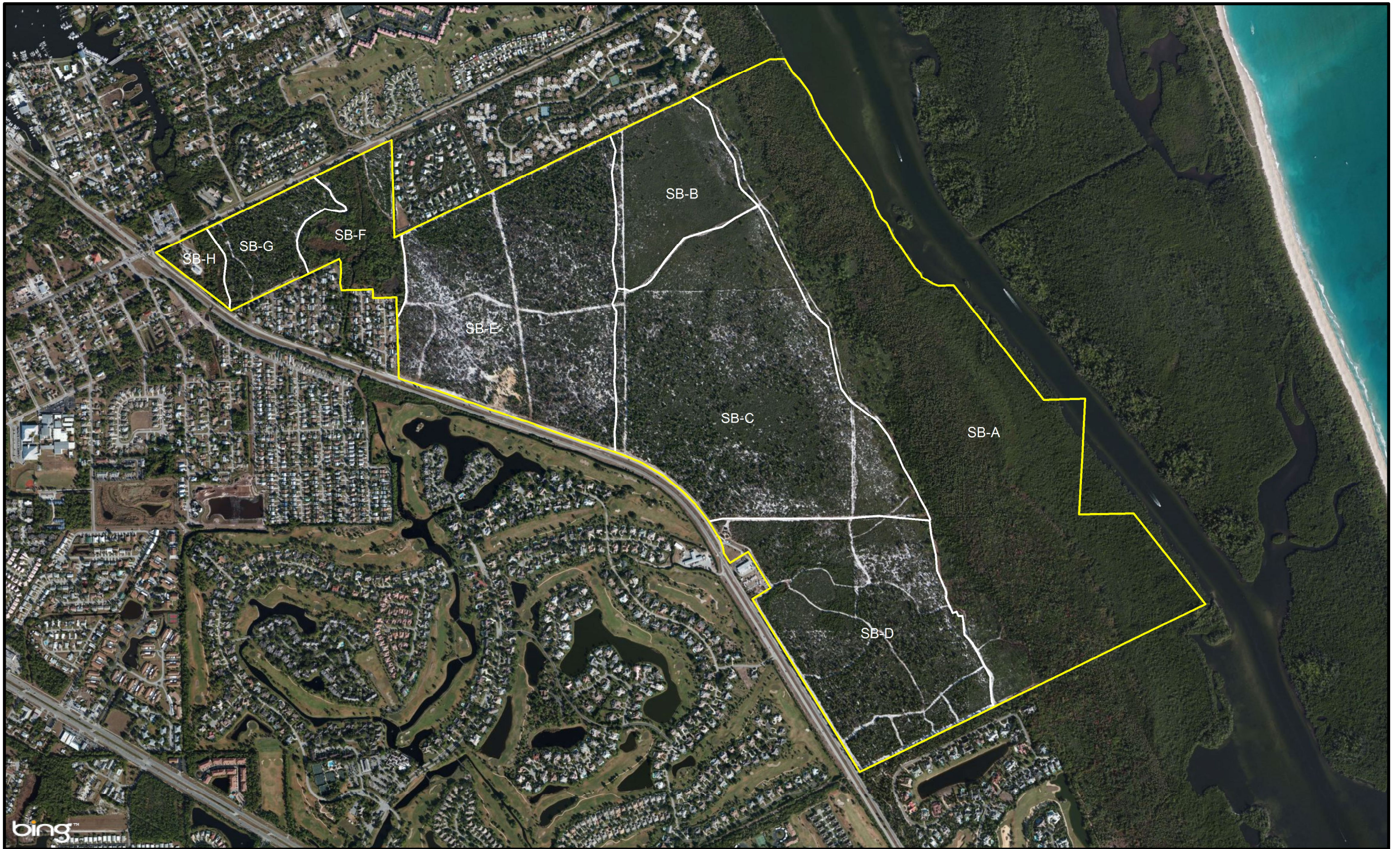
The topography of the park has been shaped by ancient marine forces. Sea level changes and associated near-shore currents have altered the topography of the landscape within the park to a series of low elevation ridges and shallow depression. Lying within the region known as the Atlantic Coastal Ridge (Puri and Vernon 1964), the majority of the park is dominated by sand dunes formed during the Pleistocene Epoch. Elevations range from sea level to 30.7 feet, with this change occurring within less than a mile. This topographic gradient has led to the formation of the baygall community, with much of its water derived from down slope seepage west to east. Distinct changes in the natural communities can be observed progressing east to west as the elevation drops one to three feet.

A 4.5-acre area within the park along State Road A1A was used as a borrow site by a previous owner but has recruited scrub vegetation. From survey information, it appears that the elevation was lowered approximately seven feet in this region.

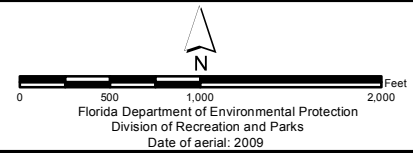
#### Geology

All rocks and sediment underlying the park were deposited by eolian, fluvial or marine processes associated with marine currents during ancient times when sea levels were higher (Schmidt 1997). The principal geologic formation underlying the park is the Pleistocene-Anastasia Formation that consists primarily of limestone and coquina. Draped over top of the Anastasia Formation is a marine terrace deposit called the Pamlico Sands. These sands, from marine sediment-derived deposits, are presumed to have been deposited during the Late Wisconsin period glaciations because of a series of sea level changes. The siliceous sands covering the surface in the park were eroded





SEABRANCH PRESERVE STATE PARK



MANAGEMENT ZONES MAP





from the southeastern coastal plain and Appalachian Mountains and transported by marine and river currents, eventually to be deposited along the shallow Florida Platform. Fluctuations in sea levels and near shore currents have altered these deposits, leaving the present day formation of upland ridges and shallow depressions observed in the park.

## Soils

There are nine soil types for the park (see Soils Map). The sand ridge group is fine, highly permeable sands made up of the Paola--St. Lucie Association. The sand ridge soils are excessively well drained and up to 80 inches deep. The low ridge is represented by the Salerno--Jonathan-Hobe Association (including Orsino sand), which are moderately permeable sands. The low ridge group is moderately to excessively well drained, with weakly cemented subsoil below 50 inches. The sand and low ridge groups were both used by pineapple plantations. The next group, the flatwoods, is represented by the Waveland--Lawnwood--Basinger Association (which includes Placid sand). These soils are poorly drained and typically hold water during periods of high rainfall. The sloughs group is represented by Okeelanta-Canova Variant-Floridana Association. These low permeability soils are mostly organic with a sandy substratum. The water table is normally at or near the surface for most of the year. The last of the five groups is the tidal swamp group represented by the Bessie-Okeelanta Variant-Terra Ceia Variant Association. These low permeability soils are primarily organic and are normally inundated by tidal waters. Organic material may occur in depths up to 50 inches. Typically, a clayey layer is found in the substratum below the organic material.

Soil erosion is not a problem within the park. Most of the areas in the park are excessively to moderately well drained, so there is little or no runoff, even during periods of heavy rainfall. In addition, most of the area remains in natural vegetation, so rainfall that is not rapidly drained through the sandy soil is taken up by the vegetation and eventually transpired. Detailed soils descriptions for the park are contained in Addendum 4.

## Minerals

There are no known minerals of commercial value at this unit.

## Hydrology

In general, the elevation of the park slopes downward from west to east, towards the Indian River. Before this parcel was acquired by the state, this property was a Development of Regional Impact (the project was withdrawn), and consultants made a number of test pits and borings searching for water table elevations. They found that depths to water ranged from one to six feet over most of the eastern area of the property. However, where elevations exceeded 20 feet (in the west), test borings of nine to ten feet encountered no water at all.

The Indian River Lagoon forms the eastern boundary of the park and, because of its size, is the main surface water feature. One hundred-and-twenty years ago, the Indian River was a much lower salinity system. Since then, several man-made inlets (St. Lucie, Ft. Pierce and Sebastian) have been opened to the ocean. The lagoon is also the main corridor of the Intracoastal Waterway, which is dredged and maintained periodically. Consequently, the Indian River Lagoon is now saline and supports the mangrove-dominated tidal swamp forming the eastern boundary of the park.

Another surface water feature at the park is Manatee Creek, which crosses the park in the northwestern corner. The West Fork of Manatee Creek is tidal and brackish, whereas the East Fork is an intermittent freshwater stream.

Historically, as seen in aerial photos from 1940, the headwaters of Manatee Creek potentially originated from a series of small ponds and marshes. Today the surrounding area is composed of residential and golf course developments that could be greatly influencing the creek by their surface water management system.

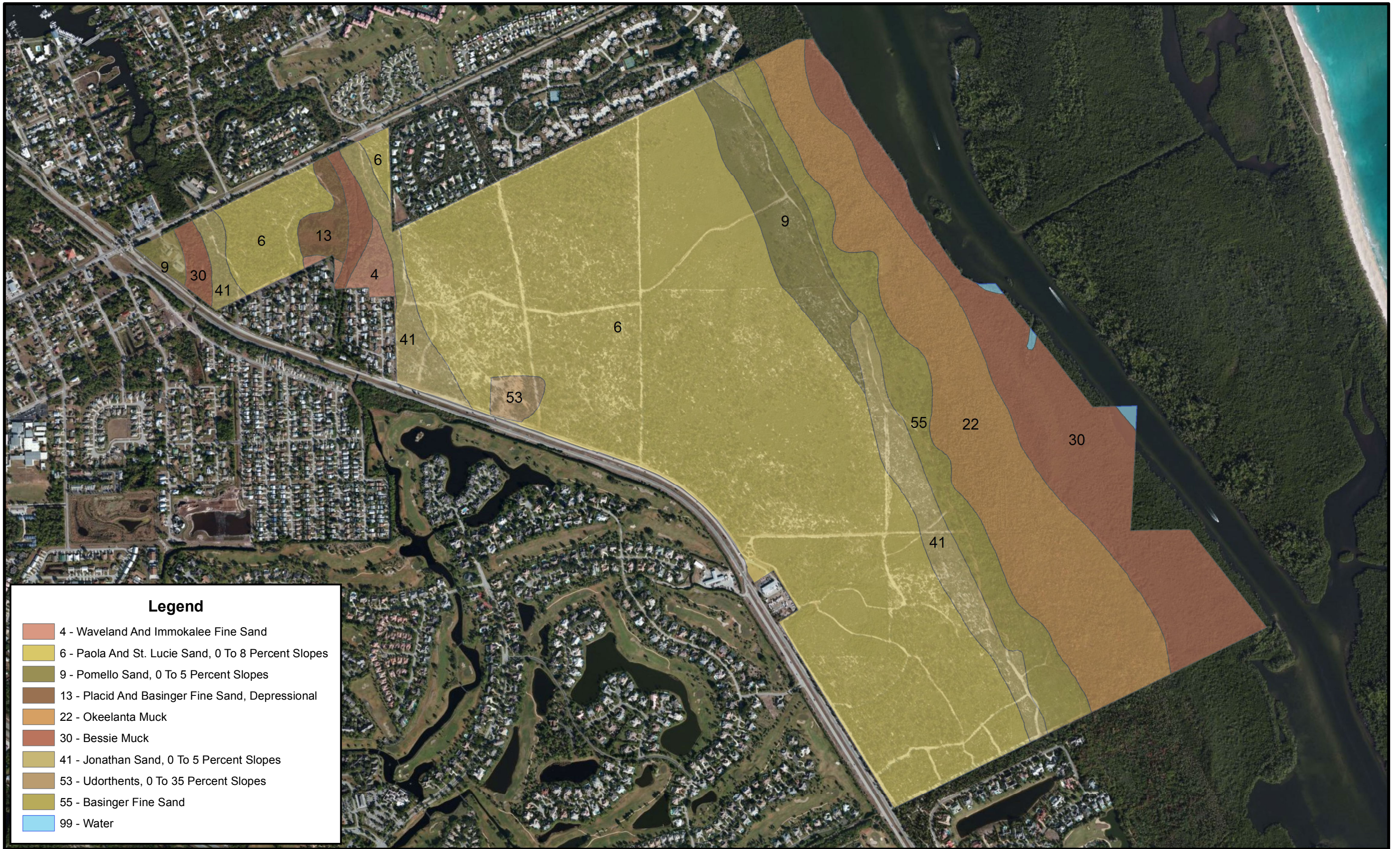
The western half of the park, which is comprised of deep, sandy soils, is an area of aquifer recharge. As the land slopes downward to the east, some of the water from this sandy recharge area flows into a freshwater swamp community known as a baygall. The baygall at the park is an important natural feature in south Florida. Unlike other forested wetlands, such as a hydric hammock or floodplain swamp which receive water from an adjacent river or lake during high water stages, the baygall receives water from the adjacent higher sandy landscape, where water slowly filters through the sand and out into the swamp.

## Natural Communities

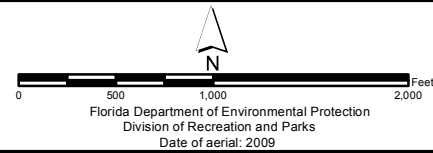
This section of the management plan describes and assesses each of the natural communities found in the state park. It also describes of the desired future condition (DFC) of each natural community and identifies the actions that will be required to bring the community to its desired future condition. Specific management objectives and actions for natural community management, exotic species management, imperiled species management and community improvement are discussed in the Resource Management Program section of this component.

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas that are similar with respect to those factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, however, despite similar physical conditions. In other instances, physical factors are substantially different, yet the species compositions are quite similar. For example, coastal strand and scrub--two communities with similar species compositions--generally have quite different climatic environments, and these necessitate different management programs. Some physical influences, such as fire frequency, may vary from FNAI's descriptions for certain natural communities in this plan.





SEABRANCHE PRESERVE STATE PARK



SOILS MAP





When a natural community within a park reaches the desired future condition, it is considered to be in a "maintenance condition." Required actions for sustaining a community's maintenance condition may include, maintaining optimal fire return intervals for fire dependant communities, ongoing control of non-native plant and animal species, maintaining natural hydrological functions (including historic water flows and water quality), preserving a community's biodiversity and vegetative structure, protecting viable populations of plant and animal species (including those that are imperiled or endemic), and preserving intact ecotones linking natural communities across the landscape.

The park contains nine distinct natural communities as well as ruderal and developed areas (see Natural Communities Map). A list of known plants and animals occurring in the park is contained in Addendum 5.

### Mesic Flatwoods

*Desired future condition:* The dominant pine species is South Florida slash pine (*Pinus elliottii*). Native herbaceous groundcover should be over at least 25 percent of the area and less than 3 feet in height. Saw palmetto (*Serenoa repens*) will comprise no more than 50 percent of total shrub species cover, and are less than 3 feet in height. Shrub species include saw palmetto, gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), scrub oaks, shiny blueberry (*Vaccinium myrsinites*), and dwarf huckleberry (*Gaylussacia dumosa*). Shrubs will generally be knee-high or less, and there are few if any large trunks of saw palmetto along the ground. The Optimal Fire Return Interval for this community is three to five years.

*Description and assessment:* The mesic flatwoods run in a narrow strip in the center of the park. This community is found between the scrubby flatwoods to the west and grades into the baygall community to the east. Some of the characteristic plants found in this community at the park include slash pine, saw palmetto, gallberry, tar-flower, blueberry, gopher apple and wiregrass. All of the mesic flatwoods acres in the park have been burned within the past five years and are in good condition. During periods of extreme heavy rain and high water, the mesic flatwoods may be inundated with water for periods of up to a month.

*General management measures:* The long-term management of this community will require the application of prescribed fire on a three to five-year rotation and continued yearly monitoring and treatment of exotic plants. Varied intervals of prescribed fire application will maintain and restore this community allowing for the greatest species diversity. Due to proximity to the scrub, pine densities should be maintained at one to two trees per acre (FWC Scrub Management Guidelines).

### Scrub

*Desired future condition:* Dominant species over the vast majority of scrub acres will include scrub oak (*Quercus inopina*), sand live oak (*Quercus maritima*), myrtle oak (*Quercus myrtifolia*), Chapman's oak (*Quercus chapmanii*), saw palmetto and coastal plain staggerbush (*Lyonia fruticosa*). The oak canopy varies in height from three to

eight feet. There will be a variety of oak age classes/heights between different scrub patches. There are scattered openings in the canopy with bare patches of sand that support many imperiled or endemic plant species; these species are regularly flowering and replenishing their seed banks. Sand pine (*Pinus clausa*), where present, will usually not be dominant in abundance, percent cover, or height. Some areas of mature sand pine may occur. The Optimal Fire Return Interval for this community is eight to 15 years when aiming to achieve a mosaic of burned and unburned areas.

*Description and assessment:* The Atlantic Coastal Ridge historically ranged from North Miami to Cape Canaveral. Due to development, scrub has almost been eliminated in Dade, Broward and Palm Beach counties. The park contains some of the last remaining coastal scrub stands in southeast Florida. This community is a natural community ranked "globally imperiled" by FNAI and should receive a high management priority.

The scrub community makes up the majority of the upland acres at the park. The scrub community in the park is dominated by sand pines, with several species of scrub oaks, hickory, saw palmetto, open patches of sand and herbaceous plants forming the understory. The park provides habitat for a number of scrub endemics and rare species, such as Curtiss' milkweed, Large-Flowered rosemary, nodding pinweed, scrub lizards and Florida Scrub-Jay.

In 1999, a restoration effort was completed in select areas on 55 acres of scrub of management zones SB-B, SB-C, SB-D and SB-E. Large sand pines were mechanically removed from three sites in the park. These sites were selected to reduce potential wildfire hazard associated with mature scrub adjacent to several residential communities, to create stages of early succession scrub for listed species of plants and animals, and as the establishment of buffer zones that can be utilized during prescribed fires. Unfortunately, the mechanical treatment was not immediately followed up with fire and has led to increased areas of dense young sand pine in its place.

One area in the park (management zone (MZ) SB-B) is dominated almost exclusively by scrub oaks and scrub hickory. Prior to public ownership, sand pines were logged out of this tract for 20-25 years, and germination of few sand pine seeds occurred following the clear-cut. This area has also received the most recorded prescribed fire history at the park.

Based on the suburban nature of the park, its proximity to the Atlantic Ocean, critical smoke areas, increased fuel loads and the sea breeze, needed burn windows can be hard to come by. Difficulties in fire management at the park in the past had left a majority of the scrub in fair condition. Mechanical treatment without fire application (1999-2000) and hurricanes (2004-2005) have reduced the canopy cover while at the same time increasing fuel loads that could increase the complexity of future fire operations. However, despite these obstacles, restoring the fire return interval to this landscape has recently become a top priority.

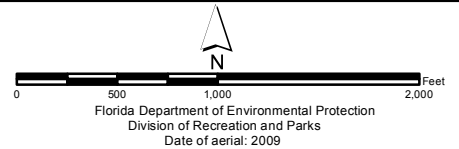




**Legend**

- MF - Mesic Flatwoods 44.5 ac.
- ECPS - Estuarine Composite Substrate 2.12 ac.
- SC - Scrub 518.72 ac.
- SCF - Scrubby Flatwoods 54.31 ac.
- BG - Baygall 169.42 ac.
- DM - Depression Marsh 3.07 ac.
- FS - Floodplain Swamp 21.21 ac.
- MS - Mangrove Swamp 94.81 ac.
- BST - Blackwater Stream 1.26 ac.
- DV - Developed 12.06 ac.

SEABRANCH PRESERVE STATE PARK



NATURAL COMMUNITIES MAP





Since 2007, the majority of scrub acres, zones SB-B, SB-C, and SB-E, have been treated with prescribed fire and are currently in good condition. Scrub in the phase immediately following the fires usually takes 3-5 years to feature short acorn producing scrub oaks, open sandy areas critical to a number of listed endemic species. The south end of the park and the extreme northwest corner of the park there is no record of fire and consequently the scrub is in fair to poor condition.

In the northwest corner of the park, management zones SB-F and SB-G are in poor condition dominated by older growth sand pine forests. Because of the competition from understory shrub oaks and canopy cover from the sand pines, herbs and grasses are not well-represented. The use of prescribed fire in these areas will prove difficult due to its heavy fuel loads, close proximity to urban interface and critical smoke sensitive areas.

In the south end (MZ SB-D), to avoid smoke impacts, prescribed fire is only possible with the rare occurrences of southwest winds. Despite the occurrences of old and middle aged sand pines, the understory is still relatively low and open. With fire application and some pine reduction, this area would be in excellent condition.

*General management measures:* The Seabranh scrub will be managed based on recommendations made by the FWC Scrub Management Guidelines. The majority of the scrub (70 percent) should be managed as optimal with the remaining acres (30 percent) either too short or slightly too tall. A 40-acre area including the southeastern portion of MZ SB-C and northeastern portion of SB-D has been identified as a recipient site for gopher tortoises relocated from the East Coast Greenway trail project. As a result, this area should be managed to account for no more than 60 percent overstory and maintain at least 30 percent herbaceous groundcover.

Prescribed fire is an important tool to achieve pyrodiversity and optimal habitat conditions. At Seabranh Preserve State Park, the fire return interval (FRI) should be evaluated based on shrub height or at an average FRI of eight to 15 years. Firebreaks around the zones may need mowing or disking, and fuel heights adjacent to firebreaks should be reduced on a case-by-case basis. The use of mechanical treatments for restoration should be used sparingly and always be followed with fire within three months to a year. In management zone SB-G, critical smoke sensitive areas may make the use of fire impossible; mechanical treatment may be the only option for habitat improvement.

Exotic species monitoring and removal should continue by DRP staff. Current infestations of herbaceous exotics such as rose natal grass and Madagascar periwinkle are found mainly along road and trail edges but have the potential to spread into critical open areas and out-compete native species.

### Scrubby Flatwoods

*Desired future condition:* Mature sand pines will typically not be present and the dominant tree species will be the South Florida slash pine. There will be a diverse shrubby understory often with patches of bare white sand. A scrub-type oak canopy

will vary in height from three to eight feet, and there will be a variety of oak age classes/heights across the landscape. Dominant shrubs include sand live oak, myrtle oak, Chapman's oak, saw palmetto, coastal plain staggerbush, and tar flower. Cover by herbaceous species is often well below 40 percent. The optimal fire return interval for this community is regionally variable, typically, three to five years when aiming to achieve a mosaic of burned and unburned areas.

*Description and assessment:* This community runs north to south in the center of the park, fringing between the scrub and the mesic flatwoods along the eastern edge of MZ SB-B, SB-C and SB-D. Slash pines are the dominant trees, but some sand pines are present. The understory is composed of plants such as scrub oaks, staggerbush and saw palmetto with wiregrass as part of its patchy groundcover. This community supports some of the same Florida endemics as scrub and should receive high priority in resource management. This community is in good condition; it is relatively exotic plant-free and has recently received prescribed fire applications within the last five years.

*General management measures:* The scrubby flatwoods and scrub communities are found within the same management zones and will receive application of prescribed fire at the same interval based on shrub height and continuity (approximately five to 15 years). The exotic plant monitoring and removal should occur on an ongoing basis by DRP staff.

### Baygall

*Desired future condition:* Consists of a wet densely forested, peat-filled depression typically near the base of a slope. Seepage from adjacent uplands will maintain saturated conditions. Medium to tall trees will mainly consist of sweetbay (*Magnolia virginiana*), loblolly bay (*Gordonia lasianthus*), and/or swamp bay (*Persea palustris*), occasionally sparse pines may also exist. A thick understory consisting of gallberry (*Ilex glabra*), fetterbush (*Lyonia lucida*), dahoon (*Ilex cassine*), and red maple (*Acer rubrum*) is typical with climbing vines such as greenbriar (*Smilax* spp.) and muscadine grape (*Vitis* spp.) usually abundant. The optimal fire return interval for this community is 25-100 years. Frequent fires from adjacent communities should be allowed to enter baygall ecotone.

*Description and assessment:* The baygall community is a rare wetland system in south Florida. It runs in a north south linear direction (crossing both park boundaries) and is separated from the Indian River only by the mangrove swamp. The baygall is a seepage wetland that forms when water from a higher sandy landscape filters through the sand and out into lower adjacent terrain.

The baygall at Seabranh a closed-canopy swamp with dominant tree species red maple, red bay, dahoon holly, cabbage palm, sweet bay and loblolly bay. Common understory plants include wild coffee, myrsine, and a variety of fern species. The baygall at Seabranh is also home to the rare plant species hand fern and vanilla orchid.

Prescribed fires from the adjacent mesic flatwoods have been allowed and will continue to burn into the ecotone edge of this system.

The baygall is in fair condition mainly due to disturbances by invasive exotic species. Old World climbing fern, Brazilian pepper, shoebutton ardisia and strawberry guava are now established in the baygall system. Several large infestations of Old World climbing fern and Brazilian pepper and ground disturbances from feral hogs threaten the structure and composition of the baygall swamp. Grant funding has allowed contracted treatments and retreatment of Category I and II treatments for the duration of the former plan. During the fiscal year 2003-2004, approximately 142 acres of Old world climbing fern, Brazilian pepper and strawberry guava were treated. In 2009-2010, another project was undertaken by contractors to treat 146 acres for all Florida Exotic Pest Plant Council (FLEPPC) Category I and II species.

During the fiscal year 2011-2012, 146 gross (124 infested) acres of baygall was treated through FWC invasive plant funding. The main targets were Brazillian Pepper and Old World climbing fern, Shoe-button Ardisia and Strawberry Guava.

*General management measures:* Because the existence of the baygall is dependent upon receiving down slope seepage, it is imperative that the ground water resources of the park and surrounding areas be protected from ground water drawdown by nearby wells. All permit applications to the South Florida Water Management District for water-use within approximately one mile of the park should be carefully reviewed.

Monitoring and evaluating the need for treatments for all exotic species should continue to be implemented on an ongoing basis. If surveys deem necessary and funding permits, the baygall community should be treated every 1-2 two years based on funding availability.

Locations of the vanilla orchid and hand fern in the baygall swamp should be documented and should be monitored for negative impacts regularly. DRP staff will consider flagging known locations of rare plants during invasive plant treatments to avoid unintended consequences. Feral hogs are continually being trapped and removed at the park by staff.

### Depression Marsh

*Desired future condition:* Emergent herbaceous and low shrub species will be dominant over most of the area with open vistas. Trees are few and if present, will occur primarily in the deeper portions of the community. There is little accumulation of dead grassy fuels due to frequent burning; one can often see the soil surface through the vegetation when the community is not inundated. Dominant vegetation in basin marsh and depression marsh include maidencane (*Panicum hemitomon*), panic grasses (*Panicum* spp.), cutgrass (*Leersia* sp.), common reed (*Phragmites australis*), pickerelweed (*Pontederia cordata*), arrowheads (*Sagittaria* sp.), buttonbush (*Cephalanthus occidentalis*), St. John's wort (*Hypericum fasciculatum*) and coastalplain willow (*Salix caroliniana*). The optimal fire return interval for this community is two to ten years, depending on fire frequency of adjacent communities.

*Description and assessment:* The depression marshes are located in the northwest corner of the park (MZ SB-F). Some of the characteristic plants found at the Seabranh depression marshes include buttonbush, willow, maidencane, hypericum and cattails. Prolonged dry period and a lack of fire management have allowed the hardwood species to dominate these marshes. Exotic species lygodium, melaluca and Brazilian pepper have been documented and treated in these areas.

Depression marshes support a variety of amphibians, reptiles, mammals and birds. Hydro-periods may vary from 50 to 200 days per year, which is important to those amphibian species that breed only in temporary wetlands. This community is in poor condition due to a lack of fire and the presence of exotic plant species.

*General management measures:* Depression marshes should not be excluded from fire when the adjacent community burns. However, fire management may not be achievable due to their proximity in the park so some mechanical treatments may be necessary. Monitoring and control of invasive/exotic plant and animal species should occur on ongoing basis.

### Floodplain Swamp

*Desired future condition:* Frequently or permanently flooded community in low-lying areas along streams and rivers. Soils will consist of a mixture of sand, organics and alluvial materials. Closed canopy will typically be dominated by bald cypress (*Taxodium distichum*) but commonly includes tupelo species (*Nyssa* spp.) as well as red maple and overcup oak. Trees bases are typically buttressed. Understory and groundcover will be typically sparse.

*Description and assessment:* The floodplain swamps are associated with flooded soils from the east and west forks of Manatee Creek and lie between scrub ridges in the northwest corner of the park (MZ SB-H and MZ SB-F). At the park, the dominant trees include pond apple, red maple, willow and red bay.

The waters feeding Manatee Creek are mostly contained within the surface water management system of residential areas. Suburban development and a lack of freshwater coming down the creeks from outside the park may have result in lower levels and shorter periods of inundation. A culvert has been installed as part of the Martin County restoration on the East Fork of Manatee Creek in an attempt to hold water longer before it discharges north into Manatee Pocket.

Saltwater intrusion may also potentially impact this community. The proximity of the St. Lucie Inlet, dredging in the Manatee Pocket and reduced freshwater from the neighboring communities could result in an influx of saltwater form the north altering the community dynamics.

Exotic species continually threatened the condition of this community. Feral pigs, Old World climbing fern, Brazilian pepper and strawberry guava are just a few of the exotic species that have invaded this habitat. Some plant species have been treated

as part of a mitigation plan with Martin County, and all FLEPPC Category I and II were treated by contractors in 2010. During the fiscal year 2011-2012, funding was again obtained to treat the 32 gross acres (14 infested) of Brazilian pepper, Old world climbing fern, strawberry guava and bishopwood.

*General management measures:* Maintaining the proper hydrology is the most important management measure any alteration in the flow of freshwater is the largest threat to this community. Exotic plant and animal monitoring should occur on an ongoing basis, any treatment and retreatment will be done as needed, as funding allows.

### Mangrove Swamp

*Desired future condition:* Typically a dense forest occurring along relatively flat, low wave energy, marine and estuarine shorelines. The dominant overstory includes 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 typically dominate the deepest water, followed by black mangrove in the intermediate zone, and white mangroves and buttonwood in the highest, least tidally influenced zone. Mangroves typically occur in dense stands (with little to no understory) but may be sparse, particularly in the upper tidal reaches where salt marsh species predominate. When present, shrub species can include seaside oxeye (*Borrchia arborescens*, *B. frutescens*), and vines including gray nicker (*Caesalpinia bonduc*), coinvine (*Dalbergia ecastaphyllum*), and rubbervine (*Rhabdadenia biflora*), and herbaceous species such as saltwort (*Batis maritima*), shoregrass (*Monanthocloe littoralis*), perennial glasswort (*Sarcocornia perennis*) and giant leather fern (*Acrostichum danaeifolium*). Soils are generally anaerobic and are saturated with brackish water at all times, becoming inundated at high tides. Mangrove swamps occur on a wide variety of soils, ranging from sands and mud to solid limestone rock. Soils in South Florida are primarily calcareous marl muds or calcareous sands. In older mangrove swamps containing red mangroves, a layer of peat can build up over the soil from decaying plant material (primarily red and black mangrove roots).

*Description and assessment:* The mangrove swamp at the park occurs on the eastern boundary of the park along the Indian River, which grades into composite substrate and seagrass as part of the Jensen Beach to Jupiter Inlet Aquatic Preserve. The dominant trees of this community are red mangrove, black mangrove, white mangrove and buttonwood. Mangrove swamps help protect other communities buffering the impacts of tropical storms, hurricanes and stabilizing sediments to improve water clarity. This community provides nursery grounds for many of Florida's commercially and recreationally important fish and shellfish species, provides habitat for rare species and are birds areas for feeding nesting and roosting.

An intermittent berm can be found along the eastern edge of the park bordering the Indian River. As a result, over time this berm may have altered tidal movement,

disrupting the natural hydrology and has allowed infestations of invasive exotics such as Australian pine and Brazilian pepper.

DRP staff has treated most of the Australian pine and Brazilian pepper, but new recruits and trees persist in areas that are difficult to access. Despite the intermittent berm and exotic species, the mangrove swamp at the park appears to be in good condition.

*General management measures:* Due to the wildlife benefits they provide and the loss of mangrove swamps in other unprotected areas of the state, this community is of great environmental importance. At Seabrook Preserve State Park, common disturbances in mangrove swamps may be ditches that can alter the hydrology and natural tidal flow by draining water from the swamp.

The feasibility of hydrological restoration to breach or remove the intermittent berm should be investigated. Ideally, this restoration would be done in a way that will allow for normal tidal flow through the mangrove swamp community while avoiding any potential saltwater impacts to the baygall community to the west.

Invasive plant species also alter the composition of this community. Continual monitoring and control of exotics, specifically Brazilian pepper and Australian pine, should take place on an ongoing basis by DRP staff.

### Blackwater Stream

*Desired future condition:* Characterized as perennial or intermittent watercourses originating in lowlands where extensive wetlands with organic soils collect rainfall and runoff, discharging it slowly to the stream. The stained waters are laden with tannins, particulates and dissolved organic matter derived from drainage through adjacent swamps resulting in sandy bottoms overlain by organic matter. Emergent and floating vegetation including golden club (*Orontium aquaticum*), smartweeds (*Polygonum* spp.), grasses and sedges may occur but is often limited by steep banks and dramatic seasonal fluctuations in water levels. Desired conditions include minimizing disturbance and alterations and preserving adjacent natural communities.

*Description and assessment:* Both forks of Manatee Creek are intermittent blackwater streams that cross the park in the northwestern corner. Historically, the headwaters of Manatee Creek were fed by collection of small ponds and freshwater marshes. However, today they arise from land in development and flow towards the brackish waters of Manatee Pocket and eventually out the St. Lucie Inlet into the Atlantic Ocean. The water feeding Manatee Creek are mostly contained within the surface water management system of a residential and golf course development called Mariner Sands. Despite their size, both forks of Manatee creek represent an important part of the park parcel.

Covering approximately one acre, the streams are at the heart of the floodplain swamp community and provide habitat to a rare and diverse assemblage of wildlife. Fish, mammals and a variety of wading birds commonly use the creek for foraging.



The shorelines of the streams are lined primarily with pond apple and emergent aquatic vegetation such as swamp lily, duck potato, pickerelweed and broadleaf arrowhead. However, on the west fork along Cove Road, species of red and white mangrove are becoming established.

In 1996, Martin County impacted a portion of the eastern fork of Manatee Creek during a survey project without the appropriate permits. As a result, a mitigation project developed with South Florida Water Management District and the Florida Department of Environmental Protection was approved and completed in 1997. This project included re-grading the creek bottom, removal of debris, treatment of exotic plants and replanting with the appropriate native species.

Both forks of the Creek and the associated floodplains (20 acres) have been treated for Category I and II exotic plants by contractors during the 2010-2011 fiscal year.

In 2011, another smaller scale restoration took place on the East Fork adjacent to the park boundary. It was determined that an unpermitted retaining wall and fill material had altered the flow and natural bank to the East Fork of Manatee Creek. That issue has since been restored to grade with native plantings and exotic plant removal.

*General management measures:* Alterations in the flow of freshwater is the largest threat to this community and maintaining the proper hydrology is the most important management measure. Documentation of plant species and the use of creeks by wildlife should be further investigated and recorded. In order to maintain the existence of these species, water quality and quantity parameters need to be investigated further.

If funding permits, both forks of Manatee Creek and its floodplains should be treated every two to three years by contractors for Category I and II species. DRP staff should evaluate the need for additional contracted removal while continuing to monitor and remove known easily accessed infestations.

Occasionally trash/debris from adjacent neighborhoods and roads will make its way into this system. During periods of low water and drought, efforts should be made to clean up areas where trash and debris may have accumulated.

#### Composite Substrate: Seagrass Bed /Unconsolidated substrate

*Desired future condition:* Estuarine Composite Substrates consist of a combination of Natural Communities such as "beds" of algae and seagrasses or areas with small patches of consolidated and unconsolidated bottom with or without sessile floral and faunal populations. Since composite substrate is a combination of community types, floral and faunal components from any of these communities may be found in the composite substrate habitat, so species diversity is often times greater than the surrounding habitats.

*Description and assessment:* The composite substrate community is composed of seagrass bed, algal bed and unconsolidated substrate. The most prolific coverage of seagrass occurs in the turbid waters of the Intracoastal Waterway closest to the mangrove shoreline and grades into unconsolidated substrate in the dredged channel to the east.

The most common species of seagrass found at Seabranh Preserve State Park are shoal grass (*Halodule wrightii*) intermixed with Johnson's seagrass (*Halophila johnsonii*) and paddle grass (*Halophila wrightii*). Among the seagrass are three species of green algae belonging to the genus *Caulerpa* (*Caulerpa sertularioides*, *Caulerpa mexicana* and *Caulerpa prolifera*).

Seagrass beds are typically characterized as expansive stands of vascular plants and are one of the most productive communities in the world. A number of faunal species including tubeworms, crustaceans, mollusks and fish species are present. Seagrass beds also provide important habitat for a host of commercially and recreationally important species including the blue crab and a number of fish species.

Most species spend part or all of their life cycle in the seagrass, which provides food, oxygen and shelter. Seagrass blades stabilize shorelines by reducing wave energy and help trap suspended sediment in the water, allowing clear water to be transported to the offshore coral reefs during tidal movement.

*General management measures:* Combinations of consolidated and unconsolidated substrate components offer the greatest opportunity for diversity and should be high priority areas for protection.

Seagrass beds require unconsolidated substrate in order to establish their underground biomass root structure. They will typically be found in waters ranging from 20° to 30° C (68° to 86° F) and require clear water for photosynthesis. Seagrass beds will not thrive where nutrient levels are high because of increased turbidity and competition of undesirable algal species. Regionally the degradation of physical and chemical water quality parameters should be prevented.

This area is a posted no wake zone. The park will continue to support these regulated zones, as well as the exclusion of anchoring, dredging, trawling and similar destructive activities, and monitor these areas for any changes in the condition of the natural community. DRP staff should work together with state, federal and local agencies to conduct resource inventories, monitoring, assess impacts and share information.

### Developed

*Description and assessment:* There are two main developed areas at the park. The shop, storage and residence area is located in the extreme northwest end of the park in MZ SB-H along Cove Road. The main entrance, Clivus composting toilet, kiosk and parking area are located on the western boundary of MZ SB-D along A1A.

*General management measures:* The developed areas within the park will be managed to minimize the effect of the developed areas on adjacent natural areas. Priority invasive plant species (FLEPPC Category I and II species) will be removed from all developed areas. Other management measures include proper stormwater management and development guidelines that are compatible with prescribed fire management in adjacent natural areas.

## Imperiled Species

Imperiled species are those that are (1) tracked by FNAI as critically imperiled (G1, S1) or imperiled (G2, S2); or (2) listed by the U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC) or the Florida Department of Agriculture and Consumer Services (FDACS) as endangered, threatened or of special concern. The park provides habitat for at least ten known listed plant species and 16 animal species.

The vanilla orchid and the hand fern are two listed epiphytes that occur in the baygall community. They require a moist, close-canopied environment, and their very existence depends on the hydrological connection with the adjacent scrub communities. Hand fern is often associated the detritus-filled base or boot of cabbage palms.

The loss of down slope seepage will have negative impacts on the baygall community, potentially eliminating these epiphytes and other baygall inhabitants. It is also imperative that invasive exotics are continually controlled in the baygall community, as these plants and animals have the potential to alter the structure and composition of the system by eliminating the native species and decreasing diversity. Since the 2004/2005 hurricanes, efforts to locate these two species have been unsuccessful. Concentrated efforts need to be made to document the location of these species for their protection and for future management activities.

The upland communities in the park contain a number of listed and endemic plant species. These include Curtiss' milkweed, large-flowered rosemary, nodding pinweed and pine pinweed that all require full sunlight and open areas created by fire to persist. Currently they are primarily found in open sand along trails, firebreaks and in newly-burned areas. Curtiss' milkweed (*Asclepias curtissi*) is an herbaceous perennial that dies back to its rootstock each year. This scrub species can persist for a number of years in shaded areas but usually flowers and fruits only in full sunlight. Large-flowered rosemary (*Conradina grandifolia*) belongs to the mint family is an aromatic shrub found only in the scrub. Nodding pinweed (*Lechea cernua*) and pine pinweed (*Lechea divaricata*) are small perennial herbs that prefer the park's open, sandy soils in the scrub and scrubby flatwoods communities.

The federally-threatened Johnson's sea grass (*Halophilla johnsonii*) is intermixed in the composite substrate of the Indian River along the submerged eastern boundary of the park. Johnson's seagrass is one of the three sea grass species known to occur at Seabranh Preserve State Park. Seagrasses are important as habitat, nursery and food source for other ecologically and economically important fauna and flora. Any

alteration of water clarity, salinity and temperature could affect the diversity and balance of Johnson's and other seagrass species.

Continued protection and restoration of upland habitats at Seabranh Preserve State Park is important to a variety of listed animal species as well. The gopher tortoise (*Gopherus polyphemus*), the gopher frog (*Lithobates capito*), the Florida mouse (*Podomys floridana*) and the Florida Scrub-Jay (*Aphelocoma coerulescens*) all require varied restoration and maintenance applications of fire and control of invasive exotic species.

The gopher tortoise occurs throughout the park's upland areas where there is dense herbaceous groundcover and sandy soils to dig its burrow. The gopher tortoise is a keystone species because tortoise burrows are not just home to the gopher tortoise, but they also provide habitat and shelter for many species, including invertebrates, amphibians, other reptiles and mammals. Several imperiled species share its burrow. Some of the species that are found in association with these burrows are gopher frogs and Florida mice, both of which are listed as Species of Special Concern by the state. As the park continues the burn program, gopher tortoise populations and burrows should be periodically surveyed to determine population status and trends of the tortoise and the commensals.

The scrub is set apart as some of the last remaining habitat for the endemic, federally-threatened Florida Scrub-Jay populations. This habitat is critical to extending known Scrub-Jay groups and establishing future jay groups in Martin County, due to its size and proximity to a potential Scrub-Jay stronghold at Jonathan Dickinson State Park, Savannas Preserve State Park, county parks and private lands. The park is a critical area for Martin County scrub connectivity and could potentially serve as a recipient site for birds in the future. It is important to preserve the genetic diversity of this meta-population that could improve the health and status statewide.

The park was home to a few breeding pairs of the Florida Scrub-Jay, however, recently there have only been intermittent sightings. DRP staff and volunteers conduct seasonal surveys to determine nesting presence/absence and to try to determine a population estimate. DRP staff also participate in the Southeast Florida Scrub Ecosystem Working Group and will continue to do so. The DRP has been working hard to reintroduce fire as the main land management tool to recreate more optimal young to early succession habitat conditions. The majority of scrub and scrubby flatwoods acres have been burned at Seabranh since 2007, and it is anticipated to continue in the future.

Bald eagles (*Haliaeetus leucocephalus*) have been observed to nest in the complex of St. Lucie Inlet State Park and Seabranh Preserve State Park over the past few years. In 2011, Seabranh was home to a successful pair of Bald Eagles and fledglings and in 2012 the nest was lost in a storm event. Although Bald eagles are no longer listed as endangered, they are protected under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act and the FWC's bald eagle rule. Bald eagles will often use alternate nest sites, and old nests are sometimes rebuilt and occupied after years of inactivity. It is important to monitor the nesting areas on an annual basis to determine

when management activity needs to stop and start. A buffer of 660 feet or more from nests is recommended, and activities that could disturb the nest should be avoided during the nesting season (Oct. 1 to May 15) or when eagles are present.

The low salinity waters associated with Manatee Creek, mangrove swamp and composite substrate along the Indian River are important habitat and nursery areas for a large number of estuarine invertebrates, fish and birds. Herons, egrets, ibis and wood storks can be observed foraging along both branches of Manatee Creek and along the mangrove swamp. The West Indian manatee (*Trichechus manatus latirostris*), while not considered a full time resident, can occasionally be observed in park waters along the mangrove swamp and seagrass beds.

If issues concerning imperiled species and their management arise, DRP staff will coordinate with USFWS and FWC to ensure that management and monitoring of imperiled animal species is consistent with recovery goals.

Table 2 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 Addendum 6.

<b>Table 2. Imperiled Species Inventory</b>						
<b>Common and Scientific Name</b>	<b>Imperiled Species Status</b>				<b>Management Actions</b>	<b>Monitoring Level</b>
	<b>FWC</b>	<b>USFWS</b>	<b>FDACS</b>	<b>FNAI</b>		
<b>PLANTS</b>						
Curtiss' Milkweed <i>Asclepias curtissii</i>			LE	G3/S2	1,2,6,10	Tier 1
Large-flowered Rosemary <i>Condradina grandiflora</i>			LT	G3/S3	1,2,6,10	Tier 1
Johnsons Seagrass <i>Halophilia johnsonii</i>		LT		G2/S2	4,10,13	Tier 2
Nodding Pinweed <i>Lechea cernua</i>			LT	G3/S3	1,2,6,10	Tier 1
Pine Pinweed <i>Lechea divaricata</i>			LE	G2/S2	1,2,6,10	Tier 1
Hand fern <i>Ophioglossum palmatum</i>			LE	G4/S2	2,4,10	Tier 2
Reflexed Wild pine <i>Tillandsia balbisiana</i>			LT		2	Tier 1

**Table 2. Imperiled Species Inventory**

Common and Scientific Name	Imperiled Species Status				Management Actions	Monitoring Level
	FWC	USFWS	FDACS	FNAI		
Common wild pine <i>Tillandsia fasciculata</i>			LE		2	Tier 1
Giant wild pine <i>Tillandsia utriculata</i>			LE		2	Tier 1
Vanilla orchid <i>Vanilla mexicana</i>			LE	G2,G4/S <sub>1</sub>	2,4,10	Tier1
<b>AMPHIBIANS</b>						
Gopher frog <i>Lithobates capito</i>	SSC			G3/S3	1,2,13	Tier 1
<b>REPTILES</b>						
American alligator <i>Alligator mississippiensis</i>	FT(S/A)	T(S/A)		G5/S4	13	Tier 1
Gopher tortoise <i>Gopherus polyphemus</i>	ST	C		G3/S3	1,2,6,7,8,10,13	Tier 2
<b>FISH</b>						
Opossum pipefish <i>Microphis brachyurus</i>	SC	SC		G4,G5/S <sub>2</sub>	4	Tier 1
<b>BIRDS</b>						
Florida scrub-jay <i>Aphelocoma coerulescens</i>	FT	LT		G2/S2	1,2,3,6,7,10 13	Tier 3
Little blue heron <i>Egretta caerulea</i>	SSC	N		G5/S4	1,2,4,13	Tier 1
Snowy egret <i>Egretta thula</i>	SSC	N		G5/S3	1,2,4,13	Tier 1
Tricolored heron <i>Egretta tricolor</i>	SSC	N		G5/S4	1,2,4,13	Tier 1
White ibis <i>Eudocimus albus</i>	SSC	N		G5/S4	1,2,4,13	Tier 1
Southeastern American kestrel <i>Falco sparverius paulus</i>	ST	N		G5/T4,S <sub>3</sub>	1,2	Tier 1
Florida Sandhill Crane <i>Grus canadensis pratensis</i>	ST	N		G5/T2/T <sub>3</sub> ,S2/S3	1,2,13	Tier 1
Wood stork <i>Mycteria americana</i>	FE	LE		G4/S2	1,2,4	Tier 1
Brown pelican <i>Pelecanus occidentalis</i>	SSC	N		G4/S3	1,2,4	Tier 1
<b>MAMMALS</b>						

<b>Table 2. Imperiled Species Inventory</b>						
<b>Common and Scientific Name</b>	<b>Imperiled Species Status</b>				<b>Management Actions</b>	<b>Monitoring Level</b>
	<b>FWC</b>	<b>USFWS</b>	<b>FDACS</b>	<b>FNAI</b>		
Florida mouse <i>Podomys floridanus</i>	SSC	N		G3,S3	1,2,6,7,13	Tier 1
West Indian manatee <i>Trichechus manatus</i>	FE	LE		G2,S2	4,10,13	Tier 1

**Management Actions:**

1. Prescribed Fire
2. Exotic Plant Removal
3. Population Translocation/Augmentation/Restocking
4. Hydrological Maintenance/Restoration
5. Nest Boxes/Artificial Cavities
6. Hardwood Removal
7. Mechanical Treatment
8. Predator Control
9. Erosion Control
10. Protection from visitor impacts (establish buffers)/law enforcement
11. Decoys (shorebirds)
12. Vegetation planting
13. Outreach and 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.

Detailed management goals, objectives and actions for imperiled species in this park are discussed in the Resource Management Program section of this component and the Implementation Component of this plan.

**Exotic and Nuisance Species**

Exotic species are plants or animals not native to Florida. Invasive exotic species are able to out-compete, displace or destroy native species and their habitats, often because they have been released from the natural controls of their native range, such

as diseases, predatory insects, etc. If left unchecked, invasive exotic plants and animals alter the character, productivity and conservation values of the natural areas they invade.

The policy of the DRP is to remove exotic species from native natural communities. In areas that exotic plants become established, annual removal plans are developed and updated to control them.

The primary pest species found at the park are Old World climbing fern, Brazilian pepper, strawberry guava, and shoebuttton ardisia. Other exotics that occur in the park at lower densities include Australian pine, melaleuca, air potato, carrotwood, earleaf acacia, wedelia, Surinam cherry, rosary pea, torpedo grass, para grass, schefflera and periwinkle. Monitoring and treatment efforts are ongoing for all exotic species, with an increased emphasis for those found on the FLEPPC Category I and II plant lists.

DRP staff continues to work hard to control a number of exotic species in the upland portions of the park. The majority of the upland communities at the park are relatively exotic free; however, species such as natal grass, periwinkle and rosary pea are found along disturbed edges, roads and management zone boundaries. The park should take an early detection rapid response management approach to all exotic species.

In the baygall community (MZ SB-A), the treatment, removal, and long-term monitoring of Old World climbing fern and Brazilian pepper is a top priority. Treatment of the exotics in this community requires many hours of manual labor to be successful and is a project that DRP staff cannot complete on their own. The baygall community is a large area of sensitive habitat that is only accessible by foot. Due to the high potential of these species to take over and eliminate the native vegetation, they must be treated and constantly retreated.

Contactors' efforts have been concentrated in the baygall and the two forks of Manatee Creek (MZ SB-F and SB-H). Any FLEPPC Category I and II species that are encountered are treated with the main target species being Old World climbing fern, Brazilian pepper, strawberry guava, java plum and shoebuttton ardisia. During the fiscal year 2003-2004, approximately 142 acres of Old World climbing fern, Brazilian pepper and strawberry guava were treated. In 2009-2010, another project was undertaken by contractors to treat 146 acres for all FLEPPC Category I and II species. A proposal has been submitted for the fiscal year 2011-2012 to retreat and maintain the 146 acres treated in previous years. The main targets will be Old World climbing fern; however, any Category I or II species will be treated. Monitoring and evaluating the need for treatments for all exotic species should continue to be implemented on an ongoing basis. If surveys deem necessary and funding permits, the baygall community should be treated every two years.

Both forks of Manatee Creek and the associated floodplains (20 acres) have been treated for Category I and II exotic plants by contractors during the 2010-2011 fiscal year. If funding permits, both forks of Manatee Creek and its floodplains should be treated every two to three years by contractors for Category I and II species. DRP



staff should evaluate the need for additional contracted removal while continuing to monitor and remove known infestations on an ongoing basis.

Table 3 contains a list of the FLEPPC Category I and II invasive, exotic plant species found within the park (FLEPPC 2009). The table also identifies relative distribution for each species and the management zones in which they are known to occur. An explanation of the codes is provided following the table. For an inventory of all exotic species found within the park, see Addendum 5.

<b>Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species</b>			
<b>Common and Scientific Name</b>	<b>FLEPPC Category</b>	<b>Distribution</b>	<b>Management Zones</b>
<b>PLANTS</b>			
Rosary Pea <i>Abrus precatorius</i>	I	1	SB-G
		2	SB-A, SB-B, SB-E, SB-F
		3	SB-C, SB-D, SB-H
Earleaf Acacia <i>Acacia auriculiformis</i>	I	1	SB-B, SB-C, SB-D, SB-E, SB-F, SB-G, SB-H
Coral Ardisia <i>Ardisia crenata</i>	I	1	SB-A
Shoebuttan Ardisia <i>Ardisia elliptica</i>	I	2	SB-A
Bishopwood <i>Bischoffia javanica</i>	I	2	SB-B, SB-D, SB-E, SB-F, SB-G, SB-H
Australian Pine <i>Casurina equisetifolia</i>	I	6	SB-A
Carrotwood <i>Cupaniopsis anacardioides</i>	I	1	SB-D, SB-E, SB-F
		2	SB-B, SB-G, SB-H
Durban Crowfoot grass <i>Dactyloctenium aegyptium</i>	II	6	SB-C, SB-D, SB-E
Surinam Cherry <i>Eugenia uniflora</i>	I	1	SB-C, SB-D, SB-F
		2	SB-H
Cogon Grass <i>Imperata cylindrica</i>	I	2	SB-D, SB-H
		3	SB-E
Lantana <i>Lantana camara</i>	I	1	SB-D
Old World Climbing Fern <i>Lygodium microphyllum</i>	I	3	SB-A, SB-F
		6	SB-G, SB-H
Melaluca <i>Melaluca quinquinerva</i>	I	2	SB-F

<b>Table 3. Inventory of FLEPPC Category I and II Exotic Plant Species</b>			
<b>Common and Scientific Name</b>	<b>FLEPPC Category</b>	<b>Distribution</b>	<b>Management Zones</b>
Natal Grass <i>Melinis repens</i>	II	2	SB-C, SB-D, SB-F, SB-G
Guinea Grass <i>Panicum maximum</i>	I	6	SB-C, SB-D, SB-E, SB-G
Torpedo Grass <i>Panicum repens</i>	I	6	SB-E, SB-H
Strawberry Guava <i>Psidium cattleianum</i>	I	1	SB-E, SB-G, SB-H
		2	SB-A, SB-F
Guava <i>Psidium guajava</i>	I	1	SB-G, SB-H
		2	SB-A, SB-F
Castor Bean <i>Ricinus communis</i>	II	1	SB-A, SB-G
Bowstring hemp <i>Sansevieria hyacinthoides</i>	II	1	SB-F, SB-H
Schefflera <i>Schefflera actinophylla</i>	I	1	SB-A, SB-F, SB-H
Brazilian Pepper <i>Schinus terebinthifolius</i>	I	2	SB-A, SB-B, SB-C, SB-D, SB-E, SB-F
		3	SB-G, SB-H
Wedelia <i>Spagneticola trilobata</i>	II	2	SB-A, SB-E, SB-H,
		3	SB-B, SB-G
Java Plum <i>Syzygium cumini</i>	I	1	SB-A
Seaside Mahoe <i>Talipariti tillaceum</i>	II	1	SB-G, SB-H
Ceaser's Weed <i>Urena lobata</i>	I	1	SB-H
		2	SB-A, SB-C, SB-D, SB-F, SB-G

**Distribution Categories:**

- 0 No current infestation: All known sites have been treated and no plants are currently evident.
- 1 Single plant or clump: One individual plant or one small clump of a single species.
- 2 Scattered plants or clumps: Multiple individual plants or small clumps of a single species scattered within the gross area infested.
- 3 Scattered dense patches: Dense patches of a single species scattered within the gross area infested.
- 4 Dominant cover: Multiple plants or clumps of a single species that occupy a majority of the gross area infested.
- 5 Dense monoculture: Generally, a dense stand of a single dominant species that not only occupies more than a majority of the gross area infested, but also covers/excludes other plants.
- 6 Linearly scattered: Plants or clumps of a single species generally scattered along a linear feature, such as a road, trail, property line, ditch, ridge, slough, etc. within the gross area infested.

Exotic animal species include non-native wildlife species, free ranging domesticated pets or livestock, and feral animals. Because of the negative impacts to natural systems attributed to exotic animals, DRP actively removes exotic animals from state parks, with priority being given to those species causing the greatest ecological damage.

In some cases, native wildlife may also pose management problems or nuisances within state parks. A nuisance animal is an individual native animal whose presence or activities create special management problems. Examples of animal species from which nuisance cases may arise include raccoons, venomous snakes and alligators that are in public areas. Nuisance animals are dealt with on a case-by-case basis in accordance with DRP's Nuisance and Exotic Animal Removal Standard.

All invasive and exotic wildlife species found at Seabranh Preserve State Park should be removed and reported as part of the early detection rapid response program. These species include but are not just limited to feral hogs and coyotes. Other exotic species that may have become well established such as the Brown anole, Marine toad, Greenhouse frog, Nine-banded armadillo and may not warrant a targeted removal program but should be opportunistically removed.

Feral hogs are commonly found at Seabranh and have greatest potential to cause ecological damage. Hog rooting can devoid large areas of vegetation, create extensive ground disturbance, disrupt surface water flow, inhibit fire from moving across the landscape, decimate the arthropod community and compete with native wildlife species for food and resources. Extensive evidence of hog disturbance can easily be found in the baygall swamp, floodplain forests and flatwoods communities. DRP staff monitors the park for signs of disturbance and currently traps and removes feral hogs on the property.

Coyotes have been documented on the property and are opportunistic omnivores that can outcompete or directly predate other native wildlife species. DRP staff is closely monitoring any impacts to species as a direct result of coyotes.

Based on its proximity to suburban development, the park may also occasionally encounter feral or stray cats and dogs. These animals should be removed according to DRP policy.

Detailed management goals, objectives and actions for management of invasive exotic plants and exotic and nuisance animals are discussed in the Resource Management Program section of this component.

### Special Natural Features

This park is unique in that a diversity of habitats from estuarine to uplands occurs within a relatively small area surrounded by urban development. It exhibits an association of increasingly rare and diverse habitat types that are considered to have both regional and statewide significance.

In association with St. Lucie Inlet State Park, Seabranh Preserve State Park establishes a somewhat contiguous and interrelated park system representative of the South Florida coastal region. This complex provides a continuous gradient of habitats from coral reefs, beaches, hardwood hammock, mangrove swamp of St. Lucie Inlet Preserve State Park to the submerged marine communities, mangrove swamp, baygall, freshwater marshes, upland pine and xeric oak sand pine scrub of Seabranh Preserve State Park.

Mangrove swamp is one the most productive communities in the United States and has been lost in much of South Florida due to increased urban development. The dense prop roots of the red mangroves serve as refuge and substrate for many commercially and recreationally important species of invertebrates and fishes, which in turn attract foraging wading birds.

The baygall community in the park is an important freshwater wetland community in an area surrounded by marine waters. Freshwater swamps such as the baygall are rare along coastal areas of Florida and provide important habitat for many species including the hand fern and vanilla orchid.

The scrub in the park represents one of the largest protected tracts remaining in southeast Florida. It provides critical habitat to listed species of flora and fauna. Scrub in the park has not been invaded by exotic vegetation to any large degree, and naturally occurring vegetation is dominant throughout. Currently representations of all stages of scrub (e.g., early, mid-, and late succession) are present within the park boundary.

## **Cultural Resources**

This section addresses the cultural resources present in the park that may include archaeological sites, historic buildings and structures, cultural landscapes, folk life, and collections. The Florida Department of State (FDOS) maintains the master inventory of such resources through the Florida Master Site File (FMSF). State law requires that all state agencies locate, inventory and evaluate cultural resources that appear to be eligible for listing in the National Register of Historic Places. Addendum 7 contains the management procedures for archaeological and historical sites and properties on state-owned or controlled properties, the criteria used for evaluating eligibility for listing in the National Register of Historic Places and the Secretary of Interior's definitions for the various preservation treatments (restoration, rehabilitation, stabilization and preservation). For the purposes of this plan, significant archaeological site, significant structure and significant landscape means those cultural resources listed or eligible for listing in the National Register of Historic Places. The terms archaeological site, historic structure or historic landscape refer to all resources that will become 50 years old during the term of this plan.

## Condition Assessment

Evaluating the condition of cultural resources is accomplished using a three-part evaluation scale, expressed as good, fair and poor. These terms describe the present condition, rather than comparing what exists to the ideal condition. Good describes a condition of structural stability and physical wholeness, where no obvious deterioration other than normal occurs. Fair describes a condition in which there is a discernible decline in condition between inspections, and the wholeness or physical integrity is and continues to be threatened by factors other than normal wear. A fair assessment is usually a cause for concern. Poor describes an unstable condition where there is palpable, accelerating decline, and physical integrity is being compromised quickly. A resource in poor condition suffers obvious declines in physical integrity from year to year. A poor condition suggests immediate action is needed to reestablish physical stability.

## Level of Significance

Applying the criteria for listing in the National Register of Historic Places involves the use of contexts as well as an evaluation of integrity of the site. A cultural resource's significance derives from its historical, architectural, ethnographic or archaeological context. Evaluation of cultural resources will result in a designation of NRL (National Register or National Landmark Listed or located in an NR district), NR (National Register eligible), NE (not evaluated) or NS (not significant) as indicated in the table at the end of this section.

There are no criteria for use in determining the significance of collections or archival material. Usually, significance of a collection is based on what or whom it may represent. For instance, a collection of furniture from a single family and a particular era in connection with a significant historic site would be considered highly significant. In the same way, a high quality collection of artifacts from a significant archaeological site would be of important significance. A large herbarium collected from a specific park over many decades could be valuable to resource management efforts. Archival records are most significant as a research source. Any records depicting critical events in the park's history, including construction and resource management efforts, would all be significant.

The following is a summary of the FMSF inventory. In addition, this inventory contains the evaluation of significance.

### Pre-Historic and Historic Archaeological Sites

*Desired future condition:* All significant archaeological sites within the park that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

*Description:* Based on its proximity to Manatee Creeks and the Indian River, upland and wetland forest resources and the scattered sparse assemblage of artifacts it is this

area mostly likely was used for temporary limited activity such as camping hunting, fishing and gathering.

The Florida Master Site File (FMSF) lists five sites within the park boundary. Seabranck Site (MT00069) is approximately 15 x 35 feet in size and is located on a topographic rise above the baygall community in MZ SB-C. Artifacts recovered included two sand-tempered plain sherds and one St. Johns Plain sherd. The report suggests that the site was most likely a limited activity campsite. At Big Knife site (MT01331), a knife was found after erosion from a tree falling. No other objects were able to be located in the area.

Two more recently documented sites are Cart site (MT01574) and Latrine site (MT 01576). Cart site (MT 01574) is a metal cart axle along the baygall trail in MZ SB-A and Latrine site (MT01576) is a concrete latrine located in the southern mesic flatwoods of MZ SB-A.

Finally, during the initial phase of the East Coast Greenway trail project, chert flakes were discovered during an archeological survey. Site MT 01579 is a low-density artifact scatter found within the transition zone between mesic flatwoods and baygall swamp.

At this time, a predictive model has not taken place at this park however; one is scheduled to occur over the course of this plan.

*Condition Assessment:* Seabranck site (MT 00069) is considered to be in good condition; there is no evidence of disturbance. The condition of Big Knife site (MT01331) needs to be further evaluated.

Cart site (MT 01574) is in fair condition. The partially buried metal cart is exposed to weather impacts; resulting some rust and corrosion. Latrine site (MT01576) is in fair condition. A prescribed burn was conducted in the area in 2010, and the adjacent vegetation is saw palmetto and oak shrub. All of these sites need to be further evaluated for historic and cultural significance throughout the duration of this plan. MT 01579 is considered in good condition and is covered by the East Coast Greenway paved trail.

*Level of Significance:* Seabranck site (MT00069) was recorded in 1987 as part of an archaeological survey conducted on park property by Piper Archaeological Research, Inc. The surveyor considered the site ineligible for the National Register of Historic Places, as it contained a sparse and unexceptionable artifact assemblage and was unlikely to yield additional information for further research.

The Big Knife (MT01331), Cart (MT01574) and Latrine (MT01576) sites were recorded by DRP staff. None of the sites has been evaluated for National Register significance. MT 1579, recorded as part of the East Coast Greenway project, was deemed not significant and as a result it was determined to be ineligible for National Register significance.

*General management measures:* The primary management level for all of these sites is preservation. Preservation includes protection from damage from resource management, natural causes, construction or human damage including looting. These sites should all be evaluated periodically for the duration of this management plan.

## Historic Structures

*Desired future condition:* All significant historic structures and landscapes that represent Florida's cultural periods or significant historic events or persons are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

*Description:* There are no known or recorded historic structures in the park. It should be noted, however, that Dixie Highway (SL01621), which runs along the western edge of the park, is listed in the Florida Master Site File as a linear resource group.

## Collections

*Desired future condition:* All historic, natural history and archaeological objects within the park that represent Florida's cultural periods, significant historic events or persons, or natural history specimens are preserved in good condition in perpetuity, protected from physical threats and interpreted to the public.

*Description:* There are no known collections at the park.

*General management measures:* A Scope of Collections Statement has not been developed for the park. As the DRP Operations Manual requires that each park adopt a Scope of Collections Statement, such a statement needs to be developed as a guide for any future collections within the park.

Detailed management goals, objectives and actions for the management of cultural resources in this park are discussed in the Cultural Resource Management Program section of this component. Table 4 contains the name, reference number, culture or period, and brief description of all the cultural sites within the park that are listed in the Florida Master Site File. The table also summarizes each site's level of significance, existing condition and recommended management treatment. An explanation of the codes is provided following the table.



<b>Table 4: Cultural Sites Listed in the Florida Master Site File</b>						
<b>Site Name and FMSF #</b>	<b>Culture/Period</b>	<b>Description</b>	<b>Significance</b>	<b>Condition</b>	<b>Treatment</b>	<b>Management Zone</b>
MT00069 Seabranh	Prehistoric/St.Johns	Archeological Site	NS	G	P	SB-E
MT 01331 Big Knife	Historic	Archeological Site	NE	NE	P	SB-C
MT01574 Cart	Historic	Archeological Site	NE	F	P	SB-A
MT01576 Latrine	Historic	Archeological Site	NE	F	P	SB-A
MT01579	Archaic	Archeological	NS	G	P	SB-A

**Significance:**

NRL National Register listed  
 NR National Register eligible  
 NE not evaluated  
 NS not significant

**Condition:**

G Good  
 F Fair  
 P Poor  
 NA Not accessible  
 NE Not evaluated

**Recommended Treatment:**

RS Restoration  
 RH Rehabilitation  
 ST Stabilization  
 P Preservation  
 R Removal  
 N/A Not applicable

## Resource Management Program

### Management Goals, Objectives and Actions

Measurable objectives and actions have been identified for each of DRP's management goals for the park. Please refer to the Implementation Schedule and Cost Estimates in the Implementation Component of this plan for a consolidated spreadsheet of the recommended actions, measures of progress, target year for completion and estimated costs to fulfill the management goals and objectives of this park.

While DRP utilizes the ten-year management plan to serve as the basic statement of policy and future direction for each park, a number of annual work plans provide more specific guidance for DRP staff to accomplish many of the resource management goals and objectives of the park. Where such detailed planning is appropriate to the character and scale of the park's natural resources, annual work plans are developed for prescribed fire management, exotic plant management and imperiled species management. Annual or longer-term work plans are developed for natural community restoration and hydrological restoration. The work plans provide DRP with crucial flexibility in its efforts to generate and implement adaptive resource management practices in the state park system.

The work plans are reviewed and updated annually. Through this process, DRP's resource management strategies are systematically evaluated to determine their effectiveness. The process and the information collected is used to refine techniques, methodologies and strategies, and ensures that each park's prescribed management actions are monitored and reported as required by Chapters 253.034 and 259.037, Florida Statutes.

The goals, objectives and actions identified in this management plan will serve as the basis for developing annual work plans for the park. The ten-year management plan is based on conditions that exist at the time the plan is developed, and the annual work plans provide the flexibility needed to adapt to future conditions as they change during the ten-year management planning cycle. As the park's annual work plans are implemented through the ten-year cycle, it may become necessary to adjust the management plan's priority schedules and cost estimates to reflect these changing conditions.

Natural Resource Management

#### Hydrological Management

**Goal: Protect water quality and quantity in the park, restore hydrology to the extent feasible and maintain the restored condition.**

The natural hydrology of most state parks has been impaired prior to acquisition to one degree or another. Florida's native habitats are precisely adapted to natural drainage patterns and seasonal water level fluctuations, and variations in these

factors frequently determine the types of natural communities that occur on a particular site. Even minor changes to natural hydrology can result in the loss of plant and animal species from a landscape. Restoring state park lands to original natural conditions often depends on returning natural hydrological processes and conditions to the park. This is done primarily by filling or plugging ditches, removing obstructions to surface water "sheet flow," installing culverts or low-water crossings on roads, and installing water control structures to manage water levels.

***Objective: Conduct/obtain an assessment of the park's hydrological restoration needs.***

The hydrology of the natural communities at this park is closely linked. DRP staff will continually monitor the hydrological function of park and assess the park's natural communities for future restoration, as needed.

***Objective: Restore natural hydrological conditions and functions to 88 acres of mangrove swamp natural community***

Mosquito control activities from many years past have left an intermittent berm on the eastern boundary along the Indian River. This berm has potentially altered normal tidal movement into the mangrove swamp that may have helped contribute to infestations of Brazilian pepper and Australian pines along the shoreline. Potential for saltwater intrusion and other hydrological impacts to the baygall must be investigated to ensure there are no associated negative effects.

***Objective: Monitor quality and quantity of water entering Manatee Creek and the baygall.***

Water quality and quantity need to be addressed in the East and West Forks of Manatee Creek. Most of the headwaters of both forks have been drastically altered by urbanization, receiving large amounts of storm water. Although Manatee Creek comprises a small portion of the park, it is an important ecological component of the park and surrounding waters. DRP staff needs to work in partnership with other agencies to ensure that the water quality and quantity entering the park is maintained at acceptable levels.

The baygall community and its soils act like a giant sponge. If the amount of water from the up-slope natural communities is reduced (e.g., wells or drainage ditches), then the hydrology of this community will be negatively impacted. This will have deleterious effects on the baygall not only because of the loss of fresh water, but also because surface and sub-surface salt water will be able to migrate landward (into the baygall) due to a decrease in head pressure. From this, it is obvious that in order to maintain the baygall community at this park, DRP staff will have to ensure that the ground water levels at this unit are not lowered. This can be accomplished by review and commenting on all ground water withdrawal and surface water modification permit applications through the South Florida Water Management District that have the potential to affect the park.

## Natural Communities Management

### **Goal: Restore and maintain the natural communities/habitats of the park.**

As discussed above, DRP practices natural systems management. In most cases, this entails returning fire to its natural role in fire-dependent natural communities. Other methods to implement this goal include large-scale restoration projects as well as smaller scale natural communities' improvements. Following are the natural community management objectives and actions recommended for the state park.

*Prescribed Fire Management:* Prescribed fire is used to mimic natural lightning-set fires, which are one of the primary natural forces that shaped Florida's ecosystem. Prescribed burning increases the abundance and health of many wildlife species. A large number of Florida's imperiled species of plants and animals are dependent on periodic fire for their continued existence. Fire-dependent natural communities gradually accumulate flammable vegetation; therefore, prescribed fire reduces wildfire hazards by reducing these wild land fuels.

All prescribed burns are conducted with authorization from the FDACS, Florida Forest Service (FFS). Wildfire suppression activities in the park are coordinated with the FFS.

### ***Objective: Within ten years, have 576 acres of the park maintained within the optimum fire return interval.***

Scrub, scrubby flatwoods and mesic flatwoods are fire-dependent communities found at Seabranche Preserve State Park. All of these systems require fire to maintain the diverse plant and wildlife assemblage. Without periodic fires, the scrub oaks grow into trees, and the unique scrub plants and animals are shaded out. These fires maintain areas with low-density tree canopy, low shrub layer and open sand areas. In those areas, scrub plants re-sprout from roots or germinate from stored seed banks, and listed wildlife species like the Florida Scrub-Jay and gopher tortoise thrive.

DRP staff will develop an annual burn plan at the beginning of each fiscal year and set out to accomplish the target acres. Staff will also update the long-range prescribed fire and wildfire plan. The park will manage fire-dependent communities for ecosystem function, structure and processes through prescribed burns.

Table 5 contains a list of all fire-dependent natural communities found within the park, their associated acreage and optimal fire return interval, and the annual average target for acres to be burned.

<b>Table 5: Prescribed Fire Management</b>		
<b>Natural Community</b>	<b>Acres</b>	<b>Optimal Fire Return Interval (Years)</b>
Scrub	525.63	8-15
Scrubby Flatwoods	54.48	5-15
Mesic Flatwoods	45.46	3-5
Depression Marsh	3.07	8-15
<b>Total Burn Acreage</b>	<b>628.64</b>	
Annual Target Acreage*	47.92-88.04	
*Annual Target Acreage Range is based on the fire return interval assigned to each burn zone. Each burn zone may include multiple natural communities.		

The park is partitioned into management zones including those designated as burn zones (see Management Zones Table and Map). Prescribed fire is planned for each burn zone on the appropriate interval. The park’s burn plan is updated annually because fire management is a dynamic process. To provide adaptive responses to changing conditions, fire management requires careful planning based on annual and very specific burn objectives. Each annual burn plan is developed to support and implement the broader objectives and actions outlined in this ten-year management plan.

In accordance with agency policy, the firebreaks should be maintained on a regular basis through mowing or disking. Depending on fire frequency, the edges of zones may also need to be mowed to provide for safety, reduce edge effects and improve ignition. The western boundary of Management Zones SB-C and SB-E are lined by power lines and tall sand pine trees. This edge should annually be mowed and/or trimmed to minimize hazardous conditions during prescribed or wildfire situations. The timing and necessity for other zones would need to be addressed during the annual burn plan and included in the burn prescription as needed.

When achievable, every effort should be made to mimic the natural role of fire in timing and frequency. However, this should not be done at the exclusion of fire from the system when all other conditions are appropriate.

Under ideal conditions, based on the fire return intervals and the acreage of each natural community, a range of 44-88 acres is targeted to burn each year. Funding, staffing and weather conditions all play a major role on whether the targeted objective is met.

Due to the suburban setting, fire management planning at the park will require careful consideration to Wildland Urban Interface issues, including smoke management. A

nursing home is situated along the north boundary, while neighborhoods and major roads surround the north, west and south boundaries of the park. To avoid impacts to these areas, all burning must be done with a forecasted westerly wind component. However, due to the close proximity to the Atlantic Ocean, sea breezes can be prevalent, and these winds can be hard to come by.

In order to track fire management activities, DRP maintains a statewide burn database. The database allows staff to track various aspects of each park's fire management program including individual burn zone histories and fire return intervals, staff training/ experience, backlog, if burn objectives have been met, etc. The database is also used for annual burn planning which allows DRP to document fire management goals and objectives on an annual basis. Each quarter the database is updated, and reports are produced that track progress towards meeting annual burn objectives.

*Natural Community Restoration:* In some cases, the reintroduction and maintenance of natural processes is not enough to reach the natural community desired future conditions in the park, and active restoration programs are required. Restoration of altered natural communities to healthy, fully functioning natural landscapes often requires substantial efforts that may include mechanical treatment of vegetation or soils and reintroduction or augmentation of native plants and animals. For the purposes of this management plan, restoration is defined as the process of assisting the recovery and natural functioning of degraded natural communities to desired future condition, including the re-establishment of biodiversity, ecological processes, vegetation structure and physical characters.

Examples that would qualify as natural communities' restoration, requiring annual restoration plans, include large mitigation projects, large-scale hardwood removal and timbering activities, roller-chopping and other large-scale vegetative modifications. The key concept is that restoration projects will go beyond management activities routinely done as standard operating procedures such as routine mowing, the reintroduction of fire as a natural process, spot treatments of exotic plants, small-scale vegetation management and so forth.

At this time, there are no natural communities at the park that require restoration beyond the normal management measures as done as standard operations.

*Natural Community Improvement:* Improvements are similar to restoration but on a smaller, less intense scale. This typically includes small-scale vegetative management activities or minor habitat manipulation. Following are the natural community/habitat improvement actions recommended at the park.

***Objective: Conduct natural community/habitat improvement activities on 30 acres of scrub community.***

The northwest corner of the park in zone SB-G is dominated by old growth sand pine forest. Because of competition from understory shrub oaks and canopy cover from the sand pines, bare ground openings required by rare plants are reduced, herbs and



grasses used for food by gopher tortoises are reduced, and habitat structure becomes less suitable for listed wildlife species.

The land management goals for this scrub improvement project should be to reduce canopy coverage, decrease understory height, increase bare sand patches, and maintain desirable oak coverage and reduce the potential for catastrophic wildfire. To improve the scrub habitat, mechanical canopy thinning, roller chopping the understory, root raking of bare sandy areas, and after, where possible fire applications should be employed.

### Imperiled Species Management

#### **Goal: Maintain, improve or restore imperiled species populations and habitats in the park.**

The DRP strives to maintain and restore viable populations of imperiled plant and animal species primarily by implementing effective management of natural systems. Single species management is appropriate in state parks when the maintenance, recovery or restoration of a species or population is complicated due to constraints associated with long-term restoration efforts, unnaturally high mortality or insufficient habitat. Single species management should be compatible with the maintenance and restoration of natural processes, and should not imperil other native species or seriously compromise park values.

In the preparation of this management plan, DRP staff consulted with staff of the FWC's Imperiled Species Management or that agency's Regional Biologist and other appropriate federal, state and local agencies for assistance in developing imperiled animal species management objectives and actions. Likewise, for imperiled plant species, DRP staff consulted with FDACS. Data collected by the USFWS, FWC, FDACS and FNAI as part of their ongoing research and monitoring programs will be reviewed periodically to inform management of decisions that may have an impact on imperiled species at the park.

Ongoing inventory and monitoring of imperiled species in the state park system is necessary to meet the DRP's mission. Long-term monitoring is also essential to ensure the effectiveness of resource management programs. Monitoring efforts must be prioritized so that the data collected provides information that can be used to improve or confirm the effectiveness of management actions on conservation priorities. Monitoring intensity must at least be at a level that provides the minimum data needed to make informed decisions to meet conservation goals. Not all imperiled species require intensive monitoring efforts on a regular interval. Priority must be given to those species that can provide valuable data to guide adaptive management practices. Those species selected for specific management action and those that will provide management guidance through regular monitoring are addressed in the objectives below.

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

DRP staff will continue to develop partnerships with other agencies and academic institutions to assist with the updates of inventory lists for additional imperiled species.

***Objective: Monitor and document two selected imperiled animal species in the park.***

DRP staff will implement monitoring protocols for two selected imperiled animal species including the Florida Scrub-Jay and gopher tortoise.

The Florida Scrub-Jay is typically found in well-maintained scrub or scrubby flatwoods communities. Ideal habitat consists of a single layer of evergreen shrubs, usually dominated by three main species of oaks. Even more specifically, Florida Scrub-Jays are seldom found as permanent residents of areas with dense sand pine canopy cover and vegetation that is over ten feet tall (Woolfenden and Fitzpatrick 1996). These areas need to be interspersed with bare sand for foraging and caching surplus acorns. Snag management is also important since the birds use these standing dead trees as sentinel posts.

A population census was conducted at the park in 1990 yielding seven birds. From 1996 to 2000, 2003, and 2005; surveys of the park were conducted by biologists, park staff and volunteers. During those surveys individual birds varied in the range of five to seven birds. There is a lack of data from 2005-2008. Since 2008, no birds have been recorded at Seabranche Preserve State Park. Currently, Florida Scrub-Jays are monitored using the protocol set by Jay Watch, a citizen science program initiated through The Nature Conservancy and now coordinated through the Southeast Florida Scrub Ecosystem Working Group.

Gopher tortoise are commonly seen at the park. The park will monitor the current population and management activities to determine the need for augmentation of gopher tortoises and habitat. To determine how many gopher tortoises are in this area and if any augmentation needs to be done; it is recommended that attempts will be made to survey for gopher tortoises following prescribed burns. Protection of the gopher tortoises and their burrows, along with maintaining a prescribed burning cycle, should suffice to maintain populations tortoises and of burrow commensals. To accommodate the East Coast Greenway trail project, it was anticipated that some tortoises would need to be relocated to another area of the park. A 40-acre area in MZ SB-C and SB-D was identified as a recipient area for those tortoises; however though no tortoises were relocated during this project.

While monitoring is important, a well thought-out and executed prescribed fire program targeting scrub and scrubby flatwoods is an equally important ingredient for these animals' continued survival. Staff will continue to monitor the effects of prescribed fire treatments on supporting natural communities.

***Objective: Monitor and document five selected imperiled plant species in the park.***

DRP staff will survey potential and known locations of hand fern, vanilla orchid, Johnson's seagrass, Curtiss' milkweed, and large flowered rosemary and establish a monitoring protocol for each plant species. A monitoring protocol currently does not exist for these plant species and needs to be developed. Areas not known to contain the plants will be incorporated into the surveying efforts as resources allow.

***Objective: Evaluate the potential of the park as a recipient site for translocation of Florida Scrub-Jays.***

The Florida Scrub-Jay (*Aphelocoma coerulescens*) is listed by the USFWS and FWC as a threatened species. DRP staff should consult with FWC, USFWS and the translocation guidelines to determine if the park meets the recipient site requirements to benefit to its larger southeast meta-population. The decline of this species is attributed to habitat loss and degradation primarily from the exclusion of fire. It is anticipated that the park will continue to be managed to maintain the optimal scrub habitat conditions according to the FWC Scrub Management Guidelines.

Exotic Species Management

**Goal: Remove exotic and invasive plants and animals from the park and conduct needed maintenance control.**

The DRP actively removes invasive exotic species from state parks, with a priority to those causing the most significant ecological damage. The park will remove exotic and invasive plants and animals from the park and conduct needed maintenance-control. Removal techniques may include hand treatment, mechanical treatment, herbicides or bio-control agents.

***Objective: Annually treat six acres of exotic plant species in the park.***

Invasive exotic plant species, if left unchecked, eventually form monocultures, which displace natural communities and associated animal species. FLEPPC's Category I and II plant species are targeted for intensive treatment. The DRP defines the acreage of exotic plants proposed for treatment as an infested area. An infested area is the approximate area of land (in acres) covered by the invasive plants if the plants were accumulated into one area. This distinction more accurately estimates the actual quantity of plants removed.

At the beginning of each fiscal year, DRP staff will determine which areas of the park will have a more focused invasive exotic plant treatment. The number of acres of exotic plants treated per year is likely to vary widely depending on the status, staffing, funding, current infestations and any new infestations that might arise during the life of this management plan. The park will update the invasive exotic species treatment plan, implement the exotic plant management annual work plan and enter data quarterly into the exotic plant database.

Each treated management zone should be surveyed with a thorough follow-up monitoring program. The follow-up program will involve surveying treatment areas to

remove newly established plants. Follow up survey and treatment records will also be entered quarterly into the exotic database. Continued commitment to treating areas to providing follow-up efforts for previously treated areas is mandated in order for this plan to be successful.

Current and new contract projects will have participation from both park management and District Biologists. All contractor removal efforts will be reported to the District for the annual invasive exotic removal report for entry into the exotics database.

***Objective: Implement control measures on two nuisance and exotic animal species in the park.***

Control activities will focus on areas where feral hogs and coyotes are causing adverse ecological impacts. DRP staff will monitor areas of disturbance and actively remove hogs and coyotes from the property according to the Exotic and Nuisance Wildlife removal standard. Contractual services to remove feral hogs and coyotes will be investigated on an as needed basis to help DRP staff achieve this objective. All other nuisance and invasive exotic species should be documented and opportunistically removed.

**Special Management Considerations**

Timber Management Analysis

Chapters 253 and 259, Florida Statutes, require an assessment of the feasibility of managing timber in land management plans for parcels greater than 1,000 acres if the lead agency determines that timber management is not in conflict with the primary management objectives of the land. The feasibility of harvesting timber at this park during the period covered by this plan was considered in context of the DRP's statutory responsibilities and an analysis of the park's resource needs and values. The long-term management goal for forest communities in the state park system is to maintain or re-establish old-growth characteristics to the degree practicable, with the exception of those communities specifically managed as early successional.

A timber management analysis was not conducted for this park since its total acreage is below the 1,000-acre threshold established by statute. Timber management will be re-evaluated during the next revision of this management plan.

Arthropod Control Plan

All DRP lands are designated as "environmentally sensitive and biologically highly productive" in accordance with Ch. 388 and Ch. 388.4111 Florida Statutes. If a local mosquito control district proposes a treatment plan, the DRP works with the local mosquito control district to achieve consensus. By policy of DEP since 1987, aerial adulticiding is not allowed, but larviciding and ground adulticiding (truck spraying in public use areas) is typically allowed. The DRP does not authorize new physical alterations of marshes through ditching or water control structures. Mosquito control

plans temporarily may be set aside under declared threats to public or animal health, or during a Governor's Emergency Proclamation.

## Sea Level Rise

Potential sea level rise is now under study and will be addressed by Florida's residents and governments in the future. The DRP will stay current on existing research and predictive models, in coordination with other DEP programs and federal, state, and local agencies. The DRP will continue to observe and document the changes that occur to the park's shorelines, natural features, imperiled species populations, and cultural resources. This ongoing data collection and analysis will inform the Division's adaptive management response to future conditions, including the effects of sea level rise, as they develop.

Within the 10-year planning period of this management plan, however, sea level rise is not anticipated to directly affect the natural or cultural resources of Seabranche Preserve State Park or the recreation facilities and infrastructure of the park.

## Cultural Resource Management

Cultural resources are individually unique, and collectively, very challenging for the public land manager whose goal is to preserve and protect them in perpetuity. The DRP is implementing the following goals, objectives and actions, as funding becomes available, to preserve the cultural resources found in the park.

### **Goal: Protect, preserve and maintain the cultural resources of the park.**

The management of cultural resources is often complicated because these resources are irreplaceable and extremely vulnerable to disturbances. The advice of historical and archaeological experts is required in this effort. All activities related to land clearing, ground disturbing activities, major repairs or additions to historic structures listed or eligible for listing in the National Register of Historic Places and collections care must be submitted to the FDOS, Division of Historical Resources (DHR) for review and comment prior to undertaking the proposed project. Recommendations may include, but are not limited to concurrence with the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effect. In addition, any demolition or substantial alteration to any historic structure or resource must be submitted to DHR for consultation and DRP must demonstrate that there is no feasible alternative to removal and must provide a strategy for documentation or salvage of the resource. Florida law further requires that DRP consider the reuse of historic buildings in the park in lieu of new construction and must undertake a cost comparison of new development versus rehabilitation of a building before electing to construct a new or replacement building. This comparison must be accomplished with the assistance of DHR.

***Objective: Assess and evaluate five of five recorded cultural resources in the park.***

The five cultural sites are to be evaluated and condition assessments updated during the plan period. Staff will provide information to include any threats to the site's condition such as natural erosion; vehicular damage; horse, bicycle or pedestrian damage; looting; construction including damage from firebreak construction; animal damage; plant or root damage or other factors that might cause deterioration of the site. This evaluation should attempt to compare the current condition with previous evaluations using photo points or high resolution scanning or similar techniques. Site assessments will be documented on appropriate forms and a copy will be sent to the Division of Historical Resource and maintained at the park and district offices.

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

Management should develop and implement a routine monitoring program that enables personnel to report on the location and condition of the recorded the parks' prehistoric and historic cultural resources. Any additional artifacts found should be recorded and updated in the FMSF as needed.

Efforts should be made to conduct oral history interviews and/or compile administrative history for the park and surrounding areas to help further guide cultural management decisions.

A Scope of Collections will need to be developed and updated for any current collections or for any new collections the park may acquire.

Predictive modeling is needed to determine if there is a need for further archeological survey. This model provides for high, medium and low areas of probability for the occurrence of pre-historic sites. The model will provide guidance for future development as well as the need for future Level 1 archaeological surveys.

***Objective: Bring Three of five recorded cultural resources into good condition.***

A cyclical maintenance plan should be developed and implemented to help guide the park with needed preservation of its sites. DRP staff should develop and implement a regular monitoring schedule for all four cultural resource sites.

Since, site MT 00069 is already considered to be in good condition; efforts to preserve this site from future threats should be addressed in the maintenance plan. The conditions of Big Knife Site (MT 01331), the Cart (MT 01574) and the Latrine (MT01576), are in fair condition but will need to be further evaluated with preservation as the end goal.

Site MT 01579 is now covered by a paved trail, this should continue to preserve the site in good condition.



Staff will ensure that any future ground disturbing activities will be conducted in accordance with DHR guidelines and monitored by appropriately trained personnel.

#### Resource Management Schedule

A priority schedule for conducting all management activities that is based on the purposes for which these lands were acquired, and to enhance the resource values, is located in the Implementation Component of this management plan.

#### Land Management Review

Section 259.036, Florida Statutes, established land management review teams to determine whether conservation, preservation and recreation lands titled in the name of the Board of Trustees are being managed for the purposes for which they were acquired and in accordance with their approved land management plans. The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

Seabranh Preserve State Park was subject to a land management review in September 1998 (see Addendum 8). The review team made the following determinations:

- The land is being managed for the purpose for which it was acquired.
- The actual management practices, including public access, complied with the management plan for this site.

## **LAND USE COMPONENT**

### **Introduction**

Land use planning and park development decisions for the state park system are based on the dual responsibilities of the Florida Department of Environmental Protection (DEP), Division of Recreation and Parks (DRP). These responsibilities are to preserve representative examples of original natural Florida and its cultural resources, and to provide outdoor recreation opportunities for Florida's citizens and visitors.

The general planning and design process begins with an analysis of the natural and cultural resources of the unit, and then proceeds through the creation of a conceptual land use plan that culminates in the actual design and construction of park facilities. Input to the plan is provided by experts in environmental sciences, cultural resources, park operation and management. Additional input is received through public workshops, and through environmental and recreational-user groups. With this approach, the DRP objective is to provide quality development for resource-based recreation throughout the state with a high level of sensitivity to the natural and cultural resources at each park.

This component of the unit plan includes a brief inventory of the external conditions and the recreational potential of the unit. Existing uses, facilities, special conditions on use, and specific areas within the park that will be given special protection, are identified. The land use component then summarizes the current conceptual land use plan for the park, identifying the existing or proposed activities suited to the resource base of the park. Any new facilities needed to support the proposed activities are expressed in general terms.

### **External Conditions**

An assessment of the conditions that exist beyond the boundaries of the unit can identify any special development problems or opportunities that exist because of the unit's unique setting or environment. This also provides an opportunity to deal systematically with various planning issues such as location, regional demographics, adjacent land uses and park interaction with other facilities

Seabranh Preserve State Park is located within an unincorporated area of Martin County, about four miles southeast of the City of Stuart and five miles south of St. Lucie County, in the southeast part of the state. Access to the park's recreational hiking trails is from Southeast Dixie Highway (US-1), located on the park's western boundary. The park is bounded north and south by Southeast Cove Road, residential development and FIND property, as well as the Intracoastal Waterway (ICW) on the east. Approximately 900,000 people live within 30 miles of the park (U.S. Census 2010).

The population of Martin County is diverse in terms of demographic characteristics. According to U.S. Census data (2011), approximately one-fifth of residents in the county identify as black, Hispanic or Latino or another minority group. Over half (55%) of residents can be described as youth or seniors (U.S. Census 2011). Martin County ranked fifth statewide in per capita personal income at \$52,798 (above the statewide average of \$39,636) (U.S. Bureau of Economic Analysis 2012).

The park is located in the Central East Vacation Region, which includes Volusia, Brevard, Indian River, St. Lucie, Martin and Okeechobee counties (Visit Florida 2011). According to the 2011 Florida Visitor Survey, eight percent of domestic visitors to Florida visited this region. Of the estimated 6 million domestic visitors who came to this region in 2011, approximately 90 percent traveled for leisure. Visiting the beach/waterfront and shopping were the most popular activities for those visitors to the region. Summer was the most popular season for visitors, but visitation was generally spread throughout the year. Most visitors traveled by air (71 percent), reporting an average stay of 4.2 nights and spending an average of \$105 per person per day (Visit Florida 2011).

There are considerable publicly-owned resource-based recreation opportunities within ten miles of the park. Seabranh Preserve State Park, located directly across the Indian River Lagoon/ICW from St. Lucie Inlet Preserve State Park, provides picnicking, hiking and bicycling trails and opportunities for wildlife viewing. Also nearby, Atlantic Ridge Preserve, Jonathan Dickinson and Savannas Preserve State Parks provide biking, hiking and equestrian trails, paddling and boating opportunities, camping, picnicking, swimming and educational and interpretive programs. The Florida Circumnavigational Saltwater Paddling Trail, or the CT, spans 1,515 miles along Florida's coast, from Pensacola to Fort Clinch. Segment 20, a 44.5-mile link from Hobe Sound to Fort Pierce, runs through the ICW adjacent to Seabranh Preserve State Park. A portion of the East Coast Greenway, a developing 3,000-mile trail system that way links all the major cities of the eastern seaboard between Canada and Key West, runs along the western boundary of the park along SR A1A and passes through the park's southern portion.

Hobe Sound National Wildlife Refuge, a 1,035-acre refuge offers opportunities for public recreation, including nature trails and wildlife observation, environmental education and an interpretive museum, surf fishing and beach use. The adjacent Jensen Beach to Jupiter Inlet Aquatic Preserve is a part of the Indian River Lagoon National Estuary Program, one of 28 designated estuaries of national significance. The natural communities within the estuary's submerged lands and open waters combine to create one of the most productive estuaries in the United States. Recreational uses include boating, fishing and swimming.

Several parks and preserves managed by Martin County are located in the vicinity of Seabranh Preserve State Park. Cove Road Park is located directly across the inlet and provides a paddling launch and small parking area. Peck

Lake Park and Twin Rivers Park provide recreational opportunities along the Indian River Lagoon and St. Lucie River, while Jimmy Graham Park and Sandsprit Park provide boating access as well. Less than four miles west of the park, Halpatiokee Regional Park is a 200-acre county park offering picnicking, paddling, hiking trails and active sport fields. Just south of this park is another 100-acres managed by Martin County under lease from the South Florida Water Management District (SFWMD) which provides additional opportunities for fishing, hiking, canoeing, boating, primitive camping, and nature study.

#### Existing Use of Adjacent Lands

Adjacent land uses surrounding the park are conservation lands, including the St. Lucie Inlet Preserve State Park and Hobe Sound National Wildlife Refuge on Jupiter Island to the east. Submerged lands to the east are the Jensen Beach to Jupiter Inlet Aquatic Preserve. Directly north of Seabrook Preserve State Park, lands along the park's northern border and adjacent to the ICW are mostly medium to high density residential. Across the St. Lucie Inlet, a low to medium density residential golf course development is located on Sailfish Point. Both public and private boat ramps, and numerous marinas and docks, for private, recreational and commercial use, are located in the immediate vicinity of the park.

Along State Road (SR) A1A to the north and west of the park, the historic fishing community of Port Salerno includes a mix of residential, commercial and institutional uses. From Cove Road to the north through Port Salerno, SR A1A has been redesigned as a livable street that promotes bicycle, pedestrian and transit use and a strong commercial center. Cove Road Park is located at the eastern terminus of Southeast Cove Road on the ICW to the north of the park. Numerous marinas and docks, for private, recreational and commercial use, are located in the immediate vicinity of the park. Lands east of the ICW from the park consist of conservation lands within St. Lucie Inlet Preserve State Park.

#### Planned Use of Adjacent Lands

Martin County is a relatively small county population-wise in southeast Florida. While it has not experienced the rapid growth rate of St. Lucie County to the north, its growth has been consistent with the overall population growth in the state. From 1980 to 2010, the population of the Martin County more than doubled. Growth in the area slowed somewhat during the economic downturn of the late 2000s, and business and real estate growth is projected to increase over the timeframe of this plan. The surrounding area is expected to grow by approximately 35% by 2040 (BEBR 2012), the future development patterns in the area will reflect those identified in the County's plans, especially those for the Community Redevelopment Areas, one of which (Port Salerno) is adjacent to the park.

Currently, the Martin County Comprehensive Plan indicates that the future land use designations of lands adjacent to the park include Recreational (primarily

for active recreation), Estate Density (up to 2 units per acre (UPA), Low Density Residential (up to 5 UPA), Medium Density Residential (up to 8 UPA) and Commercial Waterfront (Port Salerno) allowing marinas and other marine-related services and some residential, depending on zoning. Residential future land use categories allow residential plus residential-supportive uses. Other future land use designations found in the vicinity of the park include General Institutional (government services) and Commercial/Office/Residential (office uses, residential, combinations, limited commercial) (Martin County 2012). The lands on Jupiter Island across the inlet (including St. Lucie Inlet Preserve State Park) are Public Conservation Areas (primarily for conservation of the natural resource).

The zoning designations of adjacent land are consistent with the future land use designation. The areas immediately adjacent to the park are covered by a mix of zoning designations, including Public Service District-2 (PS-2; Seabrook Preserve State Park), several residential categories, mostly single-family (R-1, R-1B, R-2, R-2B, R-3A), Planned Unit Development-Residential (PUD-R), Interim Zoning (minimum standards based on R-2) and Estates/Suburban Homes. Lands within the Port Salerno Community Redevelopment Area are covered by several overlays, including the Cove Road Zoning Overlay (west of SR A1A) and the Town Center Zoning Overlay (Martin County 2013). These overlay districts are established to provide opportunities for traditional neighborhood design and mixed residential and commercial uses in redeveloping areas. Lands on Jupiter Island are covered by special barrier island regulations (Jupiter Island zoning designation) that reflect the unique conditions of the barrier islands as they relate to providing essential public services and facilities and preserving environmentally sensitive barrier island coastal habitats.

A review of proposed comprehensive plan amendments and proposed developments in Martin County showed no substantial development projects impacting the park.

A future transit route, identified along SR A1A from Hobe Sound to the Treasure Coast Mall, may provide options for increasing visitor access to the park. It will be important for DRP staff to participate in the review of all comprehensive plan amendments, proposed zoning changes and development plans and other projects that may impact the park in the future.

The Treasure Coast Regional Planning Council and Martin County are both committed to maintaining a balanced, orderly sustainable economic growth the County (TCRPC 2012). A portion of the East Coast Greenway (ECG), a developing 3,000-mile trail system that will link all the major cities of the eastern seaboard between Canada and Key West, runs along SR A1A adjacent to the park and passes through the park's southern area.

## **Property Analysis**

Effective planning requires a thorough understanding of the unit's natural and cultural resources. This section describes the resource characteristics and existing uses of the property. The unit's recreation resource elements are examined to identify the opportunities and constraints they present for recreational development. Past and present uses are assessed for their effects on the property, compatibility with the site, and relation to the unit's classification.

### **Recreational Resource Elements**

This section assesses the park's recreational resource elements, those physical qualities that, either singly or in certain combinations, can support various resource-based recreation activities. Breaking down the property into such elements provides a means for measuring the property's capability to support potential recreational activities. This process also analyzes the existing spatial factors that either favor or limit the provision of each activity.

#### **Land Area**

Seabranh Preserve State Park contains approximately 921 acres of uplands in northern Martin County, just east of State Road A1A runs along the western border of the park. Nine natural communities are represented in the park's upland area, providing diverse wildlife habitat and wide-ranging natural experiences for park visitors. Some areas of the park consist of spoil material placed from dredging operations. Park land provides significant area for several recreational amenities, including hiking and shared-use trails, picnic facilities and necessary support facilities.

#### **Water Area**

Seabranh Preserve State Park includes approximately one acre of submerged land, encompassing a small area of estuarine substrate. Two blackwater streams, rimmed by floodplain swamp, pass through the park's northwest area.

#### **Shoreline**

The park's eastern boundary is adjacent to the Indian River Lagoon, one of the most important estuarine systems in the United States. The park's shoreline is rimmed by a mangrove swamp and adjacent rare freshwater baygall communities. Due to the high sensitivity of these communities and the distance from the park's trails to the water, recreational activity is focused within the park's upland areas to the west, and no access to the Indian River Lagoon is available at the park.



## Natural Scenery

Ancient oceans shaped the physical landscape of this park, which allowed a variety of habitats to develop over time. Today, the park provides a unique opportunity for trail users to experience a significant diversity of natural communities in a relatively short distance. In less than one mile, visitors can see rare scrub, baygall, and flatwoods communities.

## Significant Habitat

The park's fire-maintained natural communities provide critical habitat for gopher tortoises (*Gopherus polyphemus*) and dependent commensal species, including gopher frog (*Rana capito aesopus*) and Florida mouse (*Peromyscus floridana*). The park also contains portions of the last remaining scrub habitat for the Florida Scrub-jay (*Aphelocoma coerulescens*) along Florida's Atlantic Ridge. Currently, resident Scrub-jays have not been documented in the park, although visiting birds have been observed.

## Natural Features

Park lands lie directly across the ICW from St. Lucie Inlet Preserve State Park. The combined parks are a part of a unique and important contiguous ecosystem that geologically links St. Lucie Inlet Preserve State Park's Anastasia rock reefs, barrier island and adjacent estuary seagrass beds to the mangrove, baygall and scrub habitats located within Seabrook Preserve State Park. The park's visitors have the unique opportunity to access the park's upper elevations of this extraordinary system and learn more about its species-rich significance through interpretive trail signs.

## **Archaeological and Historical Features**

There are four cultural resource sites in the park that date from the aboriginal and prehistoric period to the American 19th Century. Although none of the features are considered culturally significant, they may still inspire the subject matter for interpretive programming and elements. Interpretation of the time period and groups that may have occupied the region could help to educate visitors about how early inhabitants used the park's resources.

## **Assessment of Use**

All legal boundaries, significant natural features, structures, facilities, roads and trails existing in the unit are delineated on the base map (see Base Map). Specific uses made of the unit are briefly described in the following sections.

### Past Uses

Past uses of the park lands include agriculture, a 4.5-acre borrow site and off-road vehicle use.

## Future Land Use and Zoning

The DRP works with local governments to establish designations that provide both consistency between comprehensive plans and zoning codes and permit typical state park uses and facilities necessary for the provision of resource-based recreation.

The current future land use designation is Public Conservation, which permits only development compatible with conservation and passive recreation uses. This may include access, parking and other facilities that enable the management of the resource and the public's enjoyment of it (Martin County 2013). The current zoning designation for the park is Public Service District (PS-2), which permits institutional and community service uses, including parks and recreation areas (Martin County 2011).

## Current Recreational Use and Visitor Programs

Resource-based outdoor recreation in Florida continually increases in popularity. The growth of Florida's resident and tourist populations brings increasing pressure for access that is more widespread and for denser levels of public use in the natural areas available to the public. Consequently, one of the greatest challenges for public land management today is the balancing of reasonable levels of public access with the need to preserve and enhance the natural and cultural resources of the protected landscapes.

The park is currently open to the public for nature appreciation and day use hiking and biking. Ten miles of hiking trails and a 1.3-mile paved shared-use trail are available to visitors to explore contiguous natural communities. Trails traverse sand pine scrub, baygall and mesic flatwoods communities, and users have the opportunity to observe a wide variety of wildlife, including the gopher tortoise, bald eagles, Florida scrub-jay, and bobcat (*Lynx rufus*). A small picnic area with a pavilion is also available to visitors.

Visitation to the park is generally consistent throughout the year, and the East Coast Greenway corridor adjacent to and within the park has increased access to the park. The park offers interpretive and educational programming to educate the public on the park's resources. An interpretive kiosk at the entrance area provides park information and education.

Seabranh Preserve State Park recorded 11,102 visitors in FY 2012/2013. By DRP estimates, the FY 2012/2013 visitors contributed almost \$500,000 in direct economic impact, the equivalent of adding eight jobs to the local economy (FDEP 2013).

## Other Uses

A 1.3-mile section of the East Coast Greenway passes through the park from the trailhead area along SR A1A and traverses the scrub, exiting along the park's southern boundary. This paved shared-use trail connects with a 1.4-mile section of the ECG managed by Martin County and located on park land just west of the park's fence line, along the northern two-thirds of the park.

## Protected Zones

A protected zone is an area of high sensitivity or outstanding character from which most types of development are excluded as a protective measure. Generally, facilities requiring extensive land alteration or resulting in intensive resource use, such as parking lots, camping areas, shops or maintenance areas, are not permitted in protected zones. Facilities with minimal resource impacts, such as trails, primitive campsites, interpretive signs and boardwalks are generally allowed. All decisions involving the use of protected zones are made on a case-by-case basis after careful site planning and analysis.

At Seabranh Preserve State Park, scrub, baygall, depression marsh, floodplain swamp, mangrove swamp, blackwater stream, seagrass bed and unconsolidated substrate have been designated as protected zones as delineated on the Conceptual Land Use Plan. The 40-acre gopher tortoise recipient site is also included in the protected zone and shown on the map.

## Existing Facilities

Seabranh Preserve State Park provides recreational facilities for day use activities and includes an residence/shop area that supports both Seabranh and St. Lucie Inlet Preserve State Parks (see Base Map).

## Recreation Facilities

The park's recreational facilities include a trailhead area with picnic facilities and hiking and shared-use trails. The park's trails generally follow existing firebreaks and service roads with spur trails and an eastern loop accessing the park's natural communities.

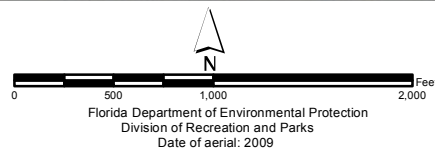
## Support Facilities

The park's support facilities include a stabilized and paved parking areas and a composting restroom in the trailhead area. The shop/residence area includes an office/shop building, several storage buildings, a residence and stabilized parking. An inventory of the park's recreational and support facilities is included below.





SEABRANCH PRESERVE STATE PARK



BASE MAP





**Trailhead Area**

Interpretive kiosk  
Small picnic shelter with grill  
Composting restroom  
Water fountain  
Stabilized parking (9 vehicles)  
Paved parking (5 + 1 ADA)

**Shop/Residence Area**

2-bay shop with office  
24 x 30 Carport Storage building  
Storage shed (3)  
Residence, mobile home  
Residence storage shed (2)  
Stabilized parking (up to 20 vehicles)

**Parkwide**

Hiking trails (10 miles)  
East Coast Greenway paved shared-use trail (1.3 miles)  
Trail kiosk

**Conceptual Land Use Plan**

The following narrative represents the current conceptual land use proposal for this park. The conceptual land use plan is the long-term, optimal development plan for the park, based on current conditions and knowledge of the park's resources, landscape and social setting (see Conceptual Land Use Plan). The conceptual land use plan is modified or amended, as new information becomes available regarding the park's natural and cultural resources or trends in recreational uses, in order to adapt to changing conditions. Additionally, the acquisition of new parkland may provide opportunities for alternative or expanded land uses. The DRP develops a detailed development plan for the park and a site plan for specific facilities based on this conceptual land use plan, as funding becomes available.

During the development of the conceptual land use plan, the DRP assessed the potential impact of proposed uses or development on the park resources and applied that analysis to determine the future physical plan of the park as well as the scale and character of proposed development. Potential resource impacts are also identified and assessed as part of the site planning process once funding is available for facility development. At that stage, design elements (such as existing topography and vegetation, sewage disposal and stormwater management) and design constraints (such as imperiled species or cultural site locations) are investigated in greater detail. Municipal sewer connections, advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Creation of impervious surfaces is minimized to the greatest extent feasible in order to limit the need for stormwater management systems, and all facilities are designed and constructed using best management practices to limit and avoid resource impacts. Federal, state and local permit and regulatory requirements are addressed during facility development. This includes the design of all new park facilities consistent with the universal access requirements of the Americans with Disabilities Act (ADA). After new facilities are constructed, park staff monitors conditions to ensure that impacts remain within acceptable levels.

## Potential Uses

### Public Access and Recreational Opportunities

**Goal: Provide public access and recreational opportunities in the park.**

The existing recreational activities and programs of this state park are appropriate to the natural and cultural resources contained in the park and should be continued. New and improved activities and programs are also recommended and discussed below.

***Objective: Maintain the park's current recreational carrying capacity of 214 users per day.***

The park will continue to provide the current range of recreational day use opportunities. Hiking, biking, picnicking and nature study are popular activities for park patrons. The park serves as a picnicking and hiking stop for users of the East Coast Greenway, which runs through the park.

***Objective: Expand the park's recreational carrying capacity by 28 users per day.***

Opportunities for primitive camping and additional picnicking at the park will expand the park's carrying capacity. Up to three primitive campsites will provide overnight camping opportunities in the park, providing a stopover for travelers on the East Coast Greenway. The picnic facilities at the trailhead area will also be expanded.

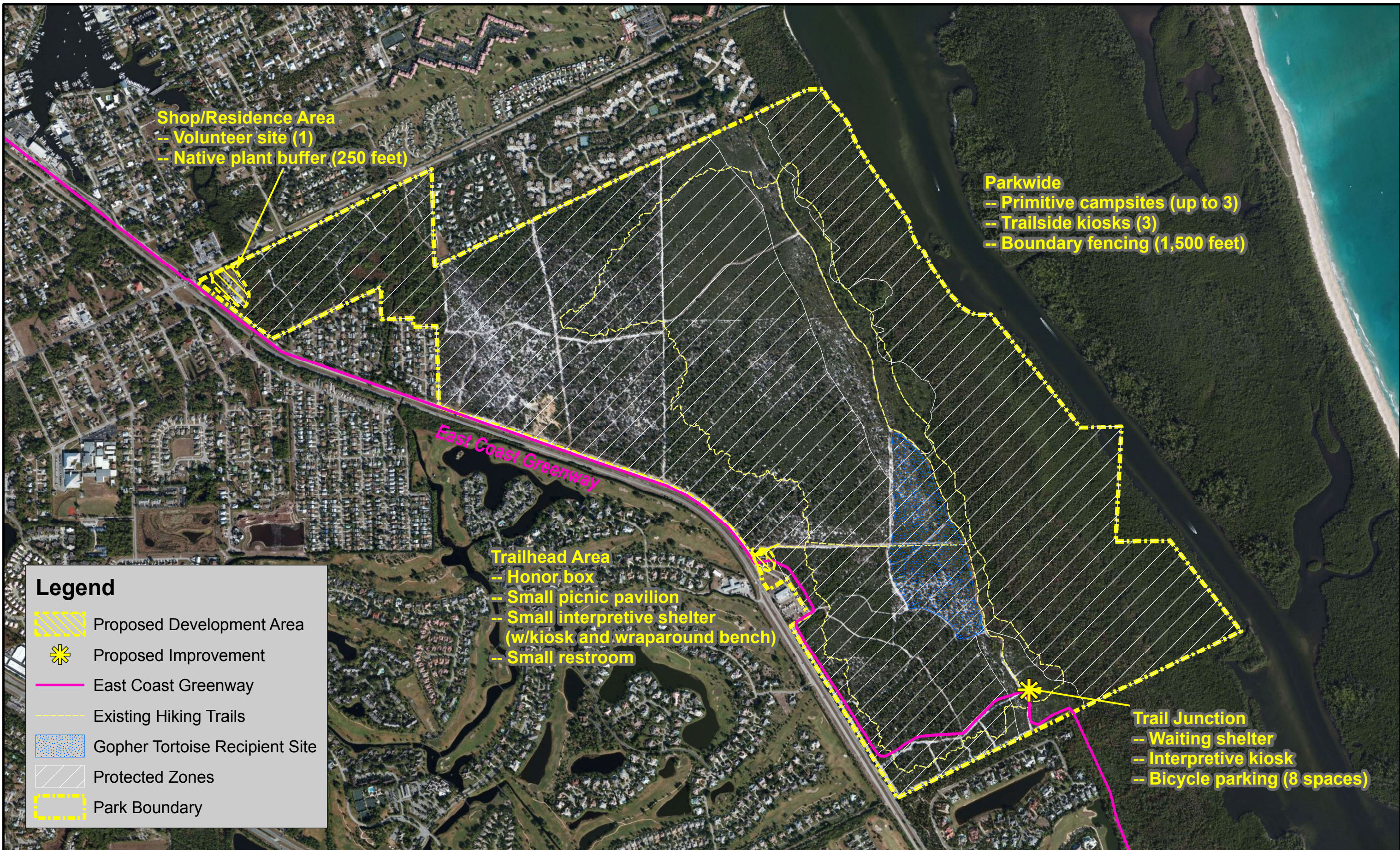
***Objective: Continue to provide the current repertoire of three interpretive, educational and recreational programs on a regular basis.***

One in-person, ranger-led activity is currently offered at the park, seasonally and upon request of park visitors. A guided walk is designed to inform visitors about the history of Seabranh Preserve State Park and its ecology. The walk provides interpretive and educational information about the park's issues and resources and provides the public with valuable information that educates visitors about scrub preservation and restoration within the park. Self-guided interpretive signs and kiosks educate visitors about invasive plants, the park's natural communities and other issues. Publications available at the park cover an array of themes, including birds, trails and park activities.








***Objective: Develop one new interpretive, educational and recreational program.***

The park will develop one new program to designed to inform visitors of the need to sustain and enhance the existing habitat conditions in the park. Visitor education will be provided in person and through interpretive displays and kiosks at trailhead and along the trails. Interpretive displays will seek to





**Legend**

-  Proposed Development Area
-  Proposed Improvement
-  East Coast Greenway
-  Existing Hiking Trails
-  Gopher Tortoise Recipient Site
-  Protected Zones
-  Park Boundary





educate visitors about the unique resources of the park as well as exotic and invasive species.

A guided bike ride along the paved East Coast Greenway will be scheduled quarterly and also offered upon request. The ride will also teach visitors about appropriate wildlife viewing behavior and techniques. Interpretive signage will also identify behaviors that are encouraged in the park, while discouraging perennial problem activities, such as littering. Up to three trailside kiosks are proposed along the Florida Trail to provide interpretation and wayfinding. A new waiting pavilion with a kiosk is proposed at the south trail junction along the East Coast Greenway. This display will provide park information, history, ecology and rotating interpretive information. DRP staff will also coordinate with public lands and the local community to promote awareness and provide educational opportunities about the park.

## **Proposed Facilities**

### Capital Facilities and Infrastructure

**Goal: Develop and maintain the capital facilities and infrastructure necessary to implement the recommendations of the management plan.**

The proposed development concept for the park is two-fold. It includes improvements to existing use areas that will enhance the visitor experience and increase access to recreational opportunities. In addition, new facilities are proposed that will add recreational activities that are compatible with those currently offered at the park.

The existing facilities of this state park are appropriate to the natural and cultural resources contained in the park and should be maintained. New construction, as discussed further below, is recommended to improve the quality and safety of the recreational opportunities, to improve the protection of park resources, and to streamline the efficiency of park operations. The following is a summary of improved, renovated and new facilities needed to implement the conceptual land use plan for Seabranche Preserve State Park:

***Objective: Maintain all public and support facilities in the park.***

All capital facilities, trails and roads within the park will be kept in proper condition through the daily or regular work of park staff and/or contracted help.

***Objective: Improve/repair three existing facilities and ten miles of trail.***

Major repair projects for park facilities may be accomplished within the ten-year term of this management plan, if funding is made available. These include the modification of existing park facilities to bring them into compliance with the Americans with Disabilities Act (a top priority for all facilities maintained by

DRP). The following discussion of other recommended improvements and repairs are organized by use area within the park.

**Trailhead Area:** The facilities at the trailhead area will be enhanced and expanded to serve the park's visitors, which are increasing in number. An honor box will be installed to capture user fees, and a small picnic pavilion will provide two additional picnic tables for park and trail users. The current composting restroom will be replaced by a small restroom facility to serve the increased visitor numbers. An interpretive shelter with a three-sided kiosk and wraparound bench is also proposed for the trailhead area, providing improved wayfinding and interpretive signage for trail users.

**Shop/Residence Area:** Improvements proposed for the shop/residence area include a volunteer RV-site and vegetative buffers using native vegetation in adjacent to the manager's residence and proposed volunteer site (approximately 250 feet).

**Parkwide:** Trailside interpretive signage and benches will be installed at several locations along the park's hiking trail system, including a kiosk in the northeast area of the park at the junction of the East Loop and North Loop trails. Park staff will work with the Martin County to establish signage at Cove Road Park identifying the park's location and recreational opportunities. Additional boundary fencing (approximately 1,500 feet) is recommended for the park to fill gaps in the fencing.

***Objective: Construct two new facilities.***

**Primitive Campsites:** Up to three designated primitive campsites are proposed in the park. One primitive site would occur near the East Coast Greenway and/or trailhead area, and the number of campsites will be reevaluated based on demand during the period covered by this plan. The primitive campsites could also be located strategically along the trails system to accommodate regional multi-day hikes and bicycle rides connecting various parks and public lands in the area and provide a level of privacy from day use areas. Campsites will be sited to reduce impacts to sensitive habitat and will likely be moved periodically to eliminate cumulative impacts. At minimum, each primitive campsite should provide room for up to two tents and a fire ring.

**Parkwide:** In the southeast area of the park, a small trailhead area is planned for the south trail junction of the East Coast Greenway and the hiking trails. A waiting shelter with an interpretive kiosk and bench will provide a waiting area and wayfinding for visitors and trail users. Interpretive information will educate visitors on the park's natural communities and management activities. Bicycle parking for up to eight bicycles (four racks) will provide a secure location for cyclists interested in hiking on the park's trails.

## Facilities Development

Preliminary cost estimates for these recommended facilities and improvements are provided in the Ten-Year Implementation Schedule and Cost Estimates (Table 7) located in the Implementation Component of this plan. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist DRP in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes. New facilities and improvements to existing facilities recommended by the plan include:

### **Trailhead Area**

Honor box  
Small waiting pavilion with kiosk and wraparound bench  
Small restroom

### **Shop/Residence Area**

Volunteer site  
Native plant buffer (250 feet)

### **Primitive Campsites**

Primitive campsites (up to 3)

### **Parkwide**

Waiting shelter with kiosk and benches (south trail junction)  
Bicycle parking (8 spaces) (south trail junction)  
Trailside kiosks (3)  
Boundary fencing (1,500 feet)

## Recreational Carrying Capacity

Carrying capacity is an estimate of the number of users a recreation resource or facility can accommodate and still provide a high quality recreational experience and preserve the natural values of the site. The carrying capacity of a unit is determined by identifying the land and water requirements for each recreation activity at the unit, and then applying these requirements to the unit's land and water base. Next, guidelines are applied which estimate the physical capacity of the unit's natural communities to withstand recreational uses without significant degradation. This analysis identifies a range within which the carrying capacity most appropriate to the specific activity, the activity site and the unit's classification is selected (see Table 6).

The recreational carrying capacity for this park is a preliminary estimate of the number of users the unit could accommodate after the current conceptual development program has been implemented. When developed, the proposed new facilities would approximately increase the unit's carrying capacity as shown in Table 6.

**Table 6. Recreational Carrying Capacity**

<b>Activity/Facility</b>	<b>Existing Capacity*</b>		<b>Proposed Additional Capacity</b>		<b>Future Capacity</b>	
	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>	<b>One Time</b>	<b>Daily</b>
<b>Picnicking</b>	8	16	8	16	16	32
<b>Trails</b>						
Hiking Trail	20	78			20	78
Shared Use Trail	60	120			60	120
<b>Primitive Camping</b>			12	12	12	12
<b>TOTAL</b>	<b>88</b>	<b>214</b>	<b>20</b>	<b>28</b>	<b>108</b>	<b>242</b>

\*Existing capacity has been revised from approved plan to better follow DRP carrying capacity guidelines.

**Optimum Boundary**

The optimum boundary map reflects lands considered desirable for direct management by the DRP as part of the state park. These parcels may include public or privately owned land that would improve the continuity of existing parklands, provide the most efficient boundary configuration, improve access to the park, provide additional natural and cultural resource protection or allow for future expansion of recreational activities. Parklands that are potentially surplus to the management needs of DRP are also identified. As additional needs are identified through park use, development, and research, and as land use changes on adjacent property, modification of the park’s optimum boundary may be necessary.

Identification of parcels on the optimum boundary map is intended solely for planning purposes. It is not to be used in connection with any regulatory purposes. Any party or governmental entity should not use a property’s identification on the optimum boundary map to reduce or restrict the lawful rights of private landowners. Identification on the map does not empower or suggest that any government entity should impose additional or more restrictive environmental land use or zoning regulations. Identification should not be used as the basis for permit denial or the imposition of permit conditions.

At this time, no lands are considered surplus to the needs of the park, and no lands have been identified for acquisition.

## **IMPLEMENTATION COMPONENT**

The resource management and land use components of this management plan provide a thorough inventory of the park's natural, cultural and recreational resources. They outline the park's management needs and problems, and recommend both short and long-term objectives and actions to meet those needs. The implementation component addresses the administrative goal for the park and reports on the Division of Recreation and Parks (DRP) progress toward achieving resource management, operational and capital improvement goals and objectives since approval of the previous management plan for this park. This component also compiles the management goals, objectives and actions expressed in the separate parts of this management plan for easy review. Estimated costs for the ten-year period of this plan are provided for each action and objective, and the costs are summarized under standard categories of land management activities.

### **MANAGEMENT PROGRESS**

Since the approval of the last management plan for Seabrook Preserve State Park in 2002, significant work has been accomplished and progress made towards meeting the DRP's management objectives for the park. These accomplishments fall within three of the five general categories that encompass the mission of the park and the DRP.

#### **Park Administration and Operations**

- Volunteer hours have increased by approximately 20 percent over the past five fiscal years.
- The park has worked closely with Martin County on regional connectivity and resource protection.
- The park has partnered with South Florida Water Management District and Palm Beach County to provide a remote parking location for work vehicles.
- Partnered with the East Coast Greenway Coalition during planning and development of new multimodal trail.

#### **Resource Management**

##### **Natural Resources**

- Cleared and installed new fire lanes after the 2004 and 2005 hurricanes.
- Continued surveys for Florida Scrub-Jays, and while they show no resident families, occasional sightings are reported.
- Applied eight prescribed fires to a total of 560 acres, taking 308 acres out of backlog and into maintenance status.
- The park continues to utilize contractors for large scale invasive exotic plant treatments. Outside funding has been allocated for at least five large-scale projects since the last UMP update, including three contractor treatments (2003, 2010-2011 and 2011-2012) to the entire baygall community (MZ-A) and two treatments to each of the Manatee Creek floodplains.
- Maintained an effective trapping and removal program for feral hogs.
- Worked with Eaglewatch and FWC to monitor successful bald eagle nesting site for past four years.



- Established a series of photo-points in 2013 for habitat monitoring.
- Confirmation of Florida Mouse presence through partnerships with researchers.
- Bio-control agents for air potato were released and documented.

### **Cultural Resources**

- Since the last plan, three new cultural resource sites were recorded by park and district staff.

### **Recreation and Visitor Services**

- Developed new guided walk on plants, history and ecology of the park.
- New East Coast Greenway paved trail section through park has nearly doubled visitation.
- New East Loop hiking trail established and maintained by the Florida Trail Association.
- Added six benches and a kiosk along North and South loop trails.
- Established and labeled a four-mile “heart trail” per governor’s directive.
- The park maintains partnerships with local schools and governments to educate and share information for the overall understanding and protection of the resources.
- Secured a 911 address for the Seabranh Preserve State Park trailhead for safety and navigation.

### **Park Facilities**

- The park has repaired structures that were damaged during numerous hurricanes that occurred between 2003 and 2005.
- The park has made many modifications to facilities to enhance compliance with the Americans with Disabilities Act (ADA), thus increasing accessibility of park’s facilities and use areas. These improvements include a new ADA-compliant sidewalk at the trailhead, connecting the pavilion, accessible grill, water fountain and composting restroom.
- A new 1.3-mile section of the East Coast Greenway multimodal concrete path was constructed through the park.
- Improvements in the shop/residence area included a new carport canopy for the tractor and fire truck, new doors, floors and interior paint at the office and new paint, flooring and fixtures at the residence.

## **MANAGEMENT PLAN IMPLEMENTATION**

This management plan is written for a timeframe of ten years, as required by Section 253.034 Florida Statutes. The Ten-Year Implementation Schedule and Cost Estimates (Table 7) summarizes the management goals, objectives and actions that are recommended for implementation over this period, and beyond. Measures are identified for assessing progress toward completing each objective and action. A time frame for completing each objective and action is provided. Preliminary cost estimates for each action are provided and the estimated total costs to complete each objective are computed. Finally, all costs are consolidated under the following five standard land management categories: Resource Management, Administration

and Support, Capital Improvements, Recreation Visitor Services and Law Enforcement.

Many of the actions identified in the plan can be implemented using existing staff and funding. However, a number of continuing activities and new activities with measurable quantity targets and projected completion dates are identified that cannot be completed during the life of this plan unless additional resources for these purposes are provided. The plan's recommended actions, time frames and cost estimates will guide the DRP's planning and budgeting activities over the period of this plan. It must be noted that these recommendations are based on the information that exists at the time the plan was prepared. A high degree of adaptability and flexibility must be built into this process to ensure that the DRP can adjust to changes in the availability of funds, improved understanding of the park's natural and cultural resources, and changes in statewide land management issues, priorities and policies.

Statewide priorities for all aspects of land management are evaluated each year as part of the process for developing the DRP's annual legislative budget requests. When preparing these annual requests, the DRP considers the needs and priorities of the entire state park system and the projected availability of funding from all sources during the upcoming fiscal year. In addition to annual legislative appropriations, the DRP pursues supplemental sources of funds and staff resources wherever possible, including grants, volunteers and partnerships with other entities. The DRP's ability to accomplish the specific actions identified in the plan will be determined largely by the availability of funds and staff for these purposes, which may vary from year to year. Consequently, the target schedules and estimated costs identified in Table 7 may need to be adjusted during the ten-year management planning cycle.



**Table 7.**  
**Seabranh Preserve State Park Ten-Year Implementation Schedule and Cost Estimates**  
 Sheet 1 of 4

NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
<b>Goal I: Provide administrative support for all park functions.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Continue day-to-day administrative support at current levels.</b>	Administrative support ongoing	C	<b>\$240,000</b>
<b>Objective B</b>	<b>Expand administrative support as new lands are acquired, new facilities are developed, or as other needs arise.</b>	Administrative support expanded	C	<b>\$30,000</b>
<b>Goal II: Protect water quality and quantity in the park, restore hydrology to the extent feasible, and maintain the restored condition.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Conduct/obtain an assessment of the park's hydrological needs.</b>	Assessment conducted	ST	<b>\$10,000</b>
<b>Objective B</b>	<b>Restore natural hydrological conditions and functions to approximately 88 acres of mangrove swamp natural community.</b>	# Acres restored or with restoration underway	LT	<b>\$50,000</b>
Action 1	Develop a study to determine impacts of intermittent berm.	Study developed	LT	\$15,000
Action 2	Develop a restoration plan based on Action 1.	Plan developed	LT	\$5,000
Action 3	Implement the restoration plan based on previous action items	Actions Implemented	LT	\$30,000
<b>Objective C</b>	<b>Monitor and analyze water resources influencing Manatee Creek and the baygall..</b>	Monitoring Conducted	LT	<b>\$35,000</b>
<b>Goal III: Restore and maintain the natural communities/habitats of the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Within ten years, have 576 acres of the park maintained within the optimum fire return interval.</b>	# Acres within fire return interval target	LT	<b>\$80,000</b>
Action 1	Update annual burn plan.	Plan updated	C	\$16,000
Action 2	Manage fire dependent communities for ecosystem function, structure and processes by burning between 44.37-88.28 acres annually, as identified by the annual burn plan.	Average # acres burned annually	C	\$46,000
Action 3	Improve 2 miles of existing fire breaks and assess the need for additional firebreaks	# Miles improved/ Assesment conducted	ST	\$18,000
<b>Objective B</b>	<b>Conduct natural community/habitat improvement activities on 30 acres of Scrub community.</b>	# Acres restored or with restoration underway	LT	<b>\$31,600</b>
Action 1	Develop/ update site specific restoration plan	Plan developed/ updated	ST	\$1,600
Action 2	Implement restoration plan	# Acres with restoration underway	LT	\$30,000

\* 2013 Dollars  
 ST = actions within 2 years  
 LT = actions within 10 years  
 C = long term or short term actions that are continuous or cyclical  
 UFN = currently unfunded need





NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
<b>Goal IV: Maintain, improve or restore imperiled species populations and habitats in the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Update baseline imperiled species occurrence inventory lists for plants and animals.</b>		List updated	<b>\$11,000</b>
<b>Objective B</b>	<b>Monitor and document 2 selected imperiled animal species in the park.</b>		# Species monitored	<b>\$41,600</b>
Action 1	Develop monitoring protocols for 2 selected imperiled animal species including Florida scrub-jay and gopher tortoise.		# Protocols developed	\$1,600
Action 2	Implement monitoring protocols for 2 imperiled animal species listed in Action 1 above		# Species monitored	\$30,000
Action 3	Continue to monitor the effects of prescribed fire treatments on supporting natural communities.			\$10,000
<b>Objective C</b>	<b>Monitor and document 5 selected imperiled plant species in the park.</b>		# Species monitored	<b>\$21,600</b>
Action 1	Develop monitoring protocols for 5 selected imperiled plant species including hand fern, vanilla orchid, Johnson's seagrass, Curtiss' milkweed, large flowered rosemary		# Protocols developed	\$1,600
Action 2	Implement monitoring protocols for the 5 selected imperiled plant species listed in Action 1 above.		# Species monitored	\$20,000
<b>Objective D</b>	<b>Evaluate the potential of the park as a recipient site for translocation of Florida Scrub-jays.</b>		# Species monitored	<b>\$1,600</b>
<b>Goal V: Remove exotic and invasive plants and animals from the park and conduct needed maintenance-control.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Annually treat 6 infested acres of exotic plant species in the park.</b>		# Acres treated	<b>\$96,000</b>
Action 1	Annually develop/update exotic plant management work plan.		Plan developed/updated	\$16,000
Action 2	Implement annual work plan by treating 6 infested acres in house, annually, and continuing maintenance and follow-up treatments, as needed.		Plan implemented	\$80,000
Action 3	Supplement treatment of baygall and floodplain swamps every 3 years with contract labor.		Treatment supplemented	\$180,000
<b>Objective B</b>	<b>Implement control measures on 2 exotic animal species in the park.</b>		# Species for which control measures implemented	<b>\$80,000</b>

\* 2013 Dollars  
ST = actions within 2 years  
LT = actions within 10 years  
C = long term or short term actions that are continuous or cyclical  
UFN = currently unfunded need



NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.				
<b>Goal VI: Protect, preserve and maintain the cultural resources of the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Assess and evaluate 4 of 4 recorded cultural resources in the park.</b>	Documentation complete	LT	<b>\$2,000</b>
Action 1	Complete 4 assessments/evaluations of archaeological sites. Prioritize preservation and stabilization projects.	Assessments complete	ST	\$2,000
<b>Objective B</b>	<b>Compile reliable documentation for all recorded historic and archaeological sites.</b>	Documentation complete	LT	<b>\$11,000</b>
Action 1	Ensure all known sites are recorded or updated in the Florida Master Site File.	# Sites recorded or updated	ST	\$1,000
Action 2	Complete a predictive model for high, medium and low probability of locating archaeological sites within the park.	Probability Map completed	LT	\$8,000
Action 3	Develop a Scope of Collections Statement	Statement developed	ST	\$2,000
<b>Objective C</b>	<b>Bring 3 of 4 recorded cultural resources into good condition.</b>	# Sites in good condition	LT	<b>\$4,000</b>
Action 1	Design and implement regular monitoring programs for 3 cultural sites	# Sites monitored	C	\$2,000
Action 2	Create and implement a cyclical maintenance program for each cultural resource.	Programs implemented	C	\$2,000
<b>Goal VII: Provide public access and recreational opportunities in the park.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Maintain the park's current recreational carrying capacity of 214 users per day.</b>	# Recreation/visitor	C	<b>\$180,000</b>
<b>Objective B</b>	<b>Expand the park's recreational carrying capacity by 28 users per day.</b>	# Recreation/visitor	LT	<b>\$25,000</b>
<b>Objective C</b>	<b>Continue to provide the current repertoire of three interpretive, educational and recreational programs on a regular basis.</b>	# Interpretive/education programs	C	<b>\$3,000</b>
<b>Objective D</b>	<b>Develop one new interpretive, educational and recreational programs.</b>	# Interpretive/education programs	LT	<b>\$3,000</b>
<b>Goal VIII: Develop and maintain the capital facilities and infrastructure necessary to meet the goals and objectives of this management plan.</b>				
		<b>Measure</b>	<b>Planning Period</b>	<b>Estimated Manpower and Expense Cost* (10-years)</b>
<b>Objective A</b>	<b>Maintain all public and support facilities in the park.</b>	Facilities maintained	C	<b>\$360,000</b>
<b>Objective B</b>	<b>Continue to implement the park's transition plan to ensure facilities are accessible in accordance with the American with Disabilities Act of 1990.</b>	Plan implemented	ST	<b>\$3,000</b>
<b>Objective C</b>	<b>Improve and/or repair three existing facilities and ten miles of trail as identified in the Land Use Component.</b>	# Facilities/Miles of Trail/Miles of Road	UFN	<b>\$210,000</b>
<b>Objective D</b>	<b>Construct two new facilities.</b>	# Facilities/Miles of Trail/Miles of Road	UFN	<b>\$40,000</b>
<b>Objective E</b>	<b>Expand maintenance activities as existing facilities are improved and new facilities are developed.</b>	Facilities maintained	C	<b>\$50,000</b>

\* 2013 Dollars  
ST = actions within 2 years  
LT = actions within 10 years  
C = long term or short term actions that are continuous or cyclical  
UFN = currently unfunded need



NOTE: THE DIVISION'S ABILITY TO COMPLETE THE OBJECTIVES OUTLINED BY THE MANAGEMENT PLAN IS CONTINGENT ON THE AVAILABILITY OF FUNDING AND OTHER RESOURCES FOR THESE PURPOSES.

Summary of Estimated Costs		
Management Categories		Total Estimated Manpower and Expense Cost* (10-years)
Resource Management		\$475,400
Administration and Support		\$270,000
Capital Improvements		\$253,000
Recreation Visitor Services		\$621,000
Law Enforcement Activities <sup>1</sup>	1Law enforcement activities in Florida State Parks are conducted by the FWC Division of Law Enforcement and by local law enforcement agencies.	

\* 2013 Dollars  
ST = actions within 2 years  
LT = actions within 10 years  
C = long term or short term actions that are continuous or cyclical  
UFN = currently unfunded need





## **Addendum 1—Acquisition History**



## **Seabranh Preserve State Park Acquisition History**

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### **Purpose of Acquisition**

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) acquired Seabranh Preserve State Park to preserve and protect its uniquely important and irreplaceable ecosystem.

### **Sequence of Acquisition**

On October 22, 1991, the Trustees purchased a 918.78-acre property constituting the initial area of Seabranh Preserve State Park. The property was purchased from Sea Branch Corporation, Inc. also known as Mariner Sands, Inc. for \$19,000,000. This purchase was made under the Environmentally Endangered Lands (EEL) category of the Conservation and Recreation Lands (CARL) program and funded through Preservation 2000 (P2000). Since this initial purchase, the Trustees has acquired a 3.50-acre property through a donation and added it to Seabranh Preserve State Park. These two acquisitions make the current area of Seabranh Preserve State Park, which is approximately 922 acres.

### **Title Interest**

The Trustees hold fee simple title to Seabranh Preserve State Park.

### **Lease Agreement**

On June 10, 1992, the Trustees leased Seabranh Preserve State Park to the State of Florida Department of Natural Resources, predecessor in interest to the State of Florida Department of Environmental Protection, Division of Recreation and Parks (DRP), under lease No. 3954. This lease is for a period of fifty (50) years, and it will expire on June 9, 2042.

According to Lease No. 3954, the DRP manages Seabranh Preserve State Park only for the conservation and protection of natural and historical resources and resource-based public outdoor recreation which is compatible with the conservation and protection of this park.

### **Special Condition on Use**

Seabranh Preserve State Park is designated single-use to provide resource-based public outdoor recreation and other park related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry are not consistent with the purposes for which the DRP manages Seabranh Preserve State Park.

### **Outstanding Reservations**

The DRP's lease from Trustees stipulates that all the property be used for public outdoor recreation and related purposes. The following outstanding rights, reservations and encumbrances apply to Seabranh Preserve State Park.

**Seabbranch Preserve State Park Acquisition History**

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Instrument: ..... Easement (No. 32066)  
Instrument Holder: ..... Martin County  
Beginning Date: ..... November 23, 2009  
Ending Date:..... November 22, 2059  
Outstanding Rights, Uses, Etc.: ..... This easement allows Martin County to  
construct and maintain a 12-foot-wide  
concrete multimodal path across lands that  
are within Seabbranch Preserve State Park.



## **Addendum 2—Advisory Group Members and Report**



**Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park  
Advisory Group Members**

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**Local Government Representatives**

The Honorable Sarah Heard, Chair  
Martin County Board of  
County Commissioners  
Martin County Administrative Center  
2401 SE Monterey Road  
Stuart, Florida 34996

**Agency Representatives**

Mr. John Lakich, Park Manager  
Seabranh Preserve and St. Lucie  
Preserve State Parks  
4810 S.E. Cove Road  
Stuart, Florida 34997

Mr. John Marshall, Region 5  
Other Public Lands Forester  
Florida Forest Service  
5458 N Highway 17  
Deleon Springs, Florida 32130

Mr. Ricardo Zambrano  
Regional Biologist  
Florida Fish and Wildlife Conservation  
Commission  
8535 Northlake Boulevard  
West Palm Beach, Florida 33412

Mr. Brian Sharpe, Aquatic Preserve  
Manager  
Jensen Beach to Jupiter Inlet Aquatic  
Preserve  
3300 Lewis Street  
Fort Pierce, Florida 34981

Mr. Bill Miller, Refuge Manager  
Hobe Sound National Wildlife Refuge  
13640 SE Federal Hwy  
PO Box 645  
Hobe Sound, Florida 33455

Ms. Janet Zimmerman, Assistant  
Executive Director  
Florida Inland Navigation District  
1314 Marcinski Road  
Jupiter, Florida 33477-9498

Mr. Charles W. Barrowclough, Chair  
Martin Soil and Water  
Conservation District  
2401 SE Monterey Road  
Stuart, Florida 34996

**Tourist Development Council  
Representative**

The Honorable Thomas Bausch Chair  
Martin County Tourism Development  
Council  
Tourism Administration  
2401 SE Monterey Road  
Stuart, Florida 34996

**Environmental and Conservation  
Representatives**

Mr. Greg Braun  
Guardians of Martin County  
10370 Trailwood Circle  
Jupiter, Florida 33478

Mr. Dan Martinelli, Conservation Chair  
Audubon of Martin County  
c/o Treasure Coast Wildlife Center  
8626 SW Citrus Boulevard  
Palm City, Florida 34990

Mr. Tony Chatowsky  
Cocoplum Chapter, Florida Native  
Plant Society  
1750 SW Coxswain Place  
Palm City, Florida 34990

**Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park  
Advisory Group Members**

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**Recreational User Representatives**

Mr. Paul Haydt, State Committee Chair  
(Florida)  
East Coast Greenway Alliance  
c/o St. Johns Water Management  
District  
P.O. Box 1429  
Palatka, Florida 32178-1429

Mr. Jack Roberts  
(Paddling community representative)  
10705 SE Seabreeze Court  
Hobe Sound, Florida 33455

Ms. Audrey Minnis, Seabranh  
Trailmaster  
Florida Trail Association  
Tropical Trekkers Chapter  
6090 SW Moore St.  
Palm City, Florida 34990

**Adjacent Landowners**

Mr. Richard Dickerson  
Miles Grant Condominium Two, Inc.  
5355 S.E. Miles Grant Road, E-202  
Stuart, Florida 34997

Mr. Eric Spoelstra, Manager  
Barry Mawn, President  
Loblolly Community Associations  
7407 S.E. Hill Terrace  
Hobe Sound, Florida 33455

## **Seabbranch Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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The Advisory Group meeting to review the proposed land management plans for Seabbranch Preserve State Park and St. Lucie Inlet Preserve State Park was held at the Jonathan Dickinson State Park Education Center on Wednesday, December 11, 2013, at 9:00 AM.

Calin Ionita represented John Marshall. Elisa Ackerly represented Charles Barrowclough. Mark Haryslak represented Cheryl Williams. Shannon Nazzal represented Thomas Bausch. Eric Spoelstra Paul Haydt did not attend but sent in written comments by email. All other appointed Advisory Group members were present. Attending Division of Recreation and Parks (DRP) staff were John Lakich, Paul Rice, Ernest Cowan, Charles Jabaly, Jeffrey Bach and Jennifer Carver.

Ms. Carver began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. Ms. Carver summarized public comments received during the previous evening's public workshop. Ms. Carver pointed out that the DRP will be adding additional language regarding general management measures for shorebird protection to the plan and passed the text around for review by Advisory Group members. Ms. Carver then asked each member of the Advisory Group to express his or her comments on the draft plan.

### **Summary of Advisory Group Comments**

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**Janet Zimmerman** (Florida Inland Navigation District (FIND)) stated that FIND is interested in continuing to work with the DRP and the Indian River Lagoon Aquatic Preserves. She mentioned that FIND's Cooperative Assistance Program can provide funding to improve boat access areas and erosion control projects. These are 50/50 matching grants, with the application period opening in January. Ms. Zimmerman pointed out the discussion on page 55 (St. Lucie Inlet) regarding erosion of the spoil piles and stated that FIND has installed Gabion (wire mesh) mats to control erosion (on spoil island M5). Ms. Zimmerman pointed out that FIND is tasked with maintaining Intracoastal Waterway navigation and works with the County on maintenance dredging. She stated that FIND has utilized a sand disposal site in the Hobe Sound National Wildlife Refuge and is looking for near shore disposal sites. She mentioned that the Marine Industries Association of the Treasure Coast conducts the waterway cleanups discussed on page 27 (St. Lucie Inlet).

**Brian Sharpe** (Florida Coastal Office/Indian River Lagoon Aquatic Preserves) stated that his office is working on several management plans for the Indian River Lagoon and Banana River Aquatic Preserves, combining them into one plan for the system. He stated that the draft plans for St. Lucie Inlet and Seabbranch Preserve State Parks and the Aquatic Preserve plans complement each other. He pointed out that his office manages the spoil islands and would like to coordinate with the DRP regarding any plans for the islands, such as providing suitable areas for least terns (as suggested at the public meeting). Mr. Sharpe also suggested that the DRP and the Florida Coastal Office (formerly Coastal and Aquatic Managed Areas) coordinate on the kiosks at local launch facilities to provide information on both the state parks and the aquatic preserves. Mr. Sharpe mentioned that wood from removal of



## **Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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Australian pines (and other trees as appropriate) is often provided as firewood at campsites and offered use of FCO's equipment for cutting logs.

**Ricardo Zambrano** (Florida Fish and Wildlife Conservation Commission (FWC)) commended the DRP on the plans. He also stated that FWC may provide additional comments regarding gopher tortoises, sea turtles and coral reefs separately (see Summary of Written Comments). He mentioned that the plan may reference an old management plan for gopher tortoises. He pointed out that page 16 and a few other places in the St. Lucie Inlet plan incorrectly mention nesting shorebirds. Mr. Zambrano felt the shorebird language would be beneficial in the plan, especially the pre-posting of sensitive areas. He felt that it would be difficult to keep spoil islands clear for bird nesting. Mr. Zambrano indicated that, on a personal note, he was not in favor of ferry service to the island. He was concerned that such a service would bring more disturbance and impact to the island. He felt that access by canoes, kayaks and paddleboards, in addition to private boats, creates less impact.

**Commissioner Sarah Heard** (Martin County) stated that the draft plans were well-written. Commissioner Heard pointed out that the biggest change in these two parks for Martin County residents came from the construction of the shared use path at Seabranh Preserve State Park. She stated that many residents and staff were concerned about the impacts of the trails, but they have become very popular. She feels that Seabranh will become more popular over time with County residents and visitors. Commissioner Heard also voiced her support for the revised management plans. She stated that several County staff persons had accompanied her to the meeting as well (see Summary of Public Comments for their additional comments).

**Jack Roberts** (Paddling community) repeated a comment he had made at the public meeting the previous evening. He pointed out that the County's Cove Road Park is a major access point for St. Lucie Inlet Preserve State Park, and he is concerned about the parking situation. He stated that the pavement is in poor condition and visitors are parking on the grass. He was concerned about the potential damage being caused at the site and wondered if the County had any plans for improvements at the site. County representatives present noted the comments and indicated that previous plans to further develop the site had been somewhat controversial.

**Bill Miller** (Hobe Sound National Wildlife Refuge (NWR)) commended DRP staff on the plans. He asked staff to briefly point out the differences between the current plans and the proposed plans. Staff provided a brief overview of each of the Conceptual Land Use Plans and resource management programs for the parks. Mr. Miller suggested that more law enforcement presence might be necessary if overnight camping is increased or added, especially at Seabranh Preserve State Park. He stated that the partnerships between the DRP and the NWR will continue, especially since St. Lucie Inlet Preserve State Park and the NWR share a border. The park and the NWR will continue to work together on exotics removal and beach renourishment issues. Mr. Miller pointed out that the NWR is willing to accept sand from dredging projects. He inquired how the six-acre target for exotics removal at

## **Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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Seabranh Preserve State Park was determined. Staff explained that the objective is stated in terms of infested acres (versus gross acres) of exotics treated and is calculated based on density of exotics. Mr. Miller pointed out the aggressive prescribed fire management goals for Seabranh and asked if the DRP is planning to burn at St. Lucie Inlet. Staff responded that a test burn was conducted in the coastal strand to control coinvine, and future burns may be conducted. Mr. Miller offered to partner with the DRP regarding timing of burns and necessary resources. He inquired if the park burns Australian pines or removes them from the site. Staff indicated that the wood is generally maintained onsite. Mr. Miller stated that least terns have nested on the NWR.

**Greg Braun** (Guardians of Martin County) complimented the DRP on both plans, including the updates to the inventories and additional data provided. He stated that adopting the scrub management guidelines was a great move for Seabranh Preserve State Park. He asked if the channelization of Manatee Creek has hydrologic effects and if culverts would assist with managing water levels in the park. Mr. Braun stated that keeping more water on the park property would be beneficial and inquired if the park does water quality monitoring. DRP staff stated that the hydrologic assessment and water quality monitoring proposed in the plan would identify any issues and make recommendations on this issue. Mr. Braun asked if the berm feature discussed in the natural community description section is a natural feature. He stated that, if it is natural, it would be detrimental to remove it and suggested that it be discussed under a separate section for a coastal berm natural community. Mr. Braun suggested that the DRP partner with agencies managing adjacent lands, such as FIND and Martin County on exotic species control. He pointed out that the plan does not address biological controls related to diseases moving through the natural communities. He stated that Martin County taxpayers contributed money toward the initial purchase of the Seabranh property and suggested that this be mentioned in the plan. Mr. Braun suggested that an observation tower be constructed near the East Coast Greenway (Seabranh) to provide views of the water/beach. He suggested that control of exotics be prioritized based on proximity to seed dispersal sources. Mr. Braun noted his observation that the mosquito control ditch at St. Lucie Inlet Preserve State Park has gotten wider and suggested that the DRP consider prohibiting motorized boats. He also noted that it appears that the mangroves may have been trimmed. He suggested that information on the federally-designated critical habitat for piping plover at St. Lucie Inlet Preserve State Park be included in an appendix or on a map. Mr. Braun asked if the DRP has outreach programs to provide information and presentations to community groups. Mr. Braun also provided staff with corrections to scientific names and other technical items after the meeting.

**Rich Dickerson** (Miles Grant Condominiums) agreed with Mr. Braun's compliments on the plans. He inquired if the DRP has a plan for addressing budget reductions. DRP staff stated that the Division is continuously reviewing ways to increase revenues and reduce costs, such as installing solar and LED lights, using electric carts, and others. The DRP seeks to educate visitors about the unique resources of the parks, especially those designated as preserves such as these two parks.

## **Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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**Calin Ionita** (Department of Agriculture and Consumer Services, Florida Forest Service (FFS)) suggested that the density (trees per acre) listed in the desired future condition for mesic flatwoods (page 19, Seabranh) be checked with the FWC scrub management guidelines. He pointed out that if scrub is maintained properly, multiple species will benefit and be present, not just Scrub-jay. DRP staff pointed out that the Division strives for good management overall and that Scrub-jay is discussed as an umbrella species. Mr. Ionita asked if the baygall should be considered in "fair" condition if exotics are present as discussed on page 25. DRP staff indicated that the rating is based on the density of exotics. Mr. Ionita suggested the interpretive information along the trails seek to educate visitors about exotic and invasive plants and animals and why they shouldn't be there (in addition to the imperiled species). DRP staff indicated that interpretive displays about diversity and the transition between natural communities provide opportunities to talk about exotics as well. Mr. Ionita mentioned that installation of fire rings at primitive campsites could result in visitors bringing their own wood from outside the park or collecting wood inside the park, both of which can be problematic. DRP staff stated that rules regarding firewood are posted at the park, and the park would generally have wood available for visitors from appropriate sources.

**Dan Martinelli** (Audubon of Martin County) appreciated the increased emphasis in the plans on measurable objectives and enhanced level of liaison among federal, state and local agencies.

**Shannon Nazzal** (Martin County Tourism Development Council (TDC)) asked if there was any sort of marketing plan for the parks. She inquired how the DRP provides information to residents and visitors about the parks. Ms. Nazzal mentioned that the TDC has found it helpful to put QR codes at trailheads and trailside kiosks to provide information. She indicated that scouting groups now use smartphones to provide educational information to kids. Ms. Nazzal suggested clarifying that overnight stays will be added to the park (Seabranh) in the objectives regarding increasing carrying capacity. She inquired how camping fees would be collected and whether the primitive camping (at both parks) would be included in the online reservation system. DRP staff indicated that campsites would be monitored, and primitive sites are generally reserved directly through the park manager.

**Tony Chatowsky** (Martin County Native Plant Society) commended the DRP on the management plans. He felt they were thorough, far-thinking, understandable and clearly-written. Mr. Chatowsky focused on plants in his review of the plans, including thoroughly reviewing the comprehensive plant list and list of endangered/threatened plants that will be monitored. He agreed that monitoring the Vanilla orchid, hand fern, Curtiss' milkweed, Johnson's seagrass and other plants is important (Seabranh). He stated that he has walked through the baygall looking for hand ferns but didn't find them. He was concerned about fire, as the biggest cause of demise of the hand fern is burning. He suggested that the baygall not be burned. DRP staff responded that prescribed fire focuses on the mesic flatwoods community, and the baygall should have wet soils throughout the year,

## **Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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so it should not burn. Mr. Chatowsky mentioned he had several corrections to the plant list and provided those to staff after the meeting. He felt the plan to focus on exotic plant removal is very important, and he supported the suggestion to place information at interpretive kiosks regarding exotic plants for public understanding and education. Mr. Chatowsky voiced concerns that camping at Seabranh might increase the risk of vandalism and unauthorized use of the park due to its location close to a heavily developed area. He has observed similar issues with a park near his home. He mentioned that smoke from campfires blowing into communities may be a problem as well. He encouraged the DRP to carefully consider the idea of putting in overnight campsites with fire and pointed out the travelers on the East Coast Greenway could continue on to Jonathan Dickinson State Park for wonderful camping opportunities. He requested that more benches be installed for hikers along the trails. He pointed out that while page 26 of the St. Lucie Inlet plan mentions king mackerel, he has only seen Spanish mackerel in this area.

**Elisa Ackerly** (Martin County Soil and Water Conservation District (MCSWCD)) stated that most of her comments were covered by other members. She mentioned that part of the MCSWCD's mission is education, so she was pleased to see education in the plan. She would like to see information about the history of these park lands (and the county and state in general) posted as part of the interpretive and educational information. She stated that this information would fill a gap for residents who may live in Indiantown (in western Martin County) see the value of the parks for resource conservation and water quality. She suggested that equestrian uses be considered for Seabranh, as there is a lot there to enjoy, though parking for trailers may be an issue. DRP staff indicated that equestrian uses had been discussed, but due to the small size of Seabranh, the DRP has focused on providing equestrian facilities at larger state parks in the area, including Atlantic Ridge State Park, Jonathan Dickinson State Park and Savannas Preserve State Park.

**Audrey Minnis** (Florida Trail Association (FTA)/Tropical Trekkers) asked if paddling access could be provided through the mangroves to Hole-in-the-Wall so that paddlers do not have to go out into St. Lucie Inlet. She suggested that paddlers launching at Cove Road be advised to go south to the 25 mph speed area so they can get across the ICW more safely. She supports better mapping of the paddling trail. She asked if the County had considered putting a restroom at Cove Road Park. Regarding the TDC's question about outreach and social media, she mentioned that FTA's activities are listed on Meetup.com. Ms. Minnis suggested that bike racks be installed at additional biking/hiking trail junctions in Seabranh (in addition to adding benches). She mentioned that the trail map for Seabranh is outdated and needs to be updated. She suggested a new north loop entrance coming directly through the trailhead. Ms. Minnis suggested that no fires be allowed at campsites in Seabranh. She asked if feral hogs were still a concern. DRP staff indicated that traps are being used, but there has not been hog activity recently. Ms. Minnis asked for clarification regarding the boardwalk that was included in the previous plan. DRP staff indicated that the boardwalk is no longer proposed. She stated that a newspaper reporter wrote about all the parks in the area a few years ago and suggested that DRP staff reach out to the press. Ms. Minnis inquired if the guided

## **Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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tours at the parks were successful. DRP staff stated that more people were starting to attend the hikes, and the kayak tour had a good turnout.

### **Summary of Written Comments**

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**Paul Haydt** (East Coast Greenway Alliance) commended DRP staff on the quality of these state park plans and others he has seen in the last several years. He noted that the East Coast Greenway is represented in the plan (Seabranh) and that trailheads and bathrooms for day users and camping opportunities for pedal-through travelers are great amenities along the East Coast Greenway. He suggested that the Alliance would be interested in working with the DRP and Florida Department of Transportation to identify opportunities to improve the trail network, potentially starting with the DRP's District 5. Mr. Haydt also commented on coastal habitat resource management issues. He suggested that coastal resiliency (climate change/sea level rise) be actively anticipated, recognized and planned for in both management plans. He suggested that shoreline park infrastructure, historical and cultural protection concerns and coastal habitat restoration and management should all be included in a "coastal resiliency" component of the plan. Mr. Haydt suggested that some of all of the dredge spoil islands at St. Lucie Inlet Preserve State Park be identified for potential restoration to historical saltmarsh habitat.

**Eric Spoelstra** (Loblolly Community Associations) wrote that Loblolly supports the DRP's efforts relative to the proposed management plan(s), and they appreciate being kept informed.

**Karen Schanzle** (Florida Fish and Wildlife Conservation Commission (FWC)) provided comments from the marine turtle subsection of FWC as indicated by Mr. Zambrano. Ms. Schanzle provided specific comments regarding the objective for monitoring imperiled animal species. She suggested that park staff use sub-meter GPS units during nesting survey and that disorientation and Obstructed Nesting Attempt reports be completed as appropriate.

### **Summary of Public Comments**

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**Deborah Drum** (Martin County) stated that both plans are well-written and the whole team should be proud. Martin County is supportive of coordinating on exotics treatment with the DRP, FIND, FFS and other agencies. She pointed out that some exotics at Seabranh are coming over from adjacent lands and that coordination was addressed sufficiently in the plan. She liked the idea of working on publicly promoting awareness of the parks to increase use, education and volunteers. She supported the idea of an appreciation day for federal, state and local lands (as suggested at the public workshop). She mentioned that the St. Lucie Inlet plan recognizes issues related to discharges from Lake Okeechobee but felt that the plan falls short on recommendations to address the problems. She suggested that the plan include requests for funding for water quality monitoring and research on the coral reef system and Johnson's seagrass. She also suggested that the ongoing research at the park provides an opportunity to serve as a clearinghouse for information collected by various agencies. Ms. Drum stated there is a need to better

## **Seabbranch Preserve State Park & St. Lucie Inlet Preserve State Park Advisory Group Staff Report**

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organize and share information on impacts to the natural systems from the discharges.

**Baret Barry** (Martin County) asked if the DRP intended to renew the permit for the gopher tortoise recipient site at Seabbranch and/or convert it from a short-term site to a long-term site. She also asked if the intent was to maintain the site only for projects within Seabbranch. DRP staff stated that the current permit would be renewed, and the intent was to keep the site available for gopher tortoises from state parks within the general area.

### **Staff Recommendations**

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The staff recommends approval of the proposed management plans for Seabbranch Preserve State Park and St. Lucie Inlet Preserve State Park as presented, with the following significant changes:

- Incorporate text under the hydrological restoration needs to identify the need for a long-term water quality monitoring program (St. Lucie Inlet).
- Incorporate language regarding the potential for establishing nesting areas for least terns on the spoils islands (St. Lucie Inlet).
- Add text regarding shorebird protection to the imperiled species inventory section (St. Lucie Inlet).
- Expand the text about interpretive and educational programs to include information on invasive and exotic plants and animals and include other opportunities for reaching out to the community (both parks).
- Incorporate text to clarify how the objective for treatment of exotic plants is determined (both parks).
- Modify the text regarding coastal/beach management to reiterate that pets are not allowed on the park's beaches (St. Lucie Inlet).
- Review Addendum 5 (Plant and Animal List) and modify as appropriate to include species observed in the park (both parks).

Additional revisions were made throughout the document to address editorial corrections, consistency of spellings and notations, and other minor corrections.

### **Notes on Composition of the Advisory Group**

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**Florida Statutes Chapter 259.032 Paragraph 10(b)** establishes a requirement that all state land management plans for properties greater than 160 acres will be reviewed by an advisory group:

"Individual management plans required by s. 253.034(5), for parcels over 160 acres, shall be developed with input from an advisory group. Members of this advisory group shall include, at a minimum, representatives of the lead land managing agency, co-managing entities, local private property owners, the appropriate soil and water conservation district, a local conservation organization, and a local elected official."

Advisory groups that are composed in compliance with these requirements complete the review of State park management plans. Additional members may be appointed



**Seabranh Preserve State Park & St. Lucie Inlet Preserve State Park  
Advisory Group Staff Report**

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to the groups, such as a representative of the park's Citizen Support Organization (if one exists), representatives of the recreational activities that exist in or are planned for the park, or representatives of any agency with an ownership interest in the property. Special issues or conditions that require a broader representation for adequate review of the management plan may require the appointment of additional members. The DRP's intent in making these appointments is to create a group that represents a balanced cross-section of the park's stakeholders. Decisions on appointments are made on a case-by-case basis by DRP staff.

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## **Addendum 4—Soils Descriptions**





## Seabranh Preserve State Park Soils Descriptions

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**(9) Beaches** - This map unit consists of nearly level to sloping, narrow strips of tide- and **(4) Waveland Sand** - This soil is nearly level and poorly drained. Slopes are typically smooth and range from zero to 2 percent. The surface layer consists of dark gray sand while the subsurface layer is light gray and grayish brown. The subsoil begins at a depth of ca. 43 inches. The upper four inches of the subsoil is black and is not cemented. The next 30 inches are weakly cemented, black and dark reddish brown loamy sand. The next 14 inches are loose back sand, and below that is dark brown sand.

Included with this soil in mapping are soils that are similar to this Waveland soil but have a dark colored surface layer 10 to 14 inches thick. Also included are small areas of Basinger, Jonathan, Lawnwood, Nettle, Placid and Salerno soils and small wet depressions. Total inclusions in any area make up about 20 percent.

Water table depth is at a depth of less than 10 inches for 2 to 4 months and within a depth of 40 inches for 6 months or more during most years. Soil permeability is characterized as rapid in the surface layer and moderate to very slow in the subsurface layers. Available water is low in the surface layer and medium in the subsoil. The soil has low natural fertility. Natural vegetation characteristics of this soil type include south Florida slash pine, saw palmetto, gallberry, fetterbush, and low bush blueberry.

Grasses are pineland threeawn, bluestem and panicum.

**(6) Paola Sand, 0 to 8 percent slopes** - This excessively drained soil is nearly level to sloping. It occurs on ancient coastal ridges and isolated knolls in the park. Slopes are typically smooth to convex. The surface layer is grayish colored sand, while the subsurface layer is white sand. Below this layer, the soil is yellowish brown and brownish yellow sand to a depth of 80 inches.

Included with this soil in mapping are small areas of soils that are similar to this Paola soil but do not have a light colored subsurface layer, and small areas of soils that have a thicker subsurface layer. Also included are small areas of Hobe, Jonathan, Orsino, Pomello, Satellite Variant and St. Lucie soils. Total inclusions in any area are less than 20 percent.

The water table is below a depth of 72 inches throughout the year. Permeability is very rapid, and the available water capacity is very low throughout the profile. Natural fertility and the content of organic matter are very low. Natural vegetation characteristic of this soil type include sand pine, scrub oak, rosemary, saw palmetto, runner oaks, cacti, mosses, and lichens. Slash pine and scrub hickory may occur in some areas.

**(7) St. Lucie Sand, 0 to 8 percent slopes** - This deep, nearly level to sloping sandy soil is excessively drained. It occurs on dry coastal ridges and isolated knolls in flatwoods. Areas range from a few acres to several hundred acres. Slopes are generally uniform and range from zero to 8 percent. The surface is gray sand about

## Seabranche Preserve State Park Soils Descriptions

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3 inches thick. Underlying the surface layer is white sand to a depth of 80 inches or more.

Included with this soil in mapping are small areas of soils that are similar to this St. Lucie soil but have fine sand texture or have a thicker surface layer. Soils that have short, steeper slopes, ranging up to 30 percent are in some places. Also included are small areas of Paola, Pomello and Satellite Variant soils. Total inclusion in any area is less than 15 percent.

Available water capacity is very low, and permeability is very rapid. Natural fertility and the content of organic matter are low. The water table is typically below a depth of 72 inches. Natural vegetation characteristic of this soil type include sand pine, sand live oak, rosemary, saw palmetto, cacti, lichens, and mosses. Scattered grasses (wiregrass and Andropogon) are also present.

**(13) Placid Sand** - This soil is nearly level and very poorly drained. It occurs in wet depressions and drainage's in the flatwoods. Slopes are smooth to concave and range from zero to 2 percent. Areas range from a few acres to ca. 30 acres. The surface layer is typically black sand. Subsurface layer consists of sand to a depth of more than 80 inches. The subsurface layer is dark grayish brown, gray, and light brownish gray.

Included with this soil in mapping are small areas of Basinger, Lawnwood, Sanibel and St. Johns Variant soils. Also included are small areas of soils that are similar to this placid soil but have 2 to 7 inches of organic material at the surface and small areas that have a brown to dark brown subsurface layer. Total inclusions in any area are less than 20 percent.

Most areas of this soil are ponded for 6 months or more each year. Water table depth remains less than 10 inches below the surface for most of the year, except in extended dry seasons. Permeability is rapid throughout the profile. The available water capacity is high in the surface layer and low in the subsurface layer. Natural fertility and the content of organic matter are high. Natural vegetation found in this soil type include pickerelweed, St. Johnswort, maidencane, redroot, sedges, water tolerant grasses, ferns, pond apple, sweetbay, and willow.

**(22) Okeelanta Muck** – This nearly level soil is very poorly drained. It occurs in depressions and freshwater swamps and marshes. The two major areas of this soil type are a long, narrow swamp along the eastern foot of the coastal ridge and a marsh area adjacent to Lake Okeechobee. Slopes are smooth to concave and 0 to 1 percent. Typically, the surface layer is black muck about 4 inches thick. Next is dark reddish brown muck about 22 inches thick over a 4-inch layer of black muck mixed with sand. Below this to a depth of 80 inches or more is sand that is very dark gray in the upper 18 inches and dark grayish brown below.

Included with this soil in mapping are small areas of soils that are similar to this Okeelanta soil but have organic matter material to a depth of 40 inches or more. Also included are small areas of Samsula and Sanibel soils. Total inclusions in any

## Seabranche Preserve State Park Soils Descriptions

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area range from about 10 to 15 percent. This soil is ponded for 6 to 9 months or more during most years. The water table is within a depth of 10 inches most of the year. Internal drainage is slow because it is inhibited by the high water table. Permeability is rapid in all layers. Available water capacity is very high in the organic material and low in the underlying sand. The soil has moderate natural fertility. Natural vegetation found in this soil type include red maple, redbay, cabbage palm, myrsine, strangler fig, dahoon holly, sawgrass, arrowhead, vines, and various types of ferns.

**(24) Orsino Sand, 0 to 5 percent slopes** – This moderately well drained soil is nearly level to gently sloping. It occurs along transitional sites between excessively drained soils on ridges and poorly drained soils in areas of the flatwoods. Areas are mainly in the Port Salerno area and range from about 20 to 100 acres. Slopes are smooth to convex and range from zero to 5 percent. Typically, the surface layer is gray sand. The subsurface layer is white sand. Next is strong brown and yellowish brown sand stained by organic matter. Below this is a light yellowish brown and very pale brown sand to a depth of 80 inches or more. Included with this soil in mapping are small areas of Jonathan, Paola, Salerno, Satellite Variant and Waveland soils. Also included are soils that are similar to this Orsino soil but have more strongly developed organic stained layers. Total inclusions in any area are less than 20 percent. The water table is at a depth of 40 to 60 inches for more than 6 months in most years and below a depth of 60 inches during the dry season. Permeability is very rapid throughout the profile, and the available water capacity is very low or low. Natural fertility and the content of organic matter are very low. Natural vegetation that occur on this soil include slash pine, slash pine, fetterbush, saw palmetto, sand live oak, myrtle oak, and various types of grasses and herbaceous plants.

**(30) Bessie Muck** – This nearly level, organic soil is very poorly drained. It occurs in mangrove swamps along the coastal areas, especially along the Intracoastal Waterway. Areas range in size from about 20 to 200 acres. Slopes are less than 1 percent. The surface layer is typically a dark reddish brown muck about 18 inches thick. This layer contains a high amount of fine mineral material. Next is 26 inches of very dark gray fine sand with shell fragments. Included with this soil in mapping are small areas of Okeelanta Variant, Aquents and Canaveral soils. Also included are small areas of soils that have less than 16 inches or more than 40 inches of organic material and small areas of soils that have a mineral surface layer overlying organic materials. Total inclusions in any area are less than 20 percent. Depth of water table in this soil is dependent on tidal action. It is at or above the surface during high tides and storm periods and is within a depth of 10 inches at all other times. The available water capacity is very high in the organic surface layer and high in the clayey substratum. Permeability is rapid in the organic layer and slow or very slow in the clayey substratum. Natural fertility in this soil is medium and salinity is high. Natural vegetation occurring in this soil includes red mangroves, black mangroves, white mangroves, sea-oxeye daisies, sea purslane, glasswort and leather ferns.

## Seabranh Preserve State Park Soils Descriptions

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**(41) Jonathan Sand, 0 to 5 percent slopes** - This nearly level to gently sloping soil is moderately well drained. It is found on slightly elevated knolls and ridges in the flatwoods. Areas range from two to 200 acres or more. Slopes are smooth to convex and range from zero to 5 percent. Typically, the surface layer is dark gray sand about 5 inches thick. The subsurface layer is sand to a depth of about 56 inches. The upper 33 inches of the subsurface layer is light gray, and the lower 18 inches is light brownish gray. The subsoil is black, weakly cemented sand to a depth of 100 inches or more. Included with this soil in mapping are small areas of soils that are similar to this Jonathan soil but have weakly cemented subsoil at a depth of slightly less than 50 inches or slightly more than 80 inches.

Also included are small areas of Hobe, Pomello Variant, Salerno, Satellite Variant and Waveland soils. Total inclusions in any area are less than 20 percent.

The water table is at a depth of 40 to 60 inches for 1 to 4 months during the wet season, and may rise for brief periods to a depth of 36 inches. It is below 60 inches most of the rest of each year.

Permeability is very rapid in the surface and subsurface layers and slow or very slow in the subsoil.

Available water capacity is very low in the surface and subsurface layers and medium in the subsoil.

Natural fertility and the content of organic matter are very low. Natural vegetation found in this soil type include south Florida slash pine, saw palmetto, species of scrub oaks, gallberry, fetterbush, gopher apple, and scattered grasses and herbaceous plants.

**(55) Basinger Fine Sand** - This nearly level soil is poorly drained. It is in sloughs and poorly defined drainage ways in the flatwoods. Slopes are less than 2 percent. The surface layer is typically very dark gray fine sand about 6 inches thick. The subsurface layer is fine sand to a depth of about 28 inches. The upper 6 inches of the subsurface layer is grayish brown, and the lower 16 inches is light brownish gray. The subsoil is dark grayish brown fine sand and has discontinuous lenses and pockets of black and dark reddish brown. The next layer is grayish brown fine sand. Below this is brown fine sand to a depth of 80 inches or more.

Included with this soil in mapping are areas of soils that are similar to this Basinger soil but have a dark colored surface layer 9 to 12 inches thick or that have loamy sand or loamy fine sand below a depth of 40 inches. Also included are areas of Lawnwood and Waveland soils and a few small areas of Placid and St. Johns Variant soils in depressions. Total inclusions in any area make up about 15 percent.

The water table is at a depth of less than 10 inches for 2 to 6 months annually and at a depth of 10 to 30 inches for more than 6 months in most years. Permeability is very rapid throughout the profile. Available water capacity and natural fertility are very low. Most areas of this soil are in open forest. Natural vegetation found in this

## Seabranh Preserve State Park Soils Descriptions

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soil includes slash pine, saw palmetto, wax myrtle, gallberry, and scattered grasses and herbaceous plants.

**(68) Pits** – Pits consist of open excavations from which soil and geologic material have been removed for use in road construction or for foundation purposes. Most areas of this unit include mounds between excavations of overburden, unstable material, or material to be used as needed. Pits, locally called borrow pits, range from small to large. The pit in SPSP is slowly being re-colonized by saw palmetto, several types of scrub oaks and various species of grasses and herbaceous plants.



## Seabranh Preserve State Park Soils Descriptions

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**Addendum 5—Plant and Animal List**



## Seabranh Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
<b>Algae</b>		
Green Feather Algae .....	<i>Caluërpa sertularioides</i>	
.....	<i>Caluërpa mexicana</i>	
.....	<i>Caulerpa prolifera</i>	
<b>Lichen</b>		
.....	<i>Cladonia spp.</i>	
<b>Ferns and Fern Allies</b>		
Giant leather fern .....	<i>Acrostichum danaeifolium</i>	BG
Azolla .....	<i>Azolla caroliniana</i>	
Swamp fern .....	<i>Blechnum serrulatum</i>	
Old World Climbing fern * .....	<i>Lygodium microphyllum</i>	
Boston fern .....	<i>Nephrolepis biserrata</i>	
Tuberous sword fern * .....	<i>Nephrolepis cordifolia</i>	
Boston fern* .....	<i>Nephrolepis exaltata</i>	
Boston fern* .....	<i>Nephrolepis multiflora</i>	
Hand fern .....	<i>Ophioglossum palmatum</i>	BG
Cinnamon fern .....	<i>Osmunda cinnamomea</i>	BG
Royal fern .....	<i>Osmunda regalis</i>	BG
Golden polypody .....	<i>Phlebodium aureum</i>	
Resurrection fern .....	<i>Polypodium polypodioides</i>	
Whisk fern .....	<i>Psilotum nudum</i>	
Bracken fern .....	<i>Pteridium aquilinum</i>	
Giant bracken fern * .....	<i>Pteris tripartita</i>	
Spikemoss .....	<i>Selaginella arenicola</i>	
Tri-vein fern .....	<i>Thelypteris interrupta</i>	
Shield fern .....	<i>Thelypteris kunthii</i>	
Shoestring fern .....	<i>Vittaria lineata</i>	
Chain fern .....	<i>Woodwardia virginica</i>	
<b>Gymnosperms</b>		
Sisal hemp* .....	<i>Agave sisalana</i>	
Jack-in-the-pulpit .....	<i>Arisaeme triphyllum</i>	
Coconut palm* .....	<i>Cocos nucifera</i>	
Swamp lily .....	<i>Crinum americanum</i>	
Green arum .....	<i>Peltandra virginica</i>	
Sand pine .....	<i>Pinus clausa</i>	
South Florida Slash pine .....	<i>Pinus elliotii var. densa</i>	
Royal palm (cultivated) .....	<i>Roystonea regia</i>	
Cabbage palm .....	<i>Sabal palmetto</i>	
Arrowhead .....	<i>Sagittaria graminea</i>	
Arrowhead .....	<i>Sagittaria lancifolia</i>	
Saw palmetto .....	<i>Serenoa repens</i>	

\* Non-native Species

## Seabranch Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Reflexed wild pine .....	<i>Tillandsia balbisiana</i> .....	SC, BG
Common wild pine .....	<i>Tillandsia fasciculata</i> .....	BG, FS
Silvery wild pine .....	<i>Tillandsia paucifolia</i>	
Ball moss .....	<i>Tillandsia recurvata</i>	
Needle-leaved air plant .....	<i>Tillandsia setacea</i>	
Spanish moss .....	<i>Tillandsia usneoides</i>	
Giant wild pine .....	<i>Tillandsia utriculata</i> .....	BG, FS
Spanish bayonet* .....	<i>Yucca aloifolia</i>	
Adam's needle .....	<i>Yucca filamentosa</i>	

### Angiosperms – Monocots

Blue maidencane .....	<i>Amphicarpum muhlenbergianum</i>	
Shortspike bluestem .....	<i>Andropogon brachystachys</i>	
Florida bluestem .....	<i>Andropogon floridanus</i>	
Bushy bluestem .....	<i>Andropogon glomeratus var. pumilus</i>	
Bluestem .....	<i>Andropogon loniberbis</i>	
Splitbeard bluestem .....	<i>Andropogon ternarius</i>	
Broomsedge .....	<i>Andropogon virginicus</i>	
Big threeawn .....	<i>Aristida condensata</i>	
Corkscrew threeawn .....	<i>Aristida gyrans</i>	
Arrowfeather .....	<i>Aristida purpurascens</i>	
Bottlebrush threeawn .....	<i>Aristida spiciformis</i>	
Wire grass .....	<i>Aristida stricta</i>	
Wire grass .....	<i>Aristida tenuispica</i>	
Asparagus fern* .....	<i>Asparagus densiflorus</i>	
Common carpet grass .....	<i>Axonopus fissifolius</i>	
Watergrass* .....	<i>Bulbostylis barbata</i>	
Hair sedge .....	<i>Bulbostylis ciliatifolia</i>	
Watergrass* .....	<i>Bulbostylis warei</i>	
Coastal sandbur .....	<i>Cenchrus incertus</i>	
.....	<i>Cenchrus spinifex</i>	
Saw grass .....	<i>Cladium jamaicensis</i>	
Dayflower* .....	<i>Commelina diffusa</i>	
Dayflower .....	<i>Commelina erecta</i>	
Pampas grass* .....	<i>Cortaderia selloana</i>	
Swamp lily .....	<i>Crinum americanum</i>	
Roseling .....	<i>Cuthbertia ornata</i>	
Poorland flatsedge .....	<i>Cyperus compressus</i>	
Baldwins flatsedge .....	<i>Cyperus ceroeus</i>	
Yellow flatsedge .....	<i>Cyperus flavescens</i>	
Haspan flatsedge .....	<i>Cyperus haspan</i>	
False saw grass .....	<i>Cyperus ligularis</i>	
Fragrant flatsedge .....	<i>Cyperus odoratus</i>	
Umbrella sedge .....	<i>Cyperus polystachyos</i>	

\* Non-native Species

## Seabranh Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Pinebarren flatsedge .....	<i>Cyperus retrorus</i>	
Tropical flatsedge .....	<i>Cyperus surinamensis</i>	
Egyptian grass* .....	<i>Dactyloctenium aegyptium</i>	
Panic grass .....	<i>Dicanthelium ensifolium var. breve</i>	
Panic grass .....	<i>Dicanthelium erectifolium</i>	
Eggleaf witchgrass .....	<i>Dicanthelium ovale</i>	
Rosette grass .....	<i>Dicanthelium portoricense</i>	
Southern crabgrass* .....	<i>Digitaria ciliaris</i>	
Shabby crabgrass .....	<i>Digitaria villosa</i>	
Air potato* .....	<i>Dioscorea bulbifera</i>	
Common Barnyard grass .....	<i>Echinocola crusgalli</i>	
Walter's Barnyard grass.....	<i>Echinocola walteri</i>	
Water hyacinth* .....	<i>Eichhornia crassipes</i>	
Roadgrass .....	<i>Eleocharis baldwinii</i>	
Jointed spike grass .....	<i>Eleocharis interstincta</i>	
Goosegrass* .....	<i>Eleusine indica</i>	
Butterfly orchid .....	<i>Encyclia tampensis</i> .....	BG
Feather lovegrass* .....	<i>Eragrostis amabilis</i>	
Thalia lovegrass* .....	<i>Eragrostis atrovirens</i>	
Gophertail lovegrass* .....	<i>Eragrostis ciliaris</i>	
Centipede grass* .....	<i>Eremochloa ophiuroides</i>	
Sugarcane Plume grass .....	<i>Erianthes giganteus</i>	
Flattened pipewort .....	<i>Eriocaulon compressum</i>	
Tenangle pipewort .....	<i>Eriocaulon decangulare</i>	
Wild coco .....	<i>Eulophia alta</i>	
Finger grass .....	<i>Eustachys petraea</i>	
Slender fimbry .....	<i>Fimbristylis autumnalis</i>	
Hurricane grass .....	<i>Fimbristylis cymosa</i>	
Dwarf umbrellagrass .....	<i>Fuirena pumila</i>	
Southern umbrella grass .....	<i>Fuirena scirpoidea</i>	
Toothed habenaria .....	<i>Habenaria floribunda</i>	
Shoal seagrass .....	<i>Halodule wrightii</i>	
Paddle seagrass .....	<i>Halophila decipiens</i>	
Johnson's seagrass .....	<i>Halophila johnsonii</i> .....	ECPS
Hydrilla * .....	<i>Hydrilla verticillata</i>	
Yellow stargrass .....	<i>Hypoxis juncea</i>	
Yellow star grass .....	<i>Hypoxis leptocarpa</i>	
Forked rush .....	<i>Juncus dichotomus</i>	
Shore rush .....	<i>Juncus marginatus</i>	
Needlepod rush .....	<i>Juncus scirpoides</i>	
Shortleaf spikesedge* .....	<i>Kyllinga brevifolius</i>	
Red root .....	<i>Lachnanthes caroliniana</i>	
Bog-button .....	<i>Lachnocaulon beyrichianum</i>	
Rose Natal Grass* .....	<i>Melinis repens</i>	

\* Non-native Species



## Seabranche Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Dwarf Bannana*	<i>Musa acuminata</i>	
Maidencane	<i>Panicum hemitomon</i>	
Guinea grass *	<i>Panicum maximum</i>	
Torpedo grass*	<i>Panicum repens</i>	
Redtop panicum	<i>Panicum rigidulum</i>	
Bluejoint grass	<i>Panicum tenerum</i>	
Sour paspalum	<i>Paspalum conjugatum</i>	
Brunswick grass	<i>Paspalum nicorae</i>	
Bahia grass*	<i>Paspalum notatum</i>	
Thin Paspalum	<i>Paspalum setaceum</i>	
Green arum	<i>Peltandra virginica</i>	
Napier grass*	<i>Pennisetum purpureum</i>	
Plantain*	<i>Plantago major</i>	
Pickereel weed	<i>Pontederia cordata</i>	
Fascicled beaksedge	<i>Rhynchospora fascicularis</i>	
Pinebarren beaksedge	<i>Rhynchospora intermedia</i>	
Narrowfruit beaksedge	<i>Rhynchospora inundata</i>	
Giant whitetop	<i>Rhynchospora latifolia</i>	
Sandyfield beaksedge	<i>Rhynchospora megalocarpa</i>	
Southern beaksedge	<i>Rhynchospora microcarpa</i>	
Bunched beaksedge	<i>Rhynchospora microcephala</i>	
Tracy's beaksedge	<i>Rhynchospora tracyi</i>	
Wright's beaksedge	<i>Rhynchospora wrightiana</i>	
Sugarcane*	<i>Saccharum giganteum</i>	
India cupscale*	<i>Sacciolepis indica</i>	
Bowstring hemp*	<i>Sansevieria hyacinthoides</i>	
Bluestem	<i>Schizachyrium sanguineum</i>	
Little bluestem	<i>Schizachyrium scoparium</i>	
Baldwin's nutrush	<i>Scleria baldwinii</i>	
Fringed nutrush	<i>Scleria ciliata</i>	
Tall nutgrass	<i>Scleria triglomerata</i>	
Coral Bristlegrass	<i>Setaria macrosperma</i>	
Jeweled blue-eyed grass	<i>Sisyrinchium xerophyllum</i>	
Greenbrier	<i>Smilax auriculata</i>	
Bamboo vine	<i>Smilax laurifolia</i>	
Smooth cordgrass	<i>Spartina alternifolia</i>	
Duckweed*	<i>Spirodela punctata</i>	
West Indian dropseed*	<i>Sporobolus indicus var. pyramidalis</i>	
St. Augustine grass*	<i>Stenotaphrum secundatum</i>	
Bantam-buttons	<i>Syngonanthus flavidulus</i>	
Oyster plant *	<i>Tradescantia spathacea</i>	
Purple Sandgrass	<i>Triplasis purpurea</i>	
Eastern gamagrass	<i>Tripsacum dactyloides</i>	
Southern cattail	<i>Typha domingensis</i>	

\* Non-native Species

## Seabranch Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Tropical signalgrass*	<i>Urochloa distachya</i>	
Vanilla orchid	<i>Vanilla mexicana</i>	BG
Yellow-eyed grass	<i>Xyris ambigua</i>	
Yellow-eyed grass	<i>Xyris brevifolia</i>	
Yellow-eyed grass	<i>Xyris caroliniana</i>	
Yellow-eyed grass	<i>Xyris elliotii</i>	
Yellow-eyed grass	<i>Xyris flabelliformis</i>	
Yellow-eyed grass*	<i>Xyris jupicai</i>	
Yellow-eyed grass	<i>Xyris smalliana</i>	
Japanese youngia*	<i>Youngia japonica</i>	
Lawn orchid*	<i>Zeuxine strateumatica</i>	

### Angiosperms – Dicots

Rosary pea *	<i>Abrus precatorius</i>	
Earleaf acacia*	<i>Acacia auriculiformis</i>	
Red maple	<i>Acer rubrum</i>	
False foxglove	<i>Agalinis fasciculata</i>	
Hammock snakeroot	<i>Agertina jucunda</i>	
Woman's tongue *	<i>Albizia lebeck</i>	
Yellow allamanda *	<i>Allamanda cathartica</i>	
Alligator weed	<i>Alternanthera philoxeroides</i>	
Chaff flower	<i>Alternanthera sessilis</i>	
Common ragweed	<i>Ambrosia artemisiifolia</i>	
Toothcups	<i>Ammannia latifolia</i>	
Pepper vine	<i>Ampelopsis arborea</i>	
Pond apple	<i>Annona glabra</i>	
Potato bean	<i>Apios americana</i>	
Nodding nixie	<i>Apteria aphylla</i>	
Shoebuttion ardisia*	<i>Ardisia elliptica</i>	
Marlberry	<i>Ardisia escallonioides</i>	
Curtiss' milkweed	<i>Asclepias curtissii</i>	SC
Dwarf pawpaw	<i>Asimina reticulata</i>	
Bushy aster	<i>Aster dumosus</i>	
Black mangrove	<i>Avicennia germinans</i>	
Groundsel tree	<i>Baccharis glomeruliflora</i>	
Saltbush	<i>Baccharis halimifolia</i>	
Water hyssop	<i>Bacopa monnieri</i>	
Yellow buttons	<i>Balduina angustifolia</i>	
Tarflower	<i>Bejaria racemosa</i>	
Beggars ticks	<i>Bidens alba var. radiate</i>	
Spanish needles*	<i>Bidens pilosa</i>	
Javanese bishopwood*	<i>Bischofia javonica</i>	
Button hemp	<i>Boehmeria cylindrica</i>	
Bluehearts	<i>Buchnera americana</i>	

\* Non-native Species

## Seabranh Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Gumbo limbo .....	<i>Bursera simaruba</i>	
Beauty berry .....	<i>Callicarpa americana</i>	
Trumpet-vine .....	<i>Campsis radicans</i>	
Vanilla plant .....	<i>Carphephorus odoratissimus</i>	
Florida hickory .....	<i>Carya floridana</i>	
Love vine .....	<i>Cassytha filliformis</i>	
Australian pine * .....	<i>Casuarina equisetifolia</i>	
Madagascar Periwinkle * .....	<i>Catharanthus roseus</i>	
Sugarberry .....	<i>Celtis laevigata</i>	
Coinwort .....	<i>Centella asiatica</i>	
Butterfly pea .....	<i>Centrosema virginianum</i>	
Buttonbush .....	<i>Cephalanthus occidentalis</i>	
Rosemary .....	<i>Ceratiola ericoides</i>	
Partridge pea .....	<i>Chamaecrista fasciculata</i>	
Blodgett's spurge .....	<i>Chamaesyce blodgettii</i>	
Coastal dune sandmat .....	<i>Chamaesyce cumulicola</i>	
Spurge .....	<i>Chamaesyce hirta</i>	
Graceful sandmat .....	<i>Chamaesyce hypericifolia</i>	
Hyssopleaf sandmat .....	<i>Chamaesyce hyssopifolia</i>	
Mexican tea* .....	<i>Chenopodium ambrosioides</i>	
Golden aster .....	<i>Chrysopsis scabrella</i>	
Lemon* .....	<i>Citrus limon</i>	
Grapefruit* .....	<i>Citrus paradisi</i>	
Tangerine* .....	<i>Citrus reticulata</i>	
Sweet orange* .....	<i>Citrus sinensis</i>	
Tread softly .....	<i>Cnidoscolus stimulosus</i>	
Narrowleaf paleseed* .....	<i>Conobea multifida</i>	
Large-flowered rosemary .....	<i>Conradina grandiflora</i> .....	SC
Horseweed .....	<i>Conyza canadensis</i>	
Swamp dogwood .....	<i>Cornus foemina</i>	
Rattle box* .....	<i>Crotalaria pallida</i>	
Rattleweed* .....	<i>Crotalaria retusa</i>	
Rabbit-bells .....	<i>Crotalaria rotundifolia</i>	
Croton .....	<i>Croton glandulosus var. glandulosus</i>	
Carrotwood* .....	<i>Cupaniopsis anacardiopsis</i>	
Roseling .....	<i>Cuthbertia ornata</i>	
Buttonweed .....	<i>Diodia teres</i>	
Coin vine .....	<i>Dalbergia ecastophyllum</i>	
Feays prairie clover .....	<i>Dalea feayi</i>	
Beggar ticks .....	<i>Desmodium incanum</i>	
Florida balm .....	<i>Dicerandra densiflora</i>	
Persimmon .....	<i>Diospyros virginiana</i>	
Sundew .....	<i>Drosera capillaries</i>	
False daisy .....	<i>Eclipta prostrata</i>	

\* Non-native Species

## Seabranh Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Tassel flower*	<i>Emilia fosbergii</i>	
Tassel flower*	<i>Emilia sonchifolia</i>	
Fireweed	<i>Erechtites hieracifolia</i>	
Southern fleabean	<i>Erigeron quercifolius</i>	
Fragrant eryngium	<i>Eryngium aromaticum</i>	
White stopper	<i>Eugenia axillaris</i>	
Dog fennel	<i>Eupatorium capillifolium</i>	
Dog fennel	<i>Eupatorium leptophyllum</i>	
Mohr's thoroughwort	<i>Eupatorium mohrii</i>	
Dog fennel	<i>Eupatorium serotinum</i>	
Leafy euphorbia	<i>Euphorbia polyphylla</i>	
Flat-topped goldenrod	<i>Euthamia caroliniana</i>	
Strangler fig	<i>Ficus aurea</i>	
Milkpea	<i>Galactia elliottii</i>	
Milkpea	<i>Galactia regularis</i>	
Southern guara	<i>Gaura angustifolia</i>	
Dwarf huckleberry	<i>Gaylussacia dumosa</i>	
Rabbit tobacco	<i>Gnaphalium obtusifolium</i>	
Loblolly	<i>Gordonia lasianthus</i>	
Rough hedgehyssop	<i>Gratiola hispida</i>	
Firebush	<i>Hamelia patens</i>	
Innocence	<i>Hedyotis procumbens</i>	
Clustered mille graine	<i>Hedyotis uniflora</i>	
Beach sunflower	<i>Helianthus debilis</i>	
Frostweed	<i>Helianthemum nashii</i>	
Camphor weed	<i>Heterotheca subaxillaris</i>	
Lindenleaf rosemallow	<i>Hibiscus furcellatus</i>	
Swamp hibiscus	<i>Hibiscus grandiflorus</i>	
Hydrilla*	<i>Hydrilla verticillata</i>	
Water pennywort	<i>Hydrocotyle bonariensis</i>	
Alligator lily	<i>Hymenocallis palmeri</i>	
Coastal St. John's wort	<i>Hypericum brachyphyllum</i>	
Roundpod St. John's Wort	<i>Hypericum cistifolium</i>	
Sandweed	<i>Hypericum fasciculatum</i>	
St. Andrews cross	<i>Hypericum hypericoides</i>	
Atlantic St. John's wort	<i>Hypericum reductum</i>	
Fourpetal St. John's wort	<i>Hypericum tetrapetalum</i>	
Musky mint	<i>Hyptis alata var. alata</i>	
Dahoon holly	<i>Ilex cassine</i>	
Gallberry	<i>Ilex glabra</i>	
Hairy indigo*	<i>Indigofera hirsuta</i>	
Moon flower	<i>Ipomoea alba</i>	
Bloodleaf	<i>Iresine diffusa</i>	
Virginia willow	<i>Itea virginica</i>	

\* Non-native Species

## Seabranch Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Jasminum*	<i>Jasminum nitidum</i>	
Life plant*	<i>Kalanchoe pinnata</i>	
Chandalier plant*	<i>Kalanchoe tubiflora</i>	
White mangrove	<i>Laguncularia racemosa</i>	
Lantana*	<i>Lantana camara</i>	
Nodding pinweed	<i>Lechea cernua</i>	SC
Deckert's pinweed	<i>Lechea deckertii</i>	
Pine pinweed	<i>Lechea divaricata</i>	SC
Pepper grass	<i>Lepidium virginicum</i>	
Blazing stars	<i>Liatris chapmanii</i>	
Blazing stars	<i>Liatris tenuifolia</i>	
Gopher apple	<i>Licania michauxii</i>	
Frog's bit	<i>Limnobiium spongia</i>	
Primrose	<i>Ludwigia maritima</i>	
Primrose	<i>Ludwigia octovalvis</i>	
Primrose willow	<i>Ludwigia peruviana</i>	
Primrose	<i>Ludwigia repens</i>	
Sky-blue lupine	<i>Lupinus diffusus</i>	
Rush pink	<i>Lygodesmia aphylla</i>	
Staggerbush	<i>Lyonia fruticosia</i>	
Fetterbush	<i>Lyonia lucida</i>	
Staggerbush	<i>Lyonia mariana</i>	
Red jumbie bean*	<i>Macroptilium lathyroides</i>	
Sweetbay	<i>Magnolia virginiana</i>	
Mango*	<i>Mangifera indica</i>	
Mastic	<i>Mastichodendron foetidissimum</i>	
Melaleuca*	<i>Melaleuca quinquenervia</i>	
Woodrose*	<i>Merremia dissecta</i>	
Manatee mudflower	<i>Micranthemum glomeratum</i>	
Hempvine	<i>Mikania cordifolia</i>	
Climbing boneset	<i>Mikania scandens</i>	
Wild basalm apple*	<i>Momordica charantia</i>	
Indian pipe	<i>Monotropa uniflora</i>	
Mulberry	<i>Morus rubra</i>	
Cow itch*	<i>Mucuna pruriens</i>	
Wax myrtle	<i>Myrica cerifera</i>	
Sensitive plant	<i>Neptunia pubescans</i>	
Spatterdock	<i>Nuphar lutea</i>	
Prickly pear	<i>Opuntia humifusa</i>	
Water dropwort	<i>Oxypolis filiformis</i>	
Lady's sorrel	<i>Oxalis corniculata</i>	
Water dropwort	<i>Oxypolis filiformis</i>	
Palafox	<i>Palafoxia feayi</i>	
Virginia creeper	<i>Parthenocissus quinquefolia</i>	

\* Non-native Species

## Seabranch Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Red bay .....	<i>Persea borbonia</i>	
Creeping charlie .....	<i>Phyla nodiflora</i>	
Drummond's leafflower .....	<i>Phyllanthus abnormis</i>	
Ground cherry .....	<i>Physalis walteri</i>	
Pokeweed .....	<i>Phytolacca americana</i>	
Artillery plant .....	<i>Pilea microphylla</i>	
Pennyroyal .....	<i>Piloblephis rigida</i>	
Silk grass .....	<i>Pityopsis graminifolia</i>	
Stinking camphorweed .....	<i>Pluchea foetida</i>	
Marsh camphorweed .....	<i>Pluchea odorata</i>	
Rosy camphorweed .....	<i>Pluchea rosea</i>	
Wild poinsettia .....	<i>Poinsettia cyathophora</i>	
Pineland catchfly .....	<i>Polanisia tenuifolia</i>	
Milkwort .....	<i>Polygala grandiflora</i>	
Wild batchelor's button .....	<i>Polygala lutea</i>	
Wild batchelor's button .....	<i>Polygala nana</i>	
Low pinebarren milkwort .....	<i>Polygala ramosa</i>	
Yellow bachelor's button .....	<i>Polygala rugelii</i>	
Coastalplain milkwort .....	<i>Polygala setacea</i>	
Wireweed .....	<i>Polygonella ciliata</i>	
Sand wireweed .....	<i>Polygonella fimbriata var. robusta</i>	
Joint weed .....	<i>Polygonella polygama</i>	
Water pepper .....	<i>Polygonum hydropiperoides</i>	
Water smartweed .....	<i>Polygonum punctatum</i>	
Rustweed .....	<i>Polypremum procumbens</i>	
Pink purslane .....	<i>Portulaca pilosa</i>	
Swamp mermaid .....	<i>Proserpinaca palustris</i>	
Mermaid weed .....	<i>Proserpinaca pectinata</i>	
Strawberry guava* .....	<i>Psidium cattleianum</i>	
Guava * .....	<i>Psidium guajava</i>	
Wild coffee .....	<i>Psychotria nervosa</i>	
Wild coffee .....	<i>Psychotria sulzneri</i>	
Rabbit tobacco .....	<i>Pterocaulon pycnostachyum</i>	
Black-root .....	<i>Pterocaulon virgatum</i>	
Chapman's oak .....	<i>Quercus chapmanii</i>	
Scrub live oak .....	<i>Quercus geminata</i>	
Dwarf live oak .....	<i>Quercus minima</i>	
Myrtle oak .....	<i>Quercus myrtifolia</i>	
Live oak .....	<i>Quercus virginiana</i>	
Myrsine .....	<i>Rapanea punctata</i>	
Mangrove rubber vine .....	<i>Rhabdadenia biflora</i>	
Meadow beauty .....	<i>Rhexia nashi</i>	
Red mangrove .....	<i>Rhizophora mangle</i>	
Winged sumac .....	<i>Rhus copallinum</i>	

\* Non-native Species

## Seabranch Preserve State Park Plants

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Least snoutbean .....	<i>Rhynchosia minima</i>	
Tropical Mexican clover* .....	<i>Richardia brasiliensis</i>	
Largeflower Mexican clover* .....	<i>Richardia grandiflora</i>	
Castor bean* .....	<i>Ricinus communis</i>	
Southern dewberry .....	<i>Rubus trivialis</i>	
Marsh pink .....	<i>Sabatia grandiflora</i>	
Carolina Willow .....	<i>Salix caroliniana</i>	
Water spangles .....	<i>Salvinia minima</i>	
Elderberry .....	<i>Sambucus canadensis</i>	
Pineland pimernel .....	<i>Samolus valerandi</i>	
Milkweed vine* .....	<i>Sarcostemma clausum</i>	
Schefflera* .....	<i>Schefflera actinophylla</i>	
Brazilian pepper* .....	<i>Schinus terebinthifolius</i>	
Sensitive briar* .....	<i>Schrankia microphylla</i>	
Sweet broom .....	<i>Scoparia dulcis</i>	
Candle plant* .....	<i>Senna alata</i>	
Coffee senna* .....	<i>Senna occidentalis</i>	
Piedmont blacksenna .....	<i>Seymaria pectinata</i>	
Wire weed .....	<i>Sida acuta</i>	
Llima* .....	<i>Sida cordifolia</i>	
Indian hemp .....	<i>Sida rhombifolia</i>	
Mastic .....	<i>Sideroxylon foetidissimum</i>	
Goldenrod .....	<i>Solidago chapmanii</i>	
Goldenrod .....	<i>Solidago fistulosa</i>	
Flat-topped goldenrod .....	<i>Solidago caroliniana</i>	
Chapman's goldenrod .....	<i>Solidago odora var. chapmanii</i>	
Largeleaf buttonweed .....	<i>Spermacoce assurgens</i>	
Buttonweed* .....	<i>Spermacoce verticillata</i>	
Creeping oxeye* .....	<i>Sphagneticola trilobata</i>	
Rice button aster .....	<i>Symphotrichium dumosum</i>	
Pineland scalypink .....	<i>Stipulicida setacea</i>	
Hairy dawnflower .....	<i>Stylisma villosa</i>	
Poison ivy .....	<i>Toxicodendron radicans</i>	
Forked blue curls .....	<i>Trichostema dichotomum</i>	
Mexican daisy* .....	<i>Tridax procumbens</i>	
Caesar weed* .....	<i>Urena lobata</i>	
Bladderwort .....	<i>Utricularia subulata</i>	
Shiny blueberry .....	<i>Vaccinium myrsinites</i>	
Deerberry .....	<i>Vaccinium stamineum</i>	
Frostweed .....	<i>Verbesina virginica</i>	
Ironweed* .....	<i>Vernonia cinerea</i>	
Cow-pea .....	<i>Vigna luteola</i>	
Florida grape .....	<i>Vitis cinerea var. floridana</i>	
Muscadine grape .....	<i>Vitis rotundifolia</i>	

\* Non-native Species



## Seabranh Preserve State Park Plants

<b>Common Name</b>	<b><i>Scientific Name</i></b>	<b>Primary Habitat Codes (for imperiled species)</b>
Waltheria .....	<i>Waltheria indica</i>	
Creeping oxeye * .....	<i>Wedelia trilobata</i>	
Hog-plum .....	<i>Ximenia Americana</i>	
Oriental false hawksbeard* .....	<i>Youngia japonica</i>	
Wild lime .....	<i>Zanthoxylum fagara</i>	

\* Non-native Species

## Seabranh Preserve State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
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### INVERTEBRATES

Crown conch.....	<i>Melongena corona</i> .....	ECPS
Flat tree oyster.....	<i>Isognomon alatus</i> .....	MS
Parchment tube worm.....	<i>Chaetopterus variopedatus</i> .....	ECPS
Black and yellow argiope spider.....	<i>Argiope aurantia</i> .....	
Spiny orb-weaver.....	<i>Gasteracantha cancriformis</i> .....	
Golden silk spider.....	<i>Nephila clavipes</i> .....	
Blue crab.....	<i>Callinectes sapidus</i> .....	ECPS
Giant Hermit Crab.....	<i>Petrochirus diogenes</i> .....	ECPS
Fiddler crab.....	<i>Uca spp</i> .....	MS
Metallic wood-boring beetle.....	<i>Chalcophora georgiana</i> .....	
Saltmarsh mosquito.....	<i>Aedes taeniorhynchus</i> .....	
Deer fly.....	<i>Chrysops vittatus</i> .....	
No-see-ums.....	<i>Cullicoides sp</i> .....	
Field cricket.....	<i>Gryllus spp</i> .....	
Gulf fritillary.....	<i>Agraulis vanillae nigrrior</i> .....	
Great southern white.....	<i>Ascia monuste shileta</i> .....	
Zebra long wing.....	<i>Heliconius charitonius tuckeri</i> .....	
Viceroy.....	<i>Limenitis archippus floridensis</i> .....	
Tiger swallowtail.....	<i>Papilio glaucus</i> .....	
Black swallowtail.....	<i>Papilio polyxenes</i> .....	
Cloudless sulfur.....	<i>Phoebis sennae eubule</i> .....	
Buckeye.....	<i>Precis (Junonia) coenia</i> .....	
Palamedes swallowtail.....	<i>Pterourus palamedes</i> .....	
Cloudless sulphur.....	<i>Phoebis sennae euble</i> .....	
Green stink bug.....	<i>Nezara viridula</i> .....	
Ants Bees Wasps		
Velvet ant.....	<i>Dasymutilla spp</i> .....	

### VERTEBRATES

Pleated sea squirt.....	<i>Stylea pilicata</i> .....	ECPS
Southern stingray.....	<i>Dasyatis Americana</i> .....	ECPS
Bay anchovy.....	<i>Anchoa mitchilli</i> .....	ECPS
Sheepshead.....	<i>Archosargus probatocephalus</i> .....	ECPS
Hardhead catfish.....	<i>Ariopsis felis</i> .....	ECPS

## Seabranch Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Gafftopsail catfish .....	<i>Bagre marinus</i> .....	ECPS
Crevalle Jack .....	<i>Caranx hippos</i> .....	ECPS
Snook .....	<i>Centropomus undecimalis</i> .....	ECPS
Spotted seatrout .....	<i>Cynoscion nebulosus</i> .....	ECPS
Irish pompano .....	<i>Diapterus auratus</i> .....	ECPS
Ladyfish .....	<i>Elops saurus</i> .....	ECPS
Spotfin mojarra .....	<i>Eucinostomus argenteus</i> .....	ECPS
Silver Jenny .....	<i>Eucinostomus gula</i> .....	ECPS
Flagfin mojarra .....	<i>Eucinostomus melanopterus</i> .....	ECPS
Mosquitofish .....	<i>Gambusia affinis</i> .....	ECPS
Pinfish .....	<i>Lagodon rhomboids</i> .....	ECPS
Gray snapper .....	<i>Lutjanus griseus</i> .....	ECPS
Tarpon .....	<i>Megalops atlanticus</i> .....	ECPS
Atlantic croaker .....	<i>Micropogonias undulates</i> .....	ECPS
Opposum pipefish .....	<i>Microphis brachyurus</i> .....	BST
Striped mullet .....	<i>Mugil cephalus</i> .....	ECPS
White mullet .....	<i>Mugil curema</i> .....	ECPS
Leather jacket .....	<i>Oligoplites saurus</i> .....	ECPS
Southern flounder .....	<i>Paralichthys lethostigma</i> .....	ECPS
Sailfin molly .....	<i>Poecilia latipinna</i> .....	ECPS
Red drum .....	<i>Sciaenops ocellatus</i> .....	ECPS
Checkered puffer .....	<i>Shoeroides testudineus</i> .....	ECPS
Atlantic needlefish .....	<i>Strongylura marina</i> .....	ECPS

### AMPHIBIANS

Florida cricket frog .....	<i>Acris gryllus</i> .....	DM
Oak toad .....	<i>Bufo quercicus</i> .....	MF, SC, SCF
Marine toad* .....	<i>Bufo marinus</i> .....	MTC
Southern toad .....	<i>Bufo terrestris</i> .....	MF, SC, SCF
Greenhouse frog* .....	<i>Eleutherodactylus planirostris</i> .....	DV
Eastern narrowmouth toad .....	<i>Gastrophryne carolinensis</i> .....	MF, SCF
Green treefrog .....	<i>Hyla cinerea</i> .....	MF, BG
Squirrel treefrog .....	<i>Hyla squirella</i> .....	MF, BG
Gopher Frog.....	<i>Lithobates capito</i> .....	MF, SC, SCF
Cuban treefrog* .....	<i>Osteopilus septentrionalis</i> .....	MF, BG
Pig frog .....	<i>Rana grylio</i> .....	DM
Southern leopard frog .....	<i>Rana utricularia</i> .....	DM, BG
Eastern spadefoot .....	<i>Scaphiopus holbrookii</i> .....	SC, SCF

### REPTILES

Green anole .....	<i>Anolis carolinensis</i> .....	MTC
Brown anole* .....	<i>Anolis sagrei</i> .....	MTC
American alligator .....	<i>Alligator mississippiensis</i> .....	DM

\* Non-native Species

## Seabranch Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Six-lined racerunner .....	<i>Cnemidophorus sexlineatus</i> .....	MF, SC, SCF
Southern black racer .....	<i>Coluber constrictor priapus</i> .....	MTC
Eastern Diamondback Rattlesnake.....	<i>Crotalus adamanteus</i> .....	SC
Southern ringneck snake .....	<i>Diadophis punctatus</i> .....	MTC
Corn snake .....	<i>Elaphe guttata</i> .....	MTC
Gopher tortoise .....	<i>Gopherus</i> .....	MF, SC, SCF
Eastern coachwhip .....	<i>Masticophis flagellum flagellum</i> ....	SC, SCF
Rough green snake .....	<i>Opheodrys aestivus</i> .....	MTC
Eastern glass lizard .....	<i>Ophisaurus ventralis</i> .....	MF, SC, SCF
Florida scrub lizard .....	<i>Sceloporus woodi</i> .....	SC, SCF
Ground skink .....	<i>Scincella lateralis</i> .....	MTC
Florida box turtle .....	<i>Terrapene carolina bauri</i> .....	MF, BG, FS
Eastern garter snake .....	<i>Thamnophis sirtalis</i> .....	MTC

### BIRDS

Cooper's hawk .....	<i>Accipiter cooperii</i> .....	SC
Florida Scrub-jay .....	<i>Aphelocoma coerulescens</i> .....	SC, SCF
Great blue heron .....	<i>Ardea herodias</i> .....	DM, BST, MS
Cedar waxwing .....	<i>Bombycilla cedorum</i> .....	MF, SC, SCF
Great horned owl .....	<i>Bubo virginianus</i> .....	MF, SC, SCF
Red-tailed hawk .....	<i>Buteo jamaicensis</i> .....	MTC
Red-shouldered hawk .....	<i>Buteo lineatus</i> .....	MTC
Green heron .....	<i>Butorides striatus</i> .....	DM, BST, MS
Chuck-will's-widow .....	<i>Caprimulgus ridgwayi</i> .....	MTC
American cardinal .....	<i>Cardinalis cardinalis</i> .....	MTC
Great egret .....	<i>Casmerodius albus</i> .....	DM, BST, MS
Turkey vulture .....	<i>Cathartes aura</i> .....	MTC
Belted kingfisher .....	<i>Ceryle alcyon</i> .....	DM, BST, MS
Common nighthawk .....	<i>Chordeiles minor</i> .....	MF, SC, SCF
Northern Harrier .....	<i>Circus cyaneus</i> .....	OF
Common Ground-dove .....	<i>Columbina passerina</i> .....	MF, SC, SCF
Northern flicker .....	<i>Colaptes auratus</i> .....	MTC
Northern bobwhite .....	<i>Colinus virginianus</i> .....	SCF, SC
Black vulture .....	<i>Coragyps atratus</i> .....	MTC
Fish crow .....	<i>Corvus ossifragus</i> .....	MTC
Blue jay .....	<i>Cyanocitta cristata</i> .....	MTC
Palm warbler .....	<i>Dendroica palmarum</i> .....	MF, SC, SCF
Yellow warbler .....	<i>Dendroica petechia</i> .....	MF, SC, SCF
Pine warbler .....	<i>Dendroica pinus</i> .....	MF, SC, SCF
Black-throated green warbler .....	<i>Dendroica virens</i> .....	MF, SC, SCF
Pileated woodpecker .....	<i>Dryocopus pileatus</i> .....	MF, BG, DM
Gray catbird.....	<i>Dumetella carolinensis</i> .....	MF, SC, SCF
Little blue heron .....	<i>Egretta caerulea</i> .....	DM, BST, MS

## Seabranch Preserve State Park Animals

Common Name	Scientific Name	Primary Habitat Codes (for imperiled species)
Snowy egret .....	<i>Egretta thula</i> .....	BST, MS
Tricolored heron .....	<i>Egretta tricolor</i> .....	BST, MS
White ibis .....	<i>Eudocimus albus</i> .....	DM, BST, MS
Peregrine falcon .....	<i>Falco peregrinus</i> .....	OF
American kestrel .....	<i>Falco sparverius</i> .....	MTC
Southeastern American kestrel.....	<i>Falco sparverius paulus</i> .....	SC
Magnificent frigatebird .....	<i>Fregata magnificens</i> .....	OF
Sandhill crane .....	<i>Grus canadensis</i> .....	MF, SC, SCF
Bald eagle .....	<i>Haliaeetus leucocephalus</i> .....	SC, OF
Herring gull .....	<i>Larus argentatus</i> .....	MS
Ring-billed gull .....	<i>Larus delawarensis</i> .....	MS
Red-bellied woodpecker .....	<i>Melanerpes carolinus</i> .....	MTC
Wild turkey .....	<i>Meleagris gallopavo</i> .....	FS
Northern mockingbird .....	<i>Mimus polyglottos</i> .....	MTC
Black-and-white warbler .....	<i>Mniotilta varia</i> .....	MF, SC, SCF
Wood stork .....	<i>Mycteria americana</i> .....	BST, FS
Great crested flycatcher .....	<i>Myiarchus crinitus</i> .....	MF, SC, SCF
Black-crowned night heron.....	<i>Nycticorax nycticorax</i> .....	BG, BST, MS
Yellow-crowned night heron .....	<i>Nycticorax violaceus</i> .....	BG, MS
Eastern screech owl .....	<i>Otus asio</i> .....	MF, SC, SCF
Osprey .....	<i>Pandion haliaetus</i> .....	MS
Parula warbler .....	<i>Parula Americana</i> .....	MF, BG, FS
Painted bunting .....	<i>Passerina ciris</i> .....	SC, FS
Brown pelican .....	<i>Pelecanus occidentalis</i> .....	MS
Double-crested cormorant .....	<i>Phalacrocorax auritus</i> .....	MS
Downy woodpecker .....	<i>Picoides pubescens</i> .....	MF, SC, SCF
Rufous-sided towhee .....	<i>Pipilo erythrophthalmus</i> .....	MF, SC, SCF
Blue-gray gnatcatcher .....	<i>Polioptila caerulea</i> .....	MTC
Black skimmer .....	<i>Rynchops niger</i> .....	MS
Eastern phoebe .....	<i>Sayornis phoebe</i> .....	FS, BST
American redstart .....	<i>Setophaga ruticilla</i> .....	MF, SC, SCF
Least tern .....	<i>Sterna antillarum</i> .....	OF
Royal tern .....	<i>Sterna maxima</i> .....	OF
Eurasian collared-dove* .....	<i>Streptopelia decaocto</i> .....	DV
Tree swallow .....	<i>Tachycineta bicolor</i> .....	MTC
Brown thrasher .....	<i>Toxostoma rufum</i> .....	MF, SCF
American robin .....	<i>Turdus migratorius</i> .....	DV
Mourning dove .....	<i>Zenaida macroura</i> .....	MTC

### MAMMALS

Coyote .....	<i>Canis latrans</i> .....	MTC
Virginia opossum .....	<i>Didelphis virginiana</i> .....	MTC
Nine-banded armadillo* .....	<i>Dasypus novemcinctus</i> .....	MTC
Seminole bat .....	<i>Lasiurus seminolus</i> .....	MTC

\* Non-native Species

## Seabranh Preserve State Park Animals

Common Name	<i>Scientific Name</i>	Primary Habitat Codes (for imperiled species)
Bobcat .....	<i>Lynx rufus</i> .....	MTC
Evening bat .....	<i>Nycticeius humeralis</i> .....	MTC
Florida mouse .....	<i>Podomys floridanus</i> .....	SC, SCF
Raccoon .....	<i>Procyon lotor</i> .....	MTC
Eastern mole .....	<i>Scalopus aquaticus</i> .....	MTC
Gray squirrel .....	<i>Sciurus carolinensis</i> .....	MF, BG, FS
Eastern spotted skunk .....	<i>Spilogale putorius</i> .....	SC, SCF
Eastern cottontail .....	<i>Sylvilagus floridanus</i> .....	MF, SC, SCF
Wild pig* .....	<i>Sus scrofa</i> .....	MTC
Manatee .....	<i>Trichechus manatus</i> .....	ECPS
Gray fox .....	<i>Urocyon cinereoargenteus</i> .....	MTC

\* Non-native Species

## Natural Community Abbreviations for Habitat

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### TERRESTRIAL

Beach Dune .....	BD
Coastal Berm .....	CB
Coastal Grassland .....	CG
Coastal Strand .....	CS
Dry Prairie .....	DP
Keys Cactus Barren .....	KCB
Limestone Outcrop .....	LO
Maritime Hammock .....	MAH
Mesic Flatwoods .....	MF
Mesic Hammock .....	MEH
Pine Rockland .....	PR
Rockland Hammock .....	RH
Sandhill .....	SH
Scrub .....	SC
Scrubby Flatwoods .....	SCF
Shell Mound .....	SHM
Sinkhole .....	SK
Slope Forest .....	SPF
Upland Glade .....	UG
Upland Hardwood Forest .....	UHF
Upland Mixed Woodland .....	UMW
Upland Pine .....	UP
Wet Flatwoods .....	WF
Xeric Hammock .....	XH

### PALUSTRINE

Alluvial Forest .....	AF
Basin Marsh .....	BM
Basin Swamp .....	BS
Baygall .....	BG
Bottomland Forest .....	BF
Coastal Interdunal Swale .....	CIS
Depression Marsh .....	DM
Dome Swamp .....	DS
Floodplain Marsh .....	FM
Floodplain Swamp .....	FS
Glades Marsh .....	GM
Hydric Hammock .....	HH
Keys Tidal Rock Barren .....	KTRB
Mangrove Swamp .....	MS
Marl Prairie .....	MP
Salt Marsh .....	SAM
Seepage Slope .....	SSL
Shrub Bog .....	SHB
Slough .....	SLO
Slough Marsh .....	SLM
Strand Swamp .....	STS



## Natural Community Abbreviations for Habitat

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Wet Prairie ..... WP

### LACUSTRINE

Clastic Upland Lake ..... CULK

Coastal Dune Lake ..... CDLK

Coastal Rockland Lake ..... CRLK

Flatwoods/Prairie ..... FPLK

Marsh Lake ..... MLK

River Floodplain Lake ..... RFLK

Sandhill Upland Lake ..... SULK

Sinkhole Lake ..... SKLK

Swamp Lake ..... SWLK

### RIVERINE

Alluvial Stream ..... AST

Blackwater Stream ..... BST

Seepage Stream ..... SST

Spring-run Stream ..... SRST

### SUBTERRANEAN

Aquatic Cave ..... ACV

Terrestrial Cave ..... TCV

### ESTUARINE

Algal Bed ..... EAB

Composite Substrate ..... ECPS

Consolidated Substrate ..... ECNS

Coral Reef ..... ECR

Mollusk Reef ..... EMR

Octocoral Bed ..... EOB

Seagrass Bed ..... ESGB

Sponge Bed ..... ESPB

Unconsolidated Substrate ..... EUS

Worm Reef ..... EWR

## Natural Community Abbreviations for Habitat

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### MARINE

Algal Bed .....	MAB
Composite Substrate.....	MCPS
Consolidated Substrate.....	MCNS
Coral Reef .....	MCR
Mollusk Reef .....	MMR
Octocoral Bed .....	MOB
Seagrass Bed .....	MSGB
Sponge Bed .....	MSPB
Unconsolidated Substrate .....	MUS
Worm Reef .....	MWR

### ALTERED LANDCOVER TYPES

Abandoned field .....	ABF
Abandoned pasture.....	ABP
Agriculture.....	AG
Canal/ditch .....	CD
Clearcut pine plantation.....	CPP
Clearing .....	CL
Developed .....	DV
Impoundment/artificial pond .....	IAP
Invasive exotic monoculture.....	IEM
Pasture - improved .....	PI
Pasture - semi-improved .....	PSI
Pine plantation .....	PP
Road.....	RD
Spoil area.....	SA
Successional hardwood forest.....	SHF
Utility corridor .....	UC

### MISCELLANEOUS

Many Types of Communities.....	MTC
Overflying.....	OF

## Natural Community Abbreviations for Habitat

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## **Addendum 6—Imperiled Species Ranking Definitions**



## **Imperiled Species Ranking Definitions**

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The Nature Conservancy and the Natural Heritage Program Network (of which FNAI is a part) define an element as any exemplary or rare component of the natural environment, such as a species, natural community, bird rookery, spring, sinkhole, cave or other ecological feature. An element occurrence (EO) is a single extant habitat that sustains or otherwise contributes to the survival of a population or a distinct, self-sustaining example of a particular element.

Using a ranking system developed by The Nature Conservancy and the Natural Heritage Program Network, the Florida Natural Areas Inventory assigns two ranks to each element. The global rank is based on an element's worldwide status; the state rank is based on the status of the element in Florida. Element ranks are based on many factors, the most important ones being estimated number of Element occurrences, estimated abundance (number of individuals for species; area for natural communities), range, estimated adequately protected EOs, relative threat of destruction, and ecological fragility.

Federal and State status information is from the U.S. Fish and Wildlife Service; and the Florida Game and Freshwater Fish Commission (animals), and the Florida Department of Agriculture and Consumer Services (plants), respectively.

### **FNAI GLOBAL RANK DEFINITIONS**

- G1 ..... Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or fabricated factor.
- G2 ..... Imperiled globally because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- G3 ..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- G4 ..... apparently secure globally (may be rare in parts of range)
- G5 ..... demonstrably secure globally
- GH ..... of historical occurrence throughout its range may be rediscovered (e.g., ivory-billed woodpecker)
- GX ..... believed to be extinct throughout range
- GXC ..... extirpated from the wild but still known from captivity or cultivation
- G#? ..... Tentative rank (e.g., G2?)
- G#G# ..... range of rank; insufficient data to assign specific global rank (e.g., G2G3)
- G#T# ..... rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definition as above (e.g., G3T1)
- G#Q ..... rank of questionable species - ranked as species but questionable whether it is species or subspecies; numbers have same definition as above (e.g., G2Q)

## **Imperiled Species Ranking Definitions**

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- G#T#Q ..... same as above, but validity as subspecies or variety is questioned.
- GU ..... due to lack of information, no rank or range can be assigned (e.g., GUT2).
- G? ..... Not yet ranked (temporary)
- S1 ..... Critically imperiled in Florida because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.
- S2 ..... Imperiled in Florida because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerability to extinction due to some natural or man-made factor.
- S3 ..... Either very rare or local throughout its range (21-100 occurrences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction of other factors.
- S4 ..... apparently secure in Florida (may be rare in parts of range)
- S5 ..... demonstrably secure in Florida
- SH ..... of historical occurrence throughout its range, may be rediscovered (e.g., ivory-billed woodpecker)
- SX ..... believed to be extinct throughout range
- SA ..... accidental in Florida, i.e., not part of the established biota
- SE ..... an exotic species established in Florida may be native elsewhere in North America
- SN ..... regularly occurring but widely and unreliably distributed; sites for conservation hard to determine
- SU ..... due to lack of information, no rank or range can be assigned (e.g., SUT2).
- S? ..... Not yet ranked (temporary)
- N ..... Not currently listed, nor currently being considered for listing, by state or federal agencies.

### **LEGAL STATUS**

#### **FEDERAL**

##### **(Listed by the U. S. Fish and Wildlife Service - USFWS)**

- LE ..... Listed as Endangered Species in the List of Endangered and Threatened Wildlife and Plants under the provisions of the Endangered Species Act. Defined as any species that is in danger of extinction throughout all or a significant portion of its range.
- PE ..... Proposed for addition to the List of Endangered and Threatened Wildlife and Plants as Endangered Species.
- LT ..... Listed as Threatened Species. Defined as any species that is likely to become an endangered species within the near future throughout all or a significant portion of its range.
- PT ..... Proposed for listing as Threatened Species.
- C ..... Candidate Species for addition to the list of Endangered and Threatened Wildlife and Plants. Defined as those species for which the USFWS currently has on file sufficient information on biological



## **Imperiled Species Ranking Definitions**

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vulnerability and threats to support proposing to list the species as endangered or threatened.

E(S/A) ..... Endangered due to similarity of appearance.

T(S/A) ..... Threatened due to similarity of appearance.

### **STATE**

#### **ANIMALS .. (Listed by the Florida Fish and Wildlife Conservation Commission - FWC)**

LE ..... Listed as Endangered Species by the FWC. Defined as a species, subspecies, or isolated population which is so rare or depleted in number or so restricted in range of habitat due to any man-made or natural factors that it is in immediate danger of extinction or extirpation from the state, or which may attain such a status within the immediate future.

LT ..... Listed as Threatened Species by the FWC. Defined as a species, subspecies, or isolated population, which is acutely vulnerable to environmental alteration, declining in number at a rapid rate, or whose range or habitat, is decreasing in area at a rapid rate and therefore is destined or very likely to become an endangered species within the near future.

LS ..... Listed as Species of Special Concern by the FWC. Defined as a population which warrants special protection, recognition or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance or substantial human exploitation that, in the near future, may result in its becoming a threatened species?

#### **PLANTS ..... (Listed by the Florida Department of Agriculture and Consumer Services - FDACS)**

LE ..... Listed as Endangered Plants in the Preservation of Native Flora of Florida Act. Defined as species of plants native to the state that are in imminent danger of extinction within the state, the survival of which is unlikely if the causes of a decline in the number of plants continue, and includes all species determined to be endangered or threatened pursuant to the Federal Endangered Species Act of 1973, as amended.

LT ..... Listed as Threatened Plants in the Preservation of Native Flora of Florida Act. Defined as species native to the state that are in rapid decline in the number of plants within the state, but which have not so decreased in such number as to cause them to be endangered.

## Imperiled Species Ranking Definitions

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## **Addendum 7—Cultural Information**



## **Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)**

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**These procedures apply to state agencies, local governments, and non-profits that manage state-owned properties.**

### **A. General Discussion**

Historic resources are both archaeological sites and historic structures. Per Chapter 267, Florida Statutes, *'Historic property' or 'historic resource' means any prehistoric district, site, building, object, or other real or personal property of historical, architectural, or archaeological value, and folklife resources. These properties or resources may include, but are not limited to, monuments, memorials, Indian habitations, ceremonial sites, abandoned settlements, sunken or abandoned ships, engineering works, treasure trove, artifacts, or other objects with intrinsic historical or archaeological value, or any part thereof, relating to the history, government, and culture of the state.'*

### **B. Agency Responsibilities**

Per State Policy relative to historic properties, state agencies of the executive branch must allow the Division of Historical Resources (Division) the opportunity to comment on any undertakings, whether these undertakings directly involve the state agency, i.e., land management responsibilities, or the state agency has indirect jurisdiction, i.e. permitting authority, grants, etc. No state funds should be expended on the undertaking until the Division has the opportunity to review and comment on the project, permit, grant, etc.

State agencies shall preserve the historic resources which are owned or controlled by the agency.

Regarding proposed demolition or substantial alterations of historic properties, consultation with the Division must occur, and alternatives to demolition must be considered.

State agencies must consult with Division to establish a program to location, inventory and evaluate all historic properties under ownership or controlled by the agency.

### **C. Statutory Authority**

Statutory Authority and more in depth information can be found at:  
<http://www.flheritage.com/preservation/compliance/guidelines.cfm>

### **D. Management Implementation**

Even though the Division sits on the Acquisition and Restoration Council and approves land management plans, these plans are conceptual. Specific information regarding individual projects must be submitted to the Division for review and recommendations.

**Management Procedures for Archaeological and Historical Sites and Properties on State-Owned or Controlled Properties (revised March 2013)**

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Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to: approval of the project as submitted, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

Projects such as additions, exterior alteration, or related new construction regarding historic structures must also be submitted to the Division of Historical Resources for review and comment by the Division's architects. Projects involving structures fifty years of age or older, must be submitted to this agency for a significance determination. In rare cases, structures under fifty years of age may be deemed historically significant. These must be evaluated on a case by case basis.

Adverse impacts to significant sites, either archaeological sites or historic buildings, must be avoided. Furthermore, managers of state property should make preparations for locating and evaluating historic resources, both archaeological sites and historic structures.

**E. Minimum Review Documentation Requirements**

In order to have a proposed project reviewed by the Division, certain information must be submitted for comments and recommendations. The minimum review documentation requirements can be found at:

[http://www.flheritage.com/preservation/compliance/docs/minimum\\_review\\_documentation\\_requirements.pdf](http://www.flheritage.com/preservation/compliance/docs/minimum_review_documentation_requirements.pdf) .

\* \* \*

Questions relating to the treatment of archaeological and historic resources on state lands should be directed to:

Deena S. Woodward  
Division of Historical Resources  
Bureau of Historic Preservation  
Compliance and Review Section  
R. A. Gray Building  
500 South Bronough Street  
Tallahassee, FL 32399-0250

Phone: (850) 245-6425

Toll Free: (800) 847-7278

Fax: (850) 245-6435

## **Eligibility Criteria for National Register of Historic Places**

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The criteria to be used for evaluating eligibility for listing in the National Register of Historic Places are as follows:

- 1)** Districts, sites, buildings, structures, and objects may be considered to have significance in American history, architecture, archaeology, engineering, and/or culture if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
  - a)** are associated with events that have made a significant contribution to the broad patterns of our history; and/or
  - b)** are associated with the lives of persons significant in our past; and/or
  - c)** embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; and/or
  - d)** have yielded, or may be likely to yield, information important in prehistory or history.
  
- 2)** Ordinarily cemeteries, birthplaces, or graves of historical figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; properties primarily commemorative in nature; and properties that have achieved significance within the past 50 years shall not be considered eligible for the *National Register*. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:
  - a)** a religious property deriving its primary significance from architectural or artistic distinction or historical importance; or
  - b)** a building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
  - c)** a birthplace or grave of an historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life; or
  - d)** a cemetery which derives its primary significance from graves of persons of transcendent importance, from age, distinctive design features, or association with historic events; or



## Eligibility Criteria for National Register of Historic Places

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- e) a reconstructed building, when it is accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and no other building or structure with the same association has survived; or a property primarily commemorative in intent, if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or
- f) a property achieving significance within the past 50 years, if it is of exceptional importance.

## Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines

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**Restoration** is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

**Rehabilitation** is defined as the act or process of making possible a compatible use for a property through repair, alterations and additions while preserving those portions or features that convey its historical, cultural or architectural values.

**Stabilization** is defined as the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated property while maintaining the essential form as it exists at present.

**Preservation** is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

**Preservation Treatments as Defined by Secretary of Interior's Standards and Guidelines**

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**Addendum 8 —Land Management Review**



# Memorandum

# Florida Department of Environmental Protection

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January 6, 1999

TO: Mr. Robert Clark, Program Administrator  
Division of State Lands

FROM: Albert Gregory, Chief, Office of Park Planning  
Dana C. Bryan, Chief, Bureau of Natural  
& Cultural Resources

SUBJECT: Response to Land Management Review (LMR) for Seabranh State  
Preserve

The Land Management Review dated November 9, 1998 determined that the management of the Seabranh State Preserve meets the two tests prescribed by law. The review team concluded that the land is being managed for the purposes for which it was acquired and in accordance with the land management plan.

The following comments are provided by field staff and our offices in response to specific concerns and where appropriate, recommendations that were included in the LMR. We have identified land management plan revisions and field management actions we plan to take to address the review team's concerns.

### **Plan Review:**

III.B.2. - Restoration: sand pit - Disagree. The sand pit was briefly mentioned on page 7 of the current management plan. This area is adequately revegetating itself naturally and has high numbers of gopher tortoises, scrub lizards, and other endemic species. Any exotic plants which appear in the pit are hand-pulled. No other restoration work is required, nor planned, for the sand pit at this time. Additional comments on the sand pit will be included in the next plan update.

III.B.3. - Restoration: Manatee Creek - Disagree. The damage to Manatee Creek is not discussed in the current plan because it occurred after the document was written. However, there is a monitoring plan for this restoration project as required by the SFWMD, and approved by DRP. We will include information on the restoration as an addendum to the next plan update.

III.F.3. - Roads/culverts: - Disagree. We are uncertain why this comment is included. There are no paved roads, and only one additional workshop driveway is currently planned. Unlawful ORV trails were closed once DRP assumed active management of the park in 1992. Some trails are still used by FPS personnel as vehicle service trails and fire breaks; other trails are revegetating.

III.I.1.b. - Adjacent Property Concerns: Residences on Cove Road: - Disagree. This was briefly mentioned on several pages of the current plan (e.g. see pages 7,19,20,22- complications with prescribed fire); however, we will discuss the issues with additional details in the next plan update.

**Field review:**

III.J.3.a. - Buildings: - Agree. Funding for construction will be pursued. Construction of buildings is contingent on DRP and DEP budget resources and priorities and also on legislative action.

III.J.3.b. - Equipment: - Agree. The park acquires new and used equipment as needed relative to other DRP priorities and budgetary limitations.

III.I.4. - Staff: - Agree. However, no new staff can be assigned to this or any park unit unless the new positions are appropriated by the Legislature or reassigned from other units. This later action is not appropriate at this time according to Division staff allocation research. Additional staff is needed by our parks statewide which is why we regularly seek positions, volunteers, and partners to help us overcome staff deficiencies.

III.I.5. - Funding: - Agree. Additional funds will be pursued. Funding is always contingent on DRP and DEP budget resources and priorities and also on legislative action.

**Recommendations:**

1. Need for additional staff and funding: - Agree. See comments under III.I.4. and III.I.5. above.
2. Coordination with SFWMD on adjacent wellfield: - Agree. DRP has already contacted the SFWMD about the wellfield. We will continue ongoing efforts to coordinate with them on this matter.

Thank you for the opportunity to comment on the LMR.

OPP/BNCR

cc: George Jones, Chief, Parks District 5