BEKER – SOUTH FORK UNIT

Management Plan

APPROVED

Florida Department Of Environmental Protection
Division Of Recreation And Parks
DECEMBER 12, 2008

TABLE OF CONTENTS

LAND USE COMPONENT

TABLE

LIST OF ADDENDA

ADDENDUM 4

ADDENDUM 5

ADDENDUM 6

MAPS

INTRODUCTION

South Fork, formerly known and managed as Beker A, was acquired in conjunction with Wingate Creek, formerly known and managed as Beker B, in 1988, through a process of mitigation by a phosphate mining enterprise known as Beker Phosphate Company. None of the land within South Fork has been mined. The park contains 1,124.11 acres.

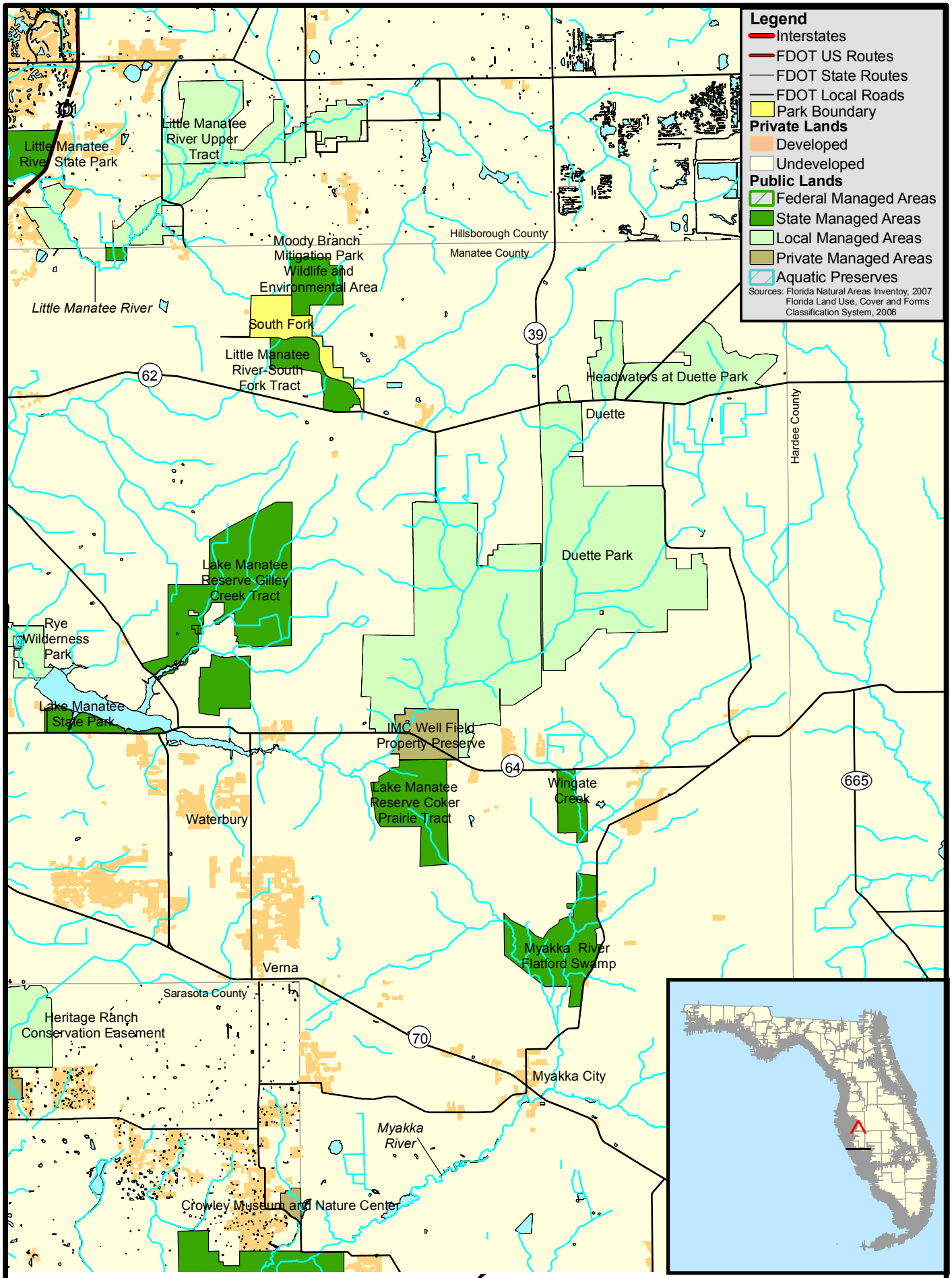
The park is located in Manatee County (see Vicinity Map) about 11 miles east of the town of Parrish. At present, there is no easy access to the park. The park can be reached through adjacent conservation lands to the north and south managed by Florida Fish and Wildlife Conservation Commission and Southwest Florida Water Management District (see Reference Map), respectively, but extensive walking is required.

The Division's lease from the Trustees stipulates that all the property be utilized for public outdoor recreation and related purposes. At South Fork, public outdoor recreation is the designated single use (see Addendum 1). There are no legislative or executive directives that constrain the use.

PURPOSE AND SCOPE OF THE PLAN

This plan serves as the basic statement of policy and direction for the management of South Fork 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 replace the March 20, 1998 approved plan. 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.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FDOT Local Roads
Park Boundary
Private Lands
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Undeveloped
Public Lands
Federal Managed Areas
State Managed Areas
Local Managed Areas
Private Managed Areas
Aquatic Preserves
Sources: Florida Natural Areas Inventoy, 2007
Florida Land Use, Cover and Forms Classification System, 2006
Little Manatee River State Park
Little Manatee River Upper Tract
Moody Branch Mitigation Park Wildlife and Environmental Area
Hillsborough County
Manatee County
Little Manatee River
South Fork
Little Manatee River-South Fork Tract
62
39
Headwaters at Duette Park
Duette
Hardee County
Duette Park
Lake Manatee Reserve Gilley Creek Tract
Rye Wilderness Park
Lake Manatee State Park
IMC Well Field Property Preserve
64
665
Wingate Creek
Lake Manatee Reserve Coker Prairie Tract
Waterbury
Myakka River Flatford Swamp
Verna
Sarasota County
Heritage Ranch Conservation Easement
70
Myakka City
Myakka River
Crowley Museum and Nature Center
SOUTH FORK UNIT
Miles
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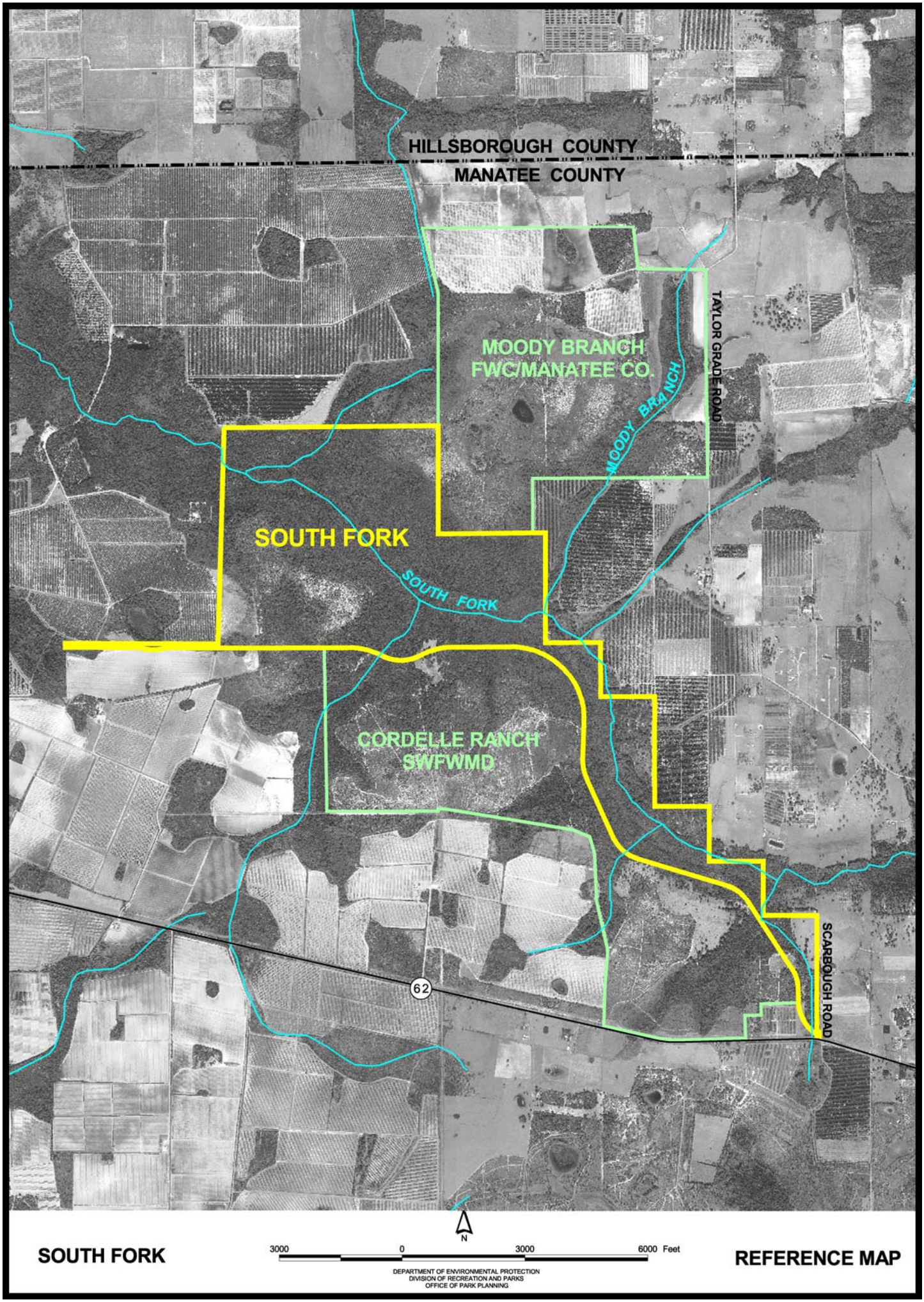
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning
VICINITY MAP



SOUTH FORK

REFERENCE MAP

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF RECREATION AND PARKS
OFFICE OF PARK PLANNING

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 no secondary purposes could be accommodated in a manner that would not interfere with the primary purpose of resource-based outdoor recreation and conservation. Uses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan or the management purposes of the park.

The potential for generating revenue to enhance management was also analyzed. Visitor fees and charges are the principal source of revenue generated by the park. It was determined that multiple-use management activities would not be appropriate as a means of generating revenues for land management. Instead, techniques such as entrance fees, concessions, and similar measures will be employed on a case-by-case basis as a means of supplementing park management funding.

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 Manual (OM) 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 South Fork, a balance is sought between the goals of maintaining and enhancing natural conditions and providing various recreational opportunities. Natural resource management activities are aimed at management of natural systems. Development in the park is directed toward providing public access to and within the park, and to providing recreational facilities, in a balance, that are both convenient and safe. Depletion of a resource by any recreational activity is not permitted. Program emphasis is on interpretation on the park's natural, aesthetic and educational attributes.

Park Goals and Objectives

The following park goals and objectives express the Division's 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 and Cultural Resources

1. Continue prescribed burning in all appropriate natural communities.
- **A.** Burn appropriate natural communities at the required intervals.
- **B.** Establish a cooperative prescribed burning program with agencies managing adjacent lands.
- **C.** Harvest sand pines, thin other pines and cut oak trees as needed for restoration of zones where fire has been excluded, and for safe burning.

2. Control exotic plants and animals.
- **A.** Eliminate cogongrass, *Imperata cylindrica*; rosary pea, *Abrus precatorius*; and other EPPC listed invasive exotic species.
- **B.** Control feral hogs, *Sus scrofa.*

3. Pursue all opportunities to acquire optimum boundaries, and facilitate access
- **A.** Acquire or otherwise preserve adjoining property to the south, north, and east of the unit.
- **B.** Acquire or otherwise preserve the riparian corridor between South Fork and the Little Manatee River Corridor Conservation Lands in Hillsborough County to the north.

4. Increase cooperation among agencies managing adjacent public conservation land.
- **A.** Remove fencing, as feasible, where a shared boundary exists between South Fork and the 960-acre Moody Branch Mitigation Park managed by the Florida Fish and Wildlife Conservation Commission, and between South Fork and the 970-acre property managed by the Southwest Florida Water Management District formerly known as Cordelle Ranch.
- **B.** Work with the Southwest Florida Water Management District, Florida Fish and Wildlife Conservation Commission and Manatee County to develop plans that are consistent and complementary for South Fork, the Cordelle Ranch parcel and Moody Branch Mitigation Park.
- **C.** Maintain lines of communication to discuss and cooperatively manage other issues as they arise.

5. Continue inventories, and identify, monitor and protect listed species.
- **A.** Collect baseline information on hydrology, including water quality monitoring in tributaries of the South Fork within the park.
- **B.** Continue biological surveys to identify all vascular plant and vertebrate species, and to map gopher tortoise burrows.
- **C.** Develop a single cooperative management strategy for Florida scrub-jays with agencies managing adjacent lands.
- **D.** Refine the natural community map as fire is re-introduced.

6. Restore disturbed land.
- **A.** Restore improved pasture where and when feasible.

7. Increase understanding, appreciation, and protection of cultural resources.
- **A.** Monitor the two known sites at the park for disturbance, and the potential for disturbance, and take actions necessary to remediate or prevent disturbance.

B. Use interpretive displays at access points to convey information about pre-European habitation within the boundaries.

Recreational Goals

1. Establish public access.
- **A.** Coordinate with the Southwest Florida Water Management District and the Florida Fish and Wildlife Conservation Commission to gain public access for park visitors through their properties to the south and north, respectively.

2. Establish a shared-trail system.
- **A.** Work with other management agencies to enhance existing service roads and develop new pathways as needed to establish a trail system throughout the adjoining public properties.

3. Develop a primitive group camping area.
- **A.** Develop a hike-in group camping area for organized, overnight trips to the park.

4. Provide interpretation and outdoor educational opportunities.
- **A.** Develop interpretive programs about the resource, including hydrology, wildlife, plants, and history of the park and neighboring conservation lands.
- **B.** Gain public appreciation of the park and management challenges through field trips for schools and other groups.
- **C.** Heighten awareness of the natural communities of South Fork and restoration efforts through trailhead displays and brochures.
- **D.** Establish a self-interpreted trail.

Administration/Operations Goals

1. Establish better access to the park.
- **A.** Coordinate with the Southwest Florida Water Management District and the Florida Fish and Wildlife Conservation Commission to gain vehicular access for park management through their properties to the south and north, respectively.

2. Establish park boundary next to private lands.
- **A.** Survey boundary and establish fencing to prevent unauthorized trespass, and to facilitate operational and resource management activities such as establishment of fire control lines.

3. Obtain a Park Ranger position.
- **A.** A position dedicated to South Fork is needed to meet the Natural and Cultural Resource Management Goals and Objectives, as well as work towards improving public access.

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 Southwest Florida Water Management District assists in the management of wildfires. 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. Emphasis is placed on protection of existing resources as well as the promotion of compatible outdoor recreational uses.

Public Participation

The Division provided an opportunity for public input by conducting a public meeting and an advisory group meeting to present the draft management plan to the public. A public meeting was held on August 26, 2008. An Advisory Group meeting was held August 27, 2008. The purpose of this meeting was to provide the Advisory Group members an opportunity to discuss the draft management plan.

Other Designations

South Fork has not been designated as an Area of Critical State Concern as defined in section 380.05, Florida Statutes. Currently, it is not under study for such designation. The park is a component of the Florida Greenways and Trails System.

All waters within South Fork have been designated as Outstanding Florida Waters, pursuant to Chapter 62-302 Florida Administrative Code. Administered by the Department of Environmental Protection (DEP), this program was created by Section 403.061, Florida Statutes, and protects lakes, rivers and streams against degradation of existing ambient water quality. Surface waters in South Fork flow into the Little Manatee River whose waters are classified as Class III waters by DEP.

South Fork is not designated as an aquatic preserve under provision of the Florida Aquatic Preserve Act of 1975 (section 258.35, Florida Statutes). Nor is it adjacent to aquatic preserves.

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

Elevations range from 45 to 125 feet above mean sea level (msl). The South Fork of the Little Manatee River flows through the park from the southeast to the northwest. The banks on the northeast side are more gently sloping than those on the west. The lowest elevations are associated with the South Fork of the Little Manatee River and its tributaries.

Geology

The park is situated on the southern extremity of a landform known as the Polk Upland,

where it meets the DeSoto Plain. A ridge line at 80-90 feet msl separates these two surface features. The surface sands rest on Miocene limestone whose upper stratum has come to be known as the Bone Valley Formation. It consists of phosphatic boulders and pebbles in a matrix of phosphatic sandy clays. This is the source of Florida's phosphate deposits.

Soils

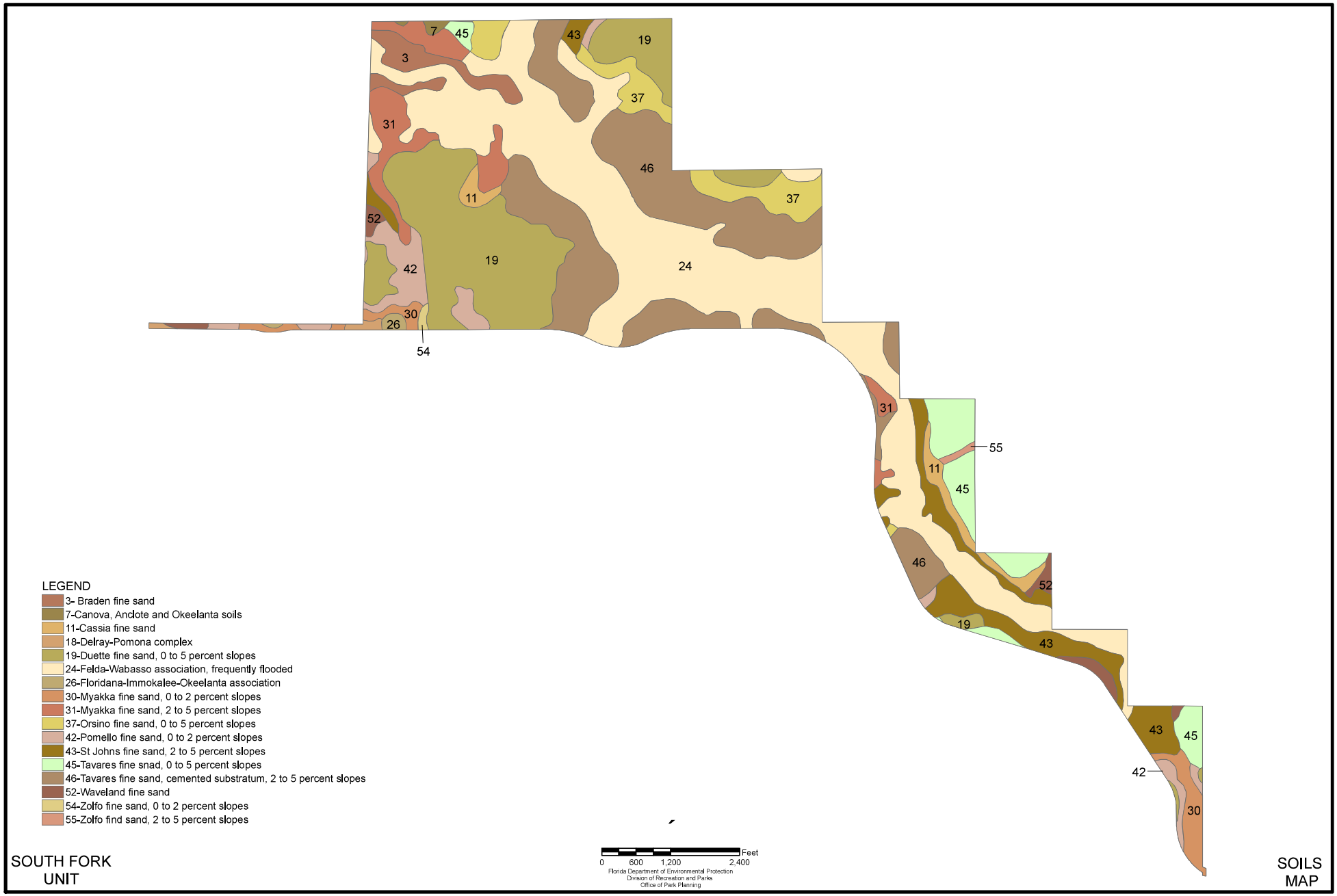
The soil types at the park, as mapped in the USDA survey published in 1981, are closely aligned with its natural communities. The soils at lower elevations in the park are influenced by flooding of the South Fork of the Little Manatee River and its tributaries. Rainwater in the adjacent uplands rapidly percolates downward to seep out and moisten the surface of the land sloping toward the river. The moisture gradient at or near the soil surface strongly influences the plant cover, with mesic types common toward the upper elevations and species tolerant of wetter conditions becoming more apparent on the lower slopes. Addendum 3 contains detailed soil descriptions for this park, but an abbreviated summary correlating natural communities with soil types is provided below (see Soil Maps).

Major soil types of the park and their associated natural communities are characterized as follows: Duette fine sand is associated with scrub vegetation, especially sand pine scrub. Pomello fine sand is associated with scrubby flatwoods, but presumably all of that natural community in the park has been converted to improved pasture; Myakka fine sand, Braden fine sand, and Waveland fine sand are all typical of mesic flatwoods with the last being wetter, having water on the surface in the summer and during heavy rains; St. Johns fine sand, a gently sloping, poorly drained soil on seepy slopes adjacent to drainageways, is associated with baygall; bottomland forests dominate the river floodplain and grows from the Felda-Wabasso soil association (the Felda soils form the lower stratum of this association while the Wabasso soils are more elevated); Tavares fine sand is the soil type in which the sandhill and upland mix forest communities predominate. Orsino fine sand is the soil type in which the xeric hammock predominates (the presence of mature sand pine and scrub palmetto indicate that this may have been formerly scrub).

In wetter areas, soils on steeper slopes, which are disturbed because of hog damage, are subject to some erosion. Other than this, there are no soil conservation or erosion issues at this park.

Minerals

Minerals of economic value include high silica sand, peat and phosphate. Peat is present in small quantities, and silica sand comprises the surface layer throughout much of the uplands. Phosphate ore probably underlies South Fork; however, no mining of any of these minerals is foreseen.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24
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19
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45
42
30
LEGEND
3- Braden fine sand
7-Canova, Andlote and Okeelanta soils
11-Cassia fine sand
18-Delray-Pomona complex
19-Duette fine sand, 0 to 5 percent slopes
24-Felda-Wabasso association, frequently flooded
26-Floridana-Immokalee-Okeelanta association
30-Myakka fine sand, 0 to 2 percent slopes
31-Myakka fine sand, 2 to 5 percent slopes
37-Orsino fine sand, 0 to 5 percent slopes
42-Pomello fine sand, 0 to 2 percent slopes
43-St Johns fine sand, 2 to 5 percent slopes
45-Tavares fine snad, 0 to 5 percent slopes
46-Tavares fine sand, cemented substratum, 2 to 5 percent slopes
52-Waveland fine sand
54-Zolfo fine sand, 0 to 2 percent slopes
55-Zolfo find sand, 2 to 5 percent slopes
Feet
0
600
1,200
2,400
Florida Department of Environmental Protection
Division of Recreation and Parks
Office of Park Planning
SOUTH FORK
UNIT
SOILS
MAP

Hydrology

South Fork and its tributaries or branches -- many of which join in the park -- form the southern portion to the headwaters of the Little Manatee River. A park at this geographic location helps protect water quality in this section of the upper watershed.

There is potential for hydrological disturbance from phosphate mining activities to the north and east. A water spill from the mine site could flow into tributaries, including Long Branch, which is a northeast to southwest flowing tributary that joins South Fork within the southeastern "tail" of the park. Such a disturbance has recently occurred in the North Prong of the Alafia River in nearby Hillsborough County. Quality of water entering the park could also be affected by other land uses in the watershed. Consideration should be given to monitoring the water quality in the park.

Groundwater. There are no data available on the groundwater resources for the park. In general, water enters the porous uplands, via rainfall, and percolates downward, some of it probably reaching the surface where the land slopes downward toward the river.

Natural Communities

The system of classifying natural communities employed in this plan was developed by the Florida Natural Areas Inventory (FNAI). The premise of this system is that physical factors, such as climate, geology, soil, hydrology and fire frequency generally determine the species composition of an area, and that areas 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 ten distinct natural communities in addition to ruderal area (see Natural Community Map). The acreage for each natural community is reflected on the Natural Community Map. Park specific assessments of the existing natural communities are provided below. USGS Section numbers in the assessments can be located on the Optimum Boundary Map in the Land Use Component. A list of plants and animals occurring in the park is contained in Addendum 4.

Mesic flatwoods. Most of this community forms a continuous northwest to southeast band in Section 12, which is sandwiched between the bottomland forest on its northeastern side and xeric hammock and scrub communities on its southwestern side. Another small patch occurs as an "island" within a larger community of xeric hammock in the northeast corner of Section 12. This example of mesic flatwoods is dominated by

SOUTH FORK
UNIT

NATURAL COMMUNITIES
MAP

slash pine and has a saw palmetto understory. Additionally there is an "India-shaped" and "round" region in the northeastern part of Section 12 that is different from all other types of mesic flatwoods in the park with respect to structure and composition. The canopy consists of sparsely scattered longleaf pine (instead of slash). The subcanopy and ground cover have saw palmetto and some scattered wiregrass patches, but are dominated by species normally found in wetter habitats such as baygall. Swamp bay, loblolly bay, gallberry, swamp azalea, chokeberry and fetterbushes are prevalent. The somewhat stunted growth of the longleaf pines may be an indication that a hardpan is present below and that drainage is poor. Certainly the baygall species indicate that this habitat is seasonally flooded. The only other example of mesic flatwoods is a degraded longleaf-pine-dominated remnant near the end of the southeasterly projecting peninsula.

Sandhill. Three disjunct pockets of sandhill can be found along the eastern boundary of the park, where the boundary looks like stairway steps. These small remnants (combined they total approximately 21 acres) may have been part of a larger sandhill complex that was converted to a citrus grove on private lands outside of the park boundary. This community is generally 70 to 90 feet above mean sea level. Years of fire exclusion have degraded these sandhill communities by allowing hardwoods to become established and shade out the grass and herbaceous groundcover. At South Fork the sandhill has a sparse canopy of pines, with turkey oaks, sand live oaks and myrtle oaks, as a mid-story, and a groundcover of "shaded" wiregrass. Typically, the dominant plant species in sandhill include longleaf pine, turkey oak, and wiregrass. Additional plant survey work is needed in this community.

Scrub. The best examples of scrub in the park are generally 75 to 125 feet above mean sea level. The largest contiguous acreage of scrub is in the southwestern part of Section 12, just south of the mesic flatwoods community. A smaller patch occurs in the extreme northeastern part of Section 12 and a few tiny patches are along higher elevations of the southeasterly projecting "arm" of the park. Years of fire exclusion have changed other sites that were formerly scrub into incipient hammock. Dominant plant species include: sand pine, rosemary, sand live oak, myrtle oak, Chapman's oak, saw palmetto, rusty lyonia and staggerbush. Other typical plants include: scrub palmetto, prickly pear cactus, tallowwood, sand spikemoss, grass-leaved golden aster, and several wireweed species.

Scrubby flatwoods. Several small expanses of scrubby flatwoods are located in the park. All of these sites generally exceed 60 feet msl. At South Fork the largest examples of scrubby flatwoods tend to be a transitional community between the scrub and mesic flatwoods or xeric hammock. The pine canopy is sparse with a mid story of scrubby oaks and other shrubs. Dominant plant species include: slash pine sand live oak, Chapman's oak, myrtle oak, runner oak, saw palmetto and wiregrass. Other typical plant species include sand pine, longleaf pine, staggerbush, shiny blueberry, tarflower,

dwarf huckleberry, gopher apple, grass-leaved golden aster, goldenrod and frostweed.

Upland mixed forest. This is the most abundant upland community in the park with the largest sites found in Section 12 and the southwestern part of Section 7. These forests run parallel to the South Fork of the Little Manatee River (i.e., in a northwest to southeasterly orientation), at elevations between 65 and 95 feet above mean sea level. The upland mixed forest is a transitional community between the high dry uplands and the wetter bottomland forest. This is a closed canopy forest of hardwoods with a canopy of several large oak species, pignut hickory, and southern magnolia. The mid story includes Carolina holly, wild olives, sparkleberry, cabbage palms, red bay, tough bully, and tallow wood/hog plum. The groundcover is sparse, with a thick layer of leaf litter. Other occasional plants include: sarsaparilla vine, saw palmetto, black cherry, American beautyberry and persimmon.

Xeric hammock. The largest examples are in the east part of Section 12 and the southwestern part of Section 7. Most of the xeric hammock is at elevations between 75 and 100 feet above mean sea level. The presence of a few mature sand pines and scrub palmetto indicates that this may have formerly been scrub. Other prevalent plants include: sand live oak, laurel oak, scrub hickory, pignut hickory in the canopy, with sparkleberry, rusty staggerbush, scrub holly, and wild olive in the understory. Other occasional plants include: sarsaparilla vine, saw palmetto, and tallow wood.

Baygall. Baygalls most often lie along seepage gradients at the base of gently sloping terrain and along the edges of palustrine floodplains where the water table is high. As a result, the underlying acidic peat substrate remains saturated throughout most of the year. The baygall community in this park is most prevalent in narrow strips between the upland mixed forest and the bottomland forest. Because of the narrowness of this community at South Fork, it was not mapped separately from the bottomland forest in the natural community map.

The vegetation is characterized by a dense undergrowth of saw palmetto and abundant catbriers or greenbriers. In the absence of fire, loblolly bay, sweet bay and swamp bay trees are the typical dominant trees. Other components of the flora may include: wax myrtle, fetterbush, highbush blueberry, dahoon holly, saw palmetto, cinnamon fern, and Virginia chain fern.

Bottomland forest. At the park, the bottomland forest borders the low, flat banks of the South Fork of the Little Manatee River and its small tributaries or "branches". This forest of primarily deciduous trees is found at elevations of between 40 and 70 feet msl. Bottomland forests are subject to occasional inundation, especially during the summer rainy season, and being subjected to hydroperiods of up to six months per year. Dominant plant species of the bottomland forest here include: water oak, live oak, laurel oak, red maple, sweetgum, dahoon holly and swamp tupelo. This last tree

named is a useful indicator species for this natural community. It does not grow in any other natural community in the park.

Other typical components include snowbell, cabbage palm, dwarf palmetto, needle palm, wax myrtle, stiffcornel or swamp dogwood, wild coffee, rein orchid, cinnamon fern, royal fern, Virginia chain fern and swamp fern.

Depression marsh. Is similar to the FNAI concept of this community, but currently has a shrubbier component. Typical vegetation components include: Carolina willow, St. John's wort, yellow-eyed grass, smartweed, cattail, wax myrtle, and maidencane.

Blackwater stream. Collectively, the South Fork of the Little Manatee River and its tributaries, constitute the blackwater stream community. The clear, tannin-stained waters of these small streams are generally acidic. Streambanks are often steep, and the streams flow at a moderate rate. The blackwater streams occasionally overflow. However, steeply rising slopes usually keep the water confined within the stream banks, although great fluctuations in water levels are not uncommon, especially during droughts or rainy periods. Typical plant species include: pickerelweed, golden club, smartweed, Virginia willow, and stiff cornel or swamp dogwood.

Ruderal/developed. Typical plant species include: Bahia grass, blackroot, flat-topped goldenrod, dog fennel, horrid thistle, blueheart, and wax myrtle. This is also the principal place where cogongrass infestation occurs.

Designated Species

Designated species are those which 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.

To date, 12 designated species of plants and nine species of vertebrates have been identified within the park. Scrub plants are represented on the list, as are the Florida Scrub-jay and Florida mouse. There has been only one record of the Florida scrub lizard at the park, and no museum specimen exists for the locale. There is some doubt as to whether the species currently occurs at the park.

Special Natural Features

No special natural features have been identified at the park.

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.

A check of the Florida Master Site File (FMSF) was requested from the Division of Historical Resources (DHR) on the park, regarding T33S R20E, Sections 12, 13, and 14 and T33S R21E, Sections 7, 17, 18, 19, and 20. Portions of some of the sections were not in the park, but results indicated that two of the several sites are barely within the boundaries. One site, MA00001, site name, Parrish Mound 1, is a prehistoric burial mound of the Safety Harbor archeological complex. The other site, MA00114, site name Long, is an artifact scatter of the same culture.

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.

During the development of this plan, an analysis was made regarding the feasibility of timber management activities for this park. It was then determined that the primary management objectives of the unit could be met without conducting timber management activities for this management plan cycle. Timber management will be reevaluated with improved access for resource management activities during the next revision of this management plan.

Additional Considerations

Presently, the only special management consideration that affects the park is the lack of suitable access to conduct resource management. As discussed above, acquisition of

suitable adjacent parcels and/or a management agreement with the Southwest Florida Water Management District or the Florida Fish and Wildlife Conservation Commission/Manatee County, which would allow for access through the property adjacent to the park, is a priority to alleviate this problem.

Management Needs and Problems

The greatest management need at South Fork is to collaborate with adjacent conservation land managers. Of the 2,300 acres originally identified as the park's optimum boundary for acquisition/expansion, SWFWMD has purchased 970 acres and Manatee County and the FFWCC collaborated to purchase another 960 acres. There is the potential to partner with SWFWMD and FFWCC to improve access and resource management activities on the park. There are at least two important reasons to do so. First, access to the unit is very difficult not only for the public, but for resource managers as well. Second, this park has boundaries that result in an unusual shape for the property. Specifically there are two long peninsula-like extensions, one trailing off from the main part of the park for about two miles to the southeast, and one shorter projection or arm on the west. The property adjoining the latter peninsula is unfortunately already in a ruderal condition. The former extension is vulnerable to invasion by exotic plants and animals. Except for the conversion of some tracts of upland habitat to improved pasture, the natural communities at South Fork are in good condition. Ordinarily management of ruderal lands would not be considered a high priority, but timely management action is needed because cogongrass is already present and spreading particularly fast in the old fields of the western part of the park. Removal of some of the common fences between the park and adjacent public land parcels would facilitate access for land management activities.

Potential threats to the park are primarily external and associated with land uses in the watershed of the South Fork of the Little Manatee River. Two of these are phosphate mining and citrus farming. There is need for hydrological monitoring, in particular monitoring of water quality in the tributaries entering the park.

Prescribed burns will be needed in sandhill, mesic flatwoods, scrubby flatwoods, and scrub. In addition, some of the xeric hammock may be restorable to scrub or scrubby flatwoods. As mentioned earlier, there is strong evidence that xeric hammocks at the park were formerly scrub. The objective, therefore, is to re-introduce the natural process of fire in conjunction with restoring the appropriate vegetation and fuel characteristics associated with scrub or scrubby flatwoods. Prescribed burning in sand pine scrub will require harvest of sand pines to burn safely, and mechanical treatment in long-unburned mesic flatwoods and scrubby flatwoods will be required for restoration of those communities. Pine trees in flatwoods may need to be thinned to allow the passage of equipment for mechanical treatment. In sandhill habitat, removal of hardwood trees may be necessary to restore the natural community. When natural community management is sufficiently underway, the natural community map should

be refined to incorporate vegetative changes.

Although cogongrass and pale rattlebox are present, the park appears to be free of some other common, aggressive exotics. Brazilian pepper, although within two miles of the park, has not yet been recorded from this unit.

Another exotic plant, rosary pea, has also been noted along the southern park boundary. Although not a threat to native vegetation, it is undesirable and ought to be removed. Feral hogs are present and should be controlled.

Inventories of plant and animal species have been conducted, and should continue. The state and federally endangered Florida goldenaster, *Chrysopsis floridana*, occurs approximately 20 meters north of the property boundary on the adjacent private property as well as on the FFWCC managed property to the east. This species has not been found on the property but surveys should be conducted annually. There is need for a cooperative management strategy for the Florida Scrub-jay. Although jays do not currently occur in the park, the amount of scrub and scrubby flatwoods present could add to habitat present on adjacent land managed by the SWFWMD and the FFWCC. Florida Scrub-jays are present on the adjacent lands.

The two known cultural sites at the park will require monitoring to protect them from disturbance and interpretation of pre-European habitation in the park and vicinity should be provided via displays and interaction with visitors.

Management Objectives

The resources administered by the Division 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 objectives at South Fork are to acquire critical adjacent parcels, and collaborate with SWFWMD and FFWCC to provide access and to protect existing linear segments of the property, initiate prescribed burning and natural community restoration, eliminate cogongrass while restoring ruderal areas, and control feral hogs. Another objective is to continue inventories of natural resources that have been started, and to use them to guide management measures such as a cooperative Florida Scrub-jay management strategy and gopher tortoise management. It is also an objective to update natural community maps as restoration progresses. As for cultural resources, the objectives are to protect known sites, avoid disturbance of unknown sites, and interpret the significance of park lands within the context of pre-European habitation.

Management Measures for Natural Resources

Hydrology

In order to ensure that water quality is maintained in the face of the two potential hydrological problems: stemming from orange grove/row crop production and phosphate mining, as mentioned earlier, consideration should be given to water quality monitoring of selected tributaries entering the South Fork of the Little Manatee River. Currently the biggest obstacle is the lack of staffing.

As mentioned earlier, erosion related to feral hog damage is a problem on wet, steep slopes. Other than this, there are no soil conservation or erosion issues at this park. Feral hogs need to be controlled.

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.

Although this burn plan is somewhat generic in nature, generally speaking, frequent late spring and early summer burns are effective in controlling hardwood encroachment in fire-adapted communities. Most prescribed burns should correspond with this natural fire season, which occurs between April and July. Burns conducted during this period cause the release of nutrients from burned vegetation. Unfortunately, regulations sometimes prevent burning during very dry periods of the year -- when, in the pre-Columbian era, much of the burning would have occurred. Some variation within the natural fire season is also important. Instead of burning during the same month each year, burns should be scheduled for different months within the natural fire season. However, it is important to burn frequently even if that means burning “out of season”.

Although many communities are adapted to spring and summer fire, a spring or summer fire should not be introduced into a community which has a high fuel buildup. When a community has not been burned for a number of years, consideration should be given to an initial fall or winter fuel-reduction burn, before using a growing-season burn. After a fuel-reduction burn, a natural fire regime can again prevail.

Several natural fires have occurred at the park since acquisition, but long periods of fire exclusion have altered much of the natural habitat, and will necessitate use of

mechanical treatment in conjunction with fire for restorative purposes. In addition, some mechanical treatment, as well as timber removal is needed to burn safely. Particularly, sand pines may need to be removed from scrub zones where prescribed burning is planned. Mechanical treatment of saw palmetto and overgrown scrub oaks is often required in mesic flatwoods and scrubby flatwoods, respectively. Sandhill communities will require the removal of hardwoods that have grown to maturity during the long period of fire exclusion. This may be accomplished with herbicides, by girdling, or by removal of the trees.

Due to the isolated nature of the park, smoke management is not expected to be a serious problem.

Boundary delineation and fencing are required on some of the park perimeter not adjoining other public land.

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 which aggravate the particular problems of a species.

Prescribed fire at the park will facilitate the conservation of designated species within the burnable habitats. Special management procedures may become necessary for the small population of Florida scrub-jays. A single management strategy should be developed by the three public conservation land management agencies for Florida scrub-jay habitat. This is especially important since the birds do not occur in the park at present. The average dispersal distance for female Florida scrub-jays from suburban territories is 8 km and the maximum dispersal is about 20 km. (Thaxton and Hingtgen, 1996). Woolfenden and Fitzpatrick (1991) have shown that a minimum of 20-40 breeding pairs are needed to sustain a population for long term survival (more than 100 years).

Exotic Species Control

Exotic species are those plants or animals that are not native to Florida, but were introduced as a result 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. Therefore, the policy of the Division is to remove exotic species from native natural communities.

Efforts must be directed for the removal of the invasive pest plant, cogongrass, *Imperata cylindrica*. As indicated, most of the infestations are in old fields. A precise herbicide

protocol using one percent Glypro (glyphosate) is currently being employed elsewhere in the district. It should be utilized here as well.

The exotic animal of concern at South Fork is the feral hog. Trapping is the preferred method of control; however control measures will be difficult until this park is staffed.

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 to be a threat or problem.

There are no known problem species at this 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. Managers of state lands must coordinate any land clearing or ground disturbing activities with the Division to allow for review and comment on the proposed project. Recommendations may include, but are not limited to approval of the project as submitted, pre-testing of the project site by a certified archaeological monitor, cultural resource assessment survey by a qualified professional archaeologist, modifications to the proposed project to avoid or mitigate potential adverse effects.

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

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

At South Fork, monitoring of known sites on a periodic basis is required as a protective measure. The pre-European significance of the park should also be interpreted in light of the sites that are known.

Based on the findings from the Florida Master Site File, noted earlier under the description of Cultural Resources, the Division of Historical Resources may wish to

initiate archaeological investigations of the Parrish Mound site (MA00001), a prehistoric burial mound of the Safety Harbor archeological complex at South Fork. If that is deemed feasible, the other site, MA00114 (the Long site which contains artifact scatter of the same culture), could also be investigated.

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 initially will be directed at completing the already-initiated vascular plant and vertebrate surveys. Based on concerns about potential hydrological problems in the future, there is a need to monitor surface water quality after baseline data are established.

Cultural Resources

Because of the initial findings of the site file search, management measures for cultural resources include drafting a proposal for a Level I archaeological survey. Any ground disturbing activities should be conducted in accordance with DHR Policy and Division guidelines.

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 6. Cost estimates for conducting priority management activities are based on the most cost effective methods and recommendations currently available.

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 managing agency shall consider the findings and recommendations of the land management review team in finalizing the required update of its management plan.

South Fork has not been the subject of a land management review.

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 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, regional demographics, adjacent land uses and the park's interaction with other facilities.

Existing Use of Adjacent Lands

South Fork is surrounded by agricultural land uses and conservation lands. The Southwest Florida Water Management District (SWFWMD) manages 970 acres, known as Cordelle Ranch, between State Road 62 and the southern boundary of the park. Bordering the park to the north is the 960-acre Moody Branch Mitigation Park Wildlife and Environmental Area that was acquired by Manatee County and managed by Florida Fish and Wildlife Conservation Commission (FFWCC). The mitigation park is being managed for gopher tortoise and scrub jays and, there are plans to provide passive recreation opportunities such as trails and wildlife observation.

Orange groves are the dominant agricultural crop in the area. Hydrological anomalies associated with citrus production poses a potential threat to the park. In addition, surface water problems associated with phosphate mining to the northeast in Hillsborough County poses a threat. However, some of the surrounding private lands are still in relatively natural condition with scrub communities and seepage wetlands present. Although the southern tip of this parcel fronts State Road 62, there is no suitable area for vehicular access through this narrow portion of the property.

Within the vicinity of South Fork, there is a variety of resource-based recreation opportunities on public lands. Little Manatee River State Park, located about 12 miles to the northwest, offers family camping, primitive camping, canoeing, fishing, equestrian trails, horse camping, nature trails, wildlife viewing, and picnicking. Little Manatee River Upper Tract and Lower Tract, co-managed by Hillsborough County and SWFWMD, provide opportunities for boating, paddling, camping, fishing, hiking, nature appreciation and picnicking. To the southwest, Lake Manatee State Park offers swimming, boating, camping, picnicking and shared-use trails. The Southwest Florida Water Management District (SWFWMD) manages the Lake Manatee Reserve – Gilley Creek Tract that provides trails for hiking, biking and horseback riding as well as fishing. In addition, the Rye Wilderness Park has a boat ramp, playground, bike trails, hiking trails, nature trails, tent camping, horseback trails, canoe launch, fishing and picnic tables. To the southeast lies the 22,000-acre Duette Park. This county park has camping, picnicking, hunting, hiking, biking, horseback riding and nature trails. Wingate Creek is also located south of the South Fork property and currently offers shared-use trails.

Planned Use of Adjacent Lands

The Future Land Use Map for Manatee County indicates that the land surrounding the park will remain primarily agricultural (Manatee County, 1999). These areas are designated as "Agriculture/Rural" which limits future development to agriculture, rural residential uses, mining, agro-industrial uses, commercial uses related to agriculture, convenience retail uses, commercial office uses, and recreational facilities (Manatee County, 1999). Also near the park are large parcels of land designated as "Conservation Lands" and "Major Recreation/Open Space" (Manatee County, 1999).

It is anticipated that private lands around South Fork will be developed for residential uses as Florida's population continues to grow. The additional development may impact the unit by effecting water resources, and increasing vehicular traffic on adjacent roads. Additional agricultural land uses are also anticipated around the park, since the regional climate is well suited to citrus and row crop farming. Additional agricultural uses could result in a decrease in surface and ground water quality.

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.

Land Area

South Fork is managed as a satellite of Lake Manatee State Park. The park contains approximately 1,124 acres along the upper reaches of the South Fork of the Little Manatee River. Scrub communities and mesic flatwoods dominate the uplands. The narrow fork of the Little Manatee River has eroded the sandy uplands to a remarkable depth. The slopes between the uplands and the river are dominated by hardwood trees that vary by species according to the specific moisture gradients of the slopes. The park is best suited to activities such as hiking, biking, horseback riding, primitive camping and nature study.

Water Area

The surface water features at the park are quite narrow, with heavily vegetated shorelines. The narrow creeks are not suitable for swimming or canoeing.

Significant Wildlife Habitat

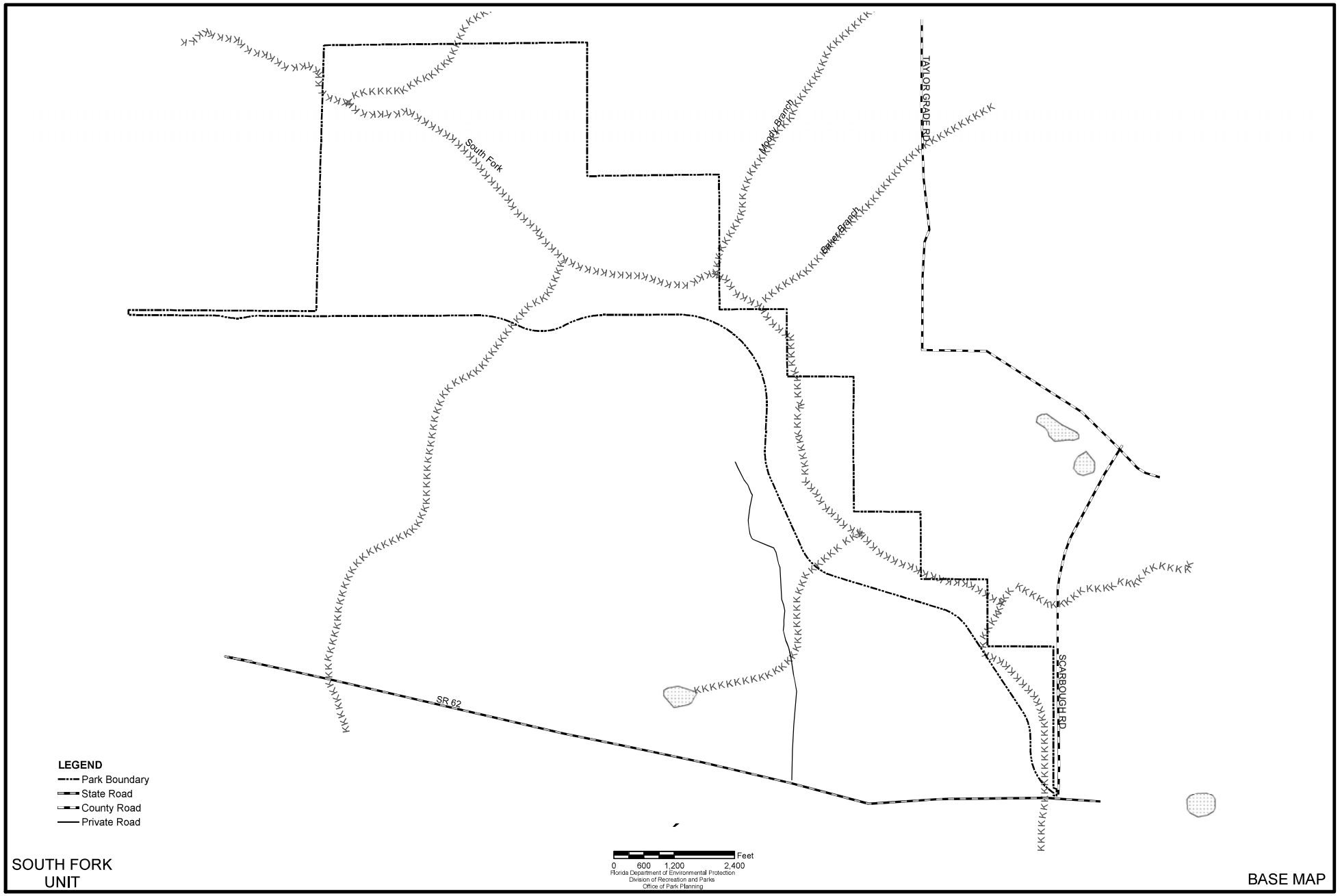
The park provides important scrub jay and gopher tortoise habitat.

Archaeological and Historical Features

The park contains two archaeological sites. One site, Parrish Mound, is a prehistoric burial mound of the Safety Harbor archaeological complex. The other site, Long Scatter, is artifact scatter of the same culture. A comprehensive archaeological survey is still needed.

Assessment of Use

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



SOUTH FORK
UNIT

BASE MAP

Past Uses

Portions of the park have been used for farming and cattle grazing as evidenced by improved pastures and old fields.

Recreational Uses

The park is currently only accessible via an improved, sandy road through the neighboring SWFWMD property. The existing service roads are available for hiking.

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 South Fork, the bottomland forest, baygall, blackwater stream, depression marsh, sandhill and scrub communities have been designated as protected zones as delineated on the Conceptual Land Use Plan.

Existing Facilities

Recreation Facilities

There are no facilities within the park.

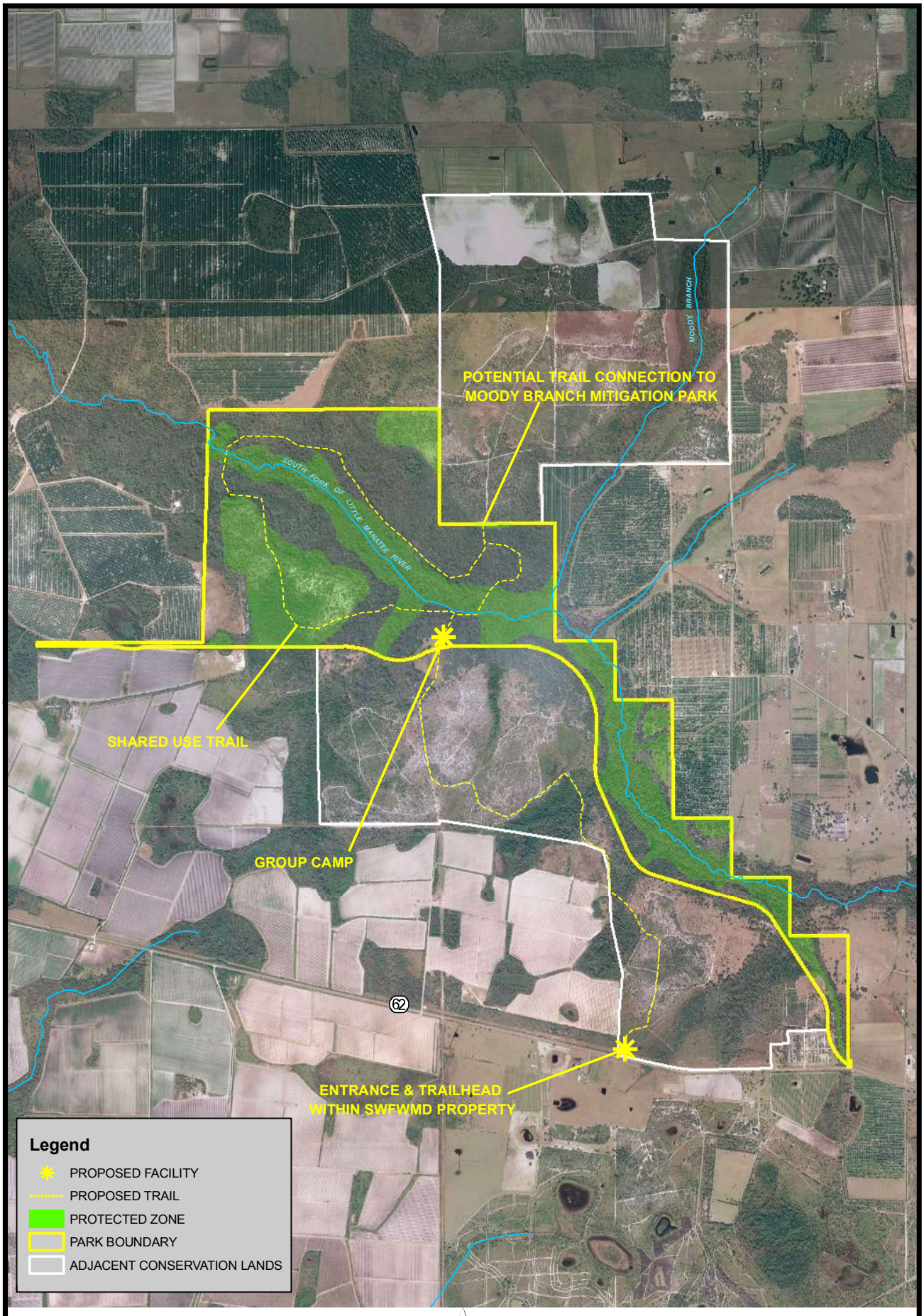
Support Facilities

There are no facilities within the park. It relies on the support facilities at Lake Manatee State Park.

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 Division 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



SOUTH FORK

CONCEPTUAL LAND USE PLAN

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

The primary emphasis is placed on protection of the site's resources. Potential recreational uses should be primarily low-impact, and must be compatible with resource preservation objectives. The following park development is recommended:

Recreation Facilities

Acquire access. Although there is potential for limited public recreation on the South Fork property, the lack of vehicular access makes this difficult. The Division will work towards developing an appropriate agreement with SWFWMD to provide public access across their property that fronts State Road 62 (see Conceptual Land Use Plan). SWFWMD has already stabilized and improved their parking area that can accommodate 15-20 cars. Additional amenities are recommended for this trailhead area including a small picnic shelter, an interpretive kiosk and a composting toilet. From here, visitors would follow existing service roads to access the state park property to the north. However, the SWFWMD property is currently only available to hikers. Therefore, access for horses and bikes would need to be secured through another location.

Another access alternative is to coordinate with FWC and Manatee County to provide recreational trail access, including equestrian use, through Moody Branch Mitigation Park to the north once it is open to the public; currently projected for 2011.

In addition, if additional lands are acquired, the Division will reevaluate public access to the state park property.

Shared-use trail. The development of a shared-use trail system is recommended for this park with connections to neighboring conservation lands. The proposed trail should introduce visitors to the diverse natural communities and wildlife habitats,

which should be interpreted at the trailhead and through signage along the trail. Footbridges should be placed where needed to cross the South Fork of the Little Manatee River and its tributaries.

The Division will work with FWC and Manatee County to coordinate recreational trail use between Moody Branch Mitigation Park and South Fork; however, horses will not be allowed on land directly south managed by SWFWMD. Trails within the SWFWMD property are available to hikers only.

Primitive group camp. A hike-in primitive group camp is recommended to provide organized groups with the opportunity to stay overnight. The area selected has been previously disturbed and is surrounded by scenic xeric hammock. Proposed facilities include a large shelter, campfire circle and a self-contained restroom facility.

Link to proposed Manatee County Greenway Trail System. Manatee County has identified the need to develop and implement a countywide, non-motorized, multi-use greenway trail network connecting to a regional system. One segment of the proposed greenway system will extend from the Hillsborough County line south through the South Fork property to Rye Wilderness Park. The Division supports greenway linkages, where feasible, and will coordinate efforts with Manatee County to accommodate necessary trail linkages between the proposed county greenway and the existing trails within the state park.

Support Facilities

A ranger residence and equipment shelter are recommended to support future management efforts at the property. The location of these facilities is contingent on future acquisitions or arrangements with neighboring land management agencies.

Facilities Development

Preliminary cost estimates for the following list of proposed facilities are provided in Addendum 6. 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.

Recreation Facilities

Stabilized parking (10 cars)
Small Picnic Shelter
Composting Toilet
Shared-Use Trail (approximately 5 miles)
Foot Bridges (2)
Interpretive Signs (5)
Primitive Group Camp

Support Facilities

Ranger Residence
Equipment Shelter (3 bay)

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).

Table 1--Existing Use And Optimum Carrying Capacity

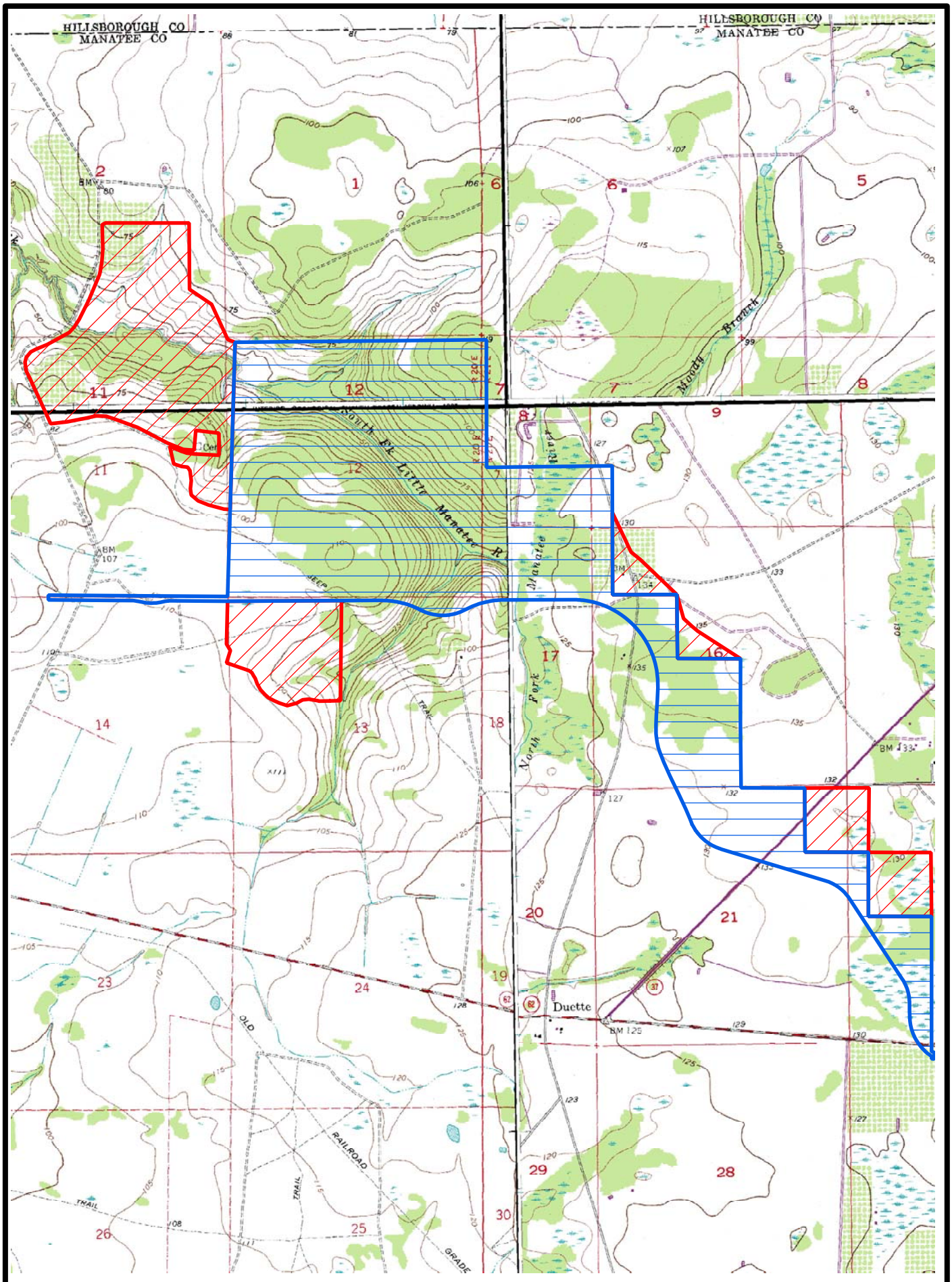
	Existing Capacity		Proposed Additional Capacity		Estimated Optimum Capacity	
Activity/Facility	One Time	Daily	One Time	Daily	One Time	Daily
Shared Use Trail			40	80	40	80
Primitive Group Camp			30	30	30	30
TOTAL	**0**	**0**	**70**	**110**	**70**	**110**

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.

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. At this time, no lands are considered surplus to the needs of the park.

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 for use 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 to be



SOUTH FORK
UNIT

0 1,000 2,000 4,000 Feet

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

LEGEND
Park Boundary
Optimum Boundary

OPTIMUM BOUNDARY MAP

used as the basis for permit denial or the imposition of permit conditions.

The optimum boundary map reflects lands identified for direct management by the Division as part of the park. These parcels may include public as well as privately owned lands that improve the continuity of existing park lands, provide additional natural and cultural resource protection, and/or allow for future expansion of recreational activities.

Undeveloped lands identified on the Optimum Boundary Map that surround the South Fork property are recommended for acquisition. Acquisition of these lands will add desirable natural resources, enhance the park's boundary for management purposes and provide a buffer from future development and agricultural uses. The Division will coordinate with Southwest Florida Water Management District, Florida Fish and Wildlife Conservation Commission and Manatee County to provide much-needed public access to the park as well as promote efficient resource management of the three adjacent public conservation lands.

Addendum 1 – Acquisition History and Advisory Group Staff Report

Sequence of Acquisition

On October 26, 1988, the Board of Trustees of the Internal Improvement Trustee Fund (Trustees) obtained title to property that later became Beker. The Trustees acquired the property by donation. The donation is a result of a settlement and compromise made between Beker Phosphate Corporation and the Trustees. The Beker phosphate company had owed the State of Florida approximately $2.5 million in severance taxes, filed Chapter 11 bankruptcy on October 21, 1985. In 1988, the State and the corporation entered into an agreement whereby the corporation conveyed the property of approximately $2.5 million value by donation to the Trustees in exchange for the State compromising Beker's severance tax liability of about $2.5 million.

Lease Agreement

On August 8, 1990, the Trustees conveyed management authority of Beker to the Department of Environmental Protection (DEP), Division of Recreation and Parks (Division) under Lease No. 3703.

Since the establishment of Beker in 1988, the Trustees have not acquired any new lands to add to Beker. However, the Division has released its leasehold interest in 45.85 acres of the park.

Title Interest

The Trustees hold fee simple title to Beker, and the Division manages the property as a park under Lease No. 3703 for a period of fifty (50) years and will expire on August 8, 2040.

Outstanding Reservations

The Division's Lease from the Trustees stipulates that all the property be utilized for public outdoor recreation and related purposesUses such as water resource development projects, water supply projects, stormwater management projects, linear facilities and sustainable agriculture and forestry (other than those forest management activities specifically identified in this plan) are not consistent with this plan. The following is a listing of outstanding rights, reservations and encumbrances that apply to Beker.

Instrument:	Special Warranty Deed
Instrument Holder:	Chapter 11 Operating Trustees for Beker Phosphate Corporation
Beginning Date:	October 26, 1988
Ending Date:	There is no specific ending date given.
Outstanding Rights, Uses, Etc.:	The donation of the property by Chapter 11 Operating Trustee for Beker Phosphate Corporation to the Trustees is subject to matters set forth on Exhibit B of the Special Warranty Deed.

The Honorable Jane W. von Hahmann
Chairman
Manatee County Board of Commissioners
P.O. Box 1000
Bradenton, Florida 34206

William C. Wolbert, Park Manager
Lake Manatee State Park
20007 State Road 64
Bradenton, Florida 34202

Gary Reeder, Chairman
Manatee River Soil and Water Conservation District
1703 21st Street West
Palmetto, Florida 34221

Jeff McGrady, Regional Wildlife Administrator
Southwest Region
Florida Fish and Wildlife Conservation Commission
3900 Drane Field Road
Lakeland, Florida 33811

Duane Weis, Manager
Myakka River District
Florida Division of Forestry
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Bradenton, Florida 34203

Will VanGelder, Senior Land Management Specialist
Southwest Florida Water Management District
2379 Broad Street
Brooksville, Florida 34604

Steve Black, President
Manatee County Audubon Society
2746 Feiffer Circle
Sarasota, Florida 34235

Gayle Reynolds, Group Chair
Manatee-Sarasota Group
Sierra Club
6047 Rogers Avenue
Sarasota, Florida 34231

Ms. Karen Fraley
Florida Native Plant Society – Serenoa Chapter
1815 Palma Sola Boulevard
Bradenton, Florida 34209

Ralph Hancock, Chair
Suncoast Chapter
Florida Trail Association
1925 8th Street North
St. Petersburg, Florida 33704

Roberta Langford, President
Myakka River Riders
12108 State Road 64 East
Bradenton, Florida 34212

Mike Lyster, Council President
Southwest Florida Boy Scout Council
5931 Barclay Lane
Naples, Florida 34110

Dr. Gaylor Huenefeld
4950 Wingate Road
Myakka City, Florida 34251

Otto M. Bundy, Owner
Native Plant Nursery
4218 18th Avenue West
Bradenton, Florida 34205

The Advisory Group meeting to review the proposed land management plan for Beker was held in the visitor center of Gamble Plantation Historic State Park on August 27, 2008 at 9am. Chairman Jane W. von Hahmann (Manatee County) was represented by Candie Pederson. Gayle Reynolds (Sierra Club) was represented by Rosalie Shaffer. Roberta Langford (Myakka River Riders) was represented by Marcia Cox. Gary Reeder (Manatee River Soil and Water Conservation District), Jeff McGrady (Florida Fish and Wildlife Conservation Commission) and Mike Lyster (Southwest Florida Boy Scout Council) did not attend. All other appointed Advisory Group members were present. Also in attendance were Gina Sowders (SWFWMD) and Alicia Dozier and Michelle Bevelock (Myakka River Riders). Attending staff from the Division of Recreation and Parks included Valinda Subic, Terry Hingtgen, Curt Wolbert and Brian Burket.

Mr. Burket began the meeting by explaining the purpose of the Advisory Group and reviewing the meeting agenda. He provided a brief overview of the Division's planning process and summarized public comments received during the previous evening's public workshop. He then asked each member of the advisory group to express his or her comments on the plan.

Summary of Advisory Group Comments

Will VanGelder (Southwest Florida Water Management District) commented that the name, South Fork, is the same used for the neighboring SWFWMD property and this may lead to confusion. He requested the opportunity to review designs for any planned creek crossings. He questioned whether it is necessary to provide a staff residence at South Fork due to concerns over an additional well and septic system in the area. Curt Wolbert responded that one of the properties identified as optimum boundary already contains a residence and shop building which could be used by park staff. Mr. VanGelder commented that the future plans for neighboring Moody Branch Mitigation Park may influence the management and public access of South Fork. He asked how signage for South Fork would be established. Mr. Wolbert replied that the Division would like to coordinate a shared agency entrance with both logos on the entrance sign. In regards to the proposed interpretive program for South Fork, Mr. VanGelder recommended including the neighboring conservation lands and highlighting restoration progress and future plans. He mentioned that some of the roads within the SWFWMD property have recently been improved. He commented that he would like to work with park staff to remove some of the internal fencing between the properties. He stressed the need to establish a property address in case of emergencies and fires. He provided a few suggestions to improve the maps within the management plan. On page 35 of the South Fork plan, he recommended expanding the discussion about how to "promote efficient resource management of the three adjacent public conservation lands." Terry Hingtgen responded that this topic is addressed in more detail in the Resource Management Component. Mr. VanGelder stated that the cost estimates for South Fork and Wingate Creek include much duplication that may

not be necessary. For Wingate Creek, he voiced support for the removal of sand pine prior to the reintroduction of fire in the scrub community. He recommended that park staff coordinate with the Division of Forestry and suggested that the harvesting of sand pine could result in good money.

Marcia Cox (Myakka River Riders) asked if equestrian access to South Fork could be provided through Moody Branch Mitigation Park. Valinda Subic replied that the Division would like to increase cooperation among the agencies managing adjacent public conservation lands around South Fork to establish a seamless, coordinated management effort; therefore, equestrian use at South Fork would be dependent upon future coordination of recreational use. Ms. Cox requested that consideration be given to allowing equestrian use of the Wingate Creek property. She commented that there is potential to use some of the facilities of the former Outward Bound Camp to support equestrian use of the property. She asked about the removal of sand pine from Wingate Creek. Terry Hingtgen explained that it is necessary to remove the sand pine before initiating a prescribed burn where it is present on the property.

Steve Black (Manatee County Audubon Society) discussed a potential conservation connection between the Wingate Creek property and the Upper Myakka River Watershed (SWFWMD) to the south. Valinda Subic suggested that Manatee County may have interest in protecting this portion of the Myakka River corridor. Mr. Black expressed support for removing internal fencing between the neighboring conservation lands at South Fork.

Otto M. Bundy (South Fork adjacent landowner) remarked that the South Fork property is an important environmental area that will require long-term maintenance which will cost money. He stated that he is in favor of moving slowly with allowing recreational use on this property.

Dr. Huenefeld (Wingate Creek adjacent landowner) expressed his opposition to spending money at either South Fork or Wingate Creek during these difficult economic times especially when other state parks are available nearby. He also recommended allowing cattle on the Wingate Creek property to help reduce the overgrowth of vegetation.

Karen Fraley (Florida Native Plant Society – Serenoa Chapter) commented that education is the key to managing South Fork and Wingate Creek. She appreciated that park biologists recognize the importance of the habitats and natural communities at these properties. She expressed support for the removal of sand pine and prescribed fire at Wingate Creek. She questioned whether the resource management cost estimates are sufficient. She requested that the Division look into securing public access at the northwest side of South Fork through the adjacent orange grove. She recommended that all future trails be kept away from endemic plant species. She expressed some

concern over the potential equestrian use of South Fork. She stated her support for the reduction of internal fence lines.

Duane Weis (Florida Division of Forestry) pointed out a discrepancy between two sections of the South Fork plan regarding timber management. He also offered some suggestions/corrections to the Timber Analysis for Wingate Creek. Terry Hingtgen stated he would make the necessary revisions. Mr. Weis requested a copy of the carrying capacity calculations. He agreed with staff comments that managing natural and cultural resources while providing recreational opportunities is a balancing act that often results in tough decisions.

Ralph Hancock (Florida Trail Association – Suncoast Chapter) indicated that the Florida Trail Association has some interest in helping with trail development at Wingate Creek and South Fork. He estimated that about three miles of hiking trail could be offered at Wingate Creek using existing roads and an open area along the creek. He suggested this could be a good Eagle Scout project. At South Fork, he stated he would like to see the internal fencing removed before developing a trail system.

Rosalie Shaffer (Manatee-Sarasota Group Sierra Club) commented that she is glad that these sensitive lands were acquired and are being managed. She stated that the protection of water quality and wetlands are very important. She recommended that it should be a priority to monitor surface water and groundwater and to work with the phosphate mines to protect water quality. She asked about the potential to plant cypress trees in the wetlands. Terry Hingtgen replied that there is no evidence that cypress ever existed on these properties. Ms. Shaffer recommended the restoration of the depression marsh at Wingate Creek. Mr. VanGelder suggested a partial ditch block would allow some restoration without flooding the neighbor's field.

Candie Pedersen (Manatee County) commented that there are some very sensitive plants on both properties, but if trails are routed appropriately, they could support horses, too. She suggested that the management plan further address the potential impact that phosphate mines can have on water quality and quantity within the park properties. She also expressed support for the restoration plans discussed in the management plan.

Summary of Additional Comments

Gina Sowders (Southwest Florida Water Management District) commented that the parking area within the SWFWMD property off State Road 62 has recently been improved and is capable of accommodating 15-20 cars. She also mentioned that the roads within the SWFWMD property are erosion prone and have been stabilized with large-scale rocks. She stated that the SWFWMD property is only available for hiking due to this erosion potential as well as the presence of endangered species and

threatened habitats, the high value of the ecological resource, wet conditions from agricultural runoff and the availability of equestrian trails in the vicinity. She further stated that it is not likely that this property would be open to horses in the future. She requested to see the carrying capacity calculations. She recommended that hog trapping occur during the week as opposed to the weekend to minimize interaction with park visitors. She requested to be informed of any research that takes place at South Fork. She asked how park staff deals with security issues including the illegal use of ATVs on the properties. Curt Wolbert responded that he utilizes law enforcement, fencing and signage and commented that ATVs are no longer a problem. Ms. Sowders expressed her support for working with the Division to establish coordinated management of the neighboring properties including providing signage and a sign-in box at the gate.

Staff Recommendations

The staff recommends approval of the proposed management plan for Beker as presented with the following changes:

Equestrian use of the South Fork property. Manatee County has indicated that they plan to allow equestrian use of Moody Branch Mitigation Park once it is open to the public; currently projected for 2011. This mitigation park is located directly north of the South Fork property and shares a common boundary. The Division will work with Manatee County to coordinate recreational trail use between the two properties; however, horses will not be allowed on land directly south managed by SWFWMD. Trails within the SWFWMD property are available to hikers only. If additional lands are acquired, the Division will reevaluate public access to the state park property.

Equestrian use of the Wingate Creek property. Following the removal of sand pine and the reintroduction of fire to the scrub community at Wingate Creek, the Division will consider recreational equestrian use of existing service roads and firebreaks west of the creek.

Addendum 2—References Cited

Bureau of Economic and Business Research (BEBR), University of Florida. 2005. Florida Statistical Abstract 2005. Gainesville, Florida.

Florida Department of Environmental Protection. 2007. Florida State Park System Economic Impact Assessment for Fiscal Year 2006/2007. Tallahassee, Florida.

Florida Natural Areas Inventory. 1990. *Guide to the Natural Communities of Florida.* Florida Natural Areas Inventory, Tallahassee, FL.

Florida Natural Areas Inventory. 2001. *Florida Conservation Lands*. 316 pp & .

Manatee County. 2007. Manatee County Future Land Use Map Series. Manatee County, Florida.

Myers, R.L., and J.J. Ewel. 1990. *Ecosystems of Florida*. University of Central Florida Press. Orlando. 765 pp.

Thaxton, J. E. & Hingtgen, T. M. 1996. Effects of urbanization and habitat fragmentation on Florida scrub-jay dispersal. Florida Field Naturalist 24(2): 25-37.

U. S. Department of Commerce, Bureau of the Census. 2000. U. S. Census 2000.

U.S.D.A.- SCS. 1983. *Soil Survey of Manatee County, Florida.* In cooperation with the University of Florida Institute of Food and Agricultural Sciences, Agricultural Experiment Stations and Soil Science Department, and the Manatee County Board of County Commissioners. 159 pp.

U.S. Fish and Wildlife Service. 1996. *Recovery Plan for Nineteen Central Florida Scrub and High Pineland Plants* (revised). U.S. Fish and Wildlife Service, Atlanta, GA. 134 pp.

Woolfenden & Fitzpatrick, 1991. Florida scrub-jay ecology and conservation. Pages 542-565. *In*: Bird Population Studies, Relevance to Conservation and Management. C. M. Perrins, J. D. Lebreton, and G. J. M. Hirons (eds.) Oxford Univ. Press, Oxford.

Wunderlin, R.P. 1982. *Guide to the Vascular Plants of Central Florida*. University Presses of Florida, Gainesville. 472 pp.

Wunderlin, R.P., and B. F. Hansen. 2000. Atlas of Florida Vascular Plants (internet web page: **http://www.plantatlas.usf.edu/)**. [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa. [Accessed 13 March 2002].

Addendum 3—Soils Descriptions

(3) BRADEN FINE SAND - This is a nearly level to very gently sloping, somewhat poorly drained soil on stream terraces that are well above normal overflow. Slopes are smooth and are 0 to 3 percent. They generally grade toward the stream.

Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsurface layer, to a depth of 28 inches, is grayish brown, brown, dark brown, light yellowish brown, and yellow fine sand. The subsoil, to a depth of 44 inches, is yellowish brown fine sandy loam. The substratum to a depth of 70 inches or more is light gray, gray, and light brownish gray fine sand and sand.

Included with this soil in mapping are areas of soils on similar landscapes; however, those soils are sandy to a depth of 80 inches of more. Also included are a few areas where the subsoil is at a depth of less than 20 inches and some places where a brownish organic stained layer is in the surface layer.

In most years, the water table is at a depth of 30 to 40 inches for 1 to 3 months out of the year. It rises above a depth of 30 inches briefly during periods of heavy rainfall. The soil is flooded rarely for brief periods following abnormally high rainfall. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. The available water capacity is medium in the surface layer and subsoil and low in the subsurface layer and substratum.

The natural vegetation consists of open forest of slash pine and live oak and a ground cover of saw palmetto, creeping bluestem, panicum, and pineland threeawn.

(7) CANOVA, ANCLOTE, AND OKEELANTA SOILS - This map unit consists of nearly level, very poorly drained mineral and organic soils in freshwater swamps and in broad, poorly defined drainageways. It is about 40 percent Canova soils, 25 percent Anclote soils, 20 percent Okeelanta soils, and 15 percent other soils, but the proportion varies in each mapped area. Individual areas of each soil are large enough to map separately, but because of present and predicted use they were not separated in mapping. In a typical mapped area, Okeelanta soils are in the lowest places; Anclote soils in the highest places, generally near the edges; and Canova soils in an intermediate position. In the poorly defined drainageways, the Anclote soils and to a lesser extent the Canova soils are adjacent to the streams. Slopes are less than 2 percent.

Typically, the surface layer of Canova soils is dark reddish brown muck 8 inches thick and dark gray fine sand 9 inches thick. The subsurface layer is gray fine sand 7 inches thick. The subsoil is gray sandy clay loam about 39 inches thick. The substratum is gray fine sandy loam.

In most years, Canova soils are ponded, or the water table is at or near the surface for 9 months or more out of the year. Permeability is rapid in the surface and subsurface

layers and moderate in the subsoil. The available water capacity is high in the surface layer, very low in the subsurface layer, and medium in the subsoil.

Typically, the surface layer of Anclote soils is black fine sand 16 inches thick. Below that, to a depth of 80 inches or more, there is grayish brown, gray, and light gray fine sand.

In most years, Anclote soils are ponded, or the water table is at or near the surf ace for 9 months or more out of the year. Permeability is rapid throughout. The available water capacity is medium in the surface layer and low in the other layers.

Typically, the surface layer of Okeelanta soils is black muck 20 inches thick. Below the surface layer, there is black sand 7 inches thick, grayish brown sand 4 inches thick, and light brownish gray sand 29 inches thick.

In most years, Okeelanta soils are ponded, or the water table is at or near the surface for 9 months or more out of the year. Permeability is rapid throughout. The available water capacity is very high in the surf ace layer and low in the other layers.

The most extensive minor soils are the Chobee, Floridana, and Manatee soils.

The soils making up this map unit are mainly in natural vegetation consisting of bay, gum, ash, swamp maple, water oak, scattered cypress, and some slash pine. In many areas they support a thick undergrowth of vines, briers, and water-loving plants.

(11) CASSIA FINE SAND - This is a nearly level, somewhat poorly drained soil, on low ridges and knolls that are slightly higher than the adjacent flatwoods. Slopes range from 0 to 2 percent.

Typically, the surface layer is gray fine sand about 3 inches thick. The subsurface layer is light gray to white fine sand about 21 inches thick. The subsoil is black to dark reddish brown fine sand coated with organic material and is about 9 inches thick. The substratum to a depth of 80 inches or more is very pale brown and light gray fine sand.

Included with this soil in mapping are areas of Myakka and Pomello soils and soils that are similar to Cassia soils except that they are weakly cemented in the subsoil.

The water table is at a depth of 15 to 40 inches for about 6 months out of the year and below a depth of 40 inches during dry periods. The available water capacity is very low except in the subsoil , where it is medium. Natural fertility is low. Permeability is rapid in the subsurface layers and moderate to moderately rapid in the subsoil.

The native vegetation consists of scattered slash and longleaf pine, dwarf oak and sand

live oak, saw palmetto, pineland threeawn, running oak, and broomsedge bluestem.

(18) DELRAY-POMONA COMPLEX - This complex consists of soils in nearly level, broad grassy sloughs where there are poorly defined stream channels in some places. Some areas are located around the larger ponds. The soils are in the eastern part of the county, generally above an elevation of about 40 feet. The soils are so intermixed that they could not be mapped separately at the scale selected for mapping. Slopes are less than 2 percent.

Delray soils make up about 50 percent of this complex, Pomona soils make up 40 percent, and scattered areas of Myakka, Wauchula, Waveland, and Palmetto soils make up 10 percent. Typically, the Delray soils are at slightly lower elevations than the Pomona soils.

Typically, the surface layer of Delray soils is black fine sand about 15 inches thick. The subsurface layer is grayish brown and light brownish gray fine sand 40 inches thick. The subsoil is grayish brown and greenish gray fine sandy loam and sandy clay loam to a depth of 80 inches or more.

In most years, if Delray soils are not drained, the water table is at or near the surface for 6 months or more out of the year. The available water capacity is high in the surface layer, medium in the subsoil, and low in the subsurface layer. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. Natural fertility is medium.

Typically, the surface layer of Pomona soils is black fine sand about 6 inches thick. The subsurface layer is gray and light gray fine sand 16 inches thick. The subsoil in the upper part is dark reddish brown and dark brown fine sand 14 inches thick. Below that, there is pale brown fine sand 15 inches thick. The subsoil in the lower part is olive gray fine sandy loam 9 inches thick. The substratum is gray loamy fine sand to a depth of 80 inches.

In most years, if Pomona soils are not drained, the water table is at or near the soil surface for 5 months or more out of the year. The available water capacity is low in the surface layer, medium in both parts of the subsoil, and very low in the other layers. Permeability is moderately slow in the lower part of the subsoil, moderate in the upper part of the subsoil, and rapid in the other layers. Natural fertility is low.

The natural vegetation in areas of this complex consists of scattered pine trees, clumps of saw palmetto, gallberry, and a stand of grasses such as bluestem, lopsided indiangrass, maidencane, and pineland threeawn.

(19) DUETTE FINE SAND, 0 TO 5 PERCENT SLOPES - This is a moderately well

drained soil on low ridges and knolls in flatwoods. Slopes are smooth.

Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsurface layer, to a depth of 58 inches, is fine sand. In the upper 8 inches it is light gray, and below that it is white. The subsoil is fine sand that is coated with organic materials to a depth of 80 inches or more. To a depth of 64 inches, it is dark brown, and below that, it is black.

Included with this soil in mapping are small areas of Cassia and Pomello soils.

In most years, if this Duette soil is not drained, the water table is at a depth of 48 to 72 inches for 1 to 4 months during the wet season. It is below a depth of 72 inches for the rest of the year. The available water capacity is very low, except in the subsoil where it is medium. Natural fertility is low. Permeability is very rapid in the surface layer and moderately rapid in the subsoil.

The natural vegetation consists of dwarf and scrub oak, saw palmetto, sand pine, prickly pear, and pineland threeawn.

(24) FELDA-WABASSO ASSOCIATION, FREQUENTLY FLOODED - This association consists of nearly level, poorly drained Felda soils and Wabasso soils and soils that are closely similar to them. The soils are in a regular and repeating pattern on the flood plains along the larger streams in the county. The Wabasso soils are on low ridges. The Felda soils are at slightly lower elevations. Slopes are 0 to 2 percent. Areas are generally narrow and long and follow streambeds and flood plains. Some areas are broad and range in width to almost 2 miles. Areas of the individual soils are large enough to map separately, but in considering the present and predicted use they were mapped as one unit.

The composition of this map unit is more variable than that of most other map units in the county; nevertheless, valid interpretations for the expected uses of the soils can still be made.

Felda soils and those that are closely similar to them make up about 60 percent of the association, wabasso soils and those that are closely similar to them make up 25 percent, and minor soils make up 15 percent.

Typically, the surface layer of Felda soils is very dark gray fine sand 3 inches thick. The subsurface layer is grayish brown fine sand 21 inches thick. The subsoil is between depths of 24 and 64 inches. In the upper part it is grayish brown fine sandy loam 3 inches thick. In the middle part it is gray sandy clay loam 6 inches thick. In the lower part it is light gray sandy clay loam 29 inches thick. The substratum to a depth of 80 inches or more is light gray sandy loam. In some of the closely similar soils the subsoil

is nearer the surface and in others the surface layer is thicker than in Felda soils.

In most years, if Felda soils are not drained, the water table is within a depth of 10 inches for 2 to 4 months out of the year and at a depth of 10 to 40 inches for about 6 months out of the year. It recedes to below a depth of 70 inches in dry seasons. Stream overflow frequently floods these soils. Permeability is rapid in the surface and subsurface layers and moderate to moderately rapid in the subsoil. The available water capacity is very low in the surface and subsurface layers and medium in the subsoil.

Typically, Wabasso soils have a surface layer of very dark gray fine sand 7 inches thick. The subsurface layer is gray and light gray fine sand 14 inches thick. The subsoil in the upper part is black, dark reddish brown, and brown fine sand 10 inches thick. In the lower part it is grayish brown sandy loam and gray sandy clay loam 28 inches thick. A 6-inch layer of pale brown fine sand separates the two parts. The substratum to a depth of 80 inches or more is gray sand mixed with shell fragments. The closely similar soils are like Wabasso soils except that they do not have the lower part of the subsoil.

In most years, if Wabasso soils are not drained, the water table is at a depth of 10 to 40 inches for more than 6 months out of the year and within a depth of 10 inches for less than 60 days in wet seasons. Stream overflow frequently floods these soils.

Permeability is rapid in the surface and subsurface layers, in the layer between the two parts of the subsoil, and in the substratum. It is moderate to moderately rapid in the upper part of the subsoil and slow to very slow in the lower part. The available water capacity is very low in the surface and subsurface layers and in the layer between the two parts of the subsoil. It is medium in the upper and lower parts of the subsoil.

The most extensive soils included in the association are the Anclote, Floridana, Bradenton, and Chobee soils.

The natural vegetation consists mostly of gum, oak, maple, hickory, bay, and magnolia in the lower areas and scattered pine and saw palmetto on the low ridges. In a few places it consists of water-tolerant grasses. Almost all areas of this unit are in natural vegetation.

(26) FLORIDANA-IMMOKALEE-OKEELANTA ASSOCIATION - This map unit consists of nearly level, very poorly drained Floridana soils, poorly drained Immokalee soils, and very poorly drained Okeelanta soils. It is about 35 percent Floridana soils, 30 percent Immokalee soils, 20 percent Okeelanta soils, and 15 percent minor soils. These soils are in small to large shallow grassy ponds mainly in the central and eastern parts of the county. Generally, Okeelanta soils are in the lowest places near in the center of the ponds; Floridana soils are in an intermediate position; and Immokalee soils are along the edges of ponds. Slopes are less than 2 percent. Areas of the individual soils

are large enough to map separately, but in considering the present and predicted use they were mapped as one unit. Most of the mapped areas are circular or oblong.

The composition of this map unit is more variable than that of most other map units in the county; nevertheless, valid interpretations for expected uses of the soil can still be made.

Typically, the surface layer of Floridana soils is black and very dark gray fine sand about 19 inches thick. The subsurface layer is gray fine sand about 17 inches thick. The subsoil is dark gray sandy clay loam 17 inches thick. The substratum is light gray fine sand that extends to a depth of 80 inches or more.

In most years, in undrained areas Floridana soils are ponded for 6 to 9 months of more out of the year. The water table is at a depth within 40 inches for the rest of the year except in extended dry periods. Permeability is rapid in the surface layer, subsurface layer, and substratum; it is slow in the subsoil. The available water capacity is medium in the surface layer and subsoil and low in the other layers.

Typically, the surface layer of Immokalee soils is black fine sand about 5 inches thick. The subsurface layer is dark gray, gray, and light gray fine sand 29 inches thick. The subsoil is dark reddish brown and dark brown fine sand 9 inches thick. The substratum to a depth of 80 inches or more is grayish brown fine sand.

Immokalee soils are ponded for 6 months or more in most years. The water table is at a depth within 40 inches for much of the remainder of the year. Permeability is moderate in the subsoil and rapid in all other layers. The available water capacity is medium in the subsoil, low in the surface layer, and very low in the other layers.

Typically, Okeelanta soils in the uppermost 20 inches are black muck. Below that, to a depth of 54 inches or more, there is black and light brownish gray sand.

In most years, in undrained areas Okeelanta soils are ponded for 9 months or more, and the water table is near the surf ace f or the rest of the time. Permeability is rapid throughout the soil. The available water capacity is very high in the organic layer and low in the sandy layers.

Included with the soils in this map unit are areas of Anclote, Chobee, Delray, Manatee, Myakka, and Pomona soils.

The natural vegetation in the lowest places is sawgrass, maidencane, willow, and, in places, a few cypress. In other areas, the vegetation is maidencane, St. Johns wort, various bluestems, smooth cordgrass, and sedges.

(30) MYAKKA FINE SAND, 0 TO 2 PERCENT SLOPES - This is a nearly level, poorly drained soil in areas of broad flatwoods. Slopes are smooth to concave.

Typically, the surface layer is dark gray fine sand about 5 inches thick. The subsurface layer is fine sand. In the upper 8 inches it is gray, and below that, it is light gray. The subsoil is fine sand 22 inches thick. In the upper 6 inches it is black, in the next 8 inches it is dark reddish brown, and in the lower 8 inches it is dark brown. Below the subsoil there is brown fine sand to a depth of 61 inches, and below that, there is very dark brown fine sand to a depth of 75 inches or more.

Included with this soil in mapping are small areas of EauGallie, Ona, Pomona, St. Johns, Wabasso, Wauchula, and Waveland soils. In most years, the water table is at a depth of less than 10 inches for 1 to 4 months out of the year. It recedes to a depth of more than 40 inches in very dry seasons. The available water capacity is medium in the subsoil and very low in the other layers. Permeability is rapid in the surface and subsurface layers and substratum and moderate or moderately rapid in the subsoil. Internal drainage is slow, and runoff is slow. Natural fertility is low.

The natural vegetation consists of longleaf and slash pines and an undergrowth of saw palmetto, running oak, gallberry, waxmyrtle, huckleberry, pineland threeawn, and scattered fetter bushes.

(31) MYAKKA FINE SAND, 2 TO 5 PERCENT SLOPES - This is a gently sloping, poorly drained soil in areas of flatwoods along many of the main drainage channels in the county.

Typically, the surface layer is a black fine sand about 6 inches thick. The subsoil in the upper part is very dark brown fine sand about 21 inches thick. The next layer is brown fine sand about 28 inches thick. The subsoil in the lower part is very dark brown fine sand. The subsoil in the lower part is very dark brown fine sand to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Ona, Pomona, St. Johns, and Wauchula soils and areas that have a less well developed subsoil.

In most years, the water table is at a depth of less than 10 inches for 1 to 4 months out of the year. It recedes to a depth of more than 40 inches in very dry seasons. The available water capacity is medium in the subsoil and very low in the other layers. Permeability is rapid in the surface and subsurface layers and substratum and moderately or moderately rapid in the subsoil. Internal drainage is slow and runoff is slow to moderate. Natural fertility is low.

The native vegetation consists of longleaf and scattered slash pine and an undergrowth

of saw palmetto, running oak, gallberry, waxmyrtle, huckleberry, pineland threeawn, and scattered fetterbushes.

(37) ORSINO FINE SAND, 0-5 PERCENT SLOPES - This is a nearly level to gently sloping, moderately well drained soil on low ridges and knolls at some of the higher elevations in the county. Slopes are convex and range from 0 to 5 percent.

Typically, the surface layer is gray fine sand 4 inches thick. The subsurface layer is white fine sand about 14 inches. The subsoil in the upper part, to a depth of 27 inches, is brownish yellow fine sand that has dark reddish brown bodies that are not cemented. Tongues of fine white sand from the subsurface layer extend into this layer. The subsoil in the lower part, to a depth of 50 inches, is brownish yellow and yellow fine sand. The substratum to a depth of 80 inches or more is white fine sand.

Included with this soil in mapping are small areas of Cassia and Pomello soils and small areas of soils that are similar to Orsino soils except that a water table is at a depth of more than 60 inches.

In most years, a water table is at a depth of 40 to 60 inches for more than 6 months out of the year. It recedes to a depth of more than 60 inches during periods of low rainfall. Permeability is very rapid. Natural fertility, content of organic matter, and the available water capacity are very low.

The natural vegetation consists of sand pine, sand live oak, and a few saw palmetto. Native grasses include pineland threeawn. In some places the native vegetation consists almost entirely of dense stands of sand live oak.

(42) POMELLO FINE SAND, 0 TO 2 PERCENT SLOPES - This is a nearly level, moderately well drained soil on low ridges in flatwoods. Individual areas are irregularly shaped. Slopes are smooth concave.

Typically, the surface layer is gray fine sand 2 inches thick. The subsurface layer is white fine sand to a depth of 46 inches. The subsoil is fine sand. In the upper 5 inches it is black. Below that, to a depth of 80 inches or more it is dark reddish brown.

Included with this soil in mapping are similar soils that have a subsoil below a depth of 50 inches. Also included are small areas of Cassia, Duette, and Zolfo soils and Pomello soils on 2 to 5 percent slopes.

In most years, the water table is at a depth of 24 to 40 inches for 1 to 4 months out of the year and at a depth of 40 to 60 inches for 8 months out of the year. The available water capacity is very low except in the subsoil, where it is medium. Natural fertility is low. Permeability is very rapid in the surface and subsurface layers and moderately rapid in

the subsoil.

The natural vegetation consists of dwarf and sand live oaks, saw palmetto, longleaf and slash pines, pineland threeawn, running oak, creeping bluestem, broomsedge bluestem, splitbeard bluestem, lopsided indiangrass, switchgrass, panicum, and paspalum. A few areas are used for citrus, vegetables, and improved pasture grasses where the areas are near other soils used for these crops.

(43) ST. JOHNS FINE SAND, 2 TO 5 PERCENT SLOPES - This is a gently sloping, poorly drained soil on seepy side slopes adjacent to drainageways. Most areas of this soil are long and narrow.

Typically, the surface layer is black fine sand to a depth of 7 inches and very dark gray fine sand to a depth of 13 inches. The subsurface layer, to a depth of 28 inches, is light gray fine sand. The subsoil is black to very dark gray fine sand about 32 inches thick. The sand grains in the subsoil are well coated with organic matter. The next layer is dark gray fine sand about 8 inches thick, and the layer below that, to a depth of 80 inches or more, is black fine sand.

Included with this soil in mapping are small but numerous areas of very poorly drained sandy soils in seeps. also included area areas of a similar soil that has a subsoil below a depth of 30 inches, areas of other similar soils that are cemented in the subsoil, and a few areas where slopes are greater than 5 percent.

In most years, if this soil is not drained, the water table is within a depth of 15 inches for 2 to 6 months out of the year and at a depth of 15 to 30 inches during periods of lower rainfall. Permeability is rapid in the surface and subsurface layers and moderate in the subsoil. Natural fertility is low, and the content of organic matter is moderate. The available water capacity is medium in the subsoil and low in the surface and subsurface layers.

The natural vegetation consists of slash pine, loblolly bay, saw palmetto, and gallberry. The native grasses include chalky bluestem, cinnamon fern, and pineland threeawn.

(45) TAVARES FINE SAND, 0 TO 5 PERCENT SLOPES - This is a moderately well drained soil on ridges and knolls. Slopes are smooth to convex.

The soil is fine sand to a depth of 80 inches or more. Typically, the surface layer is very dark gray to a depth of about 6 inches. The underlying material is yellowish brown and light yellowish brown to a depth of 56 inches, very pale brown to a depth of 79 inches, and white to a depth of 80 inches or more.

Included with this soil in mapping are small areas of Adamsville Variant, Orlando,

Orsino, and Zolfo soils. Also included are small areas of Tavares soils on 5 to 8 percent slopes.

In most years, if this soil is not drained, a water table is at a depth of 40 to 60 inches for 6 to 12 months and at a depth of 60 inches or more during very dry periods. The available water capacity is very low. Permeability is very rapid. Natural fertility is low.

The natural vegetation consists of slash and longleaf pine, blackjack, turkey, and post oak, and an understory of pineland threeawn, creeping bluestem, lopsided indiangrass, hairy panicum, low panicums, purple lovegrass, and broomsedge bluestem.

(46) TAVARES FINE SAND, CEMENTED SUBSTRATUM, 2 TO 5 PERCENT SLOPES - This is a moderately well drained soil on low benches along some of the large creeks and rivers. Slopes are generally smooth and grade to streams and rivers.

The soil is fine sand to a depth of about 60 inches. Typically, the surface layer to depth of about 7 inches, is very dark gray. The underlying material, to a depth of 60 inches, is yellowish brown and light brown and has segregated iron mottles in shades of yellow, red, and brown in the lower part. Below that, to a depth of 80 inches or more, it is mottled yellow, brown, and gray extremely hard iron-cemented sand.

Included with this soil in mapping are small areas of Braden soils. Also included are areas of Tavares soil on 0 to 2 percent slopes.

In most years, if this soil is not well drained, the water table is at a depth of 40 to 60 inches for 6 to 12 months and at a depth of more than 60 inches during very dry periods. The available water capacity is very low. Permeability is very rapid above the cemented layer and slow in that layer. Natural fertility is low.

The natural vegetation is a hammock consisting chiefly of water and laurel oaks and a few other hardwoods and a heavy undergrowth of vines and shrubs.

(52) WAVELAND FINE SAND - This is a poorly drained, nearly level soil in broad areas of flatwoods. Slopes are smooth to concave and range from 0 to 2 percent.

Typically, the surface layer is fine sand about 8 inches thick. In the upper 5 inches it is black, and below that, it is dark gray. The subsurface layer is 24 inches thick. In the uppermost 13 inches it is grayish brown sand, and below that, it is light gray fine sand. The subsoil, to a depth of 51 inches, is black sand. The substratum to a depth of 80 inches or more is sand that has pockets of sandy loam. In the upper 6 inches it is dark grayish brown, in the next 9 inches it is grayish brown, and in the lower part it is olive.

Included with this soil in mapping are small areas of Myakka, Ona, and Pomona soils.

In most years, the water table is within a depth of 10 inches for 1 to 4 months out of the year and within a depth of 40 inches for 6 months or more out of the year. It is above the subsoil early in the summer rainy season and after periods of heavy rainfall in other seasons. The water table recedes to a depth of more than 40 inches in extended dry seasons. The available water capacity is low in the surface layer, very low in the subsurface layer, medium in the subsoil, and low in the substratum. Permeability is rapid in the surface and subsurface layers, very slow to slow in the subsoil, and moderate to rapid in the substratum. Natural fertility and organic matter content are low.

Large areas are cleared and used for improved pasture. The native vegetation consists of South Florida slash pine and an understory of saw palmetto, wax myrtle, gallberry, huckleberry, fetterbush, lopsided indiangrass, creeping bluestem, chalky bluestem, Florida threeawn, and pineland threeawn.

(54) ZOLFO FINE SAND, 0 TO 2 PERCENT SLOPES - This is a somewhat poorly drained soil on low to high ridges and knolls in flatwoods.

Typically, the surface layer is very dark gray fine sand about 7 inches thick. The subsurface layer is light brownish gray, pale brown, and light gray fine sand. The subsoil begins at a depth of 65 inches. In the upper 7 inches it is dark grayish brown fine sand, and below that, it is dark brown fine sand to a depth of 80 inches or more.

Included with this soil in mapping are areas of Cassia, Duette, Orsino, Pomello, and Tavares soils. Also included are soils that are very similar to Zolfo soils except that the subsoil is less well developed.

Permeability is very rapid in the surface and subsurface layers and moderate in the subsoil. In most years, it this soil is not drained, the high water table is at a depth of 24 to 40 inches for 2 to 6 months out of the year. In some years the water table is at a depth of 10 to 24 inches for periods of as much as 2 weeks. The water table is at a depth of 60 inches for more than 9 months of the year.

The available water capacity is low to very low in the surface and subsurface and medium in the subsoil. Natural fertility is low and the content of organic matter is low to very low.

The native vegetation consists of slash and longleaf pines, laurel, bluejack, turkey, live and water oaks and an understory of, saw palmetto, pineland threeawn, broomsedge and chalky bluestems, and other perennial grasses.

(55) ZOLFO FINE SAND, 2 TO 5 PERCENT SLOPES - This is a somewhat poorly

drained soil on slopes of ridged that border the larger streams and rivers.

Typically, the surface layer is gray fine sand about 4inches thick. The subsurface layer is light brownish gray, pale brown, light gray and white fine sand. The subsoil begins at a depth of 65 inches. In the upper 15 inches it is dark reddish brown fine sand, and below that, it is black fine sand to a depth of 80 inches or more.

Included with this soil in mapping are areas of Cassia, Duette, Orsino, Pomello, and Tavares soils. Also included are soils that are very similar to Zolfo soils except that the subsoil is less well developed and areas of Zolfo soils on 5 to 8 percent slopes.

Permeability is very rapid in the surface and subsurface layers and moderate in the subsoil. In most years, it this soil is not drained, the high water table is at a depth of 24 to 40 inches for 2 to 6 months out of the year. In some years ithe water table is at a depth of 10 to 24 inches for periods of as much as 2 weeks. The water table is at a depth of 60 inches for more than 9 months of the year.

The available water capacity is low to very low in the surface and subsurface and medium in the subsoil. Natural fertility is low and the content of organic matter is low to very low.

The native vegetation consists of slash and longleaf pines, laurel, bluejack, turkey, live and water oaks and an understory of, saw palmetto, pineland threeawn, broomsedge and chalky bluestems, and other perennial grasses.

Addendum 4—Plant And Animal List

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**

FERNS

Swamp fern	*Blechnum serrulatum*	
Florida shield fern	*Dryopteris ludoviciana*	
Flakelet fern	*Hypolepis repens*	
Japanese climbing fern*	*Lygodium japonicum*	
Boston sword fern	*Nephrolepis exaltata*	
Cinnamon fern	*Osmunda cinnamomea*	29
Royal fern	*Osmunda regalis* var. *spectabilis*	29
Golden polypody	*Phlebodium aureum*	
Resurrection fern	*Pleopeltis polypodioides* var. *michauxiana*	
Bracken fern	*Pteridium aquilinum* var. *pseudocaudatum*	
Sand spikemoss	*Selaginella arenicola*	
Downy shield fern*	*Thelypteris dentata*	
Widespread maiden fern	*Thelypteris kunthii*	
Free-tip star-hair fern	*Thelypteris tetragona*	
Shoestring fern	*Vittaria lineata*	
Netted chain fern	*Woodwardia areolata*	
Virginia chain fern	*Woodwardia virginica*	

GYMNOSPERMS AND CYCADS

Sand pine	*Pinus clausa*	
South Florida slash pine	*Pinus elliottii*	
Longleaf pine	*Pinus palustris*	

MONOCOTS

Yellow colic-root	*Aletris lutea*	
Shortspike bluestem	*Andropogon brachystachus*	
Splitbears bluestem	*Andropogon ternarius*	
Nodding nixie	*Apteria aphylla*	
Jack-in-the pulpit	*Arisaema triphyllum*	
Corkscrew threeawn	*Aristida gyrans*	
Wiregrass	*Aristida stricta* var. *beyrichiana*	
Watergrass *	*Bulbostylis barbata*	
Capillary hair sedge	*Bulbostylis ciliatifolia*	
Prickly bog sedge	*Carex atlantica* subsp. *capillacea*	
Long's sedge	*Carex longii*	
Black-edge sedge	*Carex nigromarginata* var. *floridana*	
Florida hammock sedge	*Cares vexans*	

*** Non-Native Species**

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Slender wood oats	*Chasmanthium laxum*	
Longleaf wood oats	*Chasmanthium laxum* var. *sessiliflorus*	
Day-flower*	*Commelina diffusa*	
Day-flower	*Commelina erecta*	
Baldwin's flatsedge	*Cyperus croceus*	
Many-spike flatsedge	*Cyperus polystachyos*	
Pine barren flatsedge	*Cyperus retrorsus*	
Tropical flatsedge	*Cyperus surinamensis*	
Four-angle flatsedge	*Cyperus tetragonus*	
Variable witchgrass	*Dichanthelium commutatum*	
Cypress witchgrass	*Dichanthelium ensifolium* var. *unciphyllum*	
Hemlock witchgrass	*Dichanthelium portoricense*	
Road grass	*Eleocharis baldwinii*	
Slim spikerush	*Eleocharis elongata*	
Goosegrass *	*Eleusine indica*	
Butterfly orchid	*Encyclia tampensis*	29
Green-fly orchid	*Epidendrum conopseum*	29
Coastal love grass	*Eragrostis virginica*	
Saltmarsh umbrellasedge	*Fuirena breviseta*	
Dwarf umbrella grass	*Fuirena pumila*	
Southern umbrellasedge	*Fuirena scirpoidea*	
Tooth-petal false rein orchid	*Habenaria floribunda*	
Swamp yellow star-grass	*Hypoxis curtissii*	
Fringed yellow star-grass	*Hypoxis juncea*	
Cogongrass *	*Imperata cylindrica*	
Soft rush	*Juncus effusus* subsp. *solutus*	
Bog rush	*Juncus elliottii*	
Grass-leaf rush	*Juncus marginatus*	
Bighead rush	*Juncus megacephalus*	
Needle-pod rush	*Juncus scirpoides*	
Fragrant flatsedge	*Kyllinga odorata*	
Bog-buttons	*Lachnocaulon anceps*	
Italian rye grass *	*Lolium perenne*	
Banana *	*Musa* sp.	
Wood's grass	*Oplismenus hirtellus*	
Golden club	*Orontium aquaticum*	
Beaked panicum	*Panicum anceps*	
Redtop panicum	*Panicum rigidulum*	
Sour crown grass	*Paspalum conjugatum*	
Bahia grass*	*Paspalum notatum*	
Thin paspalum	*Paspalum setaceum*	

*** Non-Native Species**

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Vasey grass*	*Paspalum urvillei*	
Green arum	*Peltandra virginica*	
Florida needlegrass	*Piptochaetium avenacioides*	
Needle palm	*Rhapidophyllum hystrix*	29
Natalgrass *	*Rhynchelytrum repens*	
Fasciculate beak sedge	*Rhynchospora fascicularis*	
Pine barren beak sedge	*Rhynchospora intermedia*	
Narrowfruit horned beaksedge	*Rhynchospora inundata*	
Sandy-field beak sedge	*Rhynchospora megalocarpa*	
Scrub palmetto	*Sabal etonia*	
Dwarf palmetto	*Sabal minor*	
Cabbage palm	*Sabal palmetto*	
Narrow plume grass	*Saccharum baldwinii*	
Sugarcane plume grass	*Saccharum giganteum*	
Creeping bluestem	*Schizachyrium scoparium*	
Few-flower nutrush	*Scleria ciliata* var. *pauciflora*	
Tall nutgrass	*Scleria triglomerata*	
Saw palmetto	*Serenoa repens*	
Knotroot foxtail	*Setaria parviflora*	
Greenbrier; Catbrier	*Smilax auriculata*	
Glaucus-leaf greenbrier	*Smilax glauca*	
Catbrier	*Smilax laurifolia*	
Woolly greenbrier	*Smilax pumila*	
Lopsided Indiangrass	*Sorghastrum secundum*	
Prairie wedgescale	*Sphenopholis obtusata*	
Spring ladies'-tresses	*Spiranthes vernalis*	
Curtiss' Dropseed	*Sporobolus curtissii*	
Pinewoods dropseed	*Sporobolus juncea*	
Bantam-buttons	*Syngonanthus flavidulus*	
Bartram's air plant	*Tillandsia bartramii*	
Ball-moss	*Tillandsia recurvata*	
Southern needleleaf; Needleleaf wildpine	*Tillandsia setacea*	
Spanish moss	*Tillandsia usneoides*	
Spreading airplant	*Tillandsia utriculata*	
Broadleaf nodding caps	*Triphora amazonica*	22, 27, 29
Eastern gama grass	*Tripsacum dactyloides*	
Short-leaf yellow-eyed grass	*Xyris brevifolia*	
Elliott's yellow-eyed grass	*Xyris elliottii*	
Tall yellow-eyed grass	*Xyris platylepis*	
Soldier's orchid; Lawn orchid *	*Zeuxine strateumatica*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)

DICOTS

Rosary pea *	*Abrus precatorius*	
Southern red maple	*Acer rubrum*	
False foxglove	*Agalinis fasciculata*	
Hammock snakeroot	*Ageratina jucunda*	
Common ragweed	*Ambrosia artemisiifolia*	
Bastard indigo	*Amorpha fruticosa*	
Cluster-spike indigo bush	*Amorpha herbacea*	
Pepper vine	*Ampelopsis arborea*	
False pimpernel	*Anagallis minima*	
Florida Indian plantain	*Arnoglossum floridanum*	
Curtiss' milkweed	*Asclepias curtissii*	15
Pinewoods milkweed	*Asclepias humistrata*	
Aquatic milkweed	*Asclepias perennis*	
Butterfly-weed	*Asclepias tuberosa*	
Slimleaf pawpaw	*Asimina angustifolia*	
Pawpaw	*Asimina reticulata*	
Fern leaf yellow foxglove	*Aureolaria pedicularia* var. *pectinata*	
Silverling	*Baccharis glomeruliflora*	
Yellow buttons	*Balduina angustifolia*	
Wax begonia *	*Begonia cucullata*	
Tar flower	*Bejaria racemosa*	
Florida greeneyes	*Berlandiera subcaulis*	
Begger-ticks	*Bidens alba* var. *radiata*	
Begger-ticks	*Bidens mitis*	
False nettle	*Boehmeria cylindrica*	
Blueheart	*Buchnera americana*	
Beautyberry	*Callicarpa americana*	
Florida scrub roseling	*Callisia ornata*	
Trumpet creeper	*Campsis radicans*	
Florida paintbrush	*Carphephorus corymbosus*	
Pignut hickory	*Carya glabra*	
Scrub hickory	*Carya floridana*	
Butterfly pea	*Centrosema virginianum*	
Buttonbush	*Cephalanthus occidentalis*	
Rosemary	*Ceratiola ericoides*	
Partridge-pea	*Chamaecrista fasciculata*	
Chapman's pea	*Chapmannia floridana*	
Mexican tea *	*Chenopodium ambrosioides*	
Fringe tree	*Chionanthus virginicus*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Spotted water hemlock	*Cicuta maculata*	
Purple thistle	*Cirsium horridulum*	
Tangerine *	*Citrus reticulata*	
Sour orange; Grapefruit; Sweet orange *	*Citrus x aurantium*	
Swamp leatherflower	*Clematis crispa*	
Net-leaf leatherflower	*Clematis reticulata*	
Tread softly	*Cnidoscolus stimulosus*	
Dwarf Sneezeweed	*Conyza canadensis* var. *pusilla*	
Leavenworth's tickseed	*Coreopsis leavenworthii*	
Flowering dogwood	*Cornus florida*	
Stiff cornel; Swamp dogwood	*Cornus foemina*	
Smooth rattlebox *	*Crotalaria pallida* var. *obovata*	
Rabbit-bells	*Crotalaria rotundifolia*	
Showy rattlebox *	*Crotalaria spectabilis*	
Rushfoil	*Croton michauxii*	
Vente droton	*Croton glandulosus*	
Columbian waxweed *	*Cuphea carthagenensis*	
Florida tick-trefoil	*Desmodium floridanum*	
Zarzabacoa comun	*Desmodium incanum*	
Dixie tick-trefoil *	*Desmodium tortuosum*	
Persimmon	*Diospyros virginiana*	
West Indian chickweed	*Drymaria cordata*	
Twinflower	*Dyschoriste oblongifolia*	
Eclipta	*Eclipta prostrata*	
Florida elephant's-foot	*Elephantopus elatus*	
Florida tasselflower *	*Emilia fosbergii*	
Fireweed; American burn	*Erechtites hieraciifolius*	
Oakleaf fleabane	*Erigeron quercifolius*	
Daisy fleabane	*Erigeron vernus*	
Fragrant eryngium	*Eryngium aromaticum*	
Button snakeroot	*Eryngium baldwinii*	
Southeastern coral bean	*Erythrina herbacea*	
Dog fennel	*Eupatorium capillifolium*	
False fennel	*Eupatorium leptophyllum*	
False hoarhound	*Eupatorium rotundifolium*	
Flat-topped goldenrod	*Euthamia caroliniana*	
Water ash; Pop ash	*Fraxinus caroliniana*	
Elliott's milk pea	*Galactia elliottii*	
Eastern milk pea	*Galactia regularis*	
Coastal bedstraw	*Galium hispidulum*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Stiff marsh bedstraw	*Galium tinctorium*	
Narrowleaf purple everlasting	*Gamochaeta falcata*	
Pennsylvania everlasting	*Gamochaeta pensylvanica*	
Spoonleaf purple everlasting	*Gamochaeta purpurea*	
Garberia	*Garberia heterophylla*	8, 15, 16
Southern beeblossom	*Gaura angustifolium*	
Dwarf huckleberry	*Gaylussacia dumosa*	
Dangleberry	*Gaylussacia frondosa* var *tomentosa*	
Yellow jessamine	*Gelsemium sempervirens*	
Carolina cranesbill	*Geranium carolinianum*	
Loblolly bay	*Gordonia lasianthus*	
Scrub hedge hyssop	*Gratiola hispida*	
Pinebarren frostweed	*Helianthemum corymbosum*	
Florida scrub frostweed	*Helianthemum nashii*	
Camphor weed	*Heterotheca subaxillaris*	
Hawkweed	*Hieracium gronovii*	
Innocence	*Houstonia procumbens*	
Marsh pennywort	*Hydrocotyle umbellata*	
Coastal plain St John's-wort	*Hypericum brachyphyllum*	
Round-pod St John's-wort	*Hypericum cistifolium*	
Pineweed	*Hypericum gentianoides*	
St Andrew's-cross	*Hypericum hypericoides*	
Dwarf St John's-wort	*Hypericum mutilum*	
Atlantic St john's-wort	*Hypericum reductum*	
St Andrew's-cross	*Hypericum tetrapetalum*	
Musky mint; Cluster bushmint	*Hyptis alata*	
Bitter mint; Tropical mint bush *	*Hyptis mutabilis*	
Carolina holly; Sand holly	*Ilex ambigua*	
Dahoon holly	*Ilex cassine*	
Inkberry; Gallberry	*Ilex glabra*	
Scrub holly	*Ilex opaca* var. *arenicola*	
Hairy indigo *	*Indigofera hirsuta*	
Virginia willow	*Itea virginica*	
Grass-leaved lettuce	*Lactuca graminifolia*	
Shrub verbena *	*Lantana camara*	
Nodding pinweed	*Lechea cernua*	15
Deckert's pinweed	*Lechea deckertii*	
Pinweed	*Lechea torreyi*	
Lion's-ear *	*Leonotis nepetifolia*	
Poorman's pepper	*Lepidium virginicum*	
Slender blazing star	*Liatris gracilis*	

*** Non-Native Species**

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Blazing star	*Liatris tenuifolia*	
Gopher apple	*Licania michauxii*	
Blue toadflax	*Linaria canadensis*	
Sweetgum	*Liquidambar styraciflua*	
Bay lobelia	*Lobelia feayana*	
Pineland lobelia	*Lobelia homophylla*	
Mexican primrose-willow	*Ludwigia octovalvis*	
Primrose willow	*Ludwigia peruviana*	
Sky-blue lupine	*Lupinus diffusus*	
Roserush	*Lygodesmia aphylla*	
Rusty lyonia	*Lyonia ferruginea*	
Staggerbush	*Lyonia fruticosa*	
Maleberry	*Lyonia ligustrina* var. *foliosiflora*	
Fetterbush	*Lyonia lucida*	
Piedmont staggerbush	*Lyonia mariana*	
Winged angle loosestrife	*Lythrum alatum* var. *lanceolatum*	
Southern magnolia	*Magnolia grandiflora*	
Sweet bay	*Magnolia virginiana*	
Florida milkvine	*Matelea floridana*	22
Axil flower	*Mecardonia acuminata* subsp. *peninsularis*	
Black medic *	*Medicago lupulina*	
Florida key hemp vine	*Mikania cordifolia*	
Hemp vine	*Mikania scandens*	
Little-leaf sensitive briar	*Mimosa quadrivalvis* var. *angustata*	
Florida sensitive briar	*Mimosa quadrivalvis* var. *floridana*	
American partridge berry; Twinberry	*Mitchella repens*	
Indian pipe	*Monotropa uniflora*	
White mulberry *	*Morus alba*	
Red mulberry	*Morus rubra*	
Wax myrtle	*Myrica cerifera*	
Britton's beargrass	*Nolina brittoniana*	14
Swamp tupelo	*Nyssa sylvatica* var. *biflora*	
Blackgum	*Nyssa sylvatica* var. *sylvatica*	
Pine-barren white-top aster	*Oclemena reticulata*	
Seaside evening primrose	*Oenothera humifusa*	
Prickly-pear cactus	*Opuntia humifusa*	
Wild olive	*Osmanthus americanus*	
Scrub wild olive	*Osmanthus megacarpus*	
Lady's sorrel	*Oxalis corniculata*	
Golden ragwort; Butterweed	*Packera glabella*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Palafoxia	*Palafoxia feayi*	
Florida pellitory	*Parietaria floridana*	
Virginia creeper	*Parthenocissus quinquefolia*	
Purple passion-flower	*Passiflora incarnata*	
Buckroot	*Pediomelum canescens*	
Redbay	*Persea borbonia* var *borbonia*	
Scrub bay; Silk bay	*Persea borbonia* var *humilis*	
Swamp bay	*Persea palustris*	
Phoebanthus	*Phoebanthus grandiflorus*	
Oak Mistletoe	*Phoradendron leucarpum*	
Red chokeberry	*Photinia pyrifolia*	
Frog-fruit carpetweed	*Phyla nodiflora*	
Slenderleaf false dragonhead	*Physostegia leptophylla*	
Pokeberry; Pokeweed	*Phytolacca americana*	
Pennyroyal	*Piloblephis rigida*	
Grass-leafed golden aster	*Pityopsis graminifolia*	
Southern plantain	*Plantago virginica*	
Wild batchelor's button	*Polygala nana*	
Coastal plain milkwort	*Polygala setacea*	
Yellow batchelor's button	*Polygala rugelii*	
Wireweed	*Polygonella ciliata*	
Tall jointweed	*Polygonella gracilis*	
Jointweed	*Polygonella polygama*	
Large-flower jointweed	*Polygonella robusta*	
Swamp smartweed	*Polygonum hydropiperoides*	
Rustweed	*Polypremum procumbens*	
Chicasaw plum	*Prunus angustifolia*	
Wild cherry; Black cherry	*Prunus serotina*	
Coastal blackroot	*Pterocaulon pycnostachyum*	
Mock bishop's weed	*Ptilimnium capillaceum*	
Carolina desert chicory	*Pyrrhopappus carolinianus*	
Chapman's oak	*Quercus chapmanii*	
Sand live oak	*Quercus geminata*	
Scrub oak	*Quercus incana*	
Bluejack oak	*Quercus inopina*	
Turkey oak	*Quercus laevis*	
Laurel oak	*Quercus laurifolia*	
Dwarf live oak	*Quercus minima*	
Myrtle oak	*Quercus myrtifolia*	
Water oak	*Quercus nigra*	
Live oak	*Quercus virginiana*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for designated species)
Turkey oak hybird	*Quercus X*	
Pale meadow beauty	*Rhexia mariana*	
Swamp honeysuckle	*Rhododendron viscosum*	
Winged sumac	*Rhus copallinum*	
Michaux's snout-bean	*Rhynchosia michauxii*	
Highbush blackberry	*Rubus argutus*	
Sand blackberry	*Rubus cuneifolius*	
Hastate-leaved dock	*Rumex hastatulus*	
Narrow-leaved sabatia	*Sabatia brevifolia*	
Lance-leaf rose-gentian	*Sabatia difformis*	
Carolina willow	*Salix caroliniana*	
Lyre-leaf sage	*Salvia lyrata*	
Elderberry	*Sambucus nigra* subsp. *canadensis*	
Pineland pimpernel	*Samolus valerandi* subsp. *parviflorus*	
Lizard's-tail	*Saururus cernuus*	
Sweet broom	*Scoparia dulcis*	
Rough skullcap	*Scutellaria integrifolia*	
Piedmont seymeria	*Seymeria pectinata*	
Florida bully	*Sideroxylon reclinatum*	
Tough bumelia	*Sideroxylon tenax*	
American nightshade	*Solanum americanum*	
Tropical soda-apple *	*Solanum viarum*	
Pinebarren goldenrod	*Solidago fistulosa*	
Chapman's goldenrod	*Solidago odora* var. *chapmanii*	
Spiny-leaved sowthistle *	*Sonchus asper*	
Queen's delight	*Stillingia sylvatica*	
Pineland scalypink	*Stipulicida setacea* var. *lacerata*	
Styrax; American snowbell	*Styrax americanus*	
Spiked hoarypea	*Tephrosia spicata*	
Poison ivy	*Toxicodendron radicans*	
Forked blue curls	*Trichostema dichotomum*	
Caesar-weed *	*Urena lobata*	
Bladderwort	*Utricularia subulata*	
Tree sparkleberry	*Vaccinium arboreum*	
Highbush blueberry	*Vaccinium corymbosum*	
Blueberry	*Vaccinium darrowii*	
Shiny blueberry	*Vaccinium myrsinites*	
Deerberry	*Vaccinium stamineum*	
Frostweed	*Verbesina virginica*	
Possum haw	*Viburnum nudum*	
Walter's viburnum	*Viburnum obovatum*	

*** Non-Native Species**

Common Name	***Scientific Name***	**Primary Habitat Codes (for designated species)**
Four-leaf vetch	*Vicia acutifolia*	
Piedmont cow pea	*Vigna luteola*	
Long-leaf violet	*Viola lanceolata*	
Swamp white violet	*Viola primulifolia*	
Southern fox grape; Muscadine	*Vitis rotundifolia*	
Tallowwood; Hog plum	*Ximenia americana*	
Oriental hawk's beard *	*Youngia japonica*	

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)

FISH

Iron-colored shiner	*Notropis chalybaeus*	55
Coastal shiner	*Notropis petersoni*	55
Eastern mosquitofish	*Gambusia holbrooki*	55
Brook silverside	*Labidesthes sicculus*	55
Spotted sunfish	*Lepomis punctatus*	55
Hogchoker	*Trinectes maculatus*	55

AMPHIBIANS

Oak toad	*Bufo quercicus*	8,15
Greenhouse frog	*Eleutherodactylus planirostris*	8,27,29
Green treefrog	*Hyla cinerea*	8,27,29
Pinewoods treefrog	*Hyla femoralis*	8
Barking treefrog	*Hyla gratiosa*	8
Squirrel treefrog	*Hyla squirella*	8,22,27,29
Eastern narrowmouth toad	*Gastrophryne carolinensis*	8,27,29
Pig frog	*Rana grylio*	55
Southern leopard frog	*Rana sphenocephala*	55

REPTILES

Gopher tortoise	*Gopherus polyphemus*	8,15,24
Green anole	*Anolis carolinensis carolinensis*	8,27,29
Southern fence lizard	*Sceloporus undulatus*	8,15
Florida scrub lizard	*Sceloporus woodi*	15
Six-lined racerunner	*Cnemidophorus sexlineatus sexlineatus*	8,15
Southeastern five-lined skink	*Eumeces inexpectatus*	8,22,27,29
Ground skink	*Scincella lateralis*	8,22,24
Southern black racer	*Coluber constrictor priapus*	8
Eastern indigo snake	*Drymarchon corais couperi*	MTC
Yellow rat snake	*Elaphe obsoleta quadrivittata*	MTC
Eastern coachwhip	*Masticophis flagellum flagellum*	15

BIRDS

Cattle egret	*Bubulcus ibis*	84
Great blue heron	*Ardea herodias*	29
Black vulture	*Coragyps atratus*	OF
Turkey vulture	*Cathartes aura*	OF

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Wood duck	*Aix sponsa*	29,55
Swallow-tailed kite	*Elanoides forficatus*	OF
Red-shouldered hawk	*Buteo lineatus*	8,27
Red-tailed hawk	*Buteo jamaicensis*	8,15,84
Northern bobwhite	*Colinus virginianus*	8,22,24
Mourning dove	*Zenaida macroura*	8,24
Common ground-dove	*Columbina passerina*	8,15,84
Yellow-billed cuckoo	*Coccyzus americanus*	29
Barred owl	*Strix varia*	29
Common nighthawk	*Chordeiles minor*	8,22,24
Chuck-will's-widow	*Caprimulgus carolinensis*	8,22,24
Red-headed woodpecker	*Melanerpes erythrocephalus*	8,22,24
Red-bellied woodpecker	*Melanerpes carolinus*	8,22,24
Yellow-bellied sapsucker	*Sphyrapicus varius*	8,22,24
Downy woodpecker	*Picoides pubescens*	8,22,24
Hairy woodpecker	*Picoides villosus*	8,22,24
Northern flicker	*Colaptes auratus*	8,22,24
Pileated woodpecker	*Dryocopus pileatus*	8,22,27,29
Eastern phoebe	*Sayornis phoebe*	8,22,24
Great crested flycatcher	*Myiarchus crinitus*	8,22,24
Blue jay	*Cyanocitta cristata*	8,84
Florida scrub jay	*Aphelocoma coerulescens*	8,84
Fish crow	*Corvus ossifragus*	8,OF
Tufted titmouse	*Parus bicolor*	8,15,22,24
House wren	*Troglodytes aedon*	8,15
Carolina wren	*Thryothorus ludovicianus*	8,27,29
Ruby-crowned kinglet	*Regulus calendula*	8,22,24
Blue-gray gnatcatcher	*Polioptila caerulea*	8,22,24
American robin	*Turdus migratorius*	8,27,29,84
Gray catbird	*Dumetella carolinensis*	8,27
Northern mockingbird	*Mimus polyglottos*	8,84
Brown thrasher	*Toxostoma rufum*	8,22,24
Loggerhead shrike	*Lanius ludovicianus*	8,22,24
White-eyed vireo	*Vireo griseus*	8,27,29
Red-eyed vireo	*Vireo olivaceus*	27,29
Blue-headed vireo	*Vireo solitarius*	8,22,24,29
Northern parula	*Parula americana*	8,27,29
Yellow-rumped warbler	*Dendroica coronata*	8,27,29
Pine warbler	*Dendroica pinus*	MTC
Palm warbler	*Dendroica palmarum*	MTC
Ovenbird	*Seiurus aurocapillus*	22,24

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)
Common yellowthroat	*Geothlypis trichas*	8,27
American redstart	*Setophaga ruticilla ruticilla*	8,27,29
Summer tanager	*Piranga rubra*	15
Northern cardinal	*Cardinalis cardinalis*	8,27,29,84
Eastern towhee	*Pipilo erythrophthalmus*	8,22,24
Bachman's sparrow	*Aimophila aestivalis*	8,22,24
Chipping sparrow	*Spizella passerina*	8,22,24
Red-winged blackbird	*Agelaius phoeniceus*	8,29,31,84
Eastern meadowlark	*Sturnella magna*	8,84

MAMMALS

Eastern mole	*Scalopus aquaticus*	8,22,84
Nine-banded armadillo *	*Dasypus novemcinctus*	8,15,27,29
Gray squirrel	*Sciurus carolinensis*	8, 27,29,84
Cotton mouse	*Peromyscus gossypinus gossypinus*	8,29
Oldfield mouse	*Peromyscus polionotus*	8
Florida mouse	*Podomys floridanus*	15
Golden mouse	*Ochrotomys nutttalli*	15
Gray fox	*Urocyon cinereoargenteus*	MTC
Raccoon	*Procyon lotor*	MTC
Wild pig *	*Sus scrofa*	MTC
White-tailed deer	*Odocoileus virginianus*	MTC

*** Non-Native Species**

Common Name	*Scientific Name*	Primary Habitat Codes (for all species)

* 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. Mesic Hammock
10. Coastal Grasslands
11. Pine Rockland
12. Prairie Hammock
13. Rockland Hammock
14. Sandhill
15. Scrub
16. Scrubby Flatwoods
17. Shell Mound
18. Sinkhole
19. Slope Forest
20. Upland Glade
21. Upland Hardwood Forest
22. Upland Mixed Forest
23. Upland Pine Forest
24. Xeric Hammock

Palustrine

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

Lacustrine

45. Clastic Upland Lake
46. Coastal Dune Lake
47. Coastal Rockland Lake
48. Flatwood/Prairie Lake
49. Marsh Lake
50. River Floodplain Lake
51. Sandhill Upland Lake
52. Sinkhole Lake
53. Swamp Lake

Riverine

54. Alluvial Stream
55. Blackwater Stream
56. Seepage Stream
57. Spring-Run Stream

Estuarine

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

Marine

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

Subterranean

82. Aquatic Cave
83. Terrestral Cave

Miscellaneous

84. Ruderal
85. 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)

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.

South Fork Designated Species—Plants

Common Name/ *Scientific Name*	Designated Species Status FDACS	USFWS	FNAI
Curtiss' milkweed			
Asclepias curtissii	LE		
Butterfly orchid			
Encyclia tampensis	CE		
Green-fly orchid			
Epidendrum conopseum	CE		
Garberia			
Garberia heterophylla	LT		
Nodding pinweed			
Lechea cernua	LT		G3/S3
Florida milkvine			
Matelea floridana	LE	MC	G2/S2
Britton's beargrass			
Nolina brittoniana	LE	LE	G3/S3
Cinnamon fern			
Osmunda cinnamomea	CE		
Royal fern			
Osmunda regalis var. *spectabilis*	CE		
Needle palm			
Rhapidophyllum hystrix	CE		
Broadleaf noddingcaps			
Triphora amazonica			G1?Q/S1

South Fork Designated Species—Plants

Common Name/ *Scientific Name*	Designated Species Status FDACS	USFWS	FNAI

Common Name/ *Scientific Name*	**Designated Species Status** FFWCC	USFWS	FNAI
REPTILES			
Gopher tortoise *Gopherus polyphemus*	LT		G3/S3
Eastern indigo snake *Drymarchon corais couperi*	LT	LT	G4T3/S3
BIRDS			
Swallow-tailed kite *Elanoides forficatus*			G5/S2
Hairy woodpecker *Picoides villosus*			G5/S3?
Florida scrub-jay *Aphelocoma coerulescens*	LT	LT	G2/S2
American redstart *Setophaga ruticilla*			G5/S2
Bachman's sparrow *Aimophila aestivalis*			G3/S3
MAMMALS			
Florida mouse *Podomys floridanus*	LS		G3/S3

South Fork Designated Species—Animals

Common Name/ *Scientific Name*	Designated Species Status FFWCC	USFWS	FNAI

Addendum 6—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.

Natural and Cultural Resources

1. Request for operating budget, for fuel and equipment. Estimated Cost: $1,000 per yr = $10,000
2. Maintenance and interpretive assistance. Average of $2200/year. 0-10 years. Estimated Cost: $22,000
3. Survey boundary Estimated Cost: $27,000
4. Clear and prep 6 plus miles fence / fire lines. Estimated Cost: $73,690.00
5. Install 6 plus miles of fence Estimated Cost: $37,840
6. Initiate prescribed burning program for approximately 100 acres per year (500 total). 0-10 years. Average of $1590/year for personnel, fuel, and equipment. Estimated Cost: $15,950.00.
7. Mechanically treat designated areas for fuel reduction. Estimated Cost: $27,000
8. Initiate exotic vegetation and animal control program within the park. Continue to monitor the park for new infestations of exotic plants. Aggressively remove feral hogs. Map and treat infestations as needed. 0-10 years. Includes equipment and herbicide. Estimated Cost: $19,000.00.
9. Acquire 4X4 Tractor and accessories. Estimated Cost: $60,000
10. Acquire 4X4 1-ton Truck. Estimated Cost: $ 26,000
11. Acquire slip on 250 gal fire unit. Estimated Cost: $ 9,710.00
12. Acquire 4X4 ATV. Estimated Cost: $8,900

South Fork Total Estimated Cost: $341,590.00

Development Area or Facilities

Trails and Trailhead.....$165,625.00
Primitive Group Camp.....$187,500.00
Support Facilities.....$343,750.00

Total w/contingency $836,250.00