SEABRANCH PRESERVE STATE PARK

UNIT MANAGEMENT PLAN

APPROVED

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Division of Recreation and Parks

OCTOBER 24, 2002

Department of Environmental Protection

Jeb Bush
Governor

Marjorie Stoneman Douglas Building
3900 Commonwealth Boulevard, MS 140
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

October 25, 2002

Ms. BryAnne White
Office of Park Planning
Division of Recreation & Parks
3900 Commonwealth Blvd., M.S. 525
Tallahassee, Florida 32399-3000

Re: Seabranch Preserve State Park Lease Number: # 3954

Dear Ms. White:

On October 24, 2002, the Acquisition and Restoration Council recommended approval of the Land Management Plan for Seabranch Preserve State Park. Therefore, the Office of Environmental Services, acting as agent for the Board of Trustees of the Internal Improvement Trust Fund approves this plan. Pursuant to Section 253.034 and 259.032, Florida Statutes, and Chapter 18-2, Florida Administrative Code the plan's five-year update will be due in October 2007.

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.

Sincerely,

Delmas T. Barber

Delmas T. Barber, OMC Manager
Office of Environmental Services
Division of State Lands

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INTRODUCTION

Seabranch Preserve State Park is located in eastern Martin County, about ten miles south of Stuart. Access to Seabranch is from U.S. Highway A-1-A (see Vicinity Map). The vicinity map also reflects significant land and water resources existing near the park.

Currently, the park consists of 912.92 acres (640.24 upland acres and 272.68 wetland/submerged acres). For this plan, park acreage has been calculated based on the composition of natural communities, in addition to ruderal and developed areas within the park boundary.

At Seabranch Preserve State Park, public outdoor recreation and conservation is the designated single use of the property (see Addendum 1). There are no legislative or executive directives that constrain the use of this property.

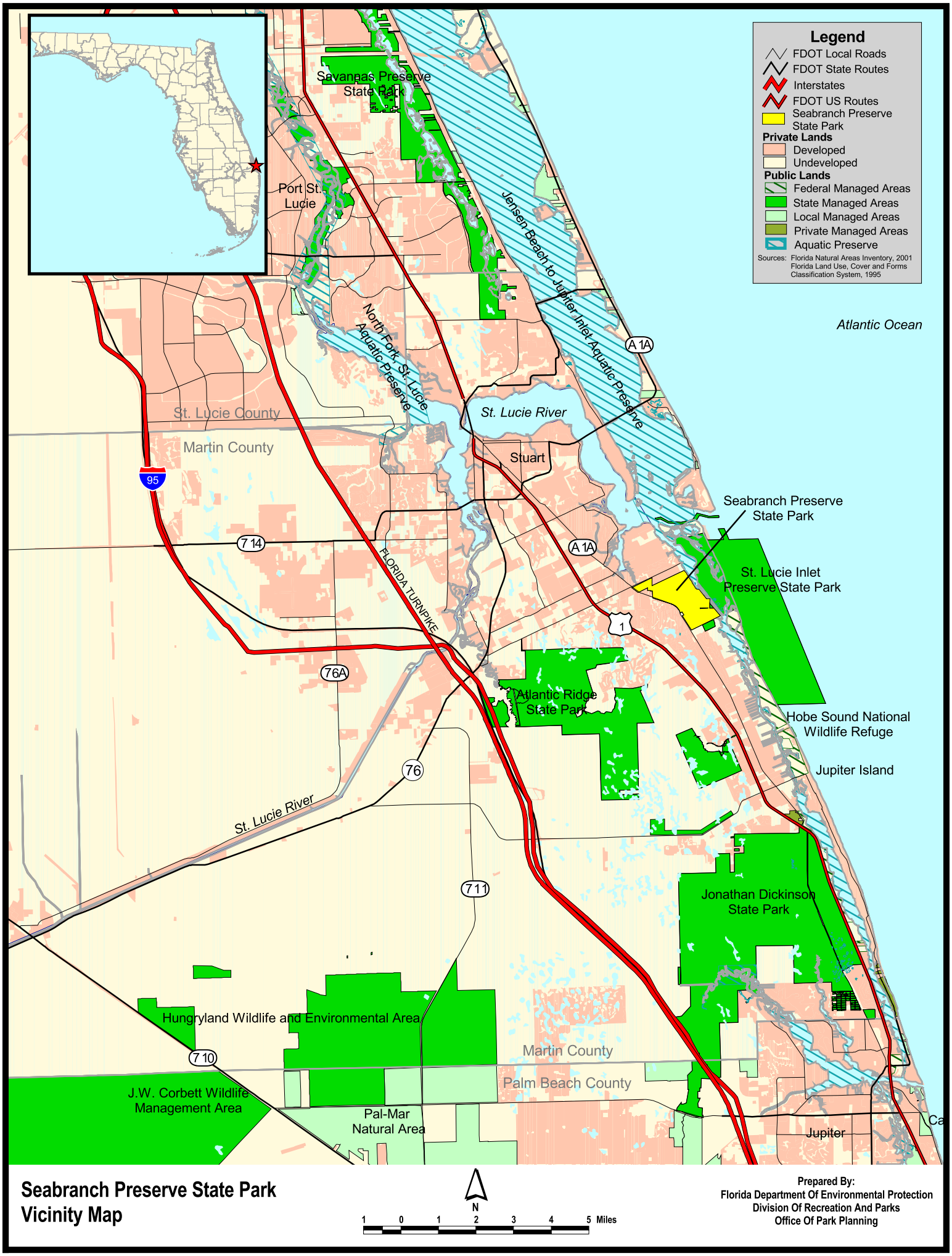
PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of Seabranch Preserve State Park as a unit of Florida's state park system. It identifies the objectives, criteria and standards that guide each aspect of park administration, and sets forth the specific measures that will be implemented to meet management objectives. The plan is intended to meet the requirements of Sections 253.034 and 259.032, Florida Statutes, Chapter 18-2, Florida Administrative Code, and intended to be consistent with the State Lands Management Plan. With approval, this management plan will supercede and replace the current approved plan of April 10, 1997. All development and resource alteration encompassed 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.

The plan consists of two interrelated components. Each component corresponds to a particular aspect of the administration of the park. The resource management component provides a detailed inventory and assessment of the natural and cultural resources of the park. Resource management problems and needs are identified, and specific management objectives are established for each resource type. This component provides guidance on the application of such measures as prescribed burning, exotic species removal, and restoration of natural conditions.

The land use component is the recreational resource allocation plan for the unit. Based on considerations such as access, population, and adjacent land uses, an optimum allocation of the physical space of the park is made, locating use areas and proposing types of facilities and volume of use to be provided.

In the development of this plan, the potential of the park to accommodate secondary management purposes (“multiple uses”) was analyzed. These secondary purposes were considered within the context of the Division’s statutory responsibilities and an analysis of 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 timber management activities could be accommodated in a manner that would be compatible and not interfere with the primary purpose of resource-based outdoor recreation and conservation. This compatible secondary management purpose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Aquatic Preserve
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Florida Land Use, Cover and Forms Classification System, 1995
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Port St. Lucie
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Prepared By:
Florida Department Of Environmental Protection
Division Of Recreation And Parks
Office Of Park Planning

is addressed in the Resource Management Component of the plan. 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 or the management purposes of the park and should be discouraged.

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 timber management activities would be appropriate at this park as an additional source of revenue for land management since it is compatible with the park's primary purpose of resource-based outdoor recreation and conservation.

The use of private land managers to facilitate restoration and management of this unit was also analyzed. Decisions regarding this type of management (such as outsourcing, contracting with the private sector, use of volunteers, etc.) will be made on a case-by-case basis as necessity dictates.

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 (Division) 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 Trustees have also granted management authority of certain sovereign submerged lands to the Division 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 impact public recreational uses.

Many operating procedures are standard system wide and are set by policy. These procedures are outlined in the Division **Operations Procedures Manual** (OPM) and cover such areas as personnel management, uniforms and personal appearance, training, signs, communications, fiscal procedures, interpretation, concessions, camping regulations, resource management, law enforcement, protection, safety and maintenance.

In the management of Seabranch Preserve State Park, the 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.

Park Goals and Objectives

The following park goals and objectives express the Division long-term intent in managing the state park. At the beginning of the process to update this management plan, the Division reviewed the goals and objectives of the previous plan to determine if they remain meaningful and practical and should be included in the updated plan. This process ensures that the goals and objectives for the park remain relevant over time.

Estimates are developed for the funding and staff resources needed to implement the management plan based on these goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division's legislative budget process. The Division prepares an annual legislative budget request based on the priorities established for the entire state park system. The Division also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers, and partnerships with agencies, local governments and the private sector, for supplementing normal legislative appropriations to address unmet needs. The ability of the Division to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

Natural Resources

1. Control visitor access to remote and sensitive areas.
2. Enhance the prescribed burn program through training, research, and local community involvement.
3. Increase exotic plant and animal removal and control programs.
4. Seek funding to contract or purchase equipment to install and maintain firebreaks.

Cultural Resources

5. Maintain, protect and interpret existing archaeological sites and their associated artifactual assemblage from vandalism, erosion and other forms of encroachment.
6. Conduct ground disturbing activities in accordance with Division policy.
7. Fill out appropriate Florida Master Site File forms for unrecorded sites and structures.
8. Regularly assess unrecorded sites and monitor the condition of exposed cultural material using photopoints. Follow BNCR vegetation management guidelines for historic structures.
9. Patrol sites for vandalism and discourage casual trails through interpretative signage where appropriate.
10. Pursue funding for a Phase I archaeological survey for the entire park.

Recreational Goals

11. Continue to provide quality resource based outdoor recreational and interpretive programs and facilities at the state park.
    - **A.** Create a positive and educational experience for visitors, and cooperate with area schools to enhance environmental education.
    - **B.** Develop hiking trail maps for all trails within the park.
12. Seek funding to expand recreational and interpretive opportunities through the improvement of programs and the development of new use areas and facilities, as outlined

in this management plan.

A. Develop chickee and educational kiosk along hiking trail.

B. Seek funding for the development of a primitive youth camp.

Park Administration/Operations

13. Maintain a defensive posture on outside influences and encroachment.

14. Support local group resource based activities.

15. Maintain good working relations with surrounding communities.

16. Construct on-site office and shop complex.

17. Hire two additional full-time park rangers and two OPS personnel.

Management Coordination

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

The Department of Agriculture and Consumer Services, Division of Forestry (DOF), assists Division 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 park boundaries. In addition, the FFWCC aids the Division with wildlife management programs, including the development and management of Watchable Wildlife programs. The Department of State, Division of Historical Resources (DHR) assists staff to assure protection of archaeological and historical sites. The 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 Wetland Resources aids staff in planning and construction activities seaward of the Coastal Construction Line. In addition, the Bureau of Beaches and Coastal Systems aids the staff in the development of erosion control projects. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Public Participation

During the development of this management plan, the Division sought public input by conducting a series of meetings. A public workshop was held on February 20, 2002. The purpose of this meeting was to present this draft management plan to the public.

A DEP Advisory Group meeting was held on February 21, 2002. The purpose of this meeting was to provide the Advisory Group members the opportunity to discuss this draft management plan. See Addendum 1 for the list of advisory group members and meeting staff report.

Other Designations

Seabranch Preserve State Park is not within an Area of Critical State Concern as defined in section 380.05, Florida Statutes. Currently the park is not being considered for such a designation. The park is a component of the Florida Greenways and Trails System.

All waters within the unit have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Surface waters in this unit are also classified as Class II waters by DEP. This unit is adjacent to the Indian River Lagoon Aquatic Preserve as designated under the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes).

RESOURCE MANAGEMENT COMPONENT

INTRODUCTION

The Division of Recreation and Parks 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. The stated management measures in this plan are consistent with the Department's overall mission in ecosystem management. Cited references are contained in Addendum 2.

The Division's philosophy of resource management is natural systems management. Primary emphasis is on restoring and maintaining, to the degree practicable, the natural processes that shape the structure, function and species composition of Florida's diverse natural communities as they occurred in the original domain. Single species management may be implemented when the recovery or persistence of a species is problematic provided it is compatible with natural systems management.

The management goal of cultural resources is to preserve sites and objects that represent all of Florida's cultural periods as well as significant historic events or persons. This goal may entail 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 is often affected by conditions and occurrences beyond park boundaries. Ecosystem management is implemented through a resource management evaluation program (to assess resource conditions, evaluate management activities, and refine management actions), review of local comprehensive plans, and review of permit applications for park/ecosystem impacts.

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 being 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 1-3 feet.

A 4.5-acre area within the park along County Road A-1-A was used as a borrow site by a previous owner. From survey information, it appears that the elevation was lowered approximately 7 feet in this region.

Geology

All rocks and sediment underlying the preserve were deposited by eolian, fluvial, or marine processes associated with marine currents during ancient times when sea levels were higher (Schmidt, 1997). The principle 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 of glaciation because of a series of sea level changes. The silicous sands

covering the surface in the preserve were eroded 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 a 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. Addendum 3 contains detailed soils descriptions for the park.

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.

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 (Intracoastal Waterway). Before this parcel was acquired by the state, and when this property was a Development of Regional Impact, 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 preserve 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. The headwaters of Manatee Creek arise from land now in development. Aerial photos from 1940 show this area as a collection of small ponds and marshes. Today, the feeding Manatee Creek of the water are mostly contained within the surface water management system of a residential and golf course development called

SEABRANCH PRESERVE STATE PARK

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SOILS MAP

Mariner Sands.

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 preserve is an important and rare 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

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI) **FNAI Descriptions**. 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 which are similar with respect to these factors will tend to have natural communities with similar species compositions. Obvious differences in species composition can occur, 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.

The park contains nine distinct natural communities {see Natural Communities Map (estuarine grass bed not mapped)} in addition to ruderal areas. Park specific assessments of the existing natural communities are provided in the narrative below. A list of plants and animals occurring in the unit is contained in Addendum 4.

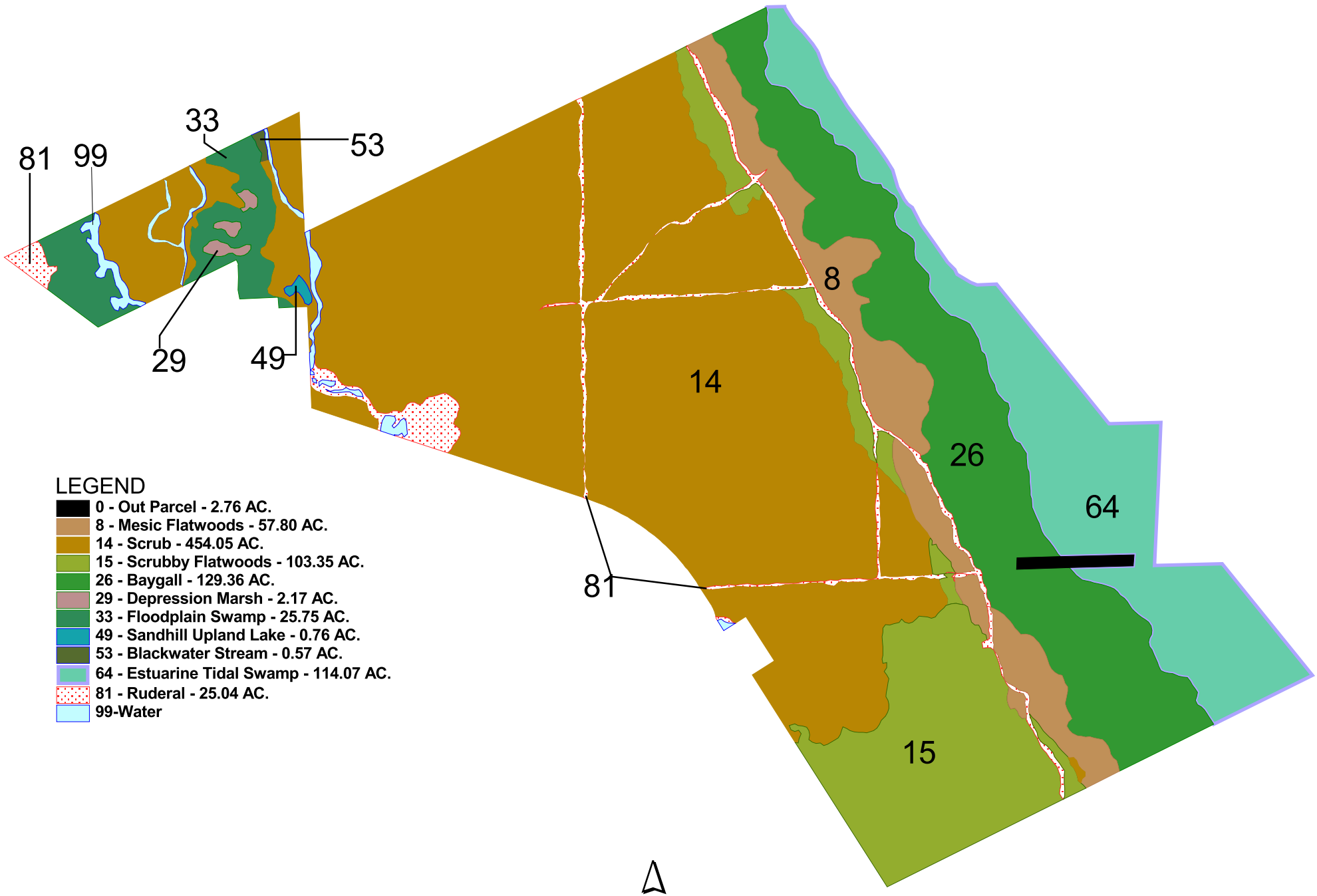
Mesic flatwoods. Mesic flatwoods run in a narrow strip along the eastern boundary of the scrub, just west of the baygall community. Mesic flatwoods are generally characterized as open-canopy forests with little understory and dense ground cover. Most of the flatwoods in the preserve have been burned in the past five years and are in relatively good shape. Under natural conditions, mesic flatwoods burn about every 4-10 years from lightning ignited fires.

Some of the characteristic plants of mesic flatwoods found at the preserve include slash pine, saw palmetto, gallberry, wiregrass and gopher apple. During periods of heavy rain and high waters, even mesic flatwoods can be inundated with water for periods of up to a month.

Scrub. The western half of the park is dominated by scrub, a natural community ranked "globally imperiled" by FNAI (1990). Scrub comprises ca. 50 percent of the park with most of the scrub being in the early to mid- successional stage. The scrub found along the Atlantic Coastal Ridge is somewhat different from the more "ancient scrub" found in central and north Florida. The management of scrub in the preserve should receive the highest priority.

The scrub community in the preserve is dominated by sand pines, with several species of scrub oaks forming dense thickets in the understory, along with a smattering of various plants such as rosemary, saw palmetto and hog plum. For many scrub endemics, such as Curtiss' milkweed, scrub jays, scrub lizards and Florida mice, the open sandy patches so typical of scrub are important. These open areas are characteristic of scrub that has been burned within the past 20 years. Scrub in this phase of its growth is termed "young" and features short scrub-oaks, from 3 - 10 feet tall.

Recently, a restoration effort designed to set back mature scrub to an early succession stage was completed on 55 acres of scrub. Large sand pines were mechanically removed from three sites in the park. Sites were selected because of the potential wildfire hazard associated with mature scrub adjacent to several residential communities. Additional benefits from the project



SEABRANCH PRESERVE STATE PARK

NATURAL COMMUNITIES MAP

include: 1) the creation of early successional scrub for listed species of plants and animals, 2) the establishment of buffer zones that can be utilized during prescribed fires as a safety net in the event of spotovers or escapes.

Approximately 75-80 percent of the scrub in the preserve is in the mid-successional stage (15-25 years old). Much of the mid-successional scrub that presently exists in the park was kept open by constant off-road vehicles before the land was taken over by the park service. Regardless, most of the mid-successional scrub is no longer suitable habitat for listed species such as the scrub jay. One area in the preserve is dominated exclusively by scrub oaks (*Quercus* spp.). All of the sand pines were logged out of this tract 20-25 years and no germination of sand pine seeds occurred following the clear-cut. The oldest tract of scrub is located directly east of the VFW Post on County Road A-1-A. This tract of mature sand pines is ca. 48 years old, with an average d.b.h. of 12.1 inches and a canopy height of 50-55 feet.

Scrubby flatwoods. The majority of this community is located in the southwest corner of the preserve, with a few long sections fringing the mesic flatwoods, running north-south, in the center of the park.

Scrubby flatwoods resemble a hybrid between mesic flatwoods and scrub. Slash pines are the dominant trees but sand pines may be present. The understory is composed of plants such as scrub oaks, staggerbush and saw palmetto. Wiregrass is part of a patchy ground cover. This community supports some of the same Florida endemics as scrub and should receive high priority in resource management.

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

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 drawdowns 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.

The baygall a closed-canopy swamp with red maple, red bay, cabbage palm, sweet bay and loblolly bay as dominant trees. Other common plants include dahoon holly, wild coffee, myrine, jack-in-the-pulpit and a variety of fern species. Invasive exotic vegetation such as Old World climbing fern, Brazilian pepper, shoebutton ardisia, and strawberry guava are now established in the baygall. Several large infestations of Old World climbing fern and Brazilian pepper may threaten the structure and composition of the baygall swamp if immediate action is not taken to treat and control these species.

Depression marsh. Three examples of depression marsh are found within the park. All three are located in the northwest portion of the parcel in association with the East Fork of Manatee Creek.

A depression marsh is defined as a shallow (usually round) depression in sandy soils. Typically, herbaceous vegetation grows in concentric bands around the marsh, as in a bulls-eye target. The depression marshes of the park are quite small, and collectively cover little more than one acre, yet they are important. Depression marshes support a variety of amphibians, reptiles, mammals and birds--particularly wading birds. Hydroperiods may vary from 50 to 200 days per year, which is important to those amphibian species that breed only in temporary wetlands.

Some of the characteristic plants found at the Seabranch depression marshes include pickerelweed, yellow-eyed grass, maidencane and arrowhead.

Floodplain swamp. The floodplain swamp lies between scrub ridges in the northwest corner of the park, and is associated with waters from Manatee Creek. Floodplain swamps occur in flooded soils along streams and rivers. At the preserve, the dominant trees include pond apple, red maple and red bay. Old World climbing fern, Brazilian pepper, and strawberry guava have invaded this habitat. Some areas have been treated as part of a mitigation plan with Martin County, but these treated areas need to be monitored for continual control of exotic vegetation.

Blackwater stream. Both forks of Manatee Creek are intermittent blackwater streams. They are both small streams yet represent an important part of the preserve parcel. Covering approximately one acre, they are the heart of the floodplain swamp community and provide habitat to a rare and diverse assemblage of fishes, such as the opossum pipefish and the fat sleeper. The shoreline of the streams is primarily lined with pond apple and emergent aquatic vegetation. At the north end of West Manatee Creek along the park boundary, mangroves are the dominant vegetation along the shoreline.

Sandhill upland lake. A small sandhill upland lake is located in the northwest portion of the park and covers about one acre. Sandhill upland lakes are essential breeding areas for certain amphibians, and important watering holes for many different types of reptiles, birds and mammals.

The vegetation found is this lake is dominated by sawgrass, maidencane, yellow-eyed grass and numerous other grasses and sedges. Areas along the perimeter of the lake have become infested with Old World climbing fern.

Estuarine tidal swamp. Estuarine tidal swamp is a natural community that occurs along low-wave, tidal shorelines and is often referred to as a mangrove forest. The estuarine tidal swamp at the preserve occurs along the Indian River on the eastern boundary of the park. The dominant trees of this community are red mangrove, black mangrove, white mangrove and buttonwood.

Mosquito control activities from many years past have left an intermittent berm along the Indian River frontage, which is infested with Australian pine and Brazilian pepper. Due to this berm, normal tidal movement has been altered.

Estuarine grass bed (Unmapped). The grass bed community is located in bands along the Indian River east of the tidal swamp. The area covered by this community is unknown now because the amount of submerged lands in this parcel is unknown. This portion of the Indian River/ Intracoastal Waterway is part of the Indian River Lagoon Aquatic Preserve.

The dominant plants in this community are shoal grass, manatee grass, and paddle grasses. Some turtle grass occurs. This portion of the Indian River is an important travel corridor for the West Indian manatee and these grass beds and others north and south are utilized for forage.

Ruderal. There are three areas within the preserve that can be classified as ruderal. One area is the borrow site on the western boundary, located in sand pine scrub. This area has started to re-vegetate naturally, and is utilized by several scrub species so that no further management actions are currently planned.

The second area is the northwest corner of the park. It can be classified as an old field, since it is a recovering agricultural field. Staff housing and the shop facility are located at this site.

The third area is the intermittent mosquito control dike along the Indian River. The dike runs the entire length of the eastern boundary of the park and is presently dominated by large Australian pines.

Designated Species

Designated species are those that are listed by the Florida Natural Areas Inventory (FNAI), U.S. Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FFWCC), and the Florida Department of Agriculture and Consumer Services (FDA) as endangered, threatened or of special concern. Addendum 5 contains a list of the designated species and their designated status for this park. Management measures will be addressed later in this plan.

There are 10 species of listed plants and 22 species of listed animals that occur in the preserve. The vanilla orchid and the hand fern are two of several listed epiphytes that occur in the baygall community. They require a moist, close-canopied environment in which to live, and their very existence depends on the hydrological connection with the adjacent scrub communities. It is important that groundwater withdrawals on adjacent lands do not lower the water table. A significant loss of down slope seepage will have negative impacts on the baygall community, potentially eliminating these epiphytes and other baygall inhabitants. It is imperative that invasive exotics such as Old World climbing fern and Brazilian pepper be controlled in the baygall. These two plants have the potential to alter the structure and composition of the present vegetation by eliminating the native hardwoods and decreasing diversity.

The scrub community in the preserve contains a number of listed scrub endemics. These species include Curtiss' milkweed, large-flowered rosemary, nodding pinweed, pine pinweed, eastern diamondback rattlesnake, Florida scrub lizard, gopher tortoise, Florida scrub jay, and the Florida mouse. All of these endemic species require early successional scrub habitat typical of a recently burned area. Due to difficulty of using prescribed fire in such a pyrogenic system such as scrub and being in such close proximity to residential communities and major roadways, the use of prescribed fire as a management tool in much of the scrub at the preserve is too hazardous. However, the use of mechanical methods to reduce the amount and height of fuel loads followed by prescribed fire is an alternative that was used to restore scrub habitat along the north and south boundaries of the preserve.

The portion of the Indian River that forms the eastern boundary of the park is an important movement corridor for the West Indian manatee. Aerial surveys taken by the Departments' Bureau of Protected Species have documented significant manatee utilization in this portion of the river. Johnson’s seagrass is also found in this portion of the park.

Fifteen of the 22 listed species of vertebrates documented from this property are birds. Although a few of the species nest within the park, most use it for feeding and resting. These species include several egrets and herons, white ibis, and the wood stork. During fall, the park is an important resting point for neotropical migrants. Species such as the painted bunting and American redstart have been observed using the park as a stopover point during the Spring and Fall migrations.

The mangroves and sea grasses along the Indian River and the low salinity waters associated with Manatee Creek are important habitat and nursery areas for a large number of estuarine fish and invertebrates, such as the opossum pipefish. Herons, egrets, ibis, and wood storks are commonly observed foraging along both branches of Manatee Creek.

Special Natural Features

The preserve contains four of the most distinctive and unique natural communities in

southeast Florida: scrub, baygall swamp, estuarine tidal swamp, and estuarine seagrass beds. The park is unique in that a diversity of habitats occurs within a relatively small area.

The scrub in the preserve 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 preserve has not been invaded by exotic vegetation to any large degree, and naturally occurring vegetation is dominant throughout the scrub. Representations of all serial stages of scrub (e.g., early, mid, and late successional) are present within the park boundary.

The baygall community in the preserve 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 foraging and roosting habitat for many species of wildlife. The closed canopy of the baygall is dominated by densely packed evergreen trees such as loblolly bay, red bay, red maple, and strangler fig. Within the baygall, understory vegetation is composed of temperate plants such as wax myrtle and dahoon holly, as well as tropical species such as myrsine and wild coffee. Copious ground vegetation includes several species of ferns and orchids.

Estuarine tidal swamp (i.e., mangroves) is one the most productive communities in the United States. The dense prop roots of the red mangroves serve as refuge and substrate for many species of invertebrates and fishes, which in turn attract foraging wading birds. The mangrove community in the preserve does not receive adequate tidal flushing due to a dike constructed along the Intracoastal Waterway. Dominant trees are red, black, and white mangroves. Brazilian pepper occurs in low to medium densities along the ecotone of the mangrove and baygall swamps.

Estuarine seagrass beds are also one of the most productive communities in Florida. Seagrasses are unique because they are the only flowering plant obligated to saltwater (Zieman, 1982). These unique grasses are colonized by epiphytic algae and micro-invertebrates. Smaller fishes and larger invertebrates that feed on the algae and micro invertebrates use the grass bed for shelter and refuge. This in turn attracts larger, predatory fish to the grass beds such as snook and barracuda.

Cultural Resources

Evaluating the condition of cultural resources is accomplished using a three part evaluative scale, expressed as good, fair, and poor. These terms describe the present state of affairs, rather than comparing what exists against the ideal, a newly constructed component. 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 judgment is cause for concern. Poor describe 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 to reestablish physical stability.

The Florida Master Site File (FMSF) lists one site within the unit. Site 8MT69 is approximately 15 x 35 feet in size and is located on a topographic rise above the baygall community. Artifacts recovered included two sand-tempered plain and one St. Johns Plain shards. The report suggests that the site was most likely a limited activity campsite.

RESOURCE MANAGEMENT PROGRAM

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 Division'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 early successional communities such as sand pine scrub and coastal strand.

Though a timber management analysis was not required at the park because the total acreage for the property is below the 1,000-acre threshold established pursuant to Florida Statutes, timber management activities have occurred in the park (see Addendum 6). Areas along the north and south boundaries, and adjacent to County Road A-1-A were clear-cut in December 2000. The project was implemented to reduce the hazardous fuel loads and the chances of a wildfire spreading outside the park into the adjacent residential communities. In addition, the project was designed to create suitable habitat for early successional scrub species in areas where prescribed fire was potentially hazardous and unsafe. The use of mechanical methods to reduce fuel loads and/or create habitat for listed species may be used in the future if conditions warrant. Plots were set up by district staff to monitor the success of the project.

Additional Considerations

The treatment, removal, and long-term monitoring of Old World climbing fern and Brazilian pepper in the baygall community are top priority. As stated previously, these two exotic species, as well as others, have the potential to change the structure and composition of the baygall and eliminate native plants, some of which are listed, from this community. Presently, infestations of Old World climbing fern and Brazilian pepper are at manageable levels in the baygall, but have the high potential to take over and eliminate the native vegetation. The area is accessible only by foot and treatment of exotics will require manual labor and numerous hours to be successful. Due to the lack of permanent staff at the park, treatment of exotics may have to be achieved through grant money from The Bureau of Invasive Plant Management and other outside sources. District staff recently began treatment of Brazilian pepper at the south end of the baygall but a larger effort is needed for successful control.

Consideration to managing the mid- to late successional scrub with prescribed fire should be addressed. Potential hazards and liabilities associated with burning this pyrogenic community adjacent to residential communities complicate this matter. The recent scrub restoration project eliminated the potential fire hazard that existed along the north and south boundaries. As with this past scrub restoration project, the proper management of scrub in the preserve may have to be achieved using mechanical methods followed by prescribed fire because of the park's urban setting.

The eastern boundary of the park along the Indian River has a mosquito control dike and ditch running its entire length. The dike berm is dominated by Australian pine and Brazilian pepper. Management options should be investigated as to whether the dike should be removed altogether, breached in certain locations, or lowered in elevation to a point where tidal waters flood it regularly.

In the past, Martin County dredged a portion of the eastern fork of Manatee Creek. A

restoration project was approved and completed and has been monitored since its inception. Park staff will continue to monitor this area both for exotic plants and for the quality of the habitat that was restored.

Management Needs and Problems

As urbanization continues around the park, demands for ground water will increase. In 1993, local government requested to place 3 surficial aquifer wells adjacent to the park for public water consumption. As mentioned earlier, the lowering of ground water elevations in and around the park will have negative impacts on the viability of the baygall community.

In order to perpetuate healthy scrub communities, an active fire management or alternative program is important. Due to the suburban surroundings, smoke management will be an important consideration. Areas to the north, west and south are completely developed with residential communities, golf courses, roadways, etc. To the east of the preserve lie the Intracoastal Waterway and St. Lucie Inlet Preserve State Park.

The primary exotic plants affecting the park are Old World climbing fern, Brazilian pepper, strawberry guava, and shoebutton ardisia. Other invasive exotic plants that have been identified in the park include melaleuca, Australian pine, carrotwood, earleaf acacia, rosary pea, and trailing wedelia. More detail is provided in the Exotic Species Control section. Feral hogs are common in the baygall community. Large areas of soil disturbance from feral hog foraging activity are common in the baygall swamp.

At Seabranch, the following objectives are directly related to the needs and problems that were previously mentioned, and will serve, as the criteria for deciding what management actions are required and how effective they are.

1. Primarily through South Florida Water Management District permit review, ensure that surficial ground water elevations are maintained in the park.
2. Implement and maintain an effective fire management program in the fire-dependent communities of the park.
3. Review and consider alternative methods (i.e., mechanical removal) to manage scrub when the use of prescribed fire is unsafe.
4. Implement and maintain an effective exotic plant and animal removal program.
5. Seek funding through the Bureau of Invasive Plant Management to treat Old World Climbing fern and Brazilian pepper in the baygall swamp community.
6. Improve the mapping and monitoring of listed species.
7. Continue updating the plant and animal inventories.

Management Objectives

The resources administered by the Division of Recreation and Parks are divided into two principal categories: natural resources and cultural resources. The Division's primary objective in natural resource management is to maintain and restore, to the extent possible, to the conditions that existed before the ecological disruptions caused by man. The objective for managing cultural resources is to protect these resources from human-related and natural threats. This will arrest deterioration and help preserve the cultural resources for future generations to enjoy.

Management Measures for Natural Resources

Hydrology

The hydrology of the natural communities at this park is closely linked. When a rain event occurs, rainwater takes several different paths. In the scrub, portions of the rainwater percolate down into the groundwater, while at the same time, some moves down-slope towards the baygall community. In the flatwoods, because of the nearly impermeable clay

layer that underlies this community, water tends to puddle and then run down-slope into the baygall community. 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, district and park staffs 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.

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 stormwater. Although Manatee Creek comprises a small portion of the park, upon further investigation, it may be considered an important ecological component of the park.

Surface water runoff is not a problem in the preserve. All residential communities surrounding the park have adequate retention ponds. In addition, no additional development is expected to occur in the general vicinity of the park. The problems of protecting surface waters are complex in an urban setting such as the preserve, but three programs are in place that helps in maintaining this resource: 1) existing wetland legislation, 2) regional water management districts responsibility for surface water permits, and 3) local regulations.

Prescribed Burning

The objectives of prescribed burning are to create those conditions that are most natural for a particular community, and to maintain ecological diversity within the unit's natural communities. To meet these objectives, the park is partitioned into burn zones, and burn prescriptions are implemented for each zone. The park burn plan is updated annually to meet current conditions. All prescribed burns are conducted with authorization from the Department of Agriculture and Consumer Services, Division of Forestry (DOF). Wildfire suppression activities will be coordinated between the Division and the DOF.

The preserve contains fire-dependent natural communities, with the largest area in sand pine scrub. The park is broken up into eight zones (see Burn Zone Map). An annual plan is written by the park manager and district biologist that lists the burn objectives for the year. Contained within the each prescription are specific weather conditions, ignition patterns, equipment and staff requirements, and any special precautions or management actions that need to be followed. Prescribed burn records and evaluations are maintained by district biologists.

Because of the suburban setting, fire management at the preserve will require careful considerations of smoke management. To maintain a fire management program, burning may have to occur during the non-lightning season, particularly in the scrub. In time, if the surrounding residential communities are willing to accept small amounts of smoke, then some lightning season burns can be accomplished in the pine flatwoods and scrubby flatwoods. All burning will be designed to minimize adverse effects on neighboring residences, which include safety and health issues and smoke management.

Designated Species Protection

The welfare of designated species is an important concern of the Division. In many cases, these species will benefit most from proper management of their natural communities. At times, however, additional management measures are needed because of the poor condition of some communities, or because of unusual circumstances that aggravate the particular

SEABRANCH PRESERVE STATE PARK

Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning

BURN ZONES MAP

problems of a species.

As mentioned previously, a number of plants and animals found in the scrub communities at this park are listed species. Their continued existence, as well as that of the scrub communities themselves, depends on the perpetuation of an active management plan that includes prescribed fire. This plan, as mentioned earlier, was initiated in December 2000 when mature scrub was restored to the beginning stages of secondary succession with mechanical methods. With lower fuels loads in the restored areas, the use of prescribed fire can successfully be used in the close proximity of residential homes and roadways.

In order to maintain a healthy baygall community with its listed species (e.g. hand fern and vanilla orchid), the proper treatment and control of invasive exotic vegetation must be accomplished. Additionally, ground water elevations in the park must be maintained at current levels.

Currently, at least one species of fish, the opossum pipefish, is found in the East and West Forks of Manatee Creek. Wading birds such as the woodstork, little blue heron, and white ibis commonly use the creek for foraging. In order to maintain the existence of these species, water quality and quantity parameters need to be investigated.

Exotic Species Control

Exotic species are those plants or animals that are not native to Florida, but were introduced because of human-related activities. Exotics have fewer natural enemies and may have a higher survival rate than do native species, as well. They may also harbor diseases or parasites that significantly impact non-resistant native species. Thus, the policy of the Division is to remove exotic species from native natural communities.

Plants. An exotic removal plan for the park is on file at park and District 5 headquarters. The exotic removal plan lists the goals of the plan (e.g., mapping of exotic infestations, documenting new location records, monitoring, etc.); ranks the exotics present in the park in order of their ability to seed and spread rapidly, and ranks high priority areas in the park in need of immediate treatment. The primary pest species are Old World climbing fern, Brazilian pepper, strawberry guava, and shoebutton 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, women's tongue, wild taro, torpedo grass, para grass, bowstring hemp, schefflera, periwinkle, and balsam apple.
In upland sites and areas with no standing water, the removal will consist of hand-pulling small seedlings and stump-treating plants with Garlon 3A or 4. Larger trees and shrubs are girdled or cut down to increase the success rate. Additional treatments may be necessary to control re-sprouting, but follow-up treatment of seedlings is essential. If there is standing water, then an aquatic-labeled herbicide will have to be used. Current treatment methods use foliar applications of Rodeo.

Animals. The primary exotic animal found at the preserve is feral pig. The pigs are concentrated in and around the baygall community. Recruitment into the park by pigs is minimal, so it should not be difficult to eliminate feral pigs from this unit.

Feral dogs and cats are currently not a problem at the preserve, but because of the park's urban setting, the potential establishment of a group of feral cats or dogs in the park is high. Educating adjacent landowners about the impacts that free-roaming pets can have on the animals in the preserve can help the problem.

Problem Species

Problem species are defined as native species whose habits create specific management problems or concerns. Occasionally, problem species are also a designated species, such as

alligators. The Division will consult and coordinate with appropriate federal, state and local agencies for management of designated species that are considered a threat or problem.

The baygall and tidal swamp communities produce a variety of mosquito species, many of them being of the biting variety. An Arthropod Control Plan has been developed in conjunction with Martin County Mosquito Control. The preserve is adjacent to several affluent, residential communities that may request a higher level of mosquito control than what the plan allows. For this reason, it is important to identify all of the environmentally sensitive areas within the park.

Management Measures for Cultural Resources

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. Approval from Department of State, Division of Historical Resources (DHR) must be obtained before taking any actions, such as development or site improvements that could affect or disturb the cultural resources on state lands (see **DHR Cultural Management Statement**).

Actions that require permits or approval from DHR include development, site excavations or surveys, disturbances of sites or structures, disturbances of the substrate, and any other actions that may affect the integrity of the cultural resources. These actions could damage evidence that would someday be useful to researchers attempting to interpret the past.

1. Ground-disturbing activities will be conducted in coordination with DHR, as outlined in DHR's policies and procedures for the management and protection of cultural resources.
2. Recorded and unrecorded cultural resources should be regularly assessed and the condition of exposed cultural material monitored using photopoints. Staff should fill out site file forms for all unrecorded sites.
3. Because of the presence of historic refuse material exposed by prescribed burning, the park is likely to accrue informal collections. Any such artifacts should be inventoried and catalogued, for Collections Management. They should then be transferred to the DHR for curation.
4. The greatest threat to the majority of sites is erosion and potential looting of exposed material. Vandalism should be discouraged using interpretive signage that includes warnings against collecting artifacts in both terrestrial and aquatic environments. This signage should be placed at access points or areas of high visitor concentration rather than at sites themselves.

Research Needs

Natural Resources

Any research or other activity that involves the collection of plant or animal species on park lands requires a collecting permit from the Department of Environmental Protection. Additional permits from the Florida Fish and Wildlife Conservation Commission, the Department of Agriculture and Consumer Services, or the U.S. Fish and Wildlife Service may also be required.

Research plots were established in the scrub restoration area by District Biologists to monitor the succession of vegetation after the mechanical removal of sand pines and prescribed fire. Data was collected before the initiation of the project and will continue to be collected on an annual basis. In addition, the structure and composition of mid- to late successional sand pine scrub were analyzed by District 5 staff. Scrub jay surveys are conducted annually by District Biologist.

Park staff will consider any research proposal submitted by outside sources to conduct

research within the park. Applied research that focuses on the hydrology, listed species, or ecosystem function within the park is welcomed. The following research needs have been identified for this park:

1. Continue plant and animal inventories for the park.
2. Survey for listed species of fish in East and West Manatee Creek.
3. Monitor populations of the vanilla orchid and hand fern in the baygall swamp.
4. Monitor the effects of Old World climbing fern and Brazilian pepper on the structure and composition of the native vegetation in the baygall.
5. Develop water quantity and quality database for the unit.

Cultural Resources

Several unrecorded remnants structures and other objects, possibly dating from the early twentieth century, are located along the eastern boundary of the park in the pine flatwoods and baygall swamp. During a survey for exotic vegetation in the baygall swamp, a large rim from a railroad car was observed and photographed (Jeff Hutchinson, personal observation). In addition, a large 70-foot royal palm and patches of wild taro exist in the baygall swamp indicating the area may have served as a home site at one time.

1. A continuation of the Phase 1 cultural resources survey is needed to refine information on known sites, locate new resources, and provide enough information to be able to make some general statements about significance and recommendations for management.
2. A systematic detailed history of the park from its earliest settlement to the present time is needed. In particular, archaeological and documentary research should be undertaken to refine information concerning early twentieth century railroad section houses. The park should tap into local informants whenever possible to help interpret the history of the park. Maps, aerials and information from courthouse records regarding ownership should be examined. All remains of old roads and tramways should be walked and recorded using GPS technology.

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 contained in Addendum 7. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available (see Addendum 7).

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 of the Internal Improvement Trust Fund (board) are being managed for the purposes for which they were acquired and in accordance with a land management plan adopted pursuant to s. 259.032, the board of trustees, acting through the Department of Environmental Protection (department). The managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

Seabranch Preserve State Park was subject to a land management review on September 23, 1998. The review team made the following determinations:

1. The land is being managed for the purpose for which it was acquired.
2. The actual management practices, including public access, were in compliance 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 Division of Recreation and Parks. 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, through public workshops, and environmental groups. With this approach, the Division's 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 described and located 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, adjacent land uses, and the park's interaction with other facilities.

Existing Use of Adjacent Lands

Seabranch Preserve State Park is located eastern Martin County along U.S. Highway A-1-A. The Indian River Lagoon forms the eastern boundary of the park. St. Lucie Inlet Preserve State Park is located directly across the Intracoastal Waterway. The Hobe Sound National Wildlife Refuge lies immediately south of St. Lucie Inlet Preserve State Park. Numerous marinas and docks, for private, recreational and commercial use, are located in the immediate vicinity of the park. Martin County has experienced extremely rapid development during the past decade, especially along the coast. The park is surrounded on three sides by residential and commercial development. Jonathan Dickinson State Park is located approximately six miles to the south.

Planned Use of Adjacent Lands

Martin County has experienced extremely rapid development during the past decade, especially along the coast. From 1980 to 1990, the County’s population increased by 57 percent. Between 1990 and 1999 an additional 20 percent increase occurred (Florida Statistical Abstract, 2000). The majority of this growth has largely been the result of residential and related commercial development. Due to the continuing population growth, densification of the existing land use pattern around the park is anticipated. The continued conversion of adjoining land to residential or commercial land uses could produce adverse impacts to the park. These include changes in surface and groundwater quality and quantity, a lowering of the water table, complication of the Division's prescribed fire management

activities, and traffic congestion. The park's baygall community that is dependent on receiving down-slope seepage and it is imperative that the ground water resources of the park are protected from nearby well drawdowns. All permit applications to the South Florida Water Management District for water use within approximately one mile should, therefore, be carefully reviewed.

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.

Recreation Resource Elements

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

Seabranch Preserve State Park provides a unique opportunity to experience several different natural communities in a relatively short distance. Ancient marine forces shaped the topography of the park, resulting in a variety of habitats within the park. In less than one mile, visitors can traverse through sand pine scrub, scrubby flatwoods, mesic flatwoods, the freshwater baygall wetland, and the mangrove dominated estuarine tidal swamp. As discussed in the Resource Management Component, the park's mosaic of high-quality upland and wetland natural communities provides exceptional habitat for designated and endemic scrub species.

The baygall community in the park is an important and rare natural feature in south Florida. The baygall receives water from the adjacent, higher sandy landscape, where water slowly filters through the sand and out into the swamp. As noted earlier, it is important to protect the surrounding water resources to ensure the health of the baygall community.

The upland natural communities of the park, especially the beach dune and scrub communities are of utmost regional importance, since the park is one of the few remaining areas in the region where these communities remain. In addition, the park landscape has exceptional visual qualities and offers interesting views along the trails. The protection of park visual resources and the preservation of the unique character of this landscape are important components of the Division's resource management and development plans for this park. A primary feature of the conceptual plan for this park is the provision of public access for wildlife observation and interpretation.

Assessment of Use

All legal boundaries, significant natural features, structures, facilities, roads, trails and easements 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

A portion of the Seabranch Preserve State Park was used to grow pineapples, and 4.5 acres within the park were used as a borrow site by a previous owner. Prior to acquisition by the

COVE ROAD

RESIDENCE

WATERLINE

INTERCOASTAL WATERWAY

STATE ROAD A1A

LEGEND

WATER LINE

HIKING TRAIL

PARK BOUNDARY

ROADS

COUNTY ROAD

PARK ROAD UNPAVED

STATE ROAD

STRUCTURES

N

800 0 800 1600 Feet

Florida Department of Environmental Protection
Division of Recreations and Parks
Office of Park Planning

SEABRANCH PRESERVE STATE PARK

BASE MAP

state, off road vehicle use occurred. With discontinued use, under Division management, damage from motorized vehicle use is slowly recovering.

Recreational Uses

The park is currently open to the public for hiking and nature appreciation.

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, 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 Seabranch Preserve State Park the baygall, scrub, and wetland communities have been designated as protected zones (see the Natural Communities Map).

Existing Facilities

Recreation Facilities	Support Facilities
Trailhead	**Trailhead**
Small picnic shelter	Restroom
FTA Trail (4.5 mi.)	Stabilized parking (5 vehicles)
	Residence

CONCEPTUAL LAND USE PLAN

The following narrative represents the current conceptual land use proposal for this park. As new information is provided regarding the environment of the park, cultural resources, recreational use, and as new land is acquired, the conceptual land use plan may be amended to address the new conditions (see Conceptual Land Use Plan). A detailed development plan for the park and a site plan for specific facilities will be developed based on this conceptual land use plan, as funding becomes available.

During the development of the unit management plan, the DRP assesses potential impacts of proposed uses on the resources of the property. Uses that could result in unacceptable impacts are not included in the conceptual land use plan. Potential impacts are more thoroughly identified and assessed through the site planning process once funding is available for the development project. At that stage, design elements, such as sewage disposal and stormwater management, and design constraints, such as designated species or cultural site locations, are more thoroughly investigated. Advanced wastewater treatment or best available technology systems are applied for on-site sewage disposal. Stormwater management systems are designed to minimize impervious surfaces to the greatest extent feasible, and all facilities are designed and constructed using best management practices to avoid impacts and to mitigate those that cannot be avoided. Federal, state and local permit and regulatory requirements are met by the final design of the projects. 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, the park staff monitors conditions to ensure that impacts remain within acceptable levels.

Potential Uses and Proposed Facilities

Expansion of the existing hiking and nature appreciation activities is proposed. The park can also accommodate picnicking and natural resource interpretive activities. No facilities for off-

CONCEPTUAL LAND USE PLAN

SEABRANCH PRESERVE

STATE PARK

N

1500 0 1500 Feet

Florida Department Of Environmental Protection
Division of Recreation and Parks
Office of Park Planning--ARC Draft

road cycling or equestrian use are proposed as the soils in this park are very loose and unsuitable for these activities.

A picnic area with up to three pavilions is recommended near the western park boundary, adjacent to State Road A-1-A. From this area, the hiking/nature trail should be expanded to provide opportunities to view all of the property's natural communities. Interpretive displays should be placed at appropriate locations to describe the resources of the park. To extend the primary trail to the Intracoastal Waterway, an elevated boardwalk is proposed along the baygall and mangrove wetlands. An observation platform with interpretive displays is also recommended at the terminus point, located at the edge of the Intracoastal Waterway.

An area of mature sand pines located in the south central portion of the property has been identified for development of a primitive group camp that includes potable water and a restroom and shower facility. Organized groups of up to 30 persons may use this proposed facility. This proposed use area would be limited to a one-acre site. While the site and the surrounding area should be burned before the actual facility development, an effort will be made to preserve the existing tree canopy. Site-specific vegetation surveys will be conducted for at least two years after the prescribed burn, to ensure that the proposed group camp will not adversely impact any endangered plants. This facility will not impede future burning of adjacent preserve lands.

The previously proposed shop building/office is proposed for construction on a disturbed area on the northwest corner of the park. A stabilized entry drive and parking area for up to 35 vehicles for the proposed picnic area and trail access and a restroom are proposed near the western property boundary, off State Road A-1-A.

The Division of Recreation and Parks has searched for years for viable plan to provide better public access to St. Lucie Inlet Preserve State Park for visitors who do not own boats. Among the scenarios that have been analyzed are public vehicle parking and ferry operations from a developed land base at the eastern end of Cover Road, from the Intracoastal Waterway shoreline at Seabranch Preserve State Park and from a parking and shuttle system using an upland site at the northwestern corner of Seabranch Preserve State Park and a ferryboat landing site at the end of Cover Road. After much study to understand the potential environmental impacts and operational feasibility of these schemes, and many discussions with adjacent landowners and elected officials, the Division has determined that public access to St. Lucie Inlet Preserve State Park from Cove Road or from Seabranch Preserve State Park is simply not feasible. The Division will continue to search for other public sector locations from which visitors may be ferried to the offshore park, or for private sector partners who could provide access to the state preserve for the non-boating public as a business opportunity.

Facilities Development

Preliminary cost estimates for the following list of proposed facilities are provided in Addendum 7. These cost estimates are based on the most cost-effective construction standards available at this time. The preliminary estimates are provided to assist the Division in budgeting future park improvements, and may be revised as more information is collected through the planning and design processes.

Following is a list of recreational and interpretive facilities proposed for development at Seabranch Preserve State Park:

Hiking trail (5 mi.)
Boardwalk
Observation deck
Interpretive signs and displays
Primitive group camp
Picnic shelters (3)
Stabilized parking (35 vehicles)
Stabilized park drive (0.5 mi.)
3-bay shop building

Existing Use and Optimum 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 1).

The optimum 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 1.

Table 1—Existing Use and Optimum Carrying Capacity

	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	**One Time**	**Daily**	**One Time**	**Daily**	**One Time**	**Daily**
Group Camp			30	30	30	30
Trails						
Hiking/Nature	24	96	40	160	64	256
Picnicking			48	96	48	96
TOTALS	**24**	**96**	**118**	**286**	**142**	**382**

Optimum Boundary

As additional needs are identified through park use, development, research, and as adjacent land uses change on private properties, modification of the unit's optimum boundary may occur for the enhancement of natural and cultural resources, recreational values, and management efficiency.

Identification of lands on the optimum boundary map is solely for planning purposes and not for regulatory purposes. A property’s identification on the optimum boundary map is not meant to be used by any party or other government body to reduce or restrict the lawful right of private landowners. Identification on the map does not empower or require any government

entity to impose additional or more restrictive environmental land use or zoning regulations. Identification is not meant to 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.

Addendum 1—Acquisition History and Advisory Group Documentation

Purpose and Sequence of Acquisition

The Board of Trustees of the Internal Improvement Trust Fund of the State of Florida (Trustees) acquired Seabranch Preserve State Park to protect, develop, operate, and maintain the property for public outdoor recreational, park, conservation, historic and related purposes.

On October 22, 1991, the Trustees purchased the property constituting Seabranch Preserve State Park. The property was funded under the P2000/CARL program.

On June 10, 1992, the Trustees leased Seabranch Preserve State Park to the Division of Recreation and Parks (DRP) under lease No. 3954. According to the lease, DRP manages the preserve only for the conservation and protection of natural, historic and cultural resources and to provide resource-based public outdoor recreation compatible with the conservation and protection of the property. The lease is for a period of fifty (50) years and will expire on June 9, 2042.

Title Interest

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

Special Conditions on Use

Seabranch Preserve State Park is designated single-use to provide resource-based public outdoor recreation and other related uses. Uses such as water resource development projects, water supply projects, storm-water management projects, and linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

Outstanding Reservations

Following is a listing of outstanding rights, reservations, and encumbrances that apply to Seabranch Preserve State Park.

Instrument:	Statutory Warranty Deed
Instrument Holder:	Sea Branch Corporation, Inc.
Beginning Date:	October 22, 1991
Ending Date:	Forever
Outstanding Rights, Uses, Etc.:	Exhibit B of the deed lists the reservations and encumbrances related to the property.

The Honorable Elmira Gainey
Commissioner, District 4
Martin Board of County Commissioners
2401 S.E. Monterey Road
Stuart, FL 34996

John Griner, Manager
St. Lucie State Preserve
16450 S.E. Federal Highway
Hobe Sound, FL 33455

David Lennard, Chair
Martin Soil and Water
Conservation District
19220 Mack Dairy Road
Jupiter, FL 33478

Joseph Catrambone, President
Martin County Chamber of Commerce
1650 South Kanner Highway
Stuart, FL 34994

Edward Ward, Area Supervisor
Division of Forestry
Department of Agriculture and Consumer Services
5050 S.W. 48th Street
Palm City, FL 34990

Steve Coughlin, Regional Biologist
Florida Fish and Wildlife Conservation Commission
8535 Northlake Boulevard
West Palm Beach, FL 33412

Margo Stahl, Manager
Hobe Sound National Refuge
13640 S.E. Federal Highway
Hobe Sound, FL 33455

David Roach, Executive Director
Florida Inland Navigation District
1301 Marcinski Road
Jupiter, FL 33477

Bob Denison, Director
Martin County Parks and Recreation
2401 S.E. Monterey Road
Stuart, FL 34996

Katherine Murray, President
Environmental Quality Inc.
382 Tequesta Drive
Tequesta, FL 33469

Greg Braun, Executive Director
Audubon Society of Martin County
Post Office Box 131
Stuart, FL 34995

Ms. Suzanne Parr
Save the Manatee Club
500 North Maitland Avenue
Maitland, FL 32751

Ms. Audrey Minnis
Florida Trail Association
Tropical Trekkers Chapter
6090 S.W. Moores Street
Palm City, FL 34990

John Peace, Fisherman
5429 S.E. Running Oak Circle
Stuart, FL 34997

Sue Farrell, President
Loblolly Pines Property Owner's Association
Loblolly Bay Property Owner's Association
7470 S.E. Hill Terrace
Hobe Sound, FL 33455

Jeff Beal, Manager
Indian River / Vero Beach to Fort Pierce
Aquatic Preserve
9737 Gumbo Limbo Lane
Jensen Beach, FL 34957-2214

Mr. Ed Stout
South River Outfitters
600 Stypmann Boulevard
Stuart, FL 34994

Sue Douglas, President
Miles Grant Condominium One
5425 Southeast Miles Grant Road
Stuart, FL 34997

Ms. Marci Koll
Environmental Quality Inc.
382 Tequesta Drive
Tequesta, FL 33469

Ms. Mindy Gautreaux
United States Fish and Wildlife Service
10216 Lee Road
Boynton Beach, FL 33437

The Advisory Group appointed to review the draft management plan updates for St. Lucie Inlet Preserve State Park and Seabranch Preserve State Park met at FPS District 5 Headquarters on Thursday, February 21, 2002. Mr. Tim Regan represented Steve Coughlin and Marcy Cole represented Ms. Murry. Mr. Lennard, Mr. Catrambone, Ms. Parr and Ms. Douglas did not attend. Division staff attending included John Griner, Jeff Hutchinson, Debbie Wolfe and Lew Scruggs.

Mr. Scruggs began the meeting by explaining the purpose of the advisory group and reviewing the meeting agenda. He then provided a brief overview of the planning process of the Division and outlined the manner in which the Advisory Group review would be conducted. He asked if the group needed staff presentations, and the group indicated that they did not. Mr. Scruggs explained the Division's conclusions drawn from extensive study of potential ways to provide ferry boat access for the public to St. Lucie Inlet Preserve. After general discussion, the floor was opened for comments.

Summary Of Advisory Group Comments

Commissioner Gainey stated her acceptance of the Division's recommendation to forgo further efforts to construct ferry landing facilities either at the end of Cove Road or along the Seabranch Preserve shoreline. She said that she appreciates the effort and study the Division has devoted to this access problem over the years. She said that the public greatly appreciates the environmental values of the two state parks, and that there is a continued unmet need for access for recreational and educational experiences, especially at St. Lucie Inlet Preserve. She inquired about the schedule for the operation of the tram from the boat docks to the beach, and stated that the Division has not done enough to advertise the offshore preserve itself and the new tram service. Commissioner Gainey provided a number of suggestions to promote public awareness of the parks, including the posting of tram schedules and park program information at local marinas and County parks. She strongly urged the Division to make more efforts at developing alternative ways for the general public to reach the park, and to develop ecotourism opportunities at these state parks.

Mr. Denison seconded the recommendation to promote access to St.Lucie Inlet Preserve by advertising the tram schedule, including posting the information on the Florida State Parks web site. He said that he and his staff would continue to work with the Division on finding an appropriate location for ferry services. Mr. Dension agreed that, overall, it is not a bad thing to have a few limited access parks in the recreation system.

Mr. Denison suggested that installing showers for beach visitors at St. Lucie Inlet Preserve should be a priority. He pointed out that the existing boat docks are not user friendly for small boats, canoes and kayaks. He suggested the addition of a floating dock to accommodate those vessels. Regarding the Cove Road site, he noted that the County had previously considered plans for a boat ramp there, but that the current use as a launch point for canoes and kayaks has proved to be much less intrusive and should continue.

Regarding the proposed primitive group camp at the Seabranch Preserve, Mr. Denison agreed that it will provide an excellent public recreation opportunity. He recommended the development and promotion of that facility in the near future. He requested that Martin County's contribution to the purchase of the Seabranch be mentioned in the management plan. Mr. Denison expressed his appreciation for the open process conducted by the Division in the planning of these state parks.

Ms. Minnis reiterated the problems with the docking facilities for small vessels, and asked if there were plans for a restroom facility at the Cover Road (County) launching area. She stated that the local chapter of the Florida Trail Association (FTA) is very supportive of the trails at Seabranch Preserve, providing many volunteer hours to the development and signage of the trails. She said that here group is working with the park to install needed trail signage, and pointed out that mileage notices are needed on the trail She mentioned that the primitive group camp would aid the trails group by providing a camping site to support the FTA workdays at the park.

Ms. Stahl noted that the beach on St. Lucie Inlet Preserve is prime turtle nesting habitat. She stated

that the priority for management of the National Wildlife Refuge is the protection of habitat, with recreation as a secondary consideration. She endorsed the cooperative management approach that her agency and the Division have taken on the barrier island, and expressed her appreciation for the partnerships that have been formed, especially on issues like predator control and beach erosion. Ms. Stahl endorsed public uses at the barrier island preserve that are compatible with habitat protection, such as environmental education programs, wildlife viewing, photography and fishing. She noted that exotic plant invasions are one of the most serious management problems affecting both state and federal lands here. She stated general agreement with the Division's draft management plans.

Mr. Ward stated that he is in agreement with the contents of the draft management plans.

Ms Ferrell asked whether the Division is required to provide public access to the state parks. Staff answered in the affirmative. Ms. Ferrell said that she has no problems with the draft management plans.

Mr. Beal stated that the draft plans are excellent efforts. He volunteered assistance to the Division when scrub burns at Seabranch Preserve are scheduled. He wholeheartedly agreed with the installation of boundary and mooring buoys to protect the submerged reef communities within St. Lucie Inlet Preserve State Park. Mr. Beal proposed the distribution of a brochure explaining the regulations that are in effect on the submerged areas of the preserve.

Ms. Cole thanked the Division for the invitation to join the Advisory Group. She suggested signage should be posted to inform visitors to St. Lucie Inlet Preserve of precautions needed during turtle nesting season. She inquired whether the Division has a timeline for natural community restoration. Staff replied that restoration activities are addressed as funding becomes available, and has not been set up on a definite schedule at this time. Ms. Cole stated that the parks need interpretive signage, and that efforts are needed to inform power boaters regarding the level of use by non-motorized watercraft in interior and adjacent water areas. She reiterated the importance of predator control on the barrier island. She agreed with other group members that docks that are more convenient are needed for small watercraft. She discussed water quality monitoring plans for the adjacent waters. She supported the priority placed on prescribed fire management on Seabranch Preserve State Park. Ms. Cole gave the management plans a general "o.k."

Mr. Peace said that, as a property owner whose property abuts Seabranch Preserve State Park, he is "delighted" with the parks, their management, and with the Division's planning meetings. He said that he and his neighbors appreciate the Division's fire management program. Mr. Peace outlined problems that are occurring at the Cove Road canoe/kayak launch site when power boat operators anchor there. He noted that he has observed up to 60 paddlers using the interior waterways on St. Lucie Inlet preserve on busy weekends. He strongly encouraged the Division's enhancement of canoeing and kayaking recreation at the state park, and recommended a clear definition of the unit's carrying capacity for that recreational use. Mr. Peace encouraged the Division to investigate the use of the state parks as outdoor classrooms or practice sites for local college classes.

Mr. Roach thanked Division staff for the opportunity to participate in the planning process. He said that he will provide the Division with the Fl. Inland Navigation District (FIND) schedule for restoration activities on the spoil islands, and maps of the various reservations that go with the land acquired from FIND, if needed. Mr. Roach noted that six items in the 1999 Land Management Review of St. Lucie Inlet Preserve State Park are to be addressed in the updated management plan. He agreed that a floating dock system is needed to improve boaters' access to the docks. He noted that FIND funding might be available for that purpose. Mr. Roach also pointed out a problem of shoaling at the entrance to the state park dock area, and suggested consideration of dredging to improve navigation in that location.

Mr. Braun congratulated the Division for jobs well done on management and planning in the two state parks. He recommended that the draft management plan include an executive summary to aid reviewers. He recommended that the statement in the Introduction regarding single use should place preservation before recreation for park units classified as state preserves. He pointed out problems

with the park boundaries in the Vicinity Map of the draft plan. He commented that the resource inventories in the draft plans are excellent, and recommended more specific mapping and monitoring planning for bird rookeries. He stated that additional listed species survey work should be a priority for these parks. He expressed concern for the welfare of many listed species at these parks in the face of increasing human activities in and around the units.

Regarding **St. Lucie Inlet Preserve State Park**, Mr. Braun pointed out that the park and the National Wildlife Refuge are the only large nesting habitat areas available in the region. Restoration of this habitat should be a priority goal. He suggested the construction of additional osprey platforms. He inquired about the legal ownership of the spoil islands adjacent to the Intracoastal Waterway, staff informed him that FIND holds management authority for them, and Mr. Roach explained the current strategies for restoration of the spoil islands. Mr. Braun recommended that the Division assist and support the FIND restoration goals.

Mr. Braun reported his perception that more motorboats now use the mangrove creeks in the park, and supported the establishment of a carrying capacity or an exclusion zone to provide better protection of that area. He pointed out a need for involvement by Division staff in the manatee protection, and CERP water quality issues. Mr. Braun suggested that grass bed research should be budgeted in the Priority Schedule and Cost Estimate.

Regarding **Seabranch Preserve State Park**, Mr. Braun expressed serious concern with the documented decrease in scrub jay population at the park. He recommended more surveys are needed, and emphasized that the birds are an indicator species for the health of the scrub ecosystem. He agreed that more aggressive burning is needed, and recommended that the Division develop a restoration schedule. He urged the Division to prohibit the construction of communication towers and other non-compatible uses on the parks. He noted outstanding opportunities for research at the park. He encouraged the formation of a park Citizen Support Organization. He strongly encouraged efforts to avoid a recurrence of the unauthorized clearing in the state park that happened several years ago. Finally, as in the case of St. Lucie Inlet, he recommended that preservation and attention to management for listed species should be emphasized in the statements regarding the purpose of the park.

Mr. Stout stated that the Division has submitted good plans for review. He agreed with the preservation efforts underway and planned for the parks, and supported the concept for a preserved, limited access beach at St. Lucie Inlet. He supported improvements to allow more convenient canoe and kayak access to the off-shore park, suggesting that at beach landing would be better than floating docks for that purpose. He supported a non-motorized zone designation for the interior waterways at St. Lucie Inlet Preserve, noting serious safety concerns and user conflicts that occur with increasing frequency. He said that kayak tours he conducts frequently help the park by collecting trash from the mangrove shorelines along their routes.

Mr. Regan said the Division's draft plans "look good." He noted the high priority for prescribed fire management in the protection of listed species in the scrub community. He recommended an active public information program to help gain acceptance and tolerance of burning activities with local homeowners. He recommended burning be conducted in small blocks. He noted that invasive exotic plans are the primary resource management problem at St. Lucie Inlet Preserve State Park.

Staff Recommendation

A number of excellent suggestions were contributed by the Advisory Group, and changes to the resource management and land use components have been made to the management plans for St. Lucie Inlet Preserve and Seabranch Preserve State Parks.

- **Resource Management Components**

Specific changes to the St. Luce Inlet Preserve State Park management plan resource management component include the addition of lobster poaching as a management concern, with the statement that park staff will monitor and involve law enforcement officials in management of the problem as

it occurs.

Several comments from the Advisory Group speak to issues that are beyond the direct scope of the Division's authority, such as enhancing protection of manatees in waterways, conducting research on seagrasses and conducting water quality monitoring programs adjacent to the parks. The Division will continue to educate park visitors, and work with law enforcement agencies for the protection of manatees. Water quality monitoring and minimizing the impacts from activities outside the park boundaries are issues of concern to the Division, but we have few direct measures at our disposal. The Division will continue to work with Martin County and the South Florida Water Management District to protect water quality within and adjacent to both state parks. Seagrass monitoring is conducted by the South Florida Water Management District, and updated aerial surveys are used by Division staff to identify problem areas as they occur. Additional seagrass studies are beyond the Division's ability at this time. Park staff will continue observation and education of park users whenever problems are encountered.

The restoration of spoil islands will continue in collaboration with the Florida Inland Navigation District. Text in the resource management component has been revised to reflect the Division's recommendations, as follows:

> **Sixteen spoil areas exist along the western boundary of the preserve adjacent to the Intracoastal Waterway. Park personnel are working in cooperation with FIND to restore and/or enhance these sites. FIND has completed the first phase of restoration on one of the northern most spoils. The initial project consisted of the removal of exotic vegetation and the replanting of native hammock vegetation on four acres. Based on talks with FIND personnel, the estimated window from initiation to conclusion for the restoration/enhancement of all the spoil areas is 2000 to 2008. FIND has suggested that they would like to restore several of the spoil sites to maritime hammocks. However, it is recommended that the majority of the spoil areas (75 percent) are restored to mangrove wetlands and only about 25 percent are enhanced/restored to maritime hammocks.**

Regarding management of the scrub jay population at **Seabranch Preserve State Park**, the Division shares the concern about decreased numbers. As discussed in the management plan, prescribed fire management is greatly complicated by the urban location of the park. An extensive mechanical restoration project has been implemented at the park, and prescribed fire management will be aggressively applied in the future, to the extent possible. Division staff are conducting studies on the response of the scrub community to the ongoing management measures and annually monitoring the scrub jay population, as outlined in the draft resource management component reviewed by the Advisory Group. These activities will be continued.

- **Land Use Component – St. Lucie Inlet Preserve State Park**

The limits on convenient public access to recreational resources at St. Lucie Inlet Preserve State Park have been a problem since the property first became a unit of the state park system. The provision of tram service from the docking area to the beach is intended to make access to the beach available to a wider range of park visitors. However, full promotion of the preserve as a beach destination should not be pursued until an adequate supply of potable water is developed at the park. This engineering project has received initial funding, and the Division hopes to have drinking water and showers available for park visitors as soon as a water line is constructed from the mainland to the park. Once water is available, the Division will implement an extensive public information effort to encourage visitation.

Improvements to the docking facilities at the park are recommended by the draft management plan. These should include improvements that facilitate access to the docks for both small motorboats and canoes and kayaks. Bathymetric surveys and design, permitting and implementation of navigation

improvements at the entrance to the docking area are also recommended, as discussed by David Roach. The Division will work with FIND to pursue that project at the appropriate time.

Division staff has discussed the concerns expressed at the Advisory Group meeting regarding the volume of use on the interior waterways of St. Lucie Inlet Preserve State Park, and the concern over safety conflicts between motorboaters and paddlers. Additional information is needed before specific management actions can be taken (although any public safety problems will be dealt with immediately, as they become evident to park management). The following text has been added to the draft land use component to begin the process needed to address future management strategies for the waterway area:

> **Peak use days that occur on summer weekends and holidays may attract large numbers of recreational users to the interior waterways at this state park. At this time, sufficient information on the volumes of use in that area of the park is not available. Park staff, with the aid of volunteers, will investigate the types and volumes of recreational uses occurring on the waterways. If resource and public safety problems are documented, the Division will develop and implement all appropriate and necessary management measures to address the situation.**

No changes are proposed to the draft land use component for Seabranch Preserve State Park.

With the completion of the revisions and additions noted above, Division staff recommend approval of the draft management plans for these state parks, and submission of the draft plans to the Acquisition and Restoration Council.

Addendum 2—References Cited

Austin, R.J., and J.R. Ballo. 1987. Cultural Resource Assessment Survey of the Proposed Sea Branch Development Site, Martin Co., Florida. Piper Archaeological Research, Inc., St. Petersburg, FL. 41 pp. Manuscript on file with the Florida Master Site File, Division of Historical Resources, Tallahassee, FL

Brooks, H. K. 1982. Physiographic divisions of Florida. Center for Environmental and Natural Resources Programs, IFAS, University of Florida, Gainesville.

Florida Natural Areas Inventory. 1990. Guide to the natural communities of Florida. Florida Department of Natural Resources, Tallahassee, FL. 111 pp.

McCollum, S.H., and O.E. Cruz, Sr. 1981. Soil Survey of Martin County Area, Florida. U.S. Dept. of Agric., Soil Cons. Serv. i-viii+204 pp.

Puri, H.S., and R.O. Vernon. 1964. Summary of the Geology of Florida and a Guidebook to the Classic Exposures. FL Geol. Surv., Tallahassee, FL. i-ix+312 pp.

Schmidt, W. 1997. Geomorphology and physiography of Floirda. Pages 1-12 *in* A. F. Randazzo and D. S. Jones (eds), The Geology of Florida. University of Florida Press, Gainesville. 327 pp.

White, W. A. 1970. The geomorphology of the Florida peninsula. Fla. Bur. Geol. Bull. No. 51.

Zieman, J. C. 1982. The ecology of the seagrasses of south Florida: a community profile. U.S. Fish and Wildl. Serv. Off. Biol. Serv. Tech. Rep. FWS / OBS 82-25.

Addendum 3—Soil Descriptions

(4) Waveland Sand - This soil is nearly level and poorly drained. Slopes are typically smooth and range from 0 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 0 to 8 percent. The surface is gray sand about 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 0 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 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 d depth of 40 inches or more. Also included are small areas of Samsula and Sanibel soils. Total inclusions in any 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 0 to 5 percent. Typically, the surface layer is gray sand. The subsurface layer is white sand. Next is a 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 include red mangroves, black mangroves, white mangroves, sea-oxeye daisies, sea purslane, glasswort, and leather ferns.

(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 2 to 200 acres or more. Slopes are smooth to convex and range from 0 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 a 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 soil include 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.

Addendum 4—Plant And Animal List

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
	Ferns and Fern Allies	
Giant leather fern	*Acrostichum danaeifolium*	26
Azolla	*Azolla caroliniana*	
Swamp fern	*Blechnum serrulatum*	
Old World Climbing fern *	*Lygodium microphyllum*	
Boston fern	*Nephrolepis biserrata*	
Tuberous sword fern*	*Nephrolepis cordifolia*	
Boston fern*	*Nephrolepis exaltata*	
Boston fern*	*Nephrolepis multiflora*	
Hand fern	*Ophioglossum palmatum*	26
Cinnamon fern	*Osmunda cinnamomea*	26
Royal fern	*Osmunda regalis*	26
Golden polypody	*Phlebodium aureum*	
Resurrection fern	*Polypodium polypodioides*	
Whisk fern	*Psilotum nudum*	
Bracken fern	*Pteridium aquilinum*	
Giant bracken fern*	*Pteris tripartita*	
Spikemoss	*Selaginella arenicola*	
Tri-vein fern	*Thelypteris interrupta*	
Shield fern	*Thelypteris kunthii*	
Shoestring fern	*Vittaria lineata*	
Chain fern	*Woodwardia virginica*	
	Gymnosperms	
Sisal hemp*	*Agave sisalana*	
Jack-in-the-pulpit	*Arisaeme triphyllum*	
Coconut palm*	*Cocos nucifera*	
Swamp lily	*Crinum americanum*	
Green arum	*Peltandra virginica*	
Sand pine	*Pinus clausa*	
South Florida Slash pine	*Pinus elliottii var. densa*	
Royal palm (cultivated)	*Roystonea regia*	
Cabbage palm	*Sabal palmetto*	
Arrowhead	*Sagittaria graminea*	
Arrowhead	*Sagittaria lancifolia*	
Saw palmetto	*Serenoa repens*	
Reflexed wild pine	*Tillandsia balbisiana*	14, 26
Common wild pine	*Tillandsia fasciculata*	26, 33
Silvery wild pine	*Tillandsia paucifolia*	
Ball moss	*Tillandsia recurvata*	
Needle-leaved air plant	*Tillandsia setacea*	
Spanish moss	*Tillandsia usneoides*	
Giant wild pine	*Tillandsia utriculata*	26, 33
Spanish bayonet*	*Yucca aloifolia*	
Adam's needle	*Yucca filamentosa*	
	Angiosperms - Monocots	
Blue maidencane	*Amphicarpum muhlenbergianum*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Shortspike bluestem	*Andropogon brachystachys*	
Florida bluestem	*Andropogon floridanus*	
Bushy bluestem	*Andropogon glomeratus var. pumilus*	
Bluestem	*Andropogon loniberbis*	
Splitbeard bluestem	*Andropogon ternarius*	
Broomsedge	*Andropogon virginicus*	
Big threeawn	*Aristida condensata*	
Corkscrew threeawn	*Aristida gyrans*	
Arrowfeather	*Aristida purpurascens*	
Bottlebrush threeawn	*Aristida spiciformis*	
Wire grass	*Aristida stricta*	
Wire grass	*Aristida tenuispica*	
Asparagus fern*	*Asparagus densiflorus*	
Watergrass*	*Bulbostylis barbata*	
Hair sedge	*Bulbostylis ciliatifolia*	
Watergrass*	*Bulbostylis warei*	
Coastal sandbur	*Cenchrus incertus*	
Saw grass	*Cladium jamaicensis*	
Dayflower*	*Commelina diffusa*	
Dayflower	*Commelina erecta*	
Pampas grass*	*Cortaderia selloana*	
Swamp lily	*Crinum americanum*	
Roseling	*Cuthbertia ornata*	
Poorland flatsedge	*Cyperus compressus*	
Yellow flatsedge	*Cyperus flavescens*	
Haspan flatsedge	*Cyperus haspan*	
False saw grass	*Cyperus ligularis*	
Fragrant flatsedge	*Cyperus odoratus*	
Umbrella sedge	*Cyperus polystachyos*	
Pinebarren flatsedge	*Cyperus retrorus*	
Tropical flatsedge	*Cyperus surinamensis*	
Egyptian grass*	*Dactyloctenium aegyptium*	
Panic grass	*Dicanthelium ensifolium var. breve*	
Panic grass	*Dicanthelium erectifolium*	
Eggleaf witchgrass	*Dicanthelium ovale*	
Southern crabgrass*	*Digitaria ciliaris*	
Shabby crabgrass	*Digitaria villosa*	
Air potato*	*Dioscorea bulbifera*	
Water hyacinth*	*Eichhornia crassipes*	
Roadgrass	*Eleocharis baldwinii*	
Goosegrass*	*Eleusine indica*	
Butterfly orchid	*Encyclia tampensis*	26
Feather lovegrass*	*Eragrostis amabilis*	
Thalia lovegrass*	*Eragrostis atrovirens*	
Gophertail lovegrass*	*Eragrostis ciliaris*	
Centipede grass*	*Eremochloa ophiuroides*	
Sugarcane Plume grass	*Erianthes giganteus*	
Flattened pipewort	*Eriocaulon compressum*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Tenangle pipewort	*Eriocaulon decangulare*	
Wild coco	*Eulophia alta*	
Finger grass	*Eustachys petraea*	
Hurricane grass	*Fimbristylis cymosa*	
Dwarf umbrellagrass	*Fuirena pumila*	
Southern umbrella grass	*Fuirena scirpoidea*	
Toothed habenaria	*Habenaria floribunda*	
Shoal seagrass	*Halodule wrightii*	
Paddle seagrass	*Halophila decipiens*	
Johnson's seagrass	*Halophila johnsonii*	59
Hydrilla *	*Hydrilla verticillara*	
Yellow stargrass	*Hypoxis juncea*	
Yellow star grass	*Hypoxis leptocarpa*	
Forked rush	*Juncus dichotomus*	
Shore rush	*Juncus marginatus*	
Needlepod rush	*Juncus scirpoides*	
Shortleaf spikesedge*	*Kyllinga brevifolius*	
Red root	*Lachnanthes caroliniana*	
Bog-button	*Lachnocaulon beyrichianum*	
Plantain	*Musa spp.*	
Maidencane	*Panicum hemitomon*	
Guinea grass *	*Panicum maximum*	
Torpedo grass*	*Panicum repens*	
Redtop panicum	*Panicum rigidulum*	
Bluejoint grass	*Panicum tenerum*	
Sour paspalum	*Paspalum conjugatum*	
Green arum	*Peltandra virginica*	
Napier grass*	*Pennisetum purpureum*	
Pickerel weed	*Pontederia cordata*	
Natal grass *	*Rhynchelytrum repens*	
Fascicled beaksedge	*Rhynchospora fascicularis*	
Pinebarren beaksedge	*Rhynchospora intermedia*	
Narrowfruit beaksedge	*Rhynchospora inundata*	
Giant whitetop	*Rhynchospora latifolia*	
Sandyfield beaksedge	*Rhynchospora megalocarpa*	
Southern beaksedge	*Rhynchospora microcarpa*	
Bunched beaksedge	*Rhynchospora microcephala*	
Tracy's beaksedge	*Rhynchospora tracyi*	
Wright's beaksedge	*Rhynchospora wrightiana*	
Sugarcane*	*Saccharum giganteum*	
India cupscale*	*Sacciolepis indica*	
Bowstring hemp*	*Sansevieria hyacinthoides*	
Bluestem	*Schizachyrium sanguineum*	
Little bluestem	*Schizachyrium scoparium*	
Baldwin's nutrush	*Scleria baldwinii*	
Fringed nutrush	*Scleria ciliata*	
Tall nutgrass	*Scleria triglomerata*	
Blue-eyed grass	*Sisyrinchium solstitiale*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Greenbrier	*Smilax auriculata*	
Bamboo vine	*Smilax laurifolia*	
Smooth cordgrass	*Spartina alternifolia*	
Duckweed*	*Spirodela punctata*	
West Indian dropseed*	*Sporobolus indicus var. pyramidalis*	
St. Augustine grass*	*Stenotaphrum secundatum*	
Bantam-buttons	*Syngonanthus flavidulus*	
Oyster plant *	*Tradescantia spathacea*	
Eastern gamagrass	*Tripsacum dactyloides*	
Southern cattail	*Typha domingensis*	
Vanilla orchid	*Vanilla mexicana*	26
Yellow-eyed grass	*Xyris ambigua*	
Yellow-eyed grass	*Xyris brevifolia*	
Yellow-eyed grass	*Xyris caroliniana*	
Yellow-eyed grass	*Xyris elliottii*	
Yellow-eyed grass	*Xyris flabelliformis*	
Yellow-eyed grass*	*Xyris jupicai*	
Yellow-eyed grass	*Xyris smalliana*	
Japanese youngia*	*Youngia japonica*	
Lawn orchid*	*Zeuxine strateumatica*	
	Angiosperms – Dicots	
Rosary pea *	*Abrus precatorius*	
Earleaf acacia*	*Acacia auriculiformis*	
Red maple	*Acer rubrum*	
False foxglove	*Agalinis fasciculata*	
Hammock snakeroot	*Agertina jucunda*	
Woman's tongue *	*Albizia lebbeck*	
Yellow allamanda *	*Allamanda cathartica*	
Alligator weed	*Alternanthera philoxeroides*	
Chaff flower	*Alternanthera sessilis*	
Common ragweed	*Ambrosia artemisiifolia*	
Toothcups	*Ammannia latifolia*	
Pepper vine	*Ampelopsis arborea*	
Pond apple	*Annona glabra*	
Potato bean	*Apios americana*	
Nodding nixie	*Apteria aphylla*	
Shoebutton ardisia*	*Ardisia elliptica*	
Marlberry	*Ardisia escallonioides*	
Curtiss' milkweed	*Asclepias curtissii*	14
Dwarf pawpaw	*Asimina reticulata*	
Bushy aster	*Aster dumosus*	
Black mangrove	*Avicennia germinans*	
Groundsel tree	*Baccharis glomeruliflora*	
Saltbush	*Baccharis halimifolia*	
Water hyssop	*Bacopa monnieri*	
Yellow buttons	*Balduina angustifolia*	
Tarflower	*Befaria racemosa*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Spanish needles	*Bidens alba var. radiata*	
Button hemp	*Boehmeria cylindrica*	
Bluehearts	*Buchnera americana*	
Gumbo limbo	*Bursera simaruba*	
Beauty berry	*Callicarpa americana*	
Trumpet-vine	*Campsis radicans*	
Vanilla plant	*Carphephorus odoratissimus*	
Florida hickory	*Carya floridana*	
Love vine	*Cassytha filliformis*	
Australian pine *	*Casuarina equisetifolia*	
Madagascar Periwinkle *	*Catharanthus roseus*	
Sugarberry	*Celtis laevigata*	
Coinwort	*Centella asiatica*	
Butterfly pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Rosemary	*Ceratiola ericoides*	
Partridge pea	*Chamaecrista fasciculata*	
Blodgett's spurge	*Chamaesyce blodgettii*	
Coastal dune sandmat	*Chamaesyce cumulicola*	
Spurge	*Chamaesyce hirta*	
Graceful sandmat	*Chamaesyce hypericifolia*	
Hyssopleaf sandmat	*Chamaesyce hyssopifolia*	
Lamb's quarters*	*Chenopodium ambrosioides*	
Golden aster	*Chrysopsis scabrella*	
Lemon*	*Citrus limon*	
Grapefruit*	*Citrus paradisi*	
Tangerine*	*Citrus reticulata*	
Sweet orange*	*Citrus sinensis*	
Stinging nettle	*Cnidoscolus stimulosus*	
Narrowleaf paleseed*	*Conobea multifida*	
Large-flowered rosemary	*Conradina grandiflora*	14
Horseweed	*Conyza canadensis*	
Swamp dogwood	*Cornus foemina*	
Rattle box*	*Crotalaria pallida*	
Rattleweed*	*Crotalaria retusa*	
Rabbit-bells	*Crotalaria rotundifolia*	
Croton	*Croton glandulosus var. glandulosus*	
Carrotwood*	*Cupaniopsis anacardiopsis*	
Roseling	*Cuthbertia ornata*	
Buttonweed	*Diodia teres*	
Coin vine	*Dalbergia ecastophyllum*	
Scrub clover	*Dalea feayi*	
Beggar ticks	*Desmodium incanum*	
Florida balm	*Dicerandra densiflora*	
Persimmon	*Diospyros virginiana*	
Sundew	*Drosera capillaris*	
Tassel flower*	*Emilia fosbergii*	
Tassel flower*	*Emilia sonchifolia*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Fireweed	*Erechtites hieracifolia*	
Southern fleabean	*Erigeron quercifolius*	
Fragrant eryngium	*Eryngium aromaticum*	
White stopper	*Eugenia axillaris*	
Dog fennel	*Eupatorium capillifolium*	
Dog fennel	*Eupatorium leptophyllum*	
Mohr's thoroughwort	*Eupatorium mohrii*	
Dog fennel	*Eupatorium serotinum*	
Leafy euphorbia	*Euphorbia polyphylla*	
Flat-topped goldenrod	*Euthamia caroliniana*	
Strangler fig	*Ficus aurea*	
Milkpea	*Galactia elliottii*	
Milkpea	*Galactia regularis*	
Southern guara	*Gaura angustifolia*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Rabbit tobacco	*Gnaphalium obtusifolium*	
Loblolly	*Gordonia lasianthus*	
Rough hedgehyssop	*Gratiola hispida*	
Firebush	*Hamelia patens*	
Innocence	*Hedyotis procumbens*	
Clustered mille graine	*Hedyotis uniflora*	
Beach sunflower	*Helianthus debilis*	
Frostweed	*Helianthemum nashii*	
Camphor weed	*Heterotheca subaxillaris*	
Lindenleaf rosemallow	*Hibiscus furcellatus*	
Swamp hibiscus	*Hibiscus grandiflorus*	
Hydrilla*	*Hydrilla verticillata*	
Water pennywort	*Hydrocotyle bonariensis.*	
Alligator lily	*Hymenocallis palmeri*	
Coastal St. John's wort	*Hypericum brachyphyllum*	
Roundpod St. John's Wort	*Hypericum cistifolium*	
Sandweed	*Hypericun fasciculatum*	
St. Andrews cross	*Hypericum hypericoides*	
Atlantic St. John's wort	*Hypericum reductum*	
Fourpetal St. John's wort	*Hypericum tetrapetalum*	
Musky mint	*Hyptis alata var. alata*	
Dahoon holly	*Ilex cassine*	
Gallberry	*Ilex glabra*	
Hairy indigo*	*Indigofera hirsuta*	
Moon flower	*Ipomoea alba*	
Bloodleaf	*Iresine diffusa*	
Virginia willow	*Itea virginica*	
Jasminum*	*Jasminum nitidum*	
Life plant*	*Kalanchoe pinnata*	
Chandalier plant*	*Kalanchoe tubiflora*	
White mangrove	*Laguncularia racemosa*	
Lantana*	*Lantana camara*	
Nodding Pinweed	*Lechea cernua*	14

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Pine Pinweed	*Lechea deckertii*	14
Pepper grass	*Lepidium virginicum*	
Blazing stars	*Liatris chapmanii*	
Blazing stars	*Liatris tenuifolia*	
Gopher apple	*Licania michauxii*	
Frog's bit	*Limnobium spongia*	
Primrose	*Ludwigia maritima*	
Primrose	*Ludwigia octovalvis*	
Primrose willow	*Ludwigia peruviana*	
Primrose	*Ludwigia repens*	
Sky-blue lupine	*Lupinus diffusus*	
Rush pink	*Lygodesmia aphylla*	
Staggerbush	*Lyonia fruticosa*	
Fetterbush	*Lyonia lucida*	
Staggerbush	*Lyonia mariana*	
Red jumbie bean*	*Macroptilium lathyroides*	
Sweetbay	*Magnolia virginiana*	
Mango *	*Mangifera indica*	
Mastic	*Mastichodendron foetidissimum*	
Melaleuca*	*Melaleuca quinquenervia*	
Woodrose*	*Merremia dissecta*	
Manatee mudflower	*Micranthemum glomeratum*	
Hempvine	*Mikania cordifolia*	
Climbing boneset	*Mikania scandens*	
Wild basalm apple*	*Momordica charantia*	
Indian pipe	*Monotropa uniflora*	
Mulberry	*Morus rubra*	
Cow itch*	*Mucuna pruriens*	
Wax myrtle	*Myrica cerifera*	
Sensitive plant	*Neptunia pubescans*	
Spatterdock	*Nuphar lutea*	
Prickly pear	*Opuntia humifusa*	
Water dropwort	*Oxypolis filiformis*	
Lady's sorrel	*Oxalis corniculata*	
Water dropwort	*Oxypolis filiformis*	
Palafox	*Palafoxia feayi*	
Virginia creeper	*Parthenocissus quinquefolia*	
Red bay	*Persea borbonia*	
Prairie clover	*Petalostemom feayi*	
Creeping charlie	*Phyla nodiflora*	
Drummond's leafflower	*Phyllanthus abnormis*	
Ground cherry	*Physalis walteri*	
Pokeweed	*Phytolacca americana*	
Artillery plant	*Pilea microphylla*	
Pennyroyal	*Piloblephis rigida*	
Silk grass	*Pityopsis graminifolia*	
Plantain*	*Plantago major*	
Stinking camphorweed	*Pluchea foetida*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Marsh camphorweed	*Pluchea odorata*	
Rosy camphorweed	*Pluchea rosea*	
Wild poinsettia	*Poinsettia cyathophora*	
Pineland catchfly	*Polanisia tenuifolia*	
Milkwort	*Polygala grandiflora*	
Wild batchelor's button	*Polygala lutea*	
Wild batchelor's button	*Polygala nana*	
Low pinebarren milkwort	*Polygala ramosa*	
Yellow bachelor's button	*Polygala rugelii*	
Coastalplain milkwort	*Polygala setacea*	
Wireweed	*Polygonella ciliata*	
Sand wireweed	*Polygonella fimbriata var. robusta*	
Joint weed	*Polygonella polygama*	
Water pepper	*Polygonum hydropiperoides*	
Water smartweed	*Polygonum punctatum*	
Rustweed	*Polypremum procumbens*	
Pink purslane	*Portulaca pilosa*	
Swamp mermaid	*Proserpinaca palustris*	
Mermaid weed	*Proserpinaca pectinata*	
Strawberry guava*	*Psidium cattleianum*	
Guava *	*Psidium guajava*	
Wild coffee	*Psychotria nervosa*	
Wild coffee	*Psychotria sulzneri*	
Rabbit tobacco	*Pterocaulon pycnostachyum*	
Black-root	*Pterocaulon virgatum*	
Chapman's oak	*Quercus chapmanii*	
Scrub live oak	*Quercus geminata*	
Dwarf live oak	*Quercus minima*	
Myrtle oak	*Quercus myrtifolia*	
Live oak	*Quercus virginiana*	
Myrsine	*Rapanea punctata*	
Mangrove rubber vine	*Rhabdadenia biflora*	
Meadow beauty	*Rhexia nashi*	
Red mangrove	*Rhizophora mangle*	
Sumac	*Rhus copallina*	
Least snoutbean	*Rhynchosia minima*	
Tropical Mexican clover*	*Richardia brasiliensis*	
Largeflower Mexican clover*	*Richardia grandiflora*	
Castor bean*	*Ricinus communis*	
Southern dewberry	*Rubus trivialis*	
Marsh pink	*Sabatia grandiflora*	
Willow	*Salix caroliniana*	
Water spangles	*Salvinia minima*	
Elderberry	*Sambucus canadensis*	
Pineland pimernel	*Samolus valerandi*	
Milkweed vine*	*Sarcostemma clausum*	
Schefflera*	*Schefflera actinophylla*	
Brazilian pepper*	*Schinus terebinthifolius*	

*** Non-native Species**

Seabranch Preserve State Park

Plants

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Sensitive briar	*Schrankia microphylla*	
Sweet broom	*Scoparia dulcis*	
Candle plant*	*Senna alata*	
Coffee senna*	*Senna occidentalis*	
Piedmont blacksenna	*Seymaria pectinata*	
Wire weed	*Sida acuta*	
Lima*	*Sida cordifolia*	
Indian hemp	*Sida rhombifolia*	
Mastic	*Sideroxylon foetidissimum*	
Goldenrod	*Solidago chapmanii*	
Goldenrod	*Solidago fistulosa*	
Flat-topped goldenrod	*Solidago microcephala*	
Chapman's goldenrod	*Solidago odora var. chapmanii*	
Largeleaf buttonweed	*Spermacoce assurgens*	
Buttonweed*	*Spermacoce verticillata*	
Pineland scalypink	*Stipulicida setacea*	
Hairy dawnflower	*Stylisma villosa*	
Poison ivy	*Toxicodendron radicans*	
Forked blue curls	*Trichostema dichotomum*	
Mexican daisy*	*Tridax procumbens*	
Caesar weed*	*Urena lobata*	
Bladderwort	*Utricularia subulata*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
Frostweed	*Verbesina virginica*	
Ironweed*	*Vernonia cinerea*	
Cow-pea	*Vigna luteola*	
Florida grape	*Vitis cinerea var. floridana*	
Muscadine grape	*Vitis rotundifolia*	
Waltheria	*Waltheria indica*	
Wedelia*	*Wedelia trilobata*	
Hog-plum	*Ximenia americana*	
Wild lime	*Zanthoxylum fagara*	

*** Non-native Species**

Seabranch Preserve State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	Invertebrates	
Saltmarsh mosquito	*Aedes taeniorhynchus*	
Gulf fritillary	*Agraulis vanillae nigrior*	
Great southern white	*Ascia monuste shileta*	
Metallic wood-boring beetle	*Chalcophora georgiana*	
Deer fly	*Chrysops vittatus*	
No-see-ums	*Cullicoides* sp.	
Velvet ant	*Dasymutilla spp.*	
Field cricket	*Gryllus spp.*	
Zebra long wing	*Heliconius charitonius tuckeri*	
Viceroy	*Limenitis archippus floridensis*	
Tiger swallowtail	*Papilio glaucus*	
Black swallowtail	*Papilio polyxenes*	
Cloudless sulfur	*Phoebis sennae eubule*	
Buckeye	*Precis (Junonia) coenia*	
Palamedes swallowtail	*Pterourus palamedes*	
Cloudless sulphur	*Phoebis sennae euble*	
Green stink bug	*Nezara viridula*	
	Fish	
Bay anchovy	*Anchoa mitchilli*	
Sheepshead	*Archosargus probatocephalus*	
Hardhead catfish	*Ariopsis felis*	
Gafftopsail catfish	*Bagre marinus*	
Crevalle Jack	*Caranx hippos*	
Snook	*Centropomus undecimalis*	
Spotted seatrout	*Cynoscion nebulosus*	
Irish pompano	*Diapterus auratus*	
Ladyfish	*Elops saurus*	
Spotfin mojarra	*Eucinostomus argenteus*	
Silver Jenny	*Eucinostomus gula*	
Flagfin mojarra	*Eucinostomus melanopterus*	
Mosquitofish	*Gambusia affinis*	
Pinfish	*Lagodon rhomboides*	
Gray snapper	*Lutjanus griseus*	
Tarpon	*Megalops atlanticus*	
Atlantic croaker	*Micropagonias undulatus*	
Opposum pipefish	*Microphis brachyurus*	53
Striped mullet	*Mugil cephalus*	
White mullet	*Mugil curema*	
Leather jacket	*Oligoplites saurus*	
Southern flounder	*Paralichthys lethostigma*	
Sailfin milly	*Poecilia latipinna*	
Red drum	*Sciaenops ocellatus*	
Checkered puffer	*Shoeroides testudineus*	
Atlantic needlefish	*Strongylura marina*	

*** Non-native Species**

Seabranch Preserve State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
	Amphibians	
Florida cricket frog	*Acris gryllus*	29
Oak toad	*Bufo quercicus*	8, 14, 15
Marine toad*	*Bufo marinus*	MTC
Southern toad	*Bufo terrestris*	8, 14, 15
Greenhouse frog*	*Eleutherodactylus planirostris*	81, 82
Eastern narrowmouth toad	*Gastrophryne carolinensis*	8, 15
Green treefrog	*Hyla cinerea*	8, 26
Squirrel treefrog	*Hyla squirella*	8, 26
Cuban treefrog*	*Osteopilus septentrionalis*	8, 26
Pig frog	*Rana grylio*	29
Southern leopard frog	*Rana utricularia*	26, 29, 49
Eastern spadefoot	*Scaphiopus holbrookii*	14, 15
	Reptiles	
Green anole	*Anolis carolinensis*	MTC
Brown anole*	*Anolis sagrei*	MTC
American alligator	*Alligator mississippiensis*	26, 33, 49
Six-lined racerunner	*Cnemidophorus sexlineatus*	8, 14, 15
Southern black racer	*Coluber constrictor priapus*	MTC
Eastern Diamondback Rattlesnake	*Crotalus adamanteus*	14
Southern ringneck snake	*Diadophis punctatus*	MTC
Corn snake	*Elaphe guttata*	MTC
Gopher tortoise	*Gopherus polyphemus*	8, 14, 15
Eastern coachwhip	*Masticophis flagellum flagellum*	14, 15
Rough green snake	*Opheodrys aestivus*	MTC
Eastern glass lizard	*Ophisaurus ventralis*	8, 14, 15
Florida scrub lizard	*Sceloporus woodi*	14, 15
Ground skink	*Scincella lateralis*	MTC
Florida box turtle	*Terrapene carolina bauri*	8, 26, 33
Eastern garter snake	*Thamnophis sirtalis*	81, 82
	Birds	
Cooper's hawk	*Accipiter cooperii*	14
Scrub jay	*Aphelocoma coerulescens*	14, 15
Great blue heron	*Ardea herodias*	29, 53, 64
Cedar waxwing	*Bombycilla cedorum*	8, 14, 15
Great horned owl	*Bubo virginianus*	8, 14, 15
Red-tailed hawk	*Buteo jamaicensis*	MTC
Red-shouldered hawk	*Buteo lineatus*	MTC
Green heron	*Butorides striatus*	29, 53, 64
Chuck-will's-widow	*Caprimulgus ridgwayi*	MTC
Great egret	*Casmerodius albus*	29, 53, 64
Turkey vulture	*Cathartes aura*	MTC
Belted kingfisher	*Ceryle alcyon*	29, 53, 64
Common nighthawk	*Chordeiles minor*	8, 14, 15
Northern Harrier	*Circus cyaneus*	OF

*** Non-native Species**

Seabranch Preserve State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Ground dove	*Columbina passerina*	8, 14, 15
Northern flicker	*Colaptes auratus*	MTC
Northern Bobwhite	*Colinus virginianus*	14, 15
Black vulture	*Coragyps atratus*	MTC
Fish crow	*Corvus ossifragus*	MTC
Blue jay	*Cyanocitta cristata*	MTC
Palm warbler	*Dendroica palmarum*	8, 14, 15
Yellow warbler	*Dendroica petechia*	8, 14, 15
Pine warbler	*Dendroica pinus*	8, 14, 15
Black-throated green warbler	*Dendroica virens*	8, 14, 15
Pileated woodpecker	*Dryocopus pileatus*	8, 26, 33
Gray catbird	*Dumetella carolinensis*	8, 15
Little blue heron	*Egretta caerulea*	29, 53, 64
Snowy egret	*Egretta thula*	53, 64
Tricolored heron	*Egretta tricolor*	53, 64
White ibis	*Eudocimus albus*	29, 53, 64
Peregrine falcon	*Falco peregrinus*	OF
American kestrel	*Falco sparverius*	MTC
Magnificent frigatebird	*Fregata magnificens*	OF
Bald eagle	*Haliaeetus leucocephalus*	OF
Herring gull	*Larus argentatus*	64
Ring-billed gull	*Larus delawarensis*	64
Red-bellied woodpecker	*Melanerpes carolinus*	MTC
Wild Turkey	*Meleagris gallopavo*	33
Northern mockingbird	*Mimus polyglottos*	MTC
Black-and-white warbler	*Mniotilta varia*	8, 14, 15
Wood stork	*Mycteria americana*	33, 53
Great crested flycatcher	*Myiarchus crinitus*	8, 14, 15
Black-crowned night heron	*Nycticorax nycticorax*	26, 53, 64
Yellow-crowned night heron	*Nycticorax violaceus*	26, 64
Eastern screech owl	*Otus asio*	8, 14, 15
Osprey	*Pandion haliaetus*	64
Parula warbler	*Parula americana*	8, 26, 33
Painted bunting	*Passerina ciris*	14, 33
Brown pelican	*Pelecanus occidentalis*	64
Double-crested cormorant	*Phalacrocorax auritus*	64
Downy woodpecker	*Picoides pubescens*	8, 14, 15
Rufous-sided towhee	*Pipilo erythrophthalmus*	8, 14, 15
Blue-gray gnatcatcher	*Polioptila caerulea*	MTC
Black skimmer	*Rynchops niger*	64
Eastern phoebe	*Sayornis phoebe*	33, 53
American redstart	*Setophaga ruticilla*	8, 14, 15
Least tern	*Sterna antillarum*	OF
Royal tern	*Sterna maxima*	OF
Eurasian collared dove*	*Streptopelia decaocto*	81, 82
Tree swallow	*Tachycineta bicolor*	MTC
Brown Thrashers	*Toxostoma rufum*	8, 15
American robin	*Turdus migratorius*	81, 82

*** Non-native Species**

Seabranch Preserve State Park

Animals

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Mourning dove	*Zenaida macroura*	MTC
	Mammals	
Virginia opossum	*Didelphis virginiana*	MTC
Nine-banded armadillo*	*Dasypus novemcinctus*	MTC
Seminole bat	*Lasiurus seminolus*	MTC
Bobcat	*Lynx rufus*	MTC
Evening bat	*Nycticeius humeralis*	MTC
Florida mouse	*Podomys floridanus*	14, 15
Raccoon	*Procyon lotor*	MTC
Eastern mole	*Scalopus aquaticus*	MTC
Gray squirrel	*Sciurus carolinensis*	8, 26, 33
Eastern spotted skunk	*Spilogale putorius*	14, 15
Eastern cottontail	*Sylvilagus floridanus*	8, 14, 15
Wild pig*	*Sus scrofa*	26
Manatee	*Trichechus manatus*	59, 64
Gray fox	*Urocyon cinereoargenteus*	MTC

* **Non-native Species**

Habitat Codes

TERRESTRIAL

1. Beach Dune
2. Bluff
3. Coastal Berm
4. Coastal Rock Barren
5. Coastal Strand
6. Dry Prairie
7. Maritime Hammock
8. Mesic Flatwoods
9. Coastal Grasslands
10. Pine Rockland
11. Prairie Hammock
12. Rockland Hammock
13. Sandhill
14. Scrub
15. Scrubby Flatwoods
16. Shell Mound
17. Sinkhole
18. Slope Forest
19. Upland Glade
20. Upland Hardwood Forest
21. Upland Mixed Forest
22. Upland Pine Forest
23. Xeric Hammock

PALUSTRINE

24. Basin Marsh
25. Basin Swamp
26. Baygall
27. Bog
28. Bottomland Forest
29. Depression Marsh
30. Dome
31. Floodplain Forest
32. Floodplain Marsh
33. Floodplain Swamp
34. Freshwater Tidal Swamp
35. Hydric Hammock
36. Marl Prairie
37. Seepage Slope
38. Slough
39. Strand Swamp
40. Swale
41. Wet Flatwoods
42. Wet Prairie

LACUSTRINE

43. Clastic Upland Lake
44. Coastal Dune Lake
45. Coastal Rockland Lake
46. Flatwood/Prairie Lake
47. Marsh Lake

LACUSTRINE—Continued

48. River Floodplain Lake
49. Sandhill Upland Lake
50. Sinkhole Lake
51. Swamp Lake

RIVERINE

52. Alluvial Stream
53. Blackwater Stream
54. Seepage Stream
55. Spring-Run Stream

ESTUARINE

56. Estuarine Composite Substrate
57. Estuarine Consolidated Substrate
58. Estuarine Coral Reef
59. Estuarine Grass Bed
60. Estuarine Mollusk Reef
61. Estuarine Octocoral Bed
62. Estuarine Sponge Bed
63. Estuarine Tidal Marsh
64. Estuarine Tidal Swamp
65. Estuarine Unconsolidated Substrate
66. Estuarine Worm Reef

MARINE

67. Marine Algal Bed
68. Marine Composite Substrate
69. Marine Consolidated Substrate
70. Marine Coral Reef
71. Marine Grass Bed
72. Marine Mollusk Reef
73. Marine Octocoral Bed
74. Marine Sponge Bed
75. Marine Tidal Marsh
76. Marine Tidal Swamp
77. Marine Unconsolidated Substrate
78. Marine Worm Reef

SUBTERRANEAN

79. Aquatic Cave
80. Terrestral Cave

MISCELLANEOUS

81. Ruderal
82. Developed

MTC Many Types Of Communities

OF Overflying

Addendum 5—Designated Species List

Rank Explanations
For FNAI Global Rank, FNAI State Rank,
Federal Status And State Status

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 man-made 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 and 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)
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 and 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)

Rank Explanations
For FNAI Global Rank, FNAI State Rank,
Federal Status And State Status

LEGAL STATUS

N = Not currently listed,nor currently being considered for listing,by state or federal agencies.

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 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 - FFWCC)**

LE = Listed as Endangered Species by the FFWCC. 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 FFWCC. 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 as a consequence is destined or very likely to become an endangered species within the foreseeable future.

LS = Listed as Species of Special Concern by the FFWCC. 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 which,in the foreseeable 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.

Seabranch Preserve State Park

Designated Species

Plants

Common Name/ *Scientific Name*	**Designated Species Status** FDA	USFWS	FNAI
Curtiss' milkweed *Asclepias curtissii*	LE		G3/S2
Large-flowered rosemary *Condradina grandiflora*	LE		G3/S3
Johnson's seagrass *Halophila johnsonii*	LT	LT	G2/S2
Nodding pinweed *Lechea cernua*	LT		G3/S3
Pine pinweed *Lechea divaricata*	LE		G2/S2
Hand fern *Ophioglossum palmatum*	LE		
Reflexed wild pine *Tillandsia balbisiana*	LT		
Common Wild pine *Tillandsia fasciculata*	LE		
Giant wild pine *Tillandsia utriculata*	LE		
Vanilla orchid *Vanilla mexicana*	LE		G4,G5/S2

Seabranch Preserve State Park

Designated Species

Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI
Fish			
Opossum pipefish *Microphis brachyurus*			G5/S2
Reptiles			
American alligator *Alligator mississippiensis*	LS	LT(S/A)	G5/S2
Eastern diamondback rattlesnake *Crotalus adamanteus*			G5/S3
Gopher tortoise *Gopherus polyphemus*	LS		G3/S3
Florida scrub lizard *Sceloporus woodi*			G3/S3
Birds			
Cooper's hawk *Accipiter cooperii*			G4/S3?
Florida scrub jay *Aphelocoma coerulescens*	LT	LT	G3/S3
Great egret *Ardea alba*			G5/S4
Little blue heron *Egretta caerulea*	LS		G5/S4
Snowy egret *Egretta thula*	LS		G5/S4
Tricolored heron *Egretta tricolor*	LS		G5/S4
White ibis *Eudocimus albus*	LS		G5/S4
American kestrel *Falco sparverius paulus*	LT		G5/T3, T4
Wood stork *Mycteria americana*	LE	LE	G4/S2
Yellow-crowned night heron *Nyctanassa violacea*			G5/S3?
Black-crowned night heron *Nycticorax nycticorax*			G5/S3?
Painted bunting *Passerina ciris*			G5/S3
Brown pelican *Pelecanus occidentalis*	LS		G4/S3
Osprey *Pandion haliaetus*			G5/S3, S4
American redstart *Setophaga ruticilla*			G5/S3

Seabranch Preserve State Park

Designated Species

Animals

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
Mammals			
Florida mouse *Podomys floridanus*	LS		G3, S3
West Indian manatee *Trichechus manatus*	LE	LE	G2, S2

Addendum 6—Timber Management Analysis

The timber assessment require by Chapters 253 and 259, Florida Statutes, was conducted by Jeff Hutchinson in cooperation with staff from the DOF.

VFW Stand

Approximately 50 percent of this stand of mature sand pine was clear cut during the scrub restoration project. However, 14 acres of mature sand pines were left in the center of the site. The remaining part of the VFW stand was not cut so that a representative sample of mature sand pine scrub was present in the park. In the future as conditions warrant, mechanical management of the remaining 14 acres may be feasible if the tract is deemed too hazardous to burn.

Age of the stand is ca. 48 years. Average d.b.h is 12.1 inches. Estimated density in the stand is 83 trees / acre. Total basal area per acre was estimated to be 66 square feet. Average canopy height is between 50-55 ft. Some of the sand pines in this stand are chip-n-saw but the majority of the pines, because of their "crooked" bole, can only be used for mulch.

Understory growth is moderate to thick with myrtle oak, sand live oak, Chapman's oak, saw palmetto, and hog plum. Patches of bare mineral soil are present in the stand. Ground cover is sparse to moderate and dominated by broomsedge, wire grass, cactus, and various herbs.

The soil is mostly level and very sandy. No wetlands exist in the immediate area of this stand. Access to the stand will be from the main parking lot along C.R. A1A.

Burn Zone B

This tract comprises ca. 50 acres of scrubby flatwoods (58.8 percent), scrub (27.4 percent), and mesic flatwoods (13.8 percent). The area was clear cut about 25-30 years ago when the land was slated for development. No regeneration of slash or sand pines occurred after the tract was cut. Only scattered clumps of slash and sand pines remain at densities < 10-20 acre. Presently, this tract is dominated by various oaks (sand live, myrtle, and Chapman's). The average canopy height is ca. 6.0 feet. Average density estimate for the oaks was calculated to 12,562/acre. The area is too overgrown and dense to provide adequate habitat for scrub jays and gopher tortoises.

Prescribed fire was attempted at the site in March of 2000 in an effort to restore habitat to conditions suitable for scrub jays and gopher tortoises. However, the low fuel loads that occur on the ground would not carry a fire. This site may sustain a prescribed fire during drought-like conditions and heavy winds (> 20 mph), a time when it may be impossible to obtain a burn permit. In addition, the use of prescribed fire in such conditions is extremely hazardous in the close vicinity of residential communities and roadways.

Restoration of this tract should be accomplished by mechanical cutting and /or roller-chopping, followed by the use of prescribed fire. A cursory survey revealed a large number of abandoned gopher tortoise burrows at this tract. Scrub jays have also been heard along the periphery of the area. Restoration of this site would provide excellent recruitment habitat for scurb jays, gopher tortoises, and other endemic plant and animals.

The soil is mostly level and very sandy. No wetlands exist in the immediate area of this stand. Access to the stand will be through the north gate along Cove Road.

Prepared by: Jeff Hutchinson

Addendum 7—Priority Schedule And Cost Estimates

Estimates are developed for the funding and staff resources needed to implement the management plan based on goals, objectives and priority management activities. Funding priorities for all state park management and development activities are reviewed each year as part of the Division's legislative budget process. The Division prepares an annual legislative budget request based on the priorities established for the entire state park system. The Division also aggressively pursues a wide range of other funds and staffing resources, such as grants, volunteers, and partnerships with agencies, local governments and the private sector for supplementing normal legislative appropriations to address unmet needs. The ability of the Division to implement the specific goals, objectives and priority actions identified in this plan will be determined by the availability of funding resources for these purposes.

1. Construct onsite support facility that includes shop compound and office. **Estimated Cost:** $50,000
2. Control of various species of exotic plants that occur in the park, and periodic monitoring and maintenance of treated sites. **Estimated Cost:** $20,000 first year and $1000 annually.
3. Increase staffing (2 park rangers) to meet management objectives and properly manage the natural resources in the park. **Estimated Cost:** $150,000 ($75,000 for each position as start up cost) and $56,000 / year annually ($28,000 annual salary / year for park ranger position).
4. Employ OPS personnel (2 per year) for the treatment, removal, and monitoring of exotic vegetation. **Estimated Cost:** $16,000 annually (2000 man-hours per year at $8.00 / hour)
5. Conduct a Level I archaeological survey of the park. **Estimated Cost:** $10,000
6. Conduct a feasibility study to determine the impacts to the natural resources from the structures associated with the proposed ferry system to St. Lucie Inlet Preserve State Park. **Estimated Cost:** $65,000
7. Purchase of a tractor and associated equipment for normal park maintenance duties and natural resource management. **Estimated Cost:** $40,000
8. Construct a chickee and educational kiosk along the hiking trail. **Estimated Cost:** $4,000
9. Development of a primitive youth camp area. **Estimated Cost:** $50,000
10. Purchase high-resolution, recent aerial photos of the park and surrounding area for use in natural resource management. **Estimated Cost:** $20,000.
11. Construct additional firebreaks to meet burn plan objectives and allow for safe prescribe burning conditions. **Estimated Cost:** $25,000.
12. Contract a feasibility study with U.S. Department of Agriculture's A.P.H.I.S. Unit to study exotic animal populations and develop a control and removal plan for the park. **Estimated Cost:** $10,000.
13. Develop an informative brochure regarding the impacts associated with the management of parks at the urban/wildland interface. **Estimated Cost:** $4,000 initially and $2,000 annually.

Seabranch Preserve State Park

Priority Schedule And Cost Estimates

Item	Quantity	Unit	Unit Price	Multiplier	Amount
Recreation Facilities					
6 Ft. Elevated Boardwalk	1000.000	LF	$165.00	1.50	$247,500.00
Large Picnic Shelter	1.000	ea.	$60,000.00	1.50	$90,000.00
Medium Picnic Shelter	3.000	ea.	$36,000.00	1.50	$162,000.00
Observation Platform	1.000	ea.	$50,000.00	1.50	$75,000.00
Primitive Group Camp	1.000	ea.	$150,000.00	1.50	$225,000.00
Support Facilities					
3 Bay Shop Building	1.000	ea.	$135,000.00	1.50	$202,500.00
Ranger Residence (woodframe)	1.000	ea.	$170,000.00	1.50	$255,000.00
Small Picnic Restroom	1.000	ea.	$56,000.00	1.50	$84,000.00
Stabilized Parking (10 Car)	3.500	per 10	$2,500.00	1.50	$13,125.00
			Sub-Total		$1,354,125.00
			20 Percent Contingency Fee		$270,825.00
			Total		**$1,624,950.00**

NOTE: These preliminary cost estimates, based on Divisions standards, do not include costs for site-specific elements not evident at the conceptual level of planning. Additional costs should be investigated before finalizing budget estimates. All items fall in the new facility construction category © of the uniform cost accounting system required by ch. 259.037 F.S.